Multilingual Legal Information Access: an Overview

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Multilingualism is a phenomenon which greatly affects the efficiency of information exchange among people in every sector of life. Cross-language retrieval systems are tools that contribute to such exchange, supporting research and world-wide communication, helping to search for data irrespective of the language in which information objects are expressed. In particular, in the domain of law a vast category of users need to exchange legal information world-wide and carry out activities in a context where a common understanding of law beyond language barriers is highly desired. However, this requirement is hard to meet, due to the variety of languages and modes in which the legal discourse is expressed as well as to the diversity of legal orders and the legal concepts on which these systems are founded.

1. The phenomenon of multilingualism in the law

Internationalisation and increasing globalisation of the market economy and social patterns of life have created a situation where the need for legal information from foreign countries and from different legal systems is greater than ever before. There is no doubt that the exchange of information is largely dependent on language, to be intended not only as a system of symbols, but also as a means of communication (Wittgenstein 1997) and thus as a tool for mediating between different cultures (Kjaer 2004b). If we consider the language of the law, we notice that the properties of such a language have a major impact on the exchange of legal information. In fact, the language of the law is the expression of legal identities that vary according to systems and countries, where different languages are used to express legislation, case law and doctrine as main components of the various legal cultures (Sacco 2005, Fletcher 2005).

In the current multilingual and multicultural environment there is a significant need – in the academic area, in the legal profession, in business settings as well as in the context of public administration services to citizens – of common understanding and exchange of legal concepts of the various legal systems, while there is a strong pressure for the preservation of their basic sense and value. Both requirements are quite difficult to meet, complicated by the complexity of the legal language and by the variety of modalities used to express law within the various legal systems.

Unlike a number of technical and scientific disciplines, where a fair correspondence exists between concepts across languages, serious difficulties arise in interpreting law across countries and languages, due to the system-bound nature of legal terminology. In fact, each legal order is situated within a complex social and political framework originating from the history, traditions and habits of a particular community. Multilingualism in the legal domain is almost unanimously perceived as a very complex issue. It is a highly debated topic not only among professionals and scholars of comparative law, linguistics, translation theory and practice (de Groot 1998, Sacco 1996), but also among government officials in institutional settings at national and international level, as demonstrated by the efforts made for the preservation and management of the plurality of languages in a number of countries as a guarantee of cultural diversity. This is the case of Belgium, Switzerland, Canada and the EU.

Europe in particular is a typical example of a multi-language and multi-system environment where decisions on linguistic policy are now receiving considerable attention (Gallo 1999). The European Union subscribes to full multilingualism in its 23 official languages, causing a huge amount of translation work for legal documentation. Linguistic policy is faced with the economic and practical problems of handling so many languages. Hence, there is a certain pressure to simplify, at least for certain contexts and specific types of documentation. Two opposite positions are often discussed (Moréteau 1999) when dealing with the management of multilingualism. These are represented by a multilingualism embracing all European languages and being as egalitarian as possible on the one extreme (indeed a very expensive solution) and on the other by the adoption of one single language, in particular a sort of international English, which is already used in some fields of law and specific legal areas such as international trade as well as in the scholarly and professional literature.

In this chapter the various aspects of multilingualism that are crucial for the development of cross-language legal information retrieval will be examined. These are to be identified on the one hand in the intimate link between language and law, covering the crucial issues of conveying legal concepts across languages, and on the other hand in the broad spectrum of comparative issues, more precisely, in the relation between legal systems. While a problem in its own, the situation is exacerbated in a multi-language environment. In fact, every attempt to exchange legal knowledge among different communities and to reach a common understanding of different legal systems must inevitably cope with the problems posed by language and the diversity of the systems. These topics are examined with a view to the extent in which they influence and impact on the development and performance of cross-language legal information retrieval systems.

It seems appropriate to first give a brief overview over the definition and scope of multilingual information access in general, and then highlight the main aspects of cross-

language retrieval of information. In particular, legal information will be dealt with, which is a topic in its own due to the complexity associated with mapping legal concepts across languages and systems.

2. Multilingual information access: definition and scope

Multilingual information access can be defined as the functionality allowing anyone to find information that is expressed in any language. Oard (1997c) identifies it as a selection of useful documents from collections that may contain several languages. Multilingual access is the general expression used to refer to the development, research and applications concerning the above-mentioned functionality. Another expression widely used in literature, also adopted in this study, is cross-language information retrieval (CLIR), often as opposed to within-language (or monolingual) retrieval (Oard 1997b).

The need for multilingual access stems from the acknowledgment that cultural diversity is vital to the maintenance of society and that languages are a strong element of the different cultural traditions. The role of information professionals in this context is crucial, as clearly stated by Clews (1988), who points out that the commitment of libraries to providing access to multilingual information resources means that they should lead the way in developing systems and services to foster cross-language retrieval. As the diversity of the world's languages and cultures generates a wealth of knowledge and ideas, it is essential to develop research studies and tools to preserve and successfully use the variety of resources produced.

With the increasing integration of the EU and the increasingly multicultural nature of modern society and its globalisation, stimulated by the development of digital information and telecommunications networks, the need for multilingual information access has become more and more pressing and the issues connected with cross-language retrieval have increased in importance. Language barriers are critical to the effectiveness of resource sharing and world-wide common access. This problem is also connected with the growing number of information databases now available on networks (Hudon 1997, Oard 1997a, Michos et al. 1999).

Multilingual access to information is a complex and multifaceted topic, embracing technical, functional and strategic issues which have been under discussion in the community of information specialists for many years (and still are). The main issues are functionalities such as thorough and proper handling of characters (their presentation, arrangement, transfer), putting queries in a preferred language and script, retrieving resources irrespective of the language used in searching and indexing, facilitating world-wide communication no matter what the language.

Literature in the late 1960s concentrated mainly on character encoding, font facilities, filing and display of multiscripts[1]. The challenge of accessing multilingual resources in single libraries and on a world-wide scale was perceived as being mostly of technological nature. It was mainly in the late 1970s that careful attention was paid to cross-language retrieval functionalities and tools, software solutions, research projects and studies where CLIR is often associated with disciplines like artificial intelligence and computational linguistics (Michos et al. 1999), machine translation (Kay 1996), language engineering, and natural language processing (Fluhr 1996).

Another important aspect of multilingual access concerns strategic issues and management issues. These refer to the need for general consensus and recommendations to achieve multilingual functionality in information systems. Emphasis is put on the need for a paradigm shift in the community of information professionals to overcome language barriers in information retrieval, taking into account language variety in building information systems. These themes are not as popular in the literature as those concerning technical and functional aspects, but are specifically addressed by some authors such as Borgman (1997) and Nardi-Ford (1998), who focus on the issue of English language dominance.

In addition, it is worth noting that, despite the technological developments which have occurred in the 1990s, until recently digital library research and development have somehow neglected the issues of multilingual presentation and access and have concentrated more on monolingual environments, mainly in the English language. Development of tools and applications embracing different languages, including Asian ones, has nevertheless progressed in these last few years (Peters & Picchi 1997).

2. 1. Multilingual Information Retrieval (MLIR) and Cross-Language Information Retrieval (CLIR)

The field of study that addresses the problem of accessing collections of documents is called Information Retrieval (IR). People use IR systems to get (the documents that contain) the information they need. These systems are based on techniques and tools to compare and match the need for information with the information content of documents. In reality, what the IR systems compare are surrogate expressions, as the query and the document characterisations are an approximation of the two data to be matched: the information need of the user and the information content of documents which are indexed (Salton 1989, Blair 1990). Information retrieval is based on a conceptual model that has been

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1   One main concern of the library system has been the management of different character sets in bibliographic databases. Efforts have been made to follow ISO encoding standards to represent the various alphabets, so to allow the exchange of data between systems. The aim is to provide all possible opportunities of data presentation and data exploitation.

extensively discussed (Salton 1989, van Rijsbergen 1979). It includes three information processing functions: indexing, query formulation and matching.

Information retrieval across languages is undoubtedly an application of information retrieval. These two fields share the same goals and a number of information retrieval techniques for matching documents as well as for processing queries are equally useful in a multilingual application. However, cross-language retrieval differs from information retrieval in a significant way as the standard monolingual information retrieval process involves no translation component, which is the main issue to cope with when searching in a multilingual environment.

While nowadays large-scale digital collections help dismantling the geographic barriers to information access, language barriers are still critical to the effectiveness of resource sharing and world-wide common access. In the current digital environment the number of languages texts are written in is considerably increasing and, as a consequence, the problem of handling multilingual information resources is to be connected with the growing number of diverse information databases now available on networks (Hudon 1997, Oard 1997a, Michos et al. 1999). For this reason cross-language information retrieval has become an important area in both research and practice (Oard & Diekema 1998, Peters & Picchi 1997).

Cross-language information retrieval is defined as the capability for users to retrieve material written or expressed in a language different from the query language (Lee et al. 2004), whereas multilingual information retrieval (MLIR) is concerned with the retrieval of information, following a search request in one language, from a collection covering documents in multiple languages. In this chapter general reference is made to CLIR to mean retrieving and accessing information in a multilingual context. The underlying functionality implies the ability of a system to process a query for information in any language, search a multi-language collection and return the most relevant documents.

Cross-language information retrieval has also been referred to as the problem of finding documents for somebody who cannot read the results; otherwise, they would trigger the search in that language (Oard 2000). This is, however, too restricted. In fact, multilingual users might issue a single query into a multilingual collection. Also, there may be the case of users with a limited active vocabulary but good reading comprehension in a second language, who prefer to issue queries in their most fluent language. As such, CLIR is a complex phenomenon, embracing technical, functional and strategic issues.

It is a matter of fact that in the last decade research and development on CLIR have progressed rapidly and issues of multilingual querying, presentation and retrieval have been extensively tackled, mainly in the area of general domain information. A rather limited number of studies and applications have been provided in domain-specific areas (e.g. medicine, environment); cross-language retrieval of legal information has received limited

attention. Despite recent developments in CLIR and the efforts made in this direction by a number of international initiatives and fora, such as the Cross-Language Evaluation Forum (CLEF)[2] and Text Retrieval Conferences (TREC)[3] promoting synchronisation between researchers working in the area by developing systematic tasks, test-suites and evaluation of results, no optimal solution for CLIR is available yet.

The requirements of a cross-language information retrieval system can be clarified by stating that in a multilingual access environment information is searched, retrieved and presented effectively, without constraints due to the different languages and scripts used in the material to be searched and in the metadata, that is bibliographic and semantic information allowing the retrieval of documents. This implies that in creating multilingual access services, both the users' native language and the multiplicity and richness of languages world-wide are to be accommodated. Also, methods have to be developed to allow users to put queries expressed in any language and retrieve information resources independently of the language of the documents and indexing.

One of the main questions arising in the context of CLIR is how the language barrier between the search requests and the documents should be crossed. This involves decisions about what to translate: search requests into the language of the documents, documents into the language of the request, or even both.[4] From a practical point of view the approach followed for large collections is usually based on the most economical method, consisting in simply translating the query at retrieval time into the document (or metadata) languages. This method presupposes that the query can be translated in a reasonably accurate way and that monolingual retrieval systems are available for all languages of the documents. Although many experiments have been carried out using query translation techniques, in the real world they pose a number of problems related to the need of contextualisation and interpretation, which increases when dealing with legal information (Francesconi & Peruginelli 2004, Sheridan et al. 1997).

Retrieving information over languages implies facilities such as multiple language recognition, translation, manipulation of information of both the queries and the documents, cross-language search and retrieval, displaying and merging of results (Peters & Picchi 1997, Bossmeyer 1994). Basically, these components reflect different sides of the problem of multilingual access, covering technical and linguistic aspects. These two aspects

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2   CLEF: http://www.clef-campaign.org. The purpose of the Cross-Language Evaluation Forum (CLEF) is to support global digital library applications by developing an infrastructure for the testing, tuning and evaluation of information retrieval systems operating on European languages in both monolingual and cross-language contexts.

3   TREC: http://trec.nist.gov. The objective of the Text Retrieval Conference (TREC), co-sponsored by the National Institute of Standards and Technology (NIST) and the U.S. Department of Defense is to support research within the information retrieval community by providing the infrastructure necessary for large-scale evaluation of text retrieval methodologies.

4   In section 3 approaches to carry out this translation and how far such translation can be successful when legal information is concerned will be considered.

are very rarely dealt with in parallel in research studies and reports on implementations. Issues concerning the presentation of results following a search session, standard character encoding and the development of multilingual thesauri for subject headings generally appear in strictly library-related literature, while topics such as matching queries and documents, query translation, expansion techniques and ranking methods are discussed in wider information professional settings.

The main components of a cross-language retrieval system can be identified in multilingual resources, machine translation, multilingual information retrieval, multilingual information extraction and summarisation as well as user evaluation and studies. In the context of CLIR, multilingual resources include corpora (parallel and comparable, useful to generate translations), lexicons and ontologies, which can be defined as inventories of concepts organised on the basis of some internal structuring principle, which serves to categorise and organise information. The problems connected with such multilingual resources are generally due to their scarce availability and to the high cost, as their development requires specialised human skills. Machine translation, which plays quite an important role in current CLIR systems, consists of an automated process that transforms written text from one language into another and is usually based on bilingual dictionaries or model parameters that can be learnt from a large parallel corpus. As regards free text retrieval, techniques like information extraction and summarisation are generally used. These techniques refer to extracting semantic information from documents to be searched according to their relevance for the users' tasks. Usually a set of extraction rules are developed, either manually or automatically, and after a training phase the knowledge or rules learnt can be used to carry out automatic information extraction and to produce a summary of the document. Due to grammatical and lexical differences between languages these techniques may not be directly applicable in cross-language retrieval.

3.   Legal information retrieval and cross-language access

As mentioned above, while much attention has been given over the past years to the study and development of methodologies for accessing multilingual information in general, research has been limited to the specific areas of legal information retrieval and of related cross-language indexing and search tools. It is worth noting that major attention has been paid by scholars and legal experts to linguistic and conceptual aspects of the legal languages: these themes are undoubtedly relevant to multilingual access and can provide important insights into this topic.

The difficulty in effectively accessing multilingual legal material through information retrieval systems definitively lies in the matching and weighing of legal terms across languages (Sacco 1998). This generally implies translating from the language of the query to

that of the material to be found or vice versa and addresses the problem of word disambiguation, which is greatly increased when mapping over legal languages. In fact, crossing the language barrier between search requests and documents implies addressing the problems of the system-bound nature of legal terminology and devising methods to map concepts between different legal systems.

Most projects and system implementations are confined to making legislative and jurisprudential information available at national level; however, in the last few years there has been a wide production of digital legal repositories made available over the Internet in a variety of languages. Hence, the need for accessing such a wealth of information by a wide variety of users all over the world has rapidly increased.

The above-mentioned issues regarding the peculiarities of legal information and information retrieval mechanisms have been highlighted as an introduction to the subject of cross-language retrieval of legal information, where problems are exacerbated due to the linguistic and systemic diversity to be handled in multilingual searching.

Aspects which seem worthy of analysis, being closely related to the development and effectiveness of legal information retrieval systems, are essentially of a linguistic, translational and comparative law nature.

3. 1. Linguistic issues in the legal domain

It has been said more than once that "the law is a profession of words" (Mellinkoff 1963, Sacco 1998). Many of the problems about meaning that are of concern to language specialists turn out to be of interest to legal professionals too and to impact on the exchange and retrieval of legal information. In fact, information retrieval systems are based on language, as queries are matched with the documents to be searched (be they free-text or metadata) through strings.

The relationship between language and law has since long attracted the interest of both jurists and linguists. It is a big concern in our modern society, where the interrelation between different legal orders is common. Both the comparatists operating in academic environments and the legal professionals are faced more and more with issues and cases where disparate legal models and concepts are involved. As these are expressed in different languages, the linguistic problem arises, with the practical implications of multilingualism, as well as with its theoretical principles.

Like language, the law is, in its origin, development and structure intimately linked to the history and culture of each country. A number of linguists and historians of the law have compared law and languages from the point of view of their origins as well as of their patterns of evolution and have pointed out that both law and language have, at their essence, rules which are constitutive of a system (Grimm 1816, Sacco 1993). Moreover,

there is a functional relationship between language and law as knowledge of the law requires language; the legal experts themselves have greatly contributed to the elaboration of the legal languages to better fit them to the needs of the law within the various countries and communities. In this context, the transfer of legal knowledge is entrusted to written or spoken language. This leads a specialist in the field to state that the law cannot manifest itself without language (Vanderlinden 1995).

As language is essentially a communication tool, it is successful when the parties understand each other, even in their disagreement. But while language is a means of understanding, it is also a means of misunderstanding between people belonging to different social groups or cultures. This synchronisation is more than elsewhere fundamental in the language of the law (Vanderlinden 1999), where equivalence of meanings across legal systems are difficult to find and assess, even when the same language is used!

In fact, legal language consists of legal terms, phrases and stable conventions and as such reflects one particular legal system. The system-specificity of legal terms makes a relevant number of legal scholars and professionals state that the language of the law is to be learnt and communicated in its close relationship with a given culture, the related country and the people's history and heritage, conceived as a socially acquired pool of knowledge, which represents its richness and uniqueness. (Moreteau 1999, de Groot 1998). As legal language is culture-bound and entwined with one particular society and its legal system, it is seen as the collective memory of the legal actors belonging to a given legal system. In addition, the multiple languages of law are a concern also among speakers of the same language in so far as, in principle, each category of receiver (citizen, lawyer, judge, public officer, etc.) requires a specific vocabulary for his or her understanding of the law.

While the dependency of legal concepts from a particular legal system is the key characteristic of legal language as a system of signs, such concepts are claimed not to be forever fixed and unchangeable, because they change when legal experience changes (Luhmann 1993). The change of legal concepts is brought about through legal argumentation (Kjaer 2004b). This is evidenced in the multifaceted role of language in establishing, maintaining, and changing concepts, which makes cross-system interoperability even harder to achieve (Kjaer 2004b, Gémar 1982).

A further argumentation is based on the branch of linguistics known as 'linguistic relativity', focusing on the fact that what one language system conceptualises in one way is not conceptualised in the same way in all other language systems. This is especially true of legal terminologies at system level (Engberg 2004).

Legal language, like language in general, can be viewed both as a system of conventional symbols and as a means of communication for people belonging to a particular social group or culture. When it is viewed as discourse, the focus is on its function as a means of communication. Discourse is defined as language used in social practice, com-

municative practice in a particular social group (Fairclough 1992, 1995). So discourse is dependent on the social context in which it is used; it is shaped by that context, which is not an immutable entity.

In this view legal discourse consists of legal rules produced within the framework of a legal system, with the double function of sustaining and reproducing the system and of changing and transforming it. All this has implications on the possibilities of legal communication and, since these changes are brought about in legal discourse, it is possible for the national legal systems and their languages to converge. In addition, today legal discourse is no longer confined to the individual national legal systems, but it transcends national boundaries. This implies that different legal practices, diverse legal languages and cultures are exposed to each other and it is likely that, for example in Europe, the national legal traditions will gradually change along with the emerging intercultural communication of legal actors, who in that way adapt themselves to the changing institutional context of law (Kjaer 2004a).

From another perspective, similar conclusions have been drawn (Gadamer 1975), based on the assumption that reason, as the universal human faculty of intuition by which one sees reality, is the common language of people belonging to different speech communities, but the fact that our experience of the world is bound to language, does not imply an exclusiveness of perspectives. An example clarifies this concept: even though the French legal concept of *contrat* is radically different from the English concept 'contract', due to opposite approaches to contract formation, an English lawyer can understand the French concept and vice versa.

However, coming to an understanding across legal languages and legal systems is a hard process and establishing a common understanding can only be done if the actors base their interpretation on the same tacit suppositions about the world, which forms the point of departure for communicative action. Incorporating these requirements in cross-language information systems requires interpretation and adaptation strategies over languages and systems, which is hard to accomplish without a high expertise in linguistics and comparative law.

3. 2. Legal translation

There is a general consensus that translation is a complex form of action, requiring much feeling and understanding of cultural aspects. There are lots of ongoing discussions among linguists, scholars and professionals working in various settings and disciplines, all sharing the opinion that this activity is much more than the substitution of lexical and grammatical elements between two languages (Capellas-Espuny 2004). Jakobson (1959), a leading linguist and expert in the subject of translation, defines translation as "the interpretation

of verbal signs by means of some other language". Further argumentation is based on the nature and scope of translation, depending on the nature and scope of the translated materials in a way that quite often "the process of translation requires the art of leaving aside some of the linguistic elements of the source text to find an expressive identity among the elements of the source and the target texts" (Capellas-Espuny 2004). To this regard it is also worth mentioning a statement on translation made by an outstanding author who makes an ongoing contribution to legal translation issues: "*la traduction est nécessairement une lutte. Le bon traducteur est celui qui cherche, qui se pose des questions, qui, loin de se contenter de ce qu'il a trouvé d'abord, commence par s'en méfier; il est comme le médecin scrupuleux qui, son diagnostic a été à peine posé, cherche les indices qui pourraient le conduire à le remplacer par un autre mieux fondé. En matière de traduction, on ne pourrait dire que la première idée n'est jamais la meilleure*» (Gémar 1979).

The significance of translation is multifold, allowing different cultures to connect, interact and enrich one another. When taking an element from one particular cultural system and introducing it into another, translation serves as a tool for cultural exchange. As Ralph Linton (1955) points out: "The comparatively rapid growth of human culture as a whole has been due to the ability of all societies to borrow elements from other cultures and to incorporate them into their own". Despite the ever increasing exchange and communication between cultures, coping with language differences and conveying meanings across languages is still a complex process. As regards the area of law, the relation between law and language can significantly broaden the scope of legal translation theory. In fact, while it can be assessed that everyday language already implies a formalised way of communication, legal language introduces a supplementary system of formalisation (Prakken & Sartor 1995). Differences between legal language and ordinary language lie, in the view of a number of authors (White 1985, Phillips 2003, Pozzo 2005), in the use of words and in the connotations they bear when they are incorporated in legal speech.

Translation is seen by White (1990) as "a set of practices that can serve as an ethical and political model for the law and, beyond it, as a standard of justice". In particular, in legal translation the demand for precision is greater than in literary translation (Avalos 1998), since what is to be carefully taken into account is not only compliance with the rules of the foreign language, but also with the rules of the foreign legal system. Further complexity is due to the fact that, although legal translation demands precision and certainty, it is bound to use abstractions, the meanings of which derive from particular (changing) cultural and social contexts. These contexts generate a certain degree of ambiguity that increases when the legal cultures and systems are vastly different from each other (Rotman 1995). It is also claimed (Harvey 2002) that law is an unstable discipline, largely indeterminate, and that legal discourse is fluctuant, with its meaning depending on the language in which it is expressed and even on the target audience.

There are several arguments for the specific status of legal translation, which are widely debated. Legal translation is claimed having a special status (Weston 1990, Gémar 1995), due to the peculiarities of legal language, which is defined as a special-purpose communication between specialists (Šarčević 1997, Harvey 2002). In addition, it is pointed out that the characteristics of legal discourse make legal language not restricted to specialists, but understandable also by the layman (Heutger 2003). Furthermore, the point is made that not only prescriptive documents are to be considered in legal translation, but also the expressive or persuasive function which is found in legal discourse, occurring, for example, in the explanatory parts of a judicial decision or in a doctrinal work. It is the complex communication situation which is peculiar to the language of the law and the perspective nature of legal discourse that makes legal translation so special, in a way that in transferring a source legal text into a target one, this latter must produce the same legal effects of the original (Šarčević 1997, Gémar 1995).

In contrast to what happens with disciplines as mathematics or chemistry, where there is an objective extra-linguistic reference, legal realities are conceived as the result of legal discourse, which creates its own reality from different or shared historic traditions, in one or several languages. Thus, legal realities cannot coincide or can coincide only partially when they focus on a common international legal phenomenon.

However, several different opinions are expressed denying the special status of legal translation, and arguments are offered on equally specific disciplines, as, for example, astrophysics, where the target text must have effects in the special subject area (Harvey 2002). Furthermore, the characteristics of the law as a system-bound discipline are also typical for several subject areas like religion and political science, where the notion of system is an inherent feature. On the whole, the opinion is widely shared that legal translators are more rigidly bound to specialised knowledge than the translators of everyday language or the humanities (Gizbert-Studnicki 1987) and that finding out terminological equivalence between terms is a serious problem when comparable concepts do not exist in the legal systems expressed by the languages to be mapped. In this context the danger of ambiguity and miscomprehension is considerable.

A field where the significance of legal translation is evident in many respects is international law. Since the right of the States to communicate in their own language has been accepted, translation has become more important than ever in this field of law. Yet, very little attention has been devoted to language in international law and there is still the danger of a communication gap between nations. Translation also matters greatly for international law in the area of international organisations. For example, the plurality of languages in the United Nations creates a serious challenge to communication: this task is faced by the multilingual system ODS – Official documents of the United Nations,

which covers all types of official UN documentation available in the six official languages, namely Arabic, Chinese, English, French, Russian and Spanish.

On a practical level legal translation requires both a comparative study of the different legal systems and an awareness of the problems created by the absence of equivalents (Capellas-Espuny 2004). This means that legal translators must be familiar with the legal culture of the target context in order to reformulate an equivalent meaning through what they judge to be the most appropriate linguistic and legal expressions. In fact, a particular concept in a legal system may have no counterpart in other systems, or a particular concept may exist in two different systems but may refer to different realities. In other words, law lacks a common knowledge base or "universal operative referents" (Pelage 2000), which makes it very difficult to find equivalents for culture-bound terms, especially those concerning legal concepts, procedures and institutions (Harvey 2002). To this regard there is an important distinction to be taken into account: the normative language of the law (as found in statutes and judicial reports), where translation is likely to be more constrained by the words of the positive law, and the language of the legal doctrine (used in law review articles, or monographs) where translation can be adapted to the spirit of the message. Finally, translating a text from the language of a civil law country to the language of another civil law country is generally less complicated than translating the same text to the language of a common law country (De Vries 1969).

Addressing the problem of functional equivalence is a major task of legal translators, who need to find an equivalent in the target language legal system for the terms of the source language legal system. Because of the system-specificity of legal terms, full equivalence can only be achieved between the languages of the same legal systems, as is the case when translating within a bilingual or multilingual legal system, such as Belgium, Finland, Switzerland and – to some extent – Canada (Gémar 1988). Where the source and target language relate to different legal systems, equivalence is rare (Sandrini 1994). To this regard de Groot (1996, 1998) points out that near-full equivalence can be found when the legal systems related to the source language and the target language have one legal area relevant to the translation in common. This is the case of the implementation of treaties, EU harmonisation or one legal system willingly adopting the legal solutions of another system.

Where the source language and the target language relate to different legal systems and the above exceptions are not at issue, perfect equivalence is rare. Nevertheless, certain terms relating to different legal systems will readily be seen as equivalents by translators. Kisch (1973) states that translatability is achieved if the terms correspond in essence and, according to this author, "this is a question of pragmatic order".

It is possible that in a particular context, such as the legal domain, certain words are acceptable equivalents where they are not in a different context. Relevant is also whether

a translation needs to be prepared to give somebody who does not master the source language a summary impression of the contents of the text, or whether the translation will receive the status of authentic text in addition to or in substitution of the source text. In the latter situation it is important that the meanings of the terms in the target text are not narrower or broader than those in the source text (de Groot & van Laer 2006).

On the principle of expressing a source language term by a 'functional' equivalent of the target language, there is a general consensus on the principle that the first method is that of functional equivalence: using a term or expression in the target language which embodies the nearest situationally equivalent concept (Šarčević 1988, Weston 1990, Šarčević 1997, Temorshuizen-Arts 2003). However, doubts about this approach are justified, as for a target language term to be identified as an equivalent to a source language term there must not only be functional equivalence, but also a similar systematic and structural embedding (de Groot 1999).

If no acceptable equivalents in the target language legal system can be established, different solutions must be sought. Basically, three subsidiary solutions may be distinguished (Šarčević 1997, Wiesmann 2004):

1. preserving the source term (loanword): Here no translation is provided and the term may be explained by adding information in parentheses or in a footnote. But in this case the main purpose of conveying the meaning of the source terms through a target term is definitely not fulfilled.

2. neologism: A new term is created in the target language that does not form part of the terminology of the target language legal system, if necessary in combination with an explanatory footnote.

3. paraphrasing: A description is used to render the source language term in the target language. If the paraphrase in the target language is a perfect definition of the source language concept, such a paraphrase approximates an equivalent composed of several words. Šarčević (1997) qualifies this as a descriptive equivalent. This is the case of a legal entity that is described, even though it does not exist as such in the target language legal system; however, the combination of its elements makes the term accessible to a lawyer trained in that system.

While interpreters often tend to choose the solution involving cognates, literal translation, synonyms and neologisms, these, however, have undesirable effects on both the accuracy and the effectiveness of communication. This tendency reveals a lack of awareness concerning the semantic discrepancies between the legal terms in the source language and in the target language on the part of interpreters. For these reasons, paraphrase is perhaps the most effective technique, involving re-formulation at sentence level in order to transfer the speaker's intention and highlight a specific context. A significant lexico-grammatical shift that helps to achieve this should not be seen as resulting in free or in-

accurate interpreting. It may be the only way of achieving listener-centred interpretation and conveying the meaning in the target language. It is important to remember that, unlike in other technical contexts, finding an adequate solution that combines the accuracy necessary for the faithful conveying of legal concepts and the need of communication is very challenging.

One serious practical problem legal translators are faced with is the limited help provided by legal dictionaries, which fail to meet their expectations for conveying the meaning of the source legal language into the target legal language. According to de Groot and van Laer (2006), who extensively analyse the problem of functional equivalence of legal terms, only very few dictionaries are reliable tools. These authors propose to indicate the degree of equivalence and to provide alternatives according to area of law, legal system and use.

As illustrated above, the comparison of law and translation studies shows differences of perspective, especially in the application of the rule of equal authority, which has not been used in translation studies, but also reveals similarities, with regard to the weaknesses attributed to translation (secondary nature of translation, authority of the original text). In spite of these common views, law and translation studies continue to develop separately, even though it would plainly be an advantage if they shared some of their theoretical approaches (Lavoie 2005).

Legal translation is an essential function for cross-language retrieval systems. One major question concerns the translation strategy to be adopted in order to ensure that users access legal information independently of the language used in a query. As described above, legal translation mainly refers to texts, whereas in cross-language retrieval what mainly matters is handling single or combined units of information as searched by users. There are different approaches to legal translation that can be used for accessing multilingual legal information.

In general the approach of fidelity to the letter of the original document, that is the strict adherence to the original, has long lasted over the centuries. Little by little the method of simple linguistic equivalence has given way to a target-oriented translation adopting a functionalist approach, where it is not formal correspondence between source and target text that is to be sought, but rather the equivalent legal effects principle (Šarčević 1997). Despite the functionalist approach having received much attention, so far linguistic fidelity is still a popular approach, being recommended by the United Nations instructions for translators (Harvey 2000). Furthermore, a narrow view of fidelity to the original text is favoured by Court interpreters (Morris 1995).

Other methods of translation, such as borrowing (translation procedure whereby the translator uses a word or expression from the source text in the target text) and creation of neologisms are scarcely significant in cross-language information retrieval, where the objective is to find materials in any language, irrespective of the language used in searching.

3. 3. Issues of comparative law

The problems raised by multilingualism are strictly connected to those related to the variety and diversity of legal systems and as such to comparative law. Far from the opinion that pursuing comparisons may be limited to descriptive translations or summaries of foreign law, a number of comparatists (van Hoecke 2004, Schlesinger 1995, Sacco 1991) express their doubts about the possibility of a real comparison of legal systems. This does not mean ignoring that comparative research has reached very good results in putting scholars and legal professionals to work together in comparative projects, launching harmonisation activities and, at EU level, having codes drafted as well as having directives fitted with the legal concepts and structure of the Member States.

Retrieval systems for legal information across different legal systems represent a practical approach to the confrontation and exchange of legal cultures. Since comparison involves observation and explanation of similarities and differences, comparative research can give a major contribution to the development of these information systems. In fact, the implementation of retrieval functionalities implies taking into account and properly managing the peculiarities of legal concepts across systems, handling the variety of languages used to express these various concepts as well as addressing the terminological issues of representing the various legal cultures.

A glance to worldwide legal orders shows that several countries have been operating in a multi-system and multilingual environment for many years: Canada, Switzerland, Belgium, Spain are only some examples of this, not to mention the European Union, with its 27 countries with their respective systems, languages and families of law. This pluralism is managed using different methods and practices, based on translation, interpretation, adaptations of legal terms and in a number of cases on multi-language drafting.

Multilingualism and comparison among systems are often addressed as a joint main issue in cooperative efforts promoting harmonisation activities for the creation of uniform law in various areas (at EU level efforts have mainly been made in contract, private and trade law). It is a matter of fact that the direct implications of comparing and possibly integrating different legal concepts and structures are intimately linked to language issues.

Many comparatists are strongly concerned with the implications of the differences existing between the cultural contexts underlying the various legal languages and with the difficulties in transferring legal meanings and legal concepts from one legal system to another, even when the same language is used (Kjaer 2004a). A number of frequently mentioned examples refer to this phenomenon, such as *societé* in the French legal language in France, which has not the same meaning as *société* in the French legal language in Belgium (Vanderlinden 1999). Similarly, *Besitz* means factual possession for a German. However, an Austrian lawyer understands *Besitz* as the factual possession including

the *animus domini*, that is *Innehabung.* So even German-speaking lawyers from Austria, Germany, Liechtenstein and Switzerland will not automatically understand each other's legal terminology (Heutger 2004).

In recent years research studies increasingly concentrate on the relation between legal language and the comparative analysis of different legal orders. This topic, mainly debated in conferences, is often tackled from the point of view of the validity and performance of legal translation and of the analogy between legal translation and legal interpretation. Many are the initiatives aimed at laying the foundation for a common frame of reference and at promoting, for example at EU level, a pan-European terminology (Pozzo 2003).

In addressing the issues related to the development of systems and tools for accessing legal information across legal systems, consideration is to be given to the methods employed in the comparative process of legal systems: integrative as opposed to contrastive (Schlesinger 1955). Looking at the methods followed, it is likely that these comparative law approaches can influence the cross-system retrieval techniques adopted in the implementation of retrieval systems.

In continental Europe a *jus commune* emerged over a number of centuries, which did not mean an entirely uniform law, but certainly a set of shared formative elements of the law, called by Sacco 'legal formants' (Sacco 1991). With the age of codification, two facts contributed to the creation of intellectual barriers between the legal systems of the several nations: the abandonment of Latin and the adoption of national codes in the language of each country. This introduced a contrastive approach in the practice of comparative law and legal professionals treated the national systems as foreign law. It is only under the recent influence of transnational exchange and increasing cross-border transactions in every sector of life, that a common core of legal systems is being looked for and that an integrative comparison has newly emerged among legal scholars.

The current debate among comparative scholars is extremely rich and complex. It is claimed that original innovation in law is very small and borrowing and emulation are of central importance in understanding the course of legal change (Sacco 1991). Nevertheless, the focus is also on the divergences and peculiarities of common and civil law systems, namely in their formants, principles and rules, manner of reasoning of lawyers and use of authorities guiding them in legal questions. However, the possibility for fruitful convergence and mutual understanding is envisaged and encouraged (Schlesinger 1995). Reciprocal influences, even though not necessarily direct legal transplants, are likely to happen and the point is made that in the first decades of the twentieth century the differences between common law and civil law traditions were emphasised, whereas today, at least in a number of fields of law, the common elements are sought for, rather than differences stressed (Orucu 1999).

The convergence or divergence approaches mentioned above are key elements for implementing multilingual retrieval tools and services: according to the chosen approach, the methods followed in these systems will facilitate terms and concepts to be matched across legal systems, adapting concepts of different systems and helping contextualisation to approach the most similar concept in the target language and system. In a more restrictive approach, only broad correspondences will be established focusing on broad concepts which are likely to be commonly understood by a variety of users.

4. Conclusion

Access to information regardless of language barriers is a key factor for effective global sharing of knowledge. This need has created a convergence of interests from various research communities around cross-language retrieval, which is becoming more and more popular between information specialists. Referred to legal information, it is to be intended both as a *de-facto* situation characterised by the existence of different legal languages, and as the set of issues involved in the management of legal information across language barriers.

In order for legal material to be accessible worldwide, interoperability is paramount, but so far there are not many solutions for cross-language legal information access and no truly multilingual information system is available yet. In this sense, the LexALP Project[5] is a pioneer project within Europe, aimed at harmonising the terminology of the Alpine Convention in the four official languages (French, German, Italian and Slovene), in a way that member States can achieve fruitful cooperation and a common understanding of their respective regulations and strategies in the fields of environmental law, sustainable development and spatial planning.

All this implies a labour-intensive work as the model of legal multilingualism is not simply to be confined to the transposition of legal concepts from one system to another, but it is likely to require a cooperative venture, an orchestration process involving all stakeholders responsible for the various legal systems: legislators, judges, legal professionals and eventually citizens in an effort towards a common understanding of law beyond language and system barriers.

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5   The methodologies and instruments developed by LexALP allow to compare the specialised terminology of six different national legal systems (Austria, France, Germany, Italy, Slovenia and Switzerland) and more than one supranational system (EU law, International law and, within the latter, the particular frame of the Alpine Convention) in four different languages, and to harmonise it. Further information in the following chapters.

Bibliography

Altuna, Bélen (1994): Considerations and requirements in designing Spanish multilingual library catalogues. In *Automated systems for access to multilingual and multiscript materials:* proceedings of the second IFLA satellite meeting, Madrid, 18th–19th August, 1993. München: K. G. Saur, 29-44.

Avalos, Francisco (1998): *Legal translations: some tips.* Lecture delivered at National Language Resource Center, San Diego State University.
http://www.law.arizona.edu/Library/Research/Guides/legal_translations.cfm?page=research

Blair, David C. (1990): *Language and representation in information retrieval*. Amsterdam [etc.]: Elsevier Science.

Bobrow, Daniel G./ King, Tracy H./ Lee, Lawrence C. (2007): Enhancing legal discovery with linguistic processing. http://www2.parc.com/isl/groups/nltt/papers/bobrow.pdf

Borgman, Christine L. (1997): Multi-media, multi-cultural, and multi-lingual digital libraries, or how do we exchange data in 400 languages? In *D-Lib magazine*.
http://www.dlib.org/dlib/june97/06borgman.html

Bossmeyer, Christine (1994): What's next: issues arising from the satellite meeting. In *Automated systems for access to multilingual and multiscript materials*: proceedings of the second IFLA satellite meeting, Madrid, 18th-19th August, 1993. München: K. G. Saur, 167-173.

Cappellas-Espuny, Gemma (2004): The problem of terminological equivalence in international maritime law: the case of *hypothèque* and mortgage in the document Final Act and International Convention on maritime liens and mortgages. In *Journal of diplomatic language,* 1:4.

CLEF - Cross-Language Evaluation Forum. http://www.clef-campaign.org

Clews, John (1988): *Language automation worldwide: the development of character set standards*. British Library R&D report 5962. Harrogate: SESAME Computer Projects.

de Groot, Gerard-René (1996): Het Vertalen van Juridische Informatie. In *Preadvies Nederlandse Vereniging voor Rechtsvergelijking*, 53. Deventer: Kluwer, 1-77.

de Groot, Gerard-René (1998): Language and law. In *Netherlands report to the fifteenth International Congress of Comparative Law*. Antwerp/ Groningen: Intersentia, 21-32.

de Groot, Gerard-René (1999): Das Übersetzen Juristischer Terminologie. In de Groot, Gerard-René & Schulze, Reiner (eds.): *Recht und Übersetzen.* Baden-Baden: Nomos, 11-46.

de Groot, Gerard-René & van Laer, Conrad J.P. (2006): The dubious quality of legal dictionaries. In *International journal of legal information*, 34:1 (spring), 65-86.

De Vries, Henry P. (1969): *Foreign law and the American lawyer: an introduction to the civil law method and language*. New York: Parker School of Foreign and Comparative Law, Columbia University.

Dowlin, Kenneth E. (1994): Issues in offering multilingual and multiscript library services: the key to the global village library. In *Automated systems for access to multilingual and multiscript materials: proceedings of the second IFLA satellite meeting, Madrid,* 18th-19th August*, 1993.* München: K. G. Saur, 23-26.

Engberg, Jan (2004): *Statutory texts as instances of language(s): consequences and limitations of interpretation*.

http://www.brooklaw.edu/students/journals/bjil/bjil29iii_engberg.pdf

Fairclough, Norman (1992): *Discourse and social change*. Cambridge, MA: Polity Press.

Fairclough, Norman (1995): *Critical discourse analysis: the critical study of language*. London/ New York: Longman.

Fletcher, George P. (2005): The language of law: common and civil. In Pozzo, Barbara (ed.): *Ordinary language and legal language*. Milano: Giuffrè, 83-107.

Fluhr, Christian (1996): Multilingual Information Retrieval (Chapter 8.5). Battista Varile, Giovanni & Zampolli, Antonio: *Survey of the State of the Art in Human Language Technology*. http://cslu.cse.ogi.edu/HLTsurvey/ch8node7.html

Francesconi, Enrico & Peruginelli, Ginevra (2004): Opening the legal literature portal to multilingual access. In *DC-2004: Proceedings of the International Conference on Dublin Core and Metadata Applications*, 11th-14th October, Shanghai, 37-44.

Gadamer, Hans-Georg (1975): *Truth and method*. New York: Seabury Press.

Gallo, Giovanni (1999): Les linguiste juristes de la Cour de Justice des Communautés européennes. In Sacco, Rodolfo & Castellani, Luca (eds.): *Les multiples langues du droit européen uniforme*. Torino: L'Harmattan Italia, 71-89.

Gémar, Jean-Claude (1979): La traduction juridique et son enseignement: aspects théoriques et pratiques. In *La traduction juridique*. *Meta*, 24:1, 35-53.

Gémar, Jean-Claude (1982): Langage du droit et traduction : essays de jurilinguistique. In Gémar, Jean-Claude (ed.): *The Language of the Law and Translation: Essays on Jurilinguistics*. Québec: Linguatech-Conseil de la langue française.

Gémar, Jean-Claude (1988): Le Traducteur Juridique ou l'interprète du Language du Droit. In Nekeman, Paul (ed.): *Translation, our Future/ La Traduction, Notre Avenir, Proceedings of the Xlth World Congress of FIT*. Maastricht, 422-430.

Gémar Jean-Claude (1995): *Traduire ou l'art d'interpréter, langue, droit et société: éléments de jurilinguistique*. Québec: Presses de l'Université du Québec.

Gizbert-Studnicki, Tomasz (1987): Is an empirical theory of the language of the law possible? In Ziembinski, Zygmunt (ed.): *Polish contributions to the theory and philosophy of law*. Amsterdam: Bodopi, 99-114.

Gollins, Tim & Sanderson, Mark (2001): Improving Cross-Language Retrieval with Triangulated Translation. In *Proceedings of the 24th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval*, New Orleans, 9th-13th September, 90-95.

Grimm, Jacob (1816): Von der Poesie im Recht. In *Zeitschrift für geschichtliche Rechtswissenschaft*, 25.

Harvey, Malcolm (2002): What's so special about legal translation? In *Meta*, 47:2, 177-185.

Heutger, Viola (2003): *Law and language in the European Union*. http://www.jus.uio.no/pace/law_and_language_in_the_european_union.viola_heutger/landscape.pdf

Heutger, Viola (2004): A more coherent European wide legal language. In *European Integration online Papers (EioP)*, 7:2. http://eiop.or.at/eiop/pdf/2004-002.pdf

Hudon, Michèle (1997): Multilingual thesaurus construction: integrating the views of different cultures in one gateway to knowledge and concepts. In *Knowledge Organisation, 24:2,* 84-91.

Jakobson, Roman (1959): On linguistic aspects of translation. In Brower, R. A. (ed.): *On Translation*. London & New York: Oxford University Press.

Kay, Martin (1996): Machine Translation: the disappointing past and present. In *Survey of the State of the Art in Human Language Technology.*
http://cslu.cse.ogi.edu/HLTsurvey/ch8node4.html#SECTION82

Kisch, Isaac (1973): Droit comparé et terminologie juridique. In Rotondi, Mario (ed.): *Inchieste di diritto comparato*. Padova/ New York, 407-423.

Kjaer, Anne Lise (2004a): A common legal language in Europe? In Van Hoecke, Mark (ed.): *Epistemology and Methodology of Comparative Law*. Oxford: Hart.

Kjaer, Anne Lise (2004b): Convergence of European legal systems: the role of languages. In *Language and culture, 29*, 125-137.

Landry, Patrice (2003): Cross-lingual applications: Workshop 4. In *ELAG 2003: cross-language applications and the Web. 27th Library Systems Seminar, Bern, 2nd-4th April.*
http://www.elag2003.ch/ws/ws_4.pdf

Lavoie, Judith (2005): Droit et traductologie: convergence et divergence. In Gémar Jean-Claude & Kasirer, Nicholas (eds.)*: Jurilinguistique entre langues et droits*. Bruxelles: Bruylant, 523-536.

Lee, Kyung-Soon/ Kageura, Kyo/ Choi, Key-Sun (2004): Implicit ambiguity resolution using incremental clustering in cross-language information retrieval. In *Information processing and management, 40:1*, 145-159.

Linton, Ralph (1955): *The tree of culture*. New York: Knopf.

Luhmann, Niklas (1993): *Das Recht der Gesellschaft.* Frankfurt/Main: Suhrkamp.

Matthijssen, Luuk (1999): *Interfacing between lawyers and computers: an architecture for knowledge-based interfaces to legal databases.* The Hague/ Boston: Kluwer Law International.

McCarley, J. Scott (1999): Should we translate the documents or the queries in cross-language information retrieval? In *Proceedings of the 37th Annual Meeting of the Association for Computational Linguistics (ACL 99)*, University of Maryland, College Park, June 20th-26th, 208-214.

Mellinkoff, David (1963): *The Language of the Law.* Boston/ Toronto: Little, Brown.

Michos, Stephanos/ Stamatos, Efstathios/ Fakotakis, Nikos (1999): *Supporting multilinguality in library automation systems using A. I.* http://slt.wcl.ee.upatras.gr/papers/michos3.pdf

Moens, Marie-Francine (2006): Improving access to legal information. In Oskamp, Anja and Lodder, Arno (eds.): *Information technology and lawyers*. Dordrecht: Springer, 119-136.

Moreteau, Olivier (1999): L'anglais pourrait-il devenir la langue juridique commune en Europe? In Sacco, Rodolfo & Castellani, Luca (eds.): *Les multiples langues du droit européen uniforme.* Torino: L'Harmattan Italia, 143-162.

Nardi-Ford, Loredana (1998): *VALA Conference Sponsor report: report on VALA Conference to COLUG on 29/7/1998 at the CIAC Italian Resource Centre in Forrest.*
http://archive.alia.org.au/sigs/online/reports/vala.report.html

Morris, Marshall (ed.) (1995): *Translation and the law.* Amsterdam/ Phialdelphia: Benjamins.

Oard, Douglas W. (1997a): Serving users in many languages: cross-language information retrieval for digital libraries. In *D-Lib Magazine*, December.

http://www.dlib.org/dlib/december97/oard/12oard.html

Oard, Douglas W. (1997b): *Alternative approaches for cross-language text retrieval.*
http://www.glue.umd.edu/~dlrg/filter/sss/papers/oard/paper.html

Oard, Douglas W. (1997c): Cross-language text retrieval research in the USA. In *Third DELOS Workshop: Cross-Language Information Retrieval*, Zurich, 5th-7th March.
http://www.ercim.org/publication/ws-proceedings/DELOS3/Oard.pdf

Oard, Douglas W. & Diekema, Anne R. (1998): Cross-language Information Retrieval. In Williams, Martha E. (ed.): *Annual Review of Information Science and Technology,* 33. Medford: Information Today.

Oard, Douglas W. (2001): Evaluating interactive cross-language information retrieval: Document selection. In Peters, Carol (ed.): *Proceedings of the First Cross-Language Evaluation Forum*, Lisbon, 21st September.

Orucu, Esin (1999): *Critical comparative law: considering paradoxes for legal systems in transition.*
http://www.ejcl.org/41/art41-1.doc

Pelage, Jacques (2000): La traductologie face au droit. In *Proceedings of the International Colloquium University of Geneva, 17th-19th February.* Berne: Association Suisse des Traducteurs, Terminologues et Interprètes (ASTTI), Ecole de traduction et d'interprétation de Genève (ETI), 125-131.

Peters, Carol & Picchi, Eugenio (1997): Across languages, across cultures: issues in multilinguality and digital libraries. In *D-Lib magazine*, *May.* http://www.dlib.org/dlib/may97/peters/05peters.html

Peters, Carol & Sheridan, Paraic (2001): Multilingual access for information systems. In *67th IFLA Council and general Conference,* August, 16-25. http://www.ifla.org/IV/ifla67/papers/099-183e.pdf

Phillips, Alfred (2003): *Lawyer's language: how and why legal language is different.* London/ New York: Routledge.

Pozzo, Barbara (2003): Harmonisation of European contract law and the need of creating a common terminology. In *European review of private law,* 11:6, 754-767.

Pozzo, Barbara (ed.) (2005): *Ordinary language and legal language.* Milano: Giuffrè.

Prakken, Henry & Sartor, Giovanni (1995): On the relation between legal language and legal argument: assumptions, applicability and dynamic priorities. In *Proceedings of the Fifth International Conference on Artificial Intelligence and Law.* New York: ACM, 1-10.

Rotman, Edgar (1996): The inherent problems of legal translation: theoretical aspects. In *Indiana International and Comparative Law review,* 6:1, 187-196.

Sacco, Rodolfo (1991): Legal formants: a dynamic approach to comparative law. In *The American Comparative Law,* 1, 343-358.

Sacco, Rodolfo (1996): Riflessioni di un giurista sulla lingua (lingua del diritto uniforme e il diritto al servizio di una lingua uniforme). In *Rivista di diritto civile,* 42:1, 57-65.

Sacco, Rodolfo (1998): Langue et droit. In *Rapports nationaux italiens au XVéme Congrès International de Droit Comparé.* Bristol/ Milano: Giuffrè.

Sacco, Rodolfo (1993): Il diritto muto. In *Rivista di diritto civile,* 6, 689-702.

Sacco, Rodolfo (2005): Language and law. In Pozzo, Barbara (ed.): *Ordinary language and legal language.* Milano: Giuffrè, 1-21.

Salton, Gerard (1989): *Automatic text processing: the transformation analysis and retrieval of information by computer.* Reading (Mass.): Addison-Wesley.

Sandrini, Peter (1994): *Deskriptive Begriffsorientierte Terminologiearbeit im Recht, Problemstellung und Lösungsansätze vom Standpunkt des Übersetzers.* Doctoral Thesis, University of Innsbruck.

Šarčević, Susan (1988): Bilingual and Multilingual Legal Dictionaries: New Standards for the Future. In *Revue Générale de Droit*, 970 ff.

Šarčević, Susan (1997): *New approach to legal translation.* The Hague/ Boston: Kluwer law International.

Schlesinger, Rudolf B. (1995): The past and future of comparative law. In *American Journal of Comparative Law,* 43, summer, 477-481.

Sheridan, Paraic/ Braschler, Martin/ Schauble, Peter (1997): Cross-language information retrieval in a multilingual legal domain. In Peters, Carol & Tanos, Costantino (eds.): *Proceedings of ECDL-97, 1ˢᵗ European Conference on Research and Advanced Technology for Digital Libraries,* Pisa, 1ˢᵗ-3ʳᵈ September, 253-268.

Temorshuizen-Arts, Marjanne (2003): *Juridische Semantiek. Een Bijdrage tot de Methodologie van de Rechtsvergelijking, de Rechtsvinding en het Juridisch Vertalen.* Doctoral Thesis, University of Leiden.

TREC: *Text REtrieval Conference* (2004): http://trec.nist.gov

Vanderlinden, Jacques & Snow, Gérard (1995): *Francais juridique et science du droit.* Bruxelles: Bruylant.

Vanderlinden, Jacques (1999): Le future des langues du droit ou le dilemma du dernier orateur. In Sacco, Rodolfo & Castellani, Luca (eds.): *Les multiples langues du droit européen uniforme.* Torino: L'Harmattan Italia, 193-222.

van Rijsbergen, Cornelis J. (1979): *Information Retrieval,* 2ⁿᵈ ed. London/ Boston: Butterworths.

Weston, Martin (1990). Theoretical and practical approaches to translation. In *An English Reader's Guide to the French Legal System*. New York: Berg.

White, James B. (1985): Law as rhetoric, rhetoric as law: the art of cultural and communal life. In *The University of Chicago law Review,* 52:3, 684-702.

Wiesmann, Eva (2004): *Rechtsübersetzung und Hilfsmittel zur Translation. Wissenschaftliche Grundlagen und computergestützte Umsetzung eines lexikographischen Konzepts*. Tübingen: Narr.

Wittgenstein, Ludwig (1997): *Philosophical investigations*. Oxford: Blackwell.