MuLex: a proposal for a legal translation-oriented TKB with graphical representation

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1. THE EVOLUTION OF ELECTRONIC TERMINOLOGICAL RESOURCES

Since the early methodological and theoretical development of Terminology in the 1960s, the structure and features of terminological repositories have always played a central role in terminological debates. In the early 1990s, Meyer et al. pointed out that

Much of the world’s terminological data is stored in large terminological databases (TDBs) […] These TDBs are useful only to humans, and even then to only a small subset of potential users: translators remain the principal user category, even though TDBs have obvious applications in technical writing, management information and domain learning, not to mention a wide variety of machine uses such as information retrieval, machine translation and expert systems1.

The same authors also acknowledge that “a growing number of terminology researchers [were] calling for the evolution of TDBs into a new generation of terminological repositories that are knowledge-based”2. Nowadays, such repositories are generally referred to as ‘terminological knowledge bases’ (TKBs), which can be assimilated to what Cabré defines as “knowledge

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2 Ibidem.
repositories represented in a formal language that can be accessed by users via an expert system based on terminological units, which are organised into a conceptual network containing various types of relations.\(^3\)

1.1. The shift from TDBs to TKBs

TKBs can be considered as an evolution of TDBs. This evolution has been possible due to the benefits brought by the developments experienced more in general by linguistic resources in electronic format, especially as regards the creation of dictionaries. The incorporation of large-scale, general-language textual corpora has led to the development of a new generation of lexicographic resources that have influenced the methodologies used in terminographic tasks. These, in turn, have also started to complement with electronically processable textual, more domain-specific corpora, ever since the early 1990s.

Although Corpus Linguistics and the development of electronic tools for language analysis\(^4\) have been permeating both lexicology and terminography, the differences in the approaches adopted and goals pursued by the two disciplines have brought about the creation of two different types of resources containing different types of information. On the one hand, lexical repositories such as WordNet\(^5\) record words and the existing relations among them on a lexical basis, while on the other, TKBs are intended as repositories of terms rather than words of the general language. Given the close connection among terms and the underlying concepts, the relations contained in TKBs are conceptual rather than lexical and may be exploited for the acquisition of knowledge of the specialised domain the terms belong to.

1.2. The shift from TKBs to ontologies

As compared to TDBs, TKBs include more specialised-domain knowledge. In this regard, conceptual structuring is undeniably an essential part

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of any terminographic task, regardless of the terminological repository used. However, while conceptual structuring is exploited for populating both TDBs and TKBs\(^6\), in the former only terminologists and the experts involved in the creation of the repository have access to it, while such structuring may have a great potential in helping the end users to widen their domain-specific knowledge, since most of them “are not domain experts, and thus hope to acquire some domain knowledge when they look up a term”\(^7\). Yet, with the development of TKBs such conceptual information has increasingly been made explicit and available to end users, allowing for conceptual relations to be expressly represented and possibly leading to a graphic representation of the knowledge domain, also for fostering the acquisition and the systematisation of information. Moreover, the conceptual information available in TKBs – usually presented as conceptual maps – can also be used for retrieving information that is not accessible by using already known terms as keywords in the search facility of the repository. This, again, may lead to a further acquisition of knowledge.

However, “[m]ore recently and more frequently […] TKBs are now referred to as ontologies”\(^8\). The validity of this statement depends on what is meant by ‘ontology’. The number of authors who have suggested an answer to the question “What is an ontology?” is considerable, thus leading to the proliferation of definitions, insomuch as Guarino described ‘ontology’ as an overloaded term\(^9\). The space constraints of this paper do not allow the enumeration of all the possible definitions of ‘ontology’\(^10\), but let it just be said that the term originally belongs to philosophy, where “it means a systematic explanation of Existence”\(^11\), but has been subsumed by Information Tech-

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\(^7\) Ibidem.


ontology and, more specifically, Artificial Intelligence (AI), where it means an artefact, a hierarchical structure used for describing the shared conceptualisation underlying the knowledge represented in a knowledge base. Anyway, why should ontologies be of any concern to terminologists and terminographers? As a matter of fact, the importance of conceptual structuring in the development of terminological resources (TRs) has led ontologies to cross the boundaries of AI and enter the realm of Computational Terminology. As observed by Faber, “[m]ore recently, sociocognitive terminology has also begun to focus on ontologies as a more viable way of implementing conceptual representations”12. This has inevitably prompted experts in the field of Terminology to formulate their own definitions of ‘ontology’. For instance, Temmerman and Kerremans argue that an ontology is “a knowledge repository in which categories (terms) are defined as well as relationships between these categories”, where “[i]mplicit knowledge (for humans) needs to be made explicit for computers”13. In this regard, it should be borne in mind that in AI ontologies should ideally represent the conceptualisation of either reality in its entirety or a specialised domain in a language-independent way. However, as claimed by Jarrar and Meersman, “[a]lso the creation of ontologies as (sets of) agreements about structure and semantics of a domain requires the use of – usually natural – language […]”14.

1.3. The shift from ontologies to ontological TKBs

Nowadays Ontology Engineering has encouraged the development of different types of ontologies15 and its theoretical premises have allowed for the widespread application of ontologies in different research and practical fields. In Terminology, “ontologies are considered as a valuable means to approach terminological work: the reason is that a substantial part of the

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terminologist’s work needs a conceptual approach. However, the identification of ontologies with terminological knowledge bases is not justified, since in ontology-based TKBs the conceptualisation represents only one of their components, i.e. the “domain-dependent terminological network”, rather than the whole TKB.

Since the mid 1990s, the discipline of Terminology has experienced an “ontology shift which combines the (semi-) formalised representation of semantic relationships with terminological management systems”. This shift consists in the combination of two types of IT tools serving for (i) the representation of conceptualisations typical of ontologies and (ii) terminology management. The merging of these tools leads to the creation of ‘termontological databases’. In the resulting terminology management systems, “los términos son objetos lingüísticos contenidos en una base de datos terminológica, y dichos objetos se relacionan a través de una red de relaciones conceptuales, que está contenida en una ontología”.

The merging of the two disciplines has brought about two main approaches: Ontotermology and Termontography. Despite the differences among them, both multidisciplinary approaches, which are both research- and application-oriented, aim at incorporating ontologies into TRs. The incorporation of ontologies in terminographic practice has been exploited in several research projects for the representation of domain-specific

19 C. VARGAS SIERRA, op. cit., p. 41-52.
22 See COGNITERM (I. MEYER, D. SKUCE, L. BOWKER, K. ECK, op. cit.), Oncoterm (www.ugr.es/local/oncoterm/), GENOMA-KB (M.T. CABRÉ, C. BACH, R. ESTOPÀ, J. FELIU, G. MARTÍNEZ, J. VIVALDI, The GENOMA-KB project: towards the integration of concepts, terms, textual corpora and entities, in “Proceedings of the 4th International Confer-
knowledge in multilingual TKBs which, however, do not deal specifically with legal language.

2. TERMINOLOGICAL RESOURCES FOR LEGAL LANGUAGE

Within a context of growing interest for web-based TRs incorporating the representation of conceptualisation, a clear demand for IT-supported TRs devoted specifically to legal terminology can be observed, insomuch as several attempts to exploit the potentialities of ontologies in the legal domain have been made so far\(^{23}\). This need clearly emerges especially when the complexity of the legal framework and the multilingual regime of the European Union is concerned.

2.1. Legal terminology and the EU

Looking at legal language in general, legal terminology can be considered “the most visible and striking linguistic feature of legal language”\(^{24}\). Since law is “entirely created by humans” and is thus “always linked to the culture of any particular society”, it “constitutes a social phenomenon”\(^{25}\). It follows that legal concepts as human constructions are bound to a specific legal system and this, in turn, affects the degree of comparability of legal systems and concepts.

When comparing the legal terminologies of two (or more) legal systems, differences among such systems may emerge and the translatability of legal terms needs a case-by-case assessment. In Gotti’s words, “legal terminology is so culture-bound (the reasons being at the same time historical, sociological, political and jurisprudential) that a satisfactory translation of all the legal...
terms of one text from one context to another is at times impossible.” In such cases, only the comparative awareness of cultural elements included in legal concepts makes it possible to find a solution to potential terminological pitfalls.

What has been said so far, however, holds true especially when the relationship between terminology and legal system is considered from a national standpoint. Indeed, legal systems have been traditionally conceived as the product of a culture within national boundaries with which they are indissolubly intertwined. Yet, the evolving legal scenario within Europe makes it impossible not to acknowledge a further legal layer, i.e. the EU supranational legal system. Unlike system-bound languages used in the national contexts, within the EU resort is made to a form of “acultural communication” governed by multilingualism. This acultural character is due to a lack of embeddedness in any of the national cultures of the EU Member States. Indeed, EU institutions adopt legal acts meant to be applicable and enforceable in all the Member States. Consequently, such acts “must avoid culture-specific features” and “concepts or terminology specific to any one national legal system are to be used with care” in them. The already complex nature of EU lawmaking is additionally complicated by the EU multilingual linguistic regime, according to which the same content of a legal act is to be expressed in the 24 official languages of the EU. Therefore, 24 different languages are

30 A. Tosi, op. cit.
used to express a single legal system made of legal concepts that can be either derived from national legal concepts by means of re-contextualisation or developed ex novo at the supranational level.

In order to express legal provisions with a supranational legal force in a linguistic form which avoids possible ambiguities, to refer to an EU concept “a supranational term which has no immediate national ‘meaning’ may be preferable”\(^{32}\). The resulting terminology is sometimes considered to be a distinctive element of ‘Eurospeak’\(^ {33}\), which generally bears a negative connotation due to its alleged vagueness and obscurity. Nevertheless, in EU legal drafting, the reason for using this kind of terminology lies in the need for designating new legal concepts and making the differences among the supranational and the national legal systems as clear as possible.

Another characterising feature of the EU reality is the intrinsic vagueness of EU legal concepts. In general, vagueness is seen as an essential component of normative texts\(^ {34}\) as it provides the flexibility needed for interpreting laws and adapting legal terms and concepts to “new or changed social and moral environments”\(^ {35}\). Therefore, vagueness serves as a bridge between abstract rules and concrete cases. If a certain degree of vagueness is thus to be expected in all legal texts, this is even more likely in the EU legal system. As observed by Kjær, “EU legal concepts are generally lacking the deep level structure of meaning otherwise characteristic of legal semantics. This renders the meaning of EU concepts inherently unstable, fuzzy, and vague”\(^ {36}\). This is mainly motivated by the fact that “vagueness is commonly found to be strategic to all-inclusiveness”\(^ {37}\), i.e., a necessary feature of the EU multi-

\(^{32}\) E. Wagner, S. Bech, J.M. Martínez, op. cit.

\(^{33}\) See D. Cosmai, op. cit.


level jurisdiction for the Member States to transpose the rules agreed at the EU level to the national level. Vagueness at the national level thus plays a central role in applying abstract legal provisions to concrete events, while at the EU level it makes EU legal provisions sufficiently flexible for Member States to implement them in their national legal systems.

To sum up, legal terminology features diverge according to the legal systems and the degrees of cultural embeddedness and vagueness of terms. Legal terminology is influenced by the constant evolution of legal notions, which is necessary for adapting the legal systems to the ever-changing reality they are supposed to regulate and, in the case of national legal systems, the novelties introduced by the EU jurisdiction.

2.2. ‘Traditional’ resources for legal terminology

The lack of legal TRs based on the systematic building of conceptual structures as their backbone does not correspond to an absolute lack of legal resources that can be used for terminological purposes. In fact, apart from traditional mono-, bi- or multilingual legal dictionaries and encyclopaedias in paper format, the web abounds not only with the same resources in electronic format, but also with glossaries and bounteous institutional terminological databases, such as IATE (InterActive Terminology for Europe)\(^{38}\), FAOTERM\(^{39}\) and ILOTERM\(^{40}\). However, these resources “can only be used as mere specialized paper dictionaries, because terminological entries lack systematicity and do not include any conceptual relations”\(^{41}\). Generally, these resources concentrate on either a single legal system – if they are monolingual – or a selection of legal systems depending on the languages they are intended to encompass. Therefore, most bilingual or multilingual legal resources are based on terminology matching, i.e. their intent is to suggest possible translation equivalents belonging to a limited number of legal systems rather than provide a thorough comparison of the concepts underlying the terms proposed. Moreover, the legal systems covered by such resources generally have a shared legal status, since in most cases they are all national. However, the growing impact of supranational and international

\(^{40}\) www.ilo.org/MultiTransWeb/Web.mvc.
law requires the development of TRs capable of overcoming such drawbacks and taking into account a multi-layered legal reality, such as the EU, characterised by a high degree of dynamism due to the constant interaction between supranational and Member States’ national law.

Given that the focus in this paper is on the European legal space, the importance of the role played by IATE as the multilingual termbase for EU institutions and agencies as well as citizens ever since 2004 is undeniable. Nonetheless, this database is burdened with a number of drawbacks, such as the duplication of data, inconsistency in the usage of terminology by different institutions or the variance of the sources of the recorded terms. Moreover, similarly to dictionaries and encyclopaedias, it fails to “offer a clue about classification parameters, essential to terminology management” and does not necessarily include legal terminology only, since it has been developed to include as much terminological information as possible on topics of European interest.

2.3. The LTS: an innovative approach toward legal terminology within the EU

Apart from the attempt of terminological standardisation via IATE, the EU has taken further steps to “provide common principles, terminology, and rules for contract law to address gaps, conflicts, and ambiguities emerging from the application of European contract law” through a Common Frame of Reference (CFR). As compared to IATE, which is a constantly growing (but still traditionally conceived) termbase on several different topics, the CFR has a stronger ontological backing and focuses solely on contract law. According to Ajani and Ebers, the “Common Frame of Reference is a first necessary step towards a pan-European legal language,” which is the only viable way towards legal harmonisation. However, despite its aim

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42 See R. TEMMERMAN, Ways of managing the dynamics of terminology in multilingual communication, in “Scolia”, 2009, p. 105-123.


at creating a pan-European legal language, the network participating in the project intended to “contribute to the development of a coherent set of legal terms for the existing national private laws and Community law”\textsuperscript{46}, which means taking into account several legal systems and traditions in which the terminology of contract law is embedded in order to obtain a uniform terminology. This terminology is recorded in an ad hoc database, i.e. the Legal Taxonomy Syllabus (LTS)\textsuperscript{47}. The LTS is based on a systematic classification of legal concepts as distinguished from legal terms, also referred to as taxonomy of concepts or ontology\textsuperscript{48}. Given that several legal systems and languages are involved in the project, the LTS is not conceived as a single taxonomy, but it rather “includes different ontologies, one for each involved national language plus one for the language of EU documents”\textsuperscript{49}, which are correlated by means of association links to the EU concepts. The LTS is therefore an ontology-based tool designed for collecting multilingual legal information and building conceptual legal dictionaries following a bottom-up approach, i.e. starting the construction of conceptual structures from the data contained in textual material. The CFR recorded in the LTS represents an attempt to standardise a portion of EU legal language in order to facilitate multilingual communication whose usefulness is envisaged especially in the processes of legal drafting, interpretation and transposition.

3. MuLex: a legal translation-oriented TKB

The approach adopted for the creation of the TKB presented in this paper, i.e. MuLex\textsuperscript{50}, takes into consideration the evolution experienced by TDBs through the incorporation of ontological principles. However, first of all the question ‘Why another TKB?’ needs to be answered. The main reasons for creating a new TKB focusing on legal issues is that from previous experiences in the development of terminological data- or knowledge bases devoted to the language of law within the European setting, an increasing need has been recognised for multilingual TRs capable of representing the

\textsuperscript{46} Ibidem.
\textsuperscript{47} www.eulawtaxonomy.org/index_en.php.
\textsuperscript{49} Ibidem.
\textsuperscript{50} See mulex.altervista.org.
multifaceted nature of the EU legal scenario. In particular, the decision to develop a new TR for the management of legal terminology stemmed from a previous research project conducted on the terminology referring to the European Police Office (Europol) extracted from Italian and English texts of EU and national origin. This project consisted in populating the University of Trieste termbase TERMit with Europol-related legal terms. Since TERMit is intended as a translation-oriented terminology platform suitable for all sorts of specialised domains, the primary reason for designing a new TR lied in the intent to overcome the shortcomings encountered while dealing with the multidimensionality of multilingual legal terms embedded in several national and supranational legal systems. Indeed, such multidimensionality reflected in plentiful instances of both “denominative variation” and partial equivalence at the conceptual level. Owing to the abundance of terminological variants recorded in the Europol project and the need to explain verbally any inter-systemic asymmetries observed during the comparative analysis of the legal systems under examination, the search for accuracy and completeness of information led the Europol project entries to be overloaded with information. Thus, they were not user-friendly enough as regards both time needed for consultation and cognitive effort required to understand the different types of information provided. For this reason, the study on victims of crime is intended as a further step in the exploration of translation-oriented TRs. In order to reflect the features of the bilingual terminological data referring to different legal systems and avoid information overload, the solution proposed in this paper is to combine the information commonly found in TRs with a graphical visualisation system for the representation of the selected term within the legal system it is embedded in and linked to a network of related terms within the same legal system.

53 Freixa defines denominative variation as “the phenomenon in which one and the same concept has different denominations” in the form of “lexicalised forms, with a minimum of stability and consensus among the users of units in a specialised domain”. See J. Freixa, Causes of denominative variation in terminology. A typology proposal, in “Terminology”, Vol. 12, 2006, n. 1, p. 51-77.
3.1. MuLex: general features

Along the same lines as the LTS (see Sect. 2.3), MuLex was conceived as an innovative instrument for the management and presentation of legal terminology extracted from texts embedded in a multi-layered (national and supranational) legal system. This means that MuLex terminographic entries are populated following a bottom-up approach, i.e. starting the terminological and conceptual analysis from existing textual information and elaborating the conceptual model of the legal system on the basis of such information.

However, unlike the LTS, which focuses on contract law, MuLex concentrates on criminal law and, more specifically, victims of crime and their rights. This particular legal field has been chosen for two main reasons. First, EU institutions have been paying an ever-increasing attention to criminal law and the status of crime victims ever since the beginning of the new millennium, which reflects in the growing number of legal instruments and explanatory documents on this topic published since 2001. Second, no terminology harmonisation tool nor translation-oriented TR specifically devoted to this field have been identified, therefore MuLex was conceived primarily to fill this gap from a descriptive stance, i.e. providing a ‘snapshot’ of the linguistic reality within the European legal space.

Given that the research project has been conducted mainly individually (with the support of a lawyer expert in the subject field of victims of crime\textsuperscript{54}), the study could not take into consideration the 24 official languages of the EU and all the national legal systems of its Member States. The main objective was thus to depict the linguistic and conceptual similarities and differences among the EU supranational legal system and two national legal systems, i.e. the Italian and British\textsuperscript{55} (mainly English and Welsh) legal systems, and focus on two languages only. At a closer look, the aim of the project was first to identify the legal notions specific to the selected area of law by extracting the terms referring to them, as well as their synonyms and term variants, from relevant legal texts, and second to perform a comparative analysis of the legal systems involved in the study. By virtue of such an analysis the

\textsuperscript{54} The author is grateful to Prof. Dr. Mitja Gialuz, University of Trieste, for his valuable assistance on legal matters.

\textsuperscript{55} When the British legal system is mentioned in this paper, reference is made mainly to the English and Welsh legal system, although some of the concepts analysed are typical also of Northern Ireland and Scotland.
inter-systemic similarities and differences have been recognised in order to match translation (quasi-)equivalents in exhaustive translation-oriented terminographic entries. The matching of equivalents has been possible by applying the genotype-phenotype distinction\(^{56}\) to the selected legal notions, i.e. deriving a common genotype (maximum abstraction of the legal notion) from the phenotypes (concrete realisations of the notion) identified in the analysed texts.

The bottom-up approach adopted in this study can thus be said to be descriptive and was determined by its end-user profile: MuLex was designed as a TKB for legal translators, who do not necessarily possess the same degree of legal knowledge as legal drafters and legislators and need a reference tool capable of meeting their cognitive and communication needs and expectations. Considering the communication- and cognition-oriented functions identified for dictionaries on the basis of two main groups of use situations by Bergenholz and Nielsen\(^{57}\), MuLex serves both functions. Indeed, legal translators may consult such a TKB for two different but complementary purposes. On the one hand, they may need additional information on a specific legal notion or on the legal system the notion belongs to, which means that the TKB serves as a cognitive aid in their knowledge acquisition process. On the other hand, translators “have always needed multilingual terminological information”\(^{58}\) to solve the communication problems they may encounter in transcoding the source text and encoding the target text, and MuLex has been specifically conceived so at to provide a balanced amount of conceptual as well as linguistic information to translators. This is why MuLex includes both ‘traditional’ terminological information focusing on both conceptual and linguistic aspects and an ontology-inspired structure to represent the legal systems analysed. Given the space limitations of this paper, it is impossible to delve into all the features of this TR, therefore in the following subsections the graphic representation of the multidimensionality of legal terminology is explored.


\(^{58}\) R. Temmerman, Ways of managing the dynamics of terminology in multilingual communication, cit., p. 105-123.
3.2. Capturing multidimensionality in MuLex

As already mentioned in Sect. 3.1, MuLex’s envisaged end users are legal translators who refer to terminological repositories to satisfy their specific professional cognitive and communication needs. Such needs can be addressed only by constantly bearing in mind the essential principle of balance between the linguistic (communication) and legal (cognitive) information that should be provided by legal translation-oriented TKBs. However, in multi-layered legal scenarios like the EU, such information features a high degree of multidimensionality which manifests itself in various interconnected ways and has a considerable impact on legal terminology. The co-existence of several legal systems with diverging legal force within the same geographical area leads to a cross-contamination among such systems. This cross-contamination, however, can be either self-determined (let’s think about a “legal transplant”\(^59\) from a legal system into another motivated by the usefulness of a legal notion existing in the former but absent from the latter) or imposed (this is the case of EU legal provisions that must be adopted by Member States due to the transformation of sovereignty caused by European integration). Moreover, within the EU, cross-contamination does not necessarily touch upon all the branches of law, leaving Member States to regulate certain areas of law independently. Therefore, despite EU’s orientation towards harmonisation, the European legal reality has a multifaceted nature which influences the language used to describe legal notions. This influence reflects especially in “terminological dynamicity”, which “has been explored from a wide variety of perspectives”\(^60\). In this paper, such dynamism is considered to show itself in the form of terminological (conceptual and linguistic) variation and different degrees of cross-linguistic equivalence, two phenomena that can be observed when comparing terms designating legal concepts rooted in different legal systems. Following Faber, dynamicity “is rarely adequately reflected in terminological resources”. This is especially true if we consider that dynamism can be observed either on a synchronic or a diachronic axis. To make this point clear, consider the concept of mediation in criminal cases, for which eight different English term variants have been retrieved in an EU


victim-related corpus\textsuperscript{61}. Looking at the same phenomenon synchronically, however, it has been observed that, for instance, in 2009 four different terminological variants were used by EU institutions to refer to the same concept. It follows that the dynamism represented in terminological repositories may vary significantly on the basis of the perspective adopted. Since this paper is intended to present MuLex by concentrating on the graphical representation tool integrated in it, a synchronic perspective has been chosen to describe the multidimensionality that can be depicted when comparing the terminologies (and the underlying conceptual structure) referred to a single legal area but embedded in different legal systems. In order to visually represent multidimensionality, the conceptual relational structures described in the following section have been developed and included in MuLex.

3.3. Conceptual relational structures

The incorporation of ontologies in TKBs unquestionably allows for a clear classification of concepts within formal conceptual structures and thus helps the development of systematic and consistent TRs. However, most such resources are based on a single, shared ontology, which presupposes the existence of a shared conceptualisation of the domain represented by the ontology itself. This means that in such resources terms in different languages are mapped to the concepts stored in a single ontology which is supposed to be a universally accepted, language- and culture-independent conceptualisation. However, as admitted by Kerremans et al.\textsuperscript{62} for Termontography, language- and culture-independent categorisation frameworks may be integrated with culture- and language-specific categories.

A similar view is adopted in the MuLex project, although the bottom-up approach requires that the exploration of legal language starts with the analysis of textual material and necessarily imposes to take language- and culture-specific items into account as from the very beginning of the analysis. The rationale behind this choice is MuLex’s main goals: managing and storing

\textsuperscript{61} For a wider discussion on diachronic terminological evolution in EU victim-related texts in general and more specifically on this example, see K. Peruzzo, \textit{Short-period evolution in EU legal texts: old and new terms, old and new concepts}, in “Linguistica”, Vol. 53, 2013, n. 2, p. 39-53.

multilingual terminology concerning a legal subdomain with a strong cultural embeddedness and making it available to legal translators. When applying Bassnet’s assumption that “[n]o language can exist unless it is steeped in the context of culture; and no culture can exist which does not have at its center, the structure of natural language”\textsuperscript{63} to legal language in general and legal terminology in particular, “the ‘body of culture’ coincides with all aspects of the legal system governing and defining a given culture”\textsuperscript{64}. Consequently, the creation of a single ontology as a conceptual structure for the setting up of a multilingual TKB is considered insufficient to represent the ‘body of culture’ designated by legal terminology. Such a disadvantage comes even more to the fore when a TKB is translation-oriented, owing to the fact that a lack of consideration for the discrepancies among legal systems and their relevant terminologies may have serious consequences for the end product of the process, i.e. the target text. From this perspective, Šarčević’s observation that “concepts with a very high level of cultural context are frequently untranslatable”\textsuperscript{65} further supports the idea of the impossibility to map multilingual legal terminology to a single reference ontology.

MuLex has therefore been developed for the purpose of highlighting the similarities and differences in the EU and the Italian and British legal systems by means of distinct conceptual relational structures for each legal system involved in the study. Such conceptual relational structures derive from the wider idea of “system of concepts”\textsuperscript{66}, i.e. a knowledge representation instrument by which several aims can be achieved. Considering that (i) “terminological repositories have an important teaching function”\textsuperscript{67}, (ii) conceptual systems “have didactic value […] for they allow a rapid review of the situation and a better understanding of the subject field, especially for the non-expert such as the student or the translator”\textsuperscript{68}, and (iii) the potential end users of MuLex are legal translators, among the five goals envisaged by Picht & Draskau\textsuperscript{69}, MuLex conceptual relational structures have been devel-

\textsuperscript{67} I. Meyer, D. Skuce, L. Bowker, K. Eck, \textit{op. cit.}
\textsuperscript{68} H. Picht, J. Draskau, \textit{op. cit.}
\textsuperscript{69} Ibidem.
oped mainly for the “recognition of the degree of congruence between the systems of concepts of different languages”, which, in turn, “is indispensable for the recognition of equivalence”. Linking the idea of equivalence with the co-existence of several legal systems within the European geographical area, it is interesting to notice the different degrees of cultural embeddedness and language dependency of the legal systems. Indeed, the “various national ontologies have a reference language. This is not the case for the EU ontology. For instance, a given term in English could refer either to a concept in the UK ontology or to a concept in the EU ontology”\(^70\). When designing MuLex, the peculiarities of the EU multidimensional and multi-jurisdictional context have been accounted for and three conceptual relational structures have been developed, two of which are national (British and Italian) and one is supranational (EU).

At this point, a terminological clarification is needed. In this study the presence of one or more conceptual systems is considered essential for the creation of consistent and systematic terminological entries. However, the term ‘ontology’ is not used to designate such systems because the term (i) appears overloaded and (ii) implies the use of ontology-development tools. Since in MuLex no such tool has been used and the conceptual information cannot be accessed by artificial agents, but is directed to human users only, the term ‘conceptual relational structures’ has been preferred here. Moreover, the aim in MuLex is not to construct comprehensive ontologies containing all the concepts belonging to the legal domain of victims of crime, but rather to establish relations among the concepts underlying the terms extracted from textual corpora, which is in line with Cole’s statement that “[f]or descriptive terminology, the absence of a completely delineated concept network for a given field is not of particular importance”\(^71\).

What also makes conceptual relational structures different from ontologies is the fact that a single conceptual relational structure is built for each concept. Indeed, in MuLex each terminographic entry contains both textual and visual material. On the one hand, textual material serves to fill knowledge gaps on the communicative side by, for instance, providing indications on the usage of legal terms in certain contexts. On the other hand, it meets the translators’ cognitive needs, since it is used to describe the concept as it


is conceived within a specific legal system (e.g. definitions), to highlight the conceptual differences among legal systems and, if the case may be, to inform the end user of the conceptual evolution of a legal notion that has led to terminological variation on the diachronic axis (see Sect. 3.2). Such conceptual information is further enriched by the presence of a conceptual relational structure for each concept (identified by a term) included in MuLex. Unlike conceptual systems or ontologies capturing the entire domain, such conceptual relational structures represent the concept the searched term refers to as the central node and the conceptual relations that link this concept to other concepts recorded in MuLex. Therefore, a conceptual relational structure contains only first-level relations among the concept-node and other concepts.

Given the embeddedness of the terminology included in MuLex in a multi-level jurisdiction and the focus of this study on three legal systems expressed in two languages, if a concept belongs to both the supranational and a national legal system, two conceptual relational structures are visualised in order to: (i) point out the presence of the concept in two legal systems using the same language and (ii) make the possible differences in the conceptual relations identified in such two systems immediately understandable to the end users. The didactic value of the graphic representation of conceptual information integrated into MuLex is best understood expressly in the light of these differences. An example of differing conceptual relational structures is presented in Fig. 1.

Fig. 1 – Differences in conceptual relational structures related to the same concept.

Concept-central node: Victim Support Europe
However, if the concept belongs to one legal system only, a single conceptual relational structure will be visualised when the corresponding term is searched. The absence of a conceptual structure for one of the legal systems involved thus indicates a conceptual vacuum and is in itself another important source of conceptual information for MuLex’s end users. An example is represented by the concept ‘Victim Support’, which is found in the UK legal system only (see Fig. 2).

![Fig. 2 - Presence of a conceptual relational structure related to a single legal system. Concept-central node: Victim Support (Legal system: UK)](image)

As regards MuLex conceptual relational structures, however, two remarks should be made. The first concerns their synchronic nature: the conceptual relational structures are suitable for providing the end users with a ‘snapshot’ of the first-level relations among the concept-node and other concepts included in the TKB at the time when it has been populated (latest update: 2013), but they cannot be used for representing the diachronic evolution of concepts. Therefore, in order to understand possible cases where a legal concept has undergone conceptual revision in time, such as victim with specific protection needs\(^7\), the conceptual relational structures are insufficient and the textual material accompanying them needs to be consulted. As to the second remark, the representation of conceptual relational structures always im-

plies a risk of subjectivity, since “[t]he specialist in the subject-field, as any human being, can be dominated by subjectivity”\textsuperscript{73}. The conceptual relational structures have been developed on the basis of the information extracted from relevant supranational and national textual material and revised and validated by a field expert. However, it is undeniable that they can be considered as single ‘chunks’ of larger conceptual systems as conceptualised by the observer and partially biased by the scope of the terminographic project and the technical constraints of the knowledge representation resource used.

3.4. Types of relations in conceptual relational structures

The types of relations used to create the conceptual relational structures included in MuLex resemble the typology developed and employed in TERMit (see Sect. 3). Considering that the concept the searched term refers to constitutes the central node of the relational structure, the relations under discussion are identified by a label and a colour. These labels are ‘superordinate’ (green), ‘coordinate’ (red), ‘subordinate’ (blue), and ‘general’ (yellow) (see Fig. 3).

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{fig3.png}
\caption{Colours associated to conceptual relations in MuLex}
\end{figure}

The first three types of relation are hierarchical, while the ‘general’ label encompasses all non-hierarchical relations. The choice of such a generic label is in line with the aims pursued by MuLex and its intended end users: a sub-classification of non-hierarchical conceptual relations would add complexity to the conceptual relational structure without necessarily providing more information and may result in an information overload. The ‘general’ label is thus applied every time a relation is identified between two concepts which can determine the co-occurrence of the terms referring to correlated concepts in texts. In Fig. 4, the conceptual relational structure concerning the ‘child victim’ concept within the EU legal system is presented. The concept referred to by the searched term corresponds to the central node (red

square), while the correlated concepts are represented by coloured circles. In the example provided, ‘child victim’ is a type of victim with specific protection needs (green circle), therefore the latter concept is considered a subordinate of the selected concept. The concept child victim has three correlated concepts (red circles), since a child victim can be either a direct victim or an indirect victim and can be victimised in a country where he or she is not habitually resident, thus being a cross-border victim. Finally, child-friendly justice (yellow circle) holds a general type of relation with child victim, since there is a clear conceptual correlation between the two terms, but it cannot be classified as a hierarchical relation.

Fig. 4 – Different conceptual relations in a conceptual relational structure.
Concept-central node: child victim (Legal system: EU)

4. Conclusions

All specialised knowledge fields are characterised by terminological dynamism. This is especially true when the legal domain is considered. On the one hand, legal notions are embedded in different cultures and this leads legal concepts and the terms designating them to be highly culture-bound. On the other hand, the constant elaboration and re-elaboration of legal notions
within the EU multi-level jurisdiction results in a progressive Europeanisation of law and a subsequent permeability of legal systems.

In this paper, the progressive evolution of electronic terminological repositories from TDBs through TKBs to ontology-based resources has been presented in order to highlight the potentialities of such resources not only for managing legal terminological data, but especially for making such data available to legal translators, i.e. a typology of end users with specific communicative and cognitive needs. For the purpose of meeting these needs, a new translation-oriented terminological knowledge base, i.e. MuLex, has been presented. This TKB was specifically developed for containing multi-lingual and multi-level terminology and was populated with English and Italian terminological units related to victims of crime and their rights and embedded in the British and Italian national legal systems and the EU supranational legal system. Although MuLex includes both textual and visual material, this paper focuses mainly on the graphic representation of conceptual relations in so-called ‘conceptual relational structures’, i.e. conceptual networks in which the central node is represented by the concept designated by the selected or searched term and is linked to other concepts considered in the TKB by means of non-hierarchical and hierarchical conceptual relations.

Although the terminology contained in MuLex is currently limited to the legal area of victims of crime and to two languages, the multidimensional character shared by the terminology within the EU legal scenario makes it a suitable tool for the storage and management of terms belonging also to other spheres of law and to other languages. Given the embeddedness of the selected terminology in different legal systems and the possible linguistic and conceptual asymmetries among them, the terminological records in MuLex allow for the creation of multiple conceptual relational structures for the same concept, even when they are expressed in the same language (national vs. EU varieties of the same language), so as to make such discrepancies and the degree of cross-linguistic equivalence evident to MuLex’s end users. The conceptual relational structures in MuLex can therefore be regarded as very useful for knowledge acquisition purposes, since they make it possible to avoid a textual information overload and create immediate links to conceptually close terms. Even so, such structures are insufficient to overcome a drawback shared by several TRs, i.e. the impossibility to graphically represent the diachronic evolution of legal notions. For this reason, MuLex entries always include textual material where information on the diachronic development can be provided if considered useful for legal translators. Moreover,
the descriptive bottom-up approach used to populate the terminographic entries and create the relational structures in MuLex is not immune from the possible subjectivity of the terminographer and the results obtained are inevitably dependent on the texts from which terms are extracted.