

# A BEST-PRACTICE MODEL FOR TERM PLANNING

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## Abstract

This thesis presents a best-practice model for term planning for a language, based on the literature and on three qualitative case studies: TERMCAT (the term planning organisation for Catalan), Terminologocentrum TNC (the term planning organisation for Swedish) and the Irish-language term planning organisations, principally the Terminology Committee (Foras na Gaeilge) and Fiontar, DCU.

Although the literature on the subject is underdeveloped, and a complete model cannot be derived from it, a basic structure for term planning is constructed, consisting of eight stages: preparation/planning, research, standardisation, dissemination, implantation, evaluation, modernisation/maintenance and training. This structure forms the basis of the case study research. A new, comprehensive model for term planning is then developed and described, combining elements from each of the three cases and from the literature. The model developed is not limited to any one particular situation of term planning for a language, and is therefore both general and adaptable.

Because it is the first of its kind, this study is of an exploratory nature; it suggests success factors for term planning and explores the limits of the literature-based model. Gaps in the literature and limits to the socioterminological approach to term planning are identified and recommendations for further research made.

## Abbreviations and frequently-used terms

<b>Antena de Terminologia</b>	Terminology Antenna, a media-focused email distribution list maintained by TERMCAT
<b>Cercaterm</b>	The TERMCAT terminology database, <a href="http://www.termcat.cat">www.termcat.cat</a>
<b>DCU</b>	Dublin City University
<b>EAFT</b>	European Association for Terminology
<b>Focal</b>	The National Terminology Database for Irish, <a href="http://www.focal.ie">www.focal.ie</a>
<b>Foras na Gaeilge</b>	The statutory body responsible for the promotion of the Irish language throughout the island of Ireland
<b>GA</b>	The Irish term planning situation
<b>IATE</b>	InterActive Terminology for Europe, the multilingual termbase of the EU, <a href="http://iate.europa.eu">iate.europa.eu</a>
<b>Infoterm</b>	International Information Centre for Terminology
<b>ISO</b>	International Organization for Standardization
<b>ISO/TC37</b>	International Organization for Standardization, Technical Committee 37 “Terminology and other language and content resources”
<b>LGP</b>	Language for general purposes
<b>LSP</b>	Language for special purposes
<b>Rikstermbanken</b>	The Terminologocentrum TNC terminology database, <a href="http://www.rikstermbanken.se">www.rikstermbanken.se</a>
<b>TERMCAT</b>	The Catalan Centre for Terminology
<b>Terminologocentrum TNC (TNC)</b>	The Swedish Centre for Terminology
<b>TermNet</b>	International Network for Terminology
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization

## Introduction

### Background: justification and aim of the study

Term planning is an important activity, as acknowledged by, among others, UNESCO (2005) and ISO (ISO 29383:2010). This importance is growing, as language communities become increasingly aware of the benefits of systematic terminology planning:

At a strategic level, the positive potential of systematic terminology planning – and especially of terminology policies – in support of information, knowledge or innovation policies, as well as of educational strategies, etc. has been recognized. With this greater awareness, countries and language communities are increasingly feeling the need to formulate systematic terminology policies (comprising also terminology planning strategies) in order to improve their competitiveness. (UNESCO 2005, ii)

Despite this growth in importance, there is no well-developed model for term planning, which could be used in establishing a term planning organisation for a language, or improving an existing one. The aim of this study is to develop a general model for term planning which could be adapted to suit many language situations. In keeping with usage in project management and international standards, this model will be termed a ‘best practice’ model. Best practice is context-dependent, and is informed here by the tenets of socioterminology.

The present researcher, as a result of her work in terminology for the Irish language (as editorial manager, since 2005, of the National Terminology Database, Focal.ie, and of other terminology projects in Fiontar, DCU), has a practical interest in the way terminology work is planned (or, often, just allowed to develop) for a language. The importance of addressing all aspects of terminology planning – and not just the provision of lists of terms, in the hope that they will be accepted and used – has become especially clear to her in that time. It cannot be assumed that, without strategic thought and planning, terminology will be developed and accepted into use in a way which is beneficial and which contributes strategically to the development of the language.

In the case of the Irish language in particular, a language facing both extensive and rapid domain loss in traditional usage and a paradoxical parallel domain gain in official usage, terminology planning needs discussion and consideration. Although the terminology situation for Irish has many strengths, there are also significant problems, such as with the timely provision of terms, with strategic planning and coordination, and with consistency in terminology, as well as with the dissemination and use of terms (this is discussed in Chapter 4). It is felt that research into a best practice model for term planning, although not specifically directed at the Irish situation, might be a useful contribution to the debate on these issues.

## Problem statement

The questions explored in this research can be set out as follows:

- Is there an existing best-practice model for term planning? If it has not been set out explicitly, can an agreed model be inferred from the existing literature on terminology?
- Can this best-practice model, if it exists, be expanded and improved by looking at how term planning work is carried out in real-life situations?
- Is the best-practice model for term planning, as derived from case study research, the same as that set out in the literature?
- Is a socioterminological approach to term planning useful?

## Language choice

Consideration was given to language choice in conducting the research and presentation of the thesis. Although the working language in Fiontar is Irish, and despite the fact that the research addresses term planning for Irish, among other languages, it was decided to undertake the research and present this thesis in English. This was discussed and agreed with the supervisors for the following reasons.

Firstly, because of the international focus, several languages were used during the research stage but the three case reports, which form a substantial part of the work, were written in English and sent to interviewees for review. If these case reports were later presented in Irish, a considerable burden of translation work would have been created, with no additional benefit to the academic value of the work. Secondly, and more importantly, it is hoped that the research will be of benefit to practitioners internationally, and the work is more readily accessible in English and can be cited directly.

All material not in English has been translated in the footnotes, and these translations are the researcher's own unless otherwise stated.

## Thesis structure and research approach

The structure of the thesis is as follows.

In Chapter 1, the theoretical approaches to terminology planning are explored, and a socioterminological approach is adopted as the most appropriate working model for this research project.

Chapter 2 is a review of the available literature on terminology planning, with the aim of identifying an existing model of best practice in term planning, insofar as this exists. An eight-part structure is derived from the literature, and the value of such a model is discussed.<sup>1</sup>

Chapter 3 discusses the reasons for choosing a qualitative case study approach, and sets out a research design for the studies, as well as explaining and justifying the case choice. Criteria for data collection and analysis are established.

In Chapter 4, the three cases of term planning (described in detail in the Appendices) are compared to the literature under each of the eight aspects identified in Chapter 2. Similarities and differences are noted.

A new best-practice model for term planning is proposed in Chapter 5. This is based on the evidence amassed in Chapters 2 and 4. The socioterminological approach is re-evaluated and its value for term planning appraised.

Chapter 6 gives some conclusions about the research questions, and describes the possible implications of this research for theory, and for policy and practice. The limitations of the study are noted, and some suggestions are made for further research.

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<sup>1</sup> Parts of chapter 2 were presented at the Language Policy and Language Learning conference, Limerick, 18-20 June 2009 (title: 'Is there a best practice model for term planning?') and at the XIV Euralex International Congress, Leewarden, 6-10 July 2010 (title: 'Building on a terminology resource – the Irish experience').

# 1 Chapter 1. Theoretical Background

## 1.1 Introduction

This chapter sets out the theoretical underpinning of the research approach, which is socioterminological: this theory is explored. At the end of the chapter, the ways in which the theoretical approach will be used in the thesis are discussed.

### **Need for a theoretical approach to terminology**

An overriding theoretical approach is needed to inform and select the aspects of term planning to be studied, and the methodology with which to study them. More importantly, it will define the aims of the work, and the perspective with which it should be viewed. In this chapter, a theoretical approach, that of socioterminology, is selected and defended.

There is at present a lively debate about whether or not terminology is a discipline with a theoretical basis, and, if it does not at present have a theoretical basis, whether or not this is a problem. Sager (Sager 1990, 1) maintains that terminology is not an independent discipline, because 'there is no substantial body of literature which could support the proclamation of terminology as a separate discipline and there is not likely to be'; Depecker (Depecker 2002, 179) states that terminology has not been founded as a science or even as a discipline, 'parce que les principes fondamentaux sur lesquels elle s'appuie ne sont pas encore nettement dégagés'<sup>2</sup>. This view is challenged by others (Budin 2001, 16). Cabré and Sager (1998/1999, 1) found that 'so far existing analyses of terminology have not provided sufficient evidence for a coherent theory of terms'. Rey (1998/1999, 124) criticises the current state of theory: 'The current state of terminology involves incomplete and archaic theoretical bases, and, according to the areas and subject fields studied, widely divergent heuristic positions and a poorly documented historical background'.

Not all theorists consider the lack of a single theoretical basis problematic. It has been argued (L'Homme 2004, 23) that such terminology theory as exists is anchored in practice, in contrast to lexicography and its theoretical basis, lexicology, for example. Cabré and Sager further find that:

the concept of "discipline" no longer adequately covers the heterogeneous elements that enter into modern fields of study... Increasingly knowledge is being pursued on an

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<sup>2</sup> 'because the fundamental principles on which it is based have not yet been clearly set out'. All translations are my own unless otherwise stated.

“inter-disciplinary” basis so that we can no longer speak of a single unified theory underlying a particular academic subject. Terminology finds itself in a similar position. Terminography or applied terminology is a well-developed practice. It shares most of its presuppositions and conventions with lexicography and does not require separate theoretical foundations. (Cabré and Sager 1998/1999, 3)

Similarly, Shelov and Leichik (2004, 26) conclude that terminology is a complex cross-disciplinary science.

Although we may conclude that terminology, as a ‘well-developed practice’ does not then need a founding, unifying theoretical basis, there may still be different schools of terminology, or approaches. They may be seen as a practical response to the different uses made of terminology. Indeed, terminology work is very varied, and it cannot be assumed that identical approaches should be taken to minute concept work (such as Wüster’s machine tool) and to terminology as an aspect of language planning. Similarly, corpus work will require a different approach to term creation.

Examples of terminology approaches include the traditional, Wüsterian theory of terminology, sometimes called the General Theory of Terminology; sociocognitive terminology (Temmerman 2000); textual terminology (Bourigault and Slodzian 1999); the communicative theory of terminology (Cabré 2000); and the various ‘schools’ of terminology – Vienna, Russia and others.

Socioterminology is another approach, and the one which appears to be best suited to the particular type of terminology explored in this thesis. The terminology work discussed in this thesis is of a very practical nature, with most of the emphasis placed on terminology management as an aspect of language planning. Minute details of term creation and derivation are less important. As well as this, terminology planning is an application of socioterminology (ISO/TR 22134:2007, 5)

Furthermore, Myking (Myking 2001, 58) usefully distinguishes between unilingual and plurilingual terminological orientations. Traditional terminology work has a plurilingual orientation, because it is generally directed towards the enhancement of international specialist communication. On the other hand, most language planning orientations in European language communities ‘are by necessity unilingually directed, i.e. towards development of national languages within (relatively) unilingual communities, and most often they are directed towards the English dominance’ (Myking 2001, 58). This calls for a different approach, which ‘may be rooted in a particular kind of social motivation and needs analysis’. (Irish language planning, although it is not really for an unilingual community, is only for one language. It is certainly directed towards the English dominance, in the same way as Catalan is

directed towards Spanish – and English – dominance.) A social approach may therefore be more useful than a traditional one for the purpose of creating a best-practice model for term planning.

In the rest of this chapter we explore how and why socioterminology has developed, what its main ideas are, and how it can be useful.

### **Development of socioterminology**

A social approach to terminology was first developed by theorists such as Louis Guilbert and Alain Rey in the 1970s, according to Gaudin (2003, 11); Rey (1992/1979) discusses the linguistic, psychological and social factors of term acceptance. But the theory of socioterminology was really only developed from the early 1980s, which is when the term first appeared (Gaudin 2003, 12). Theorists include Guespin, Gambier, Lerat, Boulanger and Gaudin. Much of the theoretical development of the new discipline was carried out during the 1990s by researchers trained in the University of Rouen (Humbley 2004), but terminological work carried out in Quebec was of a *de facto* sociolinguistic nature long before that. There has been considerable development in recent years – Gaudin (2005a, 82-83) lists several socioterminological theses submitted in Quebec and France.

The socioterminological approach is generally associated with France, Quebec, and other Romance-language countries.

In Quebec, the development of socioterminology was largely a product of necessity:

Les Québécois ont dû, au fil des ans, développer une pratique terminologique originale qui à la fois, réponde au souci d'efficacité du législateur et soit en harmonie avec une volonté populaire. Le renouvellement attesté alors fut nécessité par le fait que l'on ne pouvait se contenter d'une administration de la terminologie. Il fallait que les termes proposés pour la francisation soient adaptés aux besoins, aux habitudes et aux systèmes de valeur des locuteurs. Cela imposait des méthodes nouvelles et donc des idées neuves.<sup>3</sup> (Gaudin 2005b, 3)

In France, the new development was in part a reaction to the official terminology authorities (Myking 2001, 59). It also grew out of an unfavourable comparison made with 'l'engagement québécois' (Gaudin 1993a, 12). In the early 1990s, crises of growth, identity and authority were perceived in the field of terminology (Gambier 1991, 8), and there was much discussion

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<sup>3</sup> 'The Quebecois have had, over the years, to develop an original terminological practice which would simultaneously respond to the legislator's need for effectiveness and be in harmony with popular will. The renewal seen then was necessitated by the fact that an administration of terminology was not sufficient. The terms proposed for 'Francisation' had to be adapted to the needs, customs and value systems of the speakers. That meant new methods and therefore new ideas.'



of the need for change. Indeed, the break was emphatic and brutal: 'Au delà du débat d'idées, on est frappé par la violence des propos, et par la volonté de se démarquer de la "terminologie dominante"'<sup>4</sup> (Humbley 2004). Cabré (2003) suggests that before the early 1990s there was no serious discussion of the basic ideas or theoretical underpinnings of terminology. She ascribes this to the fact that there was only one centre for terminology (Infoterm, the International Information Centre for Terminology, founded by UNESCO in 1971) which controlled dissent and 'presented the established principles as inviolable *a priori* points of departure' (Cabré 2003, 169), and to the lack of strong theorists in the field or interest among the other sciences. This interpretation has been challenged, however (Toft 2001, 127, in another context).

Terminology has become more and more important as an aspect of language planning. In the last twenty years, there has been an increase in the use of technical terms outside their original fields, largely due to the western world's shift to a knowledge society. Obvious examples are technology and computing, as well as economics, environmental studies, genetics and healthcare (Meyer and Mackintosh 2000, 127). This has meant that popularisation and determinologisation have become objects of study (see, for example, Meyer and Mackintosh 2000, or Gaudin 2003, chapters 3 and 4), and that the traditional supposition that LSP (Language for Special Purposes) and LGP (Language for General Purposes) are separate has been questioned (Gaudin 1994, 9).

Popularisation has meant that terminology became more important to a wider public than ever before, and in new ways. This is shown, for example, by the sharp increase in the number of terms included in general-language dictionaries (Meyer and Mackintosh 2000, 126). It was augmented by the development and growth of the Internet. These changes were very relevant to term planning: they revealed a need for a wider availability and diffusion of term resources, and, particularly in the case of less widely-used languages, for publicity and promotion. Terminology became an increasingly important aspect of language planning, especially in Catalonia and Quebec. This, combined with a new interest in language politics, meant that the 'social implications' of the discipline increased:

L'approche sociolinguistique de la terminologie... était nécessaire pour le développement de la recherche en terminologie, les implications sociales de la discipline s'étant multipliées et diversifiées sous la pression du développement conjoint des technologies de la langue et des préoccupations de politique linguistique

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<sup>4</sup> 'Beyond the debate on ideas, one is struck by the violence of the words, and by the will to be differentiated from the "dominant terminology".'

dans les pays francophones, ceux de langues romanes, et dans le cadre de la francophonie institutionnelle.<sup>5</sup> (Gaudin 2003, 11)

The 1980s and early 1990s were a time of enormous change because of the growth of computing. In 1990 it could still be said that conventional thinking was dominated by pen and paper processing techniques (Sager 1990, 9), but this changed quickly. Many felt that the logical principles of the Wüsterian theory were incompatible with the new terminological practices, 'especially those which involve large corpora and computer tools to exploit them' (L'Homme *et al.* 2003, 153). Others felt that the idealism of the existing theory and the formalism of computing created a need for a balancing socio-terminology:

[La terminologie] ne peut être "machine à rêver" où verser fantasmes et nostalgie pour une langue ésotérique, policée, totalitaire. Elle ne peut être non plus "machine à jouer" sans objet référentiel ni sujets sociaux<sup>6</sup> (Gambier 1991, 8).

The most important aspects of computing for terminology work are data storage and distribution in databases, and corpus research work. The development of databases with sophisticated search capacities means that hierarchical systems of concept representation and structuring became less important. Corpus work is semasiological (starting with the word and characterizing it functionally and semantically, moving from the word to the concept (Cabré 1998, 8); concerned with the meaning of words) and context-related by definition. This means that terminology can be descriptive and based in actual use, which raises questions about ideas previously adhered to such as monoreferentiality, univocity, and biunivocity; it also places terms in their linguistic context (Cabré 1998) and makes the idea of them as negotiated meaning acceptable:

En effet, l'idéal de la monosémie ne peut constituer un objectif tenable que dans un cadre idiolectal... Le terme se caractérise par le fait que sa signification est socialement normée<sup>7</sup> (Gaudin 2005a, 86).

The changes in terminology were also partly triggered by changes in linguistics (Gaudin 2005a, 80). The development of sociolinguistics from the 1960s onward meant a new interest in the

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<sup>5</sup> 'The sociolinguistic approach to terminology... was necessary for the development of research into terminology, the social implications of the discipline having multiplied and diversified under the pressure of the development of language technologies and the development of language policy concerns in Francophone and Romance language countries, and within the context of institutional *Francophonie*.'

<sup>6</sup> 'Terminology cannot be a "dream machine" in which to place fantasies and nostalgia for an esoteric, policed, totalitarian language. Nor can it be a "mechanical toy" without either a referential object or social subjects'.

<sup>7</sup> 'In effect, the ideal of monosemy can only be a tenable objective in an idiolectal framework... A term is characterised by the fact its meaning is socially determined'.

use of language in society; theoretical sociolinguistics emphasised the importance of discourse; and the need for cultural expertise in language planning was recognised.

It is a devastating mistake to assume that corpus planning merely requires the interplay and coordination of linguistic expertise and technological expertise, devastating certainly if one's goal is not merely to do corpus planning (i.e. not merely to *create* a nomenclature in chemistry, or in some other modern technological area) but to have it *accepted* (i.e. to have it liked, learned and used). If the *latter* is our goal (and anything less strikes me as a travesty), then cultural expertise in all its ramifications is called for as well. (Fishman 1983, 109, italics original)

Language politics led to the development of terminological practice in Quebec and in other countries. In general linguistics, the term was being re-theorised as a sign, and the link between terms and referents was being questioned. Terminology gradually became a branch of applied linguistics and was not confined to scientific and technical standardisation. New concepts emerged in the 1990s such as sociolinguistic enquiry, research into the implantation of official terms, and measurement of terminological implantation (e.g. Quirion 2003a and 2003b).

Changes in philosophy were a factor in dissatisfaction with the traditional theory (see, for example, Rey 1998/1999). There had been enormous changes in philosophical views on language and the structure of knowledge since the 1940s, when the Wüsterian theory of terminology was founded in the positivism and objectivism of the Vienna Circle. The development of socioterminology was a break from the traditional theory of terminology.

It can be seen from this brief history that the development of socioterminology was a coincidence of several factors. Technological change enabled computer-assisted work such as corpora and databases; it also led to determinologisation and popularisation. Terminology was increasingly seen as an aspect of language planning. Changes in terminological, linguistic and philosophical theory meant that strict rationalism and prescriptivism were no longer attractive.

## 1.2 Main ideas of socioterminology

### Definition

There is no universally accepted definition of socioterminology, as a comparison of the following shows.

Yves Gambier, one of the first to discuss socioterminology, states that 'la socioterminologie cherche à réintroduire la terminologie dans la pratique sociale qu'est tout discours, y compris

le discours métaterminologique, ceci afin de l'interroger comme activité productrice/sociale et comme activité cognitive.'<sup>8</sup> Gambier (Gambier 1994, 102, quoted in Myking 2000, 94).

For the Québécois Jacques Maurais, 'socioterminology' is a convenient term 'that can be used to describe the relationship between society and terminology and especially the actual social use, whether by specialists or by ordinary people, of the terms coined by terminologists' (Maurais 1993, 121). Myking (Myking 2001, 50) considers Maurais's approach to be significantly different from other 'socioterminological' theories, in that it is a subfield of terminology dedicated to studies of term planning and implementation.

Gaudin describes socioterminology as the sociolinguistic study of the lexical areas belonging to the sciences, technology and institutions ('l'étude sociolinguistique des secteurs lexicaux propres aux sciences, aux techniques et aux institutions', Gaudin 2003, 12).

An ISO technical report describes it as an 'approach of terminology work based on the sociological, cultural and sociolinguistic characteristics of a linguistic community, aiming at the study and the development of its technolects in accordance with those characteristics' (ISO/TR 22134:2007, 3).

Although the definitions are quite different, one aspect which they share is the emphasis on the social use of terms – 'étude sociolinguistique'; 'le contexte social et socioprofessionnel'; 'actual social use'; 'la pratique sociale'. It is clear, however, that there is no hard and fast definition. Socioterminology cannot be said to have just one doctrine or set of rules; it is more of a developing approach to the different aspects of terminology. This approach is now used in examining the idea of 'term' and 'responsibility' in terminology.

### **What are terms?**

In socioterminology, terms are seen as part of the language, not just as signs for concepts. Terms are part of the culture. The meaning of the term, therefore, is more broad than what is given in the definition alone. Different phenomena can occur: metaphoric and metonymic usage (Gaudin 2003, 32); transfer to word-status (determinologisation); passage from one domain to another. The study of language use (see, for example, the discussion of the terms 'droit' and 'terminologie' in L'Homme 2004, 30-31) quickly dispels the notion of monoreferentiality.

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<sup>8</sup> 'Socioterminology tries to reintroduce terminology into the social practice which all discourse, including metaterminological discourse, is; it does this in order to question it as a productive/social activity and as a cognitive activity.'

Thus the functioning of a term needs to be studied as well as its definition (Gambier 1991). Broadly speaking, socioterminology advocates looking at language as a whole, that is, language in practice rather than language as regulated by experts and norms. Thus, it is not limited to language itself but also addresses the knowledge and culture within which language exists. The sociology of knowledge, of science and of innovation are all important, because they give clues to this culture. Clearly this means that discourse is important, as found in research corpora, and that these corpora should be as broad as possible.

This descriptive attitude means that the resultant terminology is more reflective of real use: for instance terms other than nominative ones (such as verbs or adjectives) might be included, although they are difficult to fit into a traditional concept system (L'Homme 2004, 37).

The distinction between language for general purposes (LGP) and language for specialised purposes (LSP) is not strict in socioterminology; Gaudin (Gaudin 1994, 9) sees it not as an opposition, but as a continuum, aided by common terminology. Popularisation, then, is a relevant issue for socioterminology because of de-terminologisation and because of the emphasis on terms in use, rather than terms as prescribed. This subject is addressed in detail in Gaudin (2003).

### **Who is 'in charge' of term creation?**

The idea that subject experts alone are responsible for term creation is challenged in socioterminology. The strict division of the sciences and technologies, and of their corresponding terminologies, into domains, is characterised as unrealistic. Gaudin (Gaudin 2003, 50) argues that the traditional concept of separate, exclusive domains is no longer valid. The new sciences, he argues, should be seen as exchanges and confrontations. Most debate now arises from interdisciplinary contact, exchange of concepts and sharing of competences. This is because of the growing multi-disciplinarity of knowledge development and the convergence of disciplines, such as computing and communications, as well as the rising importance of interdisciplinary studies (Meyer and Mackintosh 2000, 134). De-terminologization, as discussed above, also undermines the domain structure.

This means that there is a constant to-and-fro between domain experts, experts in other, related and overlapping domains and non-experts. The reality of scientific practice and work is not as neat as the division into domains makes it seem. Who, then, is the final authority on term choice, and who can make recommendations? The answer would seem to be that the meaning of terms is socially allocated – and not just circumscribed by the definition. This reaffirms the importance, for terminologists, of studying and documenting terms as they are

actually used by language users before recommendations are made, if the recommendations are to have real authority:

Il ne suffit plus d'accumuler et d'agir au sein des seuls organismes officiels, de cantonner les locuteurs dans un rôle spectateur et passif, à l'écart du processus de modernisation planifiée de la langue. Il est urgent de songer enfin à décrire avant de prescrire et de mener des études dans l'esprit de la *socioterminologie*...<sup>9</sup> (Samuel 2005, 516)

For socioterminology, terms are socially created in interactions within a profession (Gambier 1991). Thus the role of the terminologist becomes that of describer, rather than prescriber. (This will be discussed in more detail further on in the thesis as it relates to particular language situations, and to Calvet's (1999 and 2002) distinction between *in vitro* and *in vivo* term creation; description and prescription are in any case not mutually exclusive.) For Gaudin (2003), reference is co-constructed within a framework of verbal interactions, as a 'cyclical dialogic activity aimed at establishing consensus' (Ballarin 2003, 304). Terms must be researched as they are used in society, and the way to do this is through the use of corpora which are representative, not just of the domain experts, but of all users of the term in question. Gaudin (Gaudin 2005a) sees this task as both synchronic and diachronic.

All of the factors mentioned above – the use of corpora, the emphasis on description, the move away from definition or the opinion of the domain expert as the only determinant of meaning, the move towards a linguistic approach, the bridging of the gap between LGP and LSP – mean that a socioterminological approach is much closer to the methods of lexicography than to traditional terminology.

The distinction has been that lexicography takes a semasiological approach, going from the word and finding the meaning or concept behind it. Terminology, on the other hand, was traditionally supposed to be onomasiological – the concept was first identified and then, later, named (Kocourek 1991, 45). This is not possible with corpus analysis: the search for meaning in a text is incompatible with the idea of a discrete, predetermined meaning for a term. Nor is it realistic – Rey, writing in 1979, already recognised that most practical work in a field such as technics is actually semi-lexicographic and that pure terminology is confined to well-constructed domains (Rey 1992 (1979), 105). Similarly, a Quebec terminology manual from 1978 recognises that, in contrast to the received canon of onomasiology,

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<sup>9</sup> 'It is no longer enough simply to accumulate and to act within official organisations confining speakers to a passive, spectator role, outside the process of planned modernisation of the language. It is urgent to think, at last, of describing before prescribing and to carry out studies in the spirit of *socioterminology*.'

notre approche est également “systématique” à cette différence près toutefois que nous partons des termes pour aller vers les notions (ou les concepts) plutôt qu’inversement<sup>10</sup> (Auger and Rousseau 1978, 12).

Furthermore, L’Homme *et al.* (2003, 154) and others cast doubt on the possibility of a linguistic term-word distinction.

### 1.3 Uses and applications

It should be stressed that socioterminology is not the only approach to terminology, and that other approaches may be more suitable for certain needs. It is not necessary or perhaps even desirable to debate the superiority of socioterminology over, say, the traditional, Wüsterian theory of terminology. (Indeed, the tendency to do this, sometimes without having really read the writings of Wüster or his followers, is criticised by Myking (Myking 2001, 60).) The most important question is about the applicability of this approach to the questions asked in this thesis, a question which is re-examined in Chapter 5, on page 140. In this section some uses which have been made of the socioterminological approach are explored.

#### **Policy recommendations**

Several policy documents have been published in recent years which have a generally socioterminological character. The two most prominent publications are *Guidelines for Terminology Policies. Formulating and implementing terminology policy in language communities*, prepared by Infoterm for UNESCO and published in 2005, and ISO’s Technical Report, *ISO/TR 22134:2007 Practical Guidelines for Socioterminology*, published in 2007. Both are discussed in more detail in Chapter 2.

The UNESCO document stresses the social dimension of term acceptance and use, and the importance of a cooperative, open approach, taking many factors into account:

A terminology policy or strategy, especially when conceived and implemented at the national level, needs to take into account highly complex

- demographic factors;
- cultural, ethno-linguistic and geo-linguistic factors; as well as
- socio-psychological factors;

which can have an impact on the success of the measures taken. These factors may change over time, a point that must also be taken into account in every ethnic and

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<sup>10</sup> ‘Our approach is also “systematic” except that we start from terms and go towards meanings (or concepts) rather than vice versa’ .

language community that wants to implement terminology planning for whatever purpose. (UNESCO 2005, 4)

It also recognises the fact that there is no clear distinction between terminography and lexicography (UNESCO 2005, 12), and emphasises the importance of research.

The ISO document, which is intended as a directive to assist the implementation of other TC37 documents in a perspective of linguistic and cultural diversity, provides a summary of the different aspects of socioterminology and gives examples of its use.

## **Research**

There have been several theses written which have a socioterminological approach. In France, Gaudin (Gaudin 2005a, 82-83) mentions seven (Bouveret 1996, Delavigne 2001, Dury 2000, Holzem 1999, Perichon 2001, Tran 1999, de Vecchi 1999).

### **1.4 Criticisms and response**

The criticism most often levelled at the socioterminological approach is that it is based on an incomplete reading of the works of Wüster and his followers (see, for example Myking 2001, 60). This issue is not of relevance to the present research.

Socioterminology is also criticised for being language- or country-specific. Myking quotes Alain Rey in saying that French socioterminology is partly a scientifically motivated protest against political action in France, and is partly a reaction against the dominant purist approach and the use of legislation in defence of language status (Myking 2001, 59). The conclusion seems to be that the aim, scope and efforts of French socioterminology are not universal but are limited to France. This does not mean, however, that the theories and positions developed are invalid outside of France; it means that they need to be widely tested.

A more relevant issue for this thesis is the suggestion that the aims of prescriptive language planning and those of terminology, even socioterminology, cannot be completely reconciled:

Do prescriptive objectives constitute an obstacle to a sound terminology? The main answer is no. Nevertheless, there is a little “yes”, in the same way as general language planning in most communities also constantly runs the risk of neglecting sociolinguistic evidence. (Myking 2001, 63)

Myking also states, however, that prescriptive measures ‘should be based on careful needs analysis and empirical studies of actual usage’ (Myking 2001, 54). This question is re-examined in Chapter 2 (beginning on page 46) and in Chapter 5 (beginning on page 154).



## 1.5 Conclusion

The socioterminological approach was examined in this chapter. Although much depends, of course, on the outcome of the case studies, it seems that the general *approach* favoured by socioterminologists is the most suitable for the creation of a best-practice model for term planning. The focus on the social use of terms, the view of LSP and LGP as a continuum rather than two separate languages, and the emphasis on de-terminologisation and popularisation as factors in term use and diffusion, are all highly relevant to many language situations, in which subject specialists may not create or use terms, terms can easily be borrowed unchanged from English, and terminology is needed for 'popularisation' activities such as translation, journalism and education. If terms are to be 'liked, learned and used' (Fishman 1991), and if domain gain is to take place, then the social and linguistic situation must be carefully studied.

Not all aspects of term planning can be given the same consideration and weight in this thesis. As they are so many, a socioterminological approach assists in organising and ordering these aspects, and the most important general aspects of term planning emerge for consideration. These are:

- *Importance of linguistic context.* Terminology is not a completely separate discipline from lexicography, and it is an aspect of applied linguistics. Terms are part of a language, and it is necessary to be aware of that language as a whole. (For example, it is necessary to look at questions such as the domains of language use, determinologisation and the popularisation of terms.)
- *Importance of cultural context.* Language (and therefore terminology) is part of a culture, and it is impossible to study the term use or term planning for a particular language community without being aware of this culture. (Terminology and term planning cannot be directly compared across languages without a knowledge of, for example, the level of education of the language users, their attitude to linguistic authority and the level of economic development. Similarly, it is necessary to consider who the term users are.)
- *Emphasis on terminology in use.* Term use and the term user are of paramount importance. Terms need to be 'liked, learned and used'. (Practically speaking, this means looking at the diffusion, implantation, measurement and evaluation of term use.)
- *Practical focus.* There is an emphasis on how terminology work is actually done.

This chapter is closely related to the following two chapters. The literature review (Chapter 2) will give an overview of existing term planning studies, models and guides, some of which are informed by the same socioterminological approach as this study. In Chapter 3, on methodology, the aspects of term planning to be evaluated (and the criteria for their evaluation) are discussed in more detail and from a broader point of view than in this chapter. Given the socioterminological focus, the methodological approach is taken from sociology

rather than the natural sciences, with the emphasis on the cultural understandings and unique situation of language users in each language ecology. The linguistic and cultural context is central, including terminology in use, and a practical focus, particularly on the user experience.

## 2 Chapter 2. Literature review

### 2.1 Introduction

#### **Aims of the literature review**

This chapter has two aims: to establish a structure of headings for a model for term planning, and to find out what the literature says about each of these headings. An in-depth questioning and engagement of the literature is expected to reveal the underlying assumptions in the term planning community about how term planning should ideally be done. In Chapter 1, a theoretical underpinning for the thesis – that of socioterminology – was discussed and established. This review complements that first chapter.

The structure is as follows. The source material is first established, and some issues regarding that material are highlighted. Previous studies on term planning are discussed in Section 2, and a typology of those studies is suggested. It will be seen that there are few detailed case studies on term planning.

In Section 3, the concept of a model for term planning is discussed. The possibility of accepting a ‘ready-made’ model (from ISO or UNESCO) is discussed and assessed as unsuitable. The literature is reviewed in order to establish the headings for such a model.

In Section 4, the literature is categorised under these eight headings. Recurring features – and absences – are identified. It will be seen that in some areas (or under some headings) the literature is well developed and conclusions can be drawn about underlying assumptions; in others, discussion is more limited.

In Section 5, the literature-based model is evaluated and weaknesses are highlighted. The aim of the thesis is to test and supplement this model by reference to ‘real’ cases of term planning – this is done in Chapter 4.

#### **Source material**

The focus here is on language planning-oriented terminology; other types of terminology work such as corporate- or research-oriented terminology work are only examined insofar as they make a useful contribution to the discussion.

There are several distinct types of source for the material in this chapter: textbooks, manuals for an organisation or particular language situation, models given in particular publications by

international organisations, and of course works dealing with specific problems (including papers and dissertations).

The basic texts in term planning (as opposed to various sub-areas such as corpus research, socioterminology, database management or term extraction) usually provide some direction on term planning models. Cabré's manual, *Terminology: Theory, Method and Applications* (Cabré 1998) is a discussion of the origins, approaches to, functions of and organisation of terminology. L'Homme's *La terminologie: principes et techniques* (L'Homme 2004) is a general introduction to terminography. Sager's *A Practical Course in Terminology Processing* (Sager 1990) is a general overview of the theory of terminology (chapters 1-4), and a detailed discussion of the processes of term compilation, storage, retrieval and usage (chapters 5-8). Most of this second section is now out of date, however. Suonuuti's *Guide to Terminology* (Suonuuti 2001) is particularly clear and detailed.

The second type of source involves publicly-available manuals and guides giving detailed instructions for day-to-day term research, creation, and management within an organisation or a particular language situation. These have a very practical orientation, and in large measure are specific to the institution involved. This type of guide is of limited interest because it is generally restricted to the language and computer system in question, although certain elements may be of more general application. Examples include Auger and Rousseau (1978), Pavel and Nolet (2002), Célestin *et al.* (1984), Focal.ie's editorial guide (Fiontar 2007a), the Irish Terminology Committee's handbook (An Coiste Téarmaíochta 2008) and IATE's style guide (2008). There are others of course, which are used informally, internally, by organisations.

The terminology authorities in Quebec have produced several terminology resources for research over the years, including *Méthodologie de la recherche terminologique* (Auger and Rousseau 1978) and *Méthodologie de la recherche terminologique ponctuelle: essai de définition* (Célestin *et al.* 1984). *Méthodologie de la recherche terminologique* aims to provide 'un ensemble de directives pour garantir la qualité du produit, lexique ou vocabulaire, et rendre ce produit assimilable par la Banque de terminologie du Québec'<sup>11</sup> (Auger and Rousseau 1978, 11). Originally aimed at internal use, it was published because of 'une volonté bien arrêtée de renouveler nos méthodes de travail et de normaliser nos pratiques en matière

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<sup>11</sup> 'a body of guidelines to ensure the quality of the product, whether glossary or wordlist, and to make the product usable by the Quebec Terminology Bank'

de recherche terminologique'<sup>12</sup> (Auger and Rousseau 1978, 11). Rodríguez Río (2003a) is a model for Galician.

Guides dealing with a specific problem in terminology, such as Kocourek (1991), which deals with the fine details of term creation in French from a linguistic perspective, or Pearson (1998), which deals with the use of corpora for terminography, will not be discussed here as they are not relevant to the scope of the thesis.

Other guides are more relevant: there are models for various sub-areas of terminology, such as terminometry (Quirion 2003a, Quirion 2003b), quality assurance (Fontova 2007) or term creation, whether planned (L'Homme 2004, Auger and Rousseau 1978) or *ad hoc* (Célestin *et al.* 1984). Many descriptions of the stages of terminology, such as that of Antia (2000) or L'Homme (2004, 45-46), concentrate on the creation of a terminology for a particular domain, or a particular stage of work, the creation of a database, for example. Others (Strehlow 1997, Fähndrich 2005) describe terminology models for use within organisations.

Finally, there are some general publications drawn up by international panels of experts which are worth examining for their policies and recommendations. The ISO standards are so well-known and prestigious that they merit close examination, and the same may be said for UNESCO (2005), although its scope and objectives are different.

#### *Limitations of the source material*

There are some inherent problems in reviewing the literature for this topic. Terminology planning is a relatively new area of research, and not always recognised as a discipline (see the debate in Chapter 1 of Sager 1990, and Cabré and Sager 1998/1999). Drame (2009, 85) also notes the lack of research on terminology planning:

At present, research on terminology policies can not draw on empirical data. Information on terminology policies is scattered and not well organized. Due to its great distribution over different professional and societal settings, from public institutions to professional associations, universities and others, and the different forms it can take, there exists no comprehensive classification or typology of policies which could be used as a starting point to collect necessary data. (Drame 2009, 101)

This means that there are few journals specifically dedicated to the field. Terminology is still often regarded as a practice or series of practices; this should mean that there are many comprehensive writings/manuals on terminology in practice. However, most of the resources

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<sup>12</sup> 'a firm will to renew our working methods and to standardise our practices for terminological research.'

on which terminologists rely are internal working documents, not easily accessible to the outside researcher. Many publications, particularly these working documents, are in languages other than English, French, Italian, German and Spanish, the languages read by this researcher. Further, many terminology policies are not explicitly formulated, much less written down:

Being embedded in other policies and domains they are not always formulated explicitly, but are likely to be established customs, experiences and subconsciously followed norms. Trial and error have led to best practice models which are followed without ever being officially approved. They therefore do not exist in written form, let alone as some sort of legally binding document. (Drame 2009, 75)

An important consideration in evaluating terminology guides of any kind is date. The advent of computing led to huge changes in terminology methods and capacities, with the result that the practical how-to part of many manuals is out of date. This is particularly obvious for publications before the mid 1990s, such as Sager (1990). Computing also changed the approach to term planning, particularly term distribution. More recent publications are therefore more relevant in this area (for a discussion of this, see L'Homme 2004, 20).

### **Methodology**

With these challenges in mind, the approach taken was as follows. Comprehensive searches were carried out of the relevant journals, including *Current Issues in Language Planning*, *Current Issues in Language and Society*, *Hermes – Journal of Language and Communication Studies*, *International Journal of Lexicography*, *International Journal of the Sociology of Language*, *Langages*, *Language Policy and Language Planning*, *Meta*, *Terminologies Nouvelles*, and, in particular, *Terminology*. The key texts were read and analysed. Documents specific to organisations were searched for in bibliographies, online, and in the EAFT survey report, *Entities Involved in Terminological Activity*. Published in 2005, this report contains responses by terminological organisations worldwide (though mainly in Europe) to a 2004 questionnaire about their activities. The publication is hardly exhaustive, however, and has many inaccuracies – a fact acknowledged by the editors (European Association for Terminology 2005, 9). Manuals and guides are cited in some cases, although it cannot be assumed that the other associations do not also have such materials, or have not published them since 2004.

## **2.2 Approaches to term planning**

In this section an overview is given of the kinds of studies which have been carried out on terminology and term planning. This overview will establish that there has been no comprehensive, global study of the concept of 'best practice'.

There are relatively few studies on term planning, much fewer than on, for example, language planning in general. The types of terminological discussion are classified under five headings by Antia (2000):

*A Priori* and *a posteriori* (on the basis of available literature) a number of thrusts, including the following, might be expected in a critical metadiscourse on terminology: a linguistic approach (strategies used), a terminological systems approach (how groups of terms reflect the relationship in the corresponding sets of concepts), a communicative approach (the usability of the terminology in discourse), knowledge approach (the effectiveness and efficiency of the terminology project as a means of imparting knowledge), and a sociological approach (social validation of the terminology planning effort as evidenced by knowledge of, and attitudes towards, the terms) (Antia 2000, 38).

These categories – with the exception of the sociological approach – are not very useful in a discussion of term planning studies. As well as sociological (or sociolinguistic) approaches, we can discuss diachronic studies (studies of a terminology situation in time), terminometrical studies (measurement), methodological and process management studies (how terminologies are created and managed), and comparative and case studies (within or between languages or domains). There is considerable overlap between the categories, a fact also recognised by Antia. In the sections below, each classification in turn is introduced and relevant contributions are cited. This framework is useful for this thesis because it allows a closer look at the methods as well as the findings of the various authors; no other similar classifications were found. It is, however, a very loose framework and has a limited value as a classification structure.

### **Sociological and sociolinguistic approaches**

Most terminology planning situations can be examined in a sociological or sociolinguistic way with the range of studies covering not only attitudes to term planning and the sociolinguistic basis for term formation, but also the amount of funding received, for example, as a measure of strategic importance, or the government ministry to which terminology sections are answerable. This is a particularly revealing approach to the political and social aspects of terminology, and therefore highly relevant to the socioterminological point of view.

Mahmud's (1986) paper on the sociolinguistic determinants of language planning in Mauritania is a description of the political, racial and cultural tensions influencing the development of the indigenous African languages for education. This tension was between those who wanted Arabic to be the basis for term creation, and those who did not, favouring French or indigenous bases instead. Various terminology conferences are described – with different interests represented at each, and various decisions being taken in favour of or against Arabic as the source for borrowing. Mahmud concludes that:

Terminology planning is a sociolinguistically determined process in as far as it interacts with socio-cultural and political variables. What seems to be a technical-linguistic aspect of language planning is in fact readily amenable to politicization, especially in relation to the question of the source of terminology expansion. It cannot therefore be pursued in isolation from the sociolinguistic context, nor can it be carried out successfully on the basis of what are assumed to be rational considerations. (Mahmud 1986, 108)

This is reinforced by Smith's (1994) analysis of Malay development in Brunei Darussalam. Because of the very rapid development of the country, the shift from English to Malay as the language of administration, and the continuing importance of English, there are enormous human resource problems in terminology, and 'there is little local interest in acquiring new Malay terminology or in reading serious texts in Malay' (Smith 1994, 299). He predicts that, as English becomes the dominant language, 'Brunei terminologists will... fulfil a ritual and subsidiary role as creators and cultivators of Malay equivalents for English terms which will have little or no operational use' (Smith 1994, 299).

Rodríguez Ríó (Rodríguez Ríó 2003b) is another sociological investigation, a survey of Galician terminology users, carried out as part of a doctoral thesis. The survey is of 176 users of technical Galician (lecturers, students, translators, linguistic service staff in institutions or companies, authors of terminology resources), with questions on themes such as knowledge of terminology, priorities for work, quality and diffusion of resources, term creation, implantation, needs and future suggestions. It was carried out in 1998. The author found a general interest in the theme of terminology, and consciousness of its relevance for the re-Galicianisation of society, but the diffusion of resources and the training of users and terminology producers were seen as problematic. There was relatively poor awareness of terminology resources even among the sample group of language professionals. About half had found out about terminology resources from conversation with others, finding them in a bookshop, or by various other informal means rather than as a result of information campaigns, catalogues or documentation centres.

Other similar surveys have been carried out of users of terminology resources in other places. Fiontar carried out a survey of users of Focal.ie in March 2007 (Fiontar 2007b), and the *Office québécois de la langue française* carried out a very comprehensive study of users of the *Grand dictionnaire terminologique* in 2004 (Moffet 2004), concluding with a list of twelve recommendations for improvement.

### **Terminometrical approaches**

One relatively well-developed category of sociological term planning study is terminometry, or studies of term implantation. This was pioneered in Israel (Alloni-Fainberg 1972, Fainberg



1977), and has been an important recent development in Quebec and, to a lesser extent, in France (Quirion 2003a; Quirion 2003b; Heller 1982; Centre linguistique de l'entreprise 1984; Maurais 1984; Daoust 1987; Paul *et al.* 1991; Martin and Loubier 1993; Loubier 1993; Bouchard 1995; Rouges-Martinez and Villebrun 1997; Delavigne and Gaudin 1997; Martin 1998; Auger 1999). Quirion is especially important; his study of the effect of terminological factors on term acceptance is discussed in Section 2.4.

Martin (1998) is a particularly detailed terminometric study of the use of official terms in education in Quebec. The French language charter makes the use of standardised terms and expressions obligatory in certain situations of official communication, and the research evaluates the effect of that approach on terminological choices, in official administrative texts and in other communications where the charter does not apply. The research was carried out through the study of corpora and through questionnaires and group interviews. This research led Martin to the conclusion that very little of the official terminology had been implanted in official texts.

Other studies (such as Auger 1999) are more positive in their results, depending on the domain studied, although Auger does recommend that more work should be done on the social diffusion and implantation of terms (Auger 1999, 123). Gouadec (1994), in France, found a high level of use of English terms in computing documents (depending on the type of product, the function of the document and the intended readership), but also a high level of acceptance of official terms. Francisation and standardisation were impossible in the research and programming end of computing, because the programming language itself was English and French had a secondary status.

Two sociological or terminometrical studies are mentioned in Antia (2000, 42-43): Askira (1994) and Kummer (1983). Askira (1994) investigates how English terms from several fields are understood in news translations from English into Hausa and Kanuri. Respondents were asked to rank English alternatives for a given term, in order to measure the degree of accuracy, acceptance and standardisation of the term. Kummer (1983) measured knowledge, translatability into English and usage of Swahili terms in various fields by polling respondents. He concludes that 'formal and institutional state channels of dissemination are not as effective as informal means' (quoted in Antia, 2000, 44).

Vila (Vila i Moreno *et al.* 2007) is a study of the implantation of sports terms. The results obtained by the qualitative study (of certain sporting fields) show that TERM-CAT's terms are more likely to be used in formal contexts:

Les produccions orals formals o els textos escrits, contextos en què la consciència dels parlants té un paper més important, presentaven, en termes generals, més occurències de les formes catalanes o catalanitzades que no pas els usos orals interpersonals.<sup>13</sup> (Vila i Moreno *et al.* 2007, 244)

Terminometrical studies are among the best developed areas of terminology studies; it must be said, however, that they often do not give a comprehensive picture of term use among the wider language community (particularly in spoken language), and that they are limited to a handful of languages. This may change as corpus research techniques develop and improve.

### **Diachronic approaches**

Diachronic approaches to terminology are relatively popular. Zarnikhi (2005), for example, is a diachronic study of physics terminology in Iran over the last 150 years; Hualde and Zuazo (2007) give a diachronic study of general corpus planning for Basque. Covering a much longer period, Samuel (2005) looks at the development of Indonesian terminology from the seventh century up to the 1990s. Onyango (2003) is a history of the use of Kiswahili and English in the Parliament of Kenya.

Many general studies start with a diachronic survey of term planning in their particular language or situation. Onyango (2005) gives a short overview of the status of Swahili in Kenya since before independence in 1963. He notes how various legislative initiatives and decrees have or have not affected the development of the language. Santos (2003) provides an overview of Galician terminology since the early 1980s. Mac Amhlaigh (2008) offers a diachronic study of Irish lexicography and lexicographers over time (but only briefly touches on terminology).

Candel and Gaudin (2006) is a collection of papers on the diachronic aspects of the lexicon. There is, for example, a study of terminology use in ecology (Dury 2006); of forestry terms in Quebec (Auger 2006); and of the evolution of nuclear terminology (Delavigne 2006). The latter presents a fascinating description of the way in which the vocabulary of nuclear physics in France has changed since radiation was first discovered at the end of the nineteenth century. After the bombing of Hiroshima and Nagasaki, there were political efforts to separate civil and military uses of nuclear power in the public mind, largely by the use of different terms – *atomique* for military uses, and *nucléaire* for civil energy uses. Similarly electricity producers tried in the 1980s to substitute the opaque acronym *CNPE* (short for *Centre nucléaire de*

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<sup>13</sup> 'formal oral productions or written texts, contexts in which the awareness of the speakers had greater importance, presented, in general terms, more occurrences of the Catalan or Catalanised forms than interpersonal oral usage.'

*production d'électricité*) for the highly charged term *Centrale nucléaire*. This study, along with the Mauritanian case mentioned above (Mahmud 1986) is a good example of how political constraints and expediency affect term choices.

Even though Candel and Gaudin believe that the history of vocabulary is neither in fashion nor well-funded (Candel and Gaudin 2006, 13), diachronic approaches form the basis or the introductory sections of many studies. As in the nuclear example above, it is clear that they can reflect broader issues than language planning alone.

### **Studies of methods and process management (managerial-type studies)**

Methods of term creation and dissemination are discussed in a limited number of articles and studies. Such studies are obviously very closely related to some of the other approaches discussed above, but this is a heterogeneous category, including studies of radio dissemination, term creation decisions and funding and human resource questions.

Hübschmannová and Neustupný (2004), in a discussion of North-Central Romani, take a very critical attitude to the standard view of terminology methods, objecting to the emphasis on term creation rather than use:

The traditional approach to the development of language as employed outside the daily-life domain is through the concept of 'terminology'. However, terminology does not provide a satisfactory framework. It implies (1) concentration on terms, (2) concentration on inventories rather than processes, and (3) a one-sided regard to the generation rather than the management process. (Hübschmannová and Neustupný 2004, 84)

They conclude that 'in many cases it is inappropriate to approach the issue of terminology from the point of view of terms developed as the result of terminological processes' (Hübschmannová and Neustupný 2004, 105). They favour a management approach to language rather than a policy or planning approach. Similarly, a problem identified with APLL (the Academy of Persian Language and Literature in Iran) is that work is done to approve terms and to publish lists without consideration of coordination with other types of planning or the promotion of language awareness. (Zarnikhi 2010, 148).

In a case study of the creation of a glossary of chemistry terms for Northern Sotho, Taljard (2008) identifies the three main problems faced by the members of the language body: the voluntary nature of the work, the lack of terminological training, and the technical inaccessibility of the term management system. Fishman (2006, 129-147) is a factual description of the work of two Hebrew terminology committees, and of the difficulties encountered by them.

In another study, Karpova and Averboukh (2008) find that, in term planning for Russian, some areas became fashionable during the 1990s and were much better provided for than other fundamental areas such as machinery, chemistry or the building industry (Karpova and Averboukh 2008, 989), showing a lack of strategic planning.

Santos (2003) is of particular relevance to the aims of this thesis. This study is a description of the development of Galician terminology since the early 1980s, with an evaluation of various aspects of that provision and a suggested model (discussed in Section 2.3 below) for the future. Her new model for Galician is a response to the problem that some of the tasks involved in the provision of Galician terminology (planning, standardisation, etc.) are, she concludes, not approached in an integrated way, and that there is poor coordination of tasks, with no-one responsible for standardisation, evaluation and modernisation. This leads to a waste of resources and effort, although there is an improvement due to a growing professionalisation. Her model is another step in this professionalisation, addressing the need to reassign functions, reorganise management and reinforce infrastructures (Santos 2003, 272).

She analyses terminology production under the headings of: production rhythm (number and frequency of publications), authors, thematic areas, languages represented, formats (articles, monographs, theses, as well as dictionaries and vocabularies), structure and medium (paper or electronic). The author is critical of the provision of terms; for example, some areas are neglected; there is no specific resource for some areas of knowledge, and in other cases there is no generic resource for a discipline. Sub-domains are sometimes overlooked:

Non existe un desenvolvemento básico uniforme de todas as áreas temáticas nin unha planificación previa que priorice con algún criterio (maior demanda no país, xerarquía temática, interese dos posibles usuarios, materias implantados no ensino universitario, etc.) a produción das subespecialidades no período estudado (Santos 2003, 239).<sup>14</sup>

Production of terminology, she finds, ought to be planned on an annual basis.

In his description of term planning for Indonesian in Indonesia (and also in Malaysia) since the 1930s, Samuel (1996) charts the inefficiency of official language planning policies. The large numbers of terms produced – 321,710 between 1950 and 1966 (Samuel 1996, 131) – belie the problems: no implantation policy, a lack of professionalism and the fact that term production

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<sup>14</sup> 'A basic uniform development of all the thematic areas does not exist; nor does advance planning which would prioritise with some criteria (demand in the country, thematic hierarchy, interest of potential users, materials implanted in university education, etc.) the production of subspecialities in the period studied.'

quickly became an end in itself. In the early 1950s, the commercial sale of terminology dictionaries by language agencies was banned, under the pretext that work carried out by a State agency should not be sold for profit (Samuel 1996, 139). This meant that language agencies did not have the means to distribute dictionaries except in tiny numbers, and that most people turned to dictionaries from non-government publishers. Most dictionaries before 1975 were privately published, with the result that competing dictionaries on the same subject often have different terms, with different source languages. Samuel compares this situation with terminology provision in Malaysia, which was in a much better position in terms of stability, authority, financing, and the competence of its personnel.

Samuel sums up this historical situation in suggesting that there was no terminology policy in Indonesia before the 1980s:

*'Peut-on parler de politique terminologique en Indonésie? D'ailleurs, quel terme employer pour définir l'action de l'État sur la langue dans ce pays? Indépendamment de la réalité de cette action, le terme de planification nous semble convenir le mieux, à cause de ce qu'il sous-entend: dirigisme, centralisme, concertation limitée. Mais si l'on entend par planification un ensemble cohérent de décisions, engageant l'action de l'État dans la durée pour atteindre des objectifs précis, correspondant à des besoins identifiés, cette action étant soutenue par des moyens appropriés, on peut dire qu'il n'y a pas de politique terminologique avant les années quatre-vingts' (Samuel 1996, 145).<sup>15</sup>*

Another, different, type of managerial approach is the social change communication perspective used by Drame (2009) in her PhD research. The aspects of terminology policy discussed are the same as those set out in UNESCO (2005), of which Drame was a co-author. The communication model developed is compared to the South African case, and suggestions for improvement are made. The communication model focuses much more on campaigning and lobbying stakeholders for a terminology policy and about the importance of terminology than on the diffusion of terminology resources, however. Drame argues that the policy-making process is largely an act of communication (Drame 2009, 11).

### **Comparative and case study approaches**

Most of the studies already discussed could be classified as comparative studies or case studies, mostly of just one case. (Like the diachronic approach, there is a considerable amount

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<sup>15</sup> 'Can we speak of a terminology policy in Indonesia? Or what word should be used to define the State's action on the language in that country? Independently of the reality of this action, the term 'planning' seems to me to suit best, because of what it covers implies: interventionism, central control, limited consultation. But if what is understood by planning is a coherent ensemble of decisions, committing the State to action over time to attain precise objectives, corresponding to identified needs, supported by appropriate means, it can be said that there was no terminology policy before the 1980s.'

of overlap with other kinds of study.) Not all of them show evidence of following a strict investigative methodology, however.

Ó Riain (1985) is a study of language planning (status and corpus, although the majority of the thesis is dedicated to status planning) in Ireland (for the Irish language) and in Quebec (for French). Most of the thesis is devoted to the Irish case. He finds fault with the way term planning was carried out at the establishment of the State but states that the situation was being remedied. There is, however, very little discussion – two pages – of corpus planning in Quebec, so the basis for comparison is limited. Matras (1991) uses the cases of Yiddish, Kurdish and Romani for a comparison between ‘stateless’ languages, and tries to construct a typology of ‘non-official standardisation’ (Matras 1991, 110), although, like Ó Riain, he does not focus on terminology. Zarnikhi (2010) compares term planning for Catalan and for Persian.

Other studies make passing comparisons between language situations. Onyango (2005) compares the situation of Swahili in Kenya and in Tanzania, where it is on a more solid legal, administrative and practical footing (although its status there is a matter of debate: Mulokozi 2004).

No other comparative studies were found during the research for this chapter, which is surprising, since many fields of research rely heavily on comparisons to develop new theories and best practices.

Many researchers use case studies of a particular subsection of terminology to explore term planning. These are generally either a particular language, or a particular domain in that language, such as Martin’s (1998) use of education terminology. Samuel (2005) uses case studies in analysing the development of Malay terminology. Ní Ghearáin’s (2011) PhD thesis is a study of lexical planning for Irish.

Antia (2000) uses two different cases: he evaluates an existing glossary, and he creates a new legislative terminology resource in order to demonstrate and test the alternative needs analysis and work methods he proposes for term planning, both general and specifically African. Similarly, Drame (2009) proposes an ideal communication model based on scientific methods and knowledge, then analyses a case study situation, that of South Africa, in view of that model.

Coluzzi (2006) is a PhD thesis using a case study approach in a related field, that of minority language planning. He compares three minority languages or dialects in Italy (Friulian, Cimbrian and Milanese) with three Spanish ones in comparable situations (Galician, Aranese and Asturian respectively). The aim in carrying out the case studies is ‘to show what Italy

would have the potential to do' (Coluzzi 2006, 2) if micronationalism were stronger. There is no comprehensive discussion of the case study methodology employed, however.

### 2.3 A literature-based model structure

The first step in developing any term planning model is to establish the stages and aspects of term planning. These are broken down differently by different authors. It is clear that there is no firm distinction in the literature between the structures of different levels of planning – term creation and standardisation, project planning and management, organisational management over time, and planning for a language as a whole. It is sometimes unclear just what is being discussed – individual projects or general work methods. There is no consensus on the stages of term planning models, because the literature is scarce and undeveloped, and, perhaps, has a weak theoretical basis (Temmerman 2000, 2).

ISO 15188:2001 (2001, 2), for example, describes the stages of a terminology project (a 'project aimed at collecting, developing, analysing and recording the terminology of one or more subject fields'), and Fähndrich (2005) describes a similar project from a business perspective, whereas Onyango (2005) describes the framework for a terminology process for a language. TERMCAT (2006a), on the other hand, describes the steps in standardising an individual term.

The only models which specifically claim to be for the general planning of a terminology policy are the UNESCO guidelines (2005) and ISO 29383:2010, *Terminology policies – development and implementation*, based in part on these guidelines, which:

address decision makers in different positions at various levels, who – for a variety of purposes – want to design, plan and implement a terminology policy, which is geared towards a conscious, systematic and controlled approach to the creation, maintenance and use of terminology in/for defined user communities. (UNESCO 2005, i)

It is clear that there are far more planning models for individual term projects than for term planning for a language. This is problematic as we try to establish the important aspects of term planning in a language, on which to structure a model.

#### **Can ISO/UNESCO provide a ready-made model?**

There is a possibility that there are already models for term planning: those created by ISO TC37 or UNESCO (2005), or maybe a combination of these. Are they perhaps already a solution?

The UNESCO document is a description of the four stages of terminology policy planning – preparation, formulation, implementation and maintenance. The target audience of the

UNESCO document is decision-makers; considerable emphasis is therefore placed on an explanation of the basic principles and the importance of language planning in general and of terminology in particular.

In many ways, the UNESCO document is too general to be useful. The recommendations are not specific and are sometimes vague – for example, there is no description of how the implementation phase of policy development might be carried out, nor of how performance should be monitored. Similarly, while the authors recommend a shift to a systematic terminology policy at a ‘certain stage of language planning’ (UNESCO 2005, 2), this stage is not described or specified. As well as this, most of the document deals with *preparation for a terminology policy*, not the actual terminology work. There are many questions unanswered, particularly about how terminology should be distributed and brought into use. Most discussion of awareness-raising in the document refers to preliminary awareness-raising or lobbying about the importance of a terminology policy. Apart from the idea of a term database, and perhaps some media work, there are no further recommendations given for term distribution.

The document is perhaps best seen as a description of the development of generic terminology policies and plans and not of the actual processes and day-to-day work. (The document states that ISO’s TC37 is the international standard-setter for the principles and methods of terminology work.) The UNESCO guide is most relevant for its statement of general aspirations and its breakdown of the stages of formulating and implementing terminology policy. Its significance lies in the argument made about the importance of terminology, and in the emphasis on preparation, inclusiveness and openness:

The Guidelines... focussed less on the technicalities of the terminology planning proper... Rather, it described the pragmatic environment, in which the planning takes place, as a management process. It therefore focused only insofar on the linguistic and cognitive perspective as is necessary to describe the characteristics of it, and correctly place the subject in its context. More importantly, the Guidelines made external factors like society, economy, political administration and management their topic, and thus examined the issue from a new and different angle. (Drame 2009, 10)

The second possible ready-made model is one based on the ISO/TC37 standards. They have been of great importance and influence, but have also been criticised. Some of these criticisms relate to the fundamental approach taken.

Sager (1990) criticises the fact that ISO is dominated by industrialised countries, which means that ‘any linguistically-based principles and methods have had little if any relevance to countries with a strong need for importing technology’ (Sager 1990, 117). Because of this and



of translation and adaptation problems, he concludes that 'the enterprise of reaching international agreement on methods of terminology is seen to be fraught with complications and difficulties' (Sager 1990, 118).

Temmerman (2000) finds it surprising that terminology is treated as a commodity to be standardised. 'Vocabulary, which is part of language, is treated as if it could be standardised in the same way as types of paint and varnish or parts of aircraft and space vehicles' (Temmerman 2000, 12). While the first ISO 704 standard, published in 1968, was suitable as a basis for documents dealing with the standardisation of terms for objects in technology and engineering, the mistake made, she finds, was to generalise from this to a more widely applicable theory of terminology.

The treatment of terminology as a commodity to be standardised, along with the authority of ISO, has stunted research rather than fostering it, according to Temmerman (2000, 14). This may suggest an uneasy relationship between ISO and academia, as well as between ISO and language planning. Following Aguilar-Amat's distinction between linguistic system, translation and linguistic planning orientations (Aguilar-Amat and Santamaria 1998), ISO could perhaps be seen to address the linguistic system orientation and the translation orientation of terminology but not the language-planning orientation, except for ISO 29383:2010. Prys, while stressing the importance for Welsh of adhering to ISO standards, even if Welsh is only marginally involved in many of the areas covered, such as multilingual documents or the development of metadata (Prys 2007, 4), notes that in the case of Wales and other language communities, there is often a prejudice against borrowing from the dominant language, and that this must be recognised:

The aim of the international standards is to promote effective communication, rather than to preserve linguistic purity, but giving due regard to the wishes of the specific language community is part of any comprehensive terminological planning (Prys 2007, 37).

We do not know how much the ISO terminology standards are used in practice among language planners. In term planning studies and reports, such as those in Section 2.2 above, they are rarely mentioned (and much term planning seems to be done on an *ad hoc* basis anyway, a practice not covered in the standards). There appears to be a conflict in the literature between the ideal as suggested by ISO and a pragmatic description of actual terminology work (for example, Auger and Rousseau 1978). In the EAFT survey (2005), only one entity (the Breton terminology body, TermBret) claimed to have incorporated the ISO standards into its work; a few others claimed to co-operate with ISO but did not state that they were using the standards. Costa (ND, 4) uses the ISO standards as a basis for a guide to applied research in terminology, but supplements it with mixed methods, between semasiology and

onomasiology. They are, however, used in Suonuuti (2001). The fact that ISO standards are not freely available online may dissuade other, smaller, groups. Suonuuti found that the older international standards were much too theoretical and complicated for practical use, although more recent ones were more practical and compact.

The main value of the ISO standards is, perhaps, to establish precise definitions and descriptions of fundamental aspects of terminology. They also establish the norm for terminology resource creation and evaluation, and provide guidance on some – chiefly commercial – aspects of socioterminology. They are limited, however, by their general focus on industrial terminology and on industrialised countries.

### Structures suggested in the literature

The authors who have tried to categorise term planning include Auger (1986), Quirion (2003a), Cabré (1999 and 1998), Santos (2003), Onyango (2005) and Fährdrich (2005), as well as UNESCO (2005) and the ISO standards. In some cases this is done very briefly, as a way of arranging the subject matter, and there is no prolonged discussion on the choices made. Some structures which have to do with planning a particular project, such as Suonuuti (2001) are omitted here (and discussed further below). The different structures are summarised in Table 1, and grouped and briefly discussed in the sections below.

**Table 1: Comparison of term planning structures in the literature**

	Auger (1986)	Cabré (1999)	Santos (2003)	Onyango (2005)	UNESCO (2005)	ISO 29383:2010	Fährdrich (2005)
Research	*	*	*				
Formation of language institute				*			
Preparation					*	*	
Acquisition							*
Setting of goals				*			
Needs analysis & offering							*
Formulation					*	*	
Standardisation	*	*	*				
Diffusion	*	*	*				
Term engineering				*			
Implementation					*	*	
Planning							*
Dissemination				*			
Implantation	*	*	*				
Maintenance					*	*	
Implementation and controlling							*
Evaluation and monitoring	*	*	*	*			
Handover and							*

	Auger (1986)	Cabré (1999)	Santos (2003)	Onyango (2005)	UNESCO (2005)	ISO 29383:2010	Fähndrich (2005)
completion							
Final phase							
Modernising	*	*	*				
Follow-up							*
Planning (coordination and management of resources)			*				
Training			*				

### *Auger (1986) and variations*

Auger (1986) provides a model for the creation of terminology collections, and the carrying out of projects. It is clearly based on the experience of Quebec, but is still general. He identifies six functions of term planning:

- research
- standardisation
- diffusion
- implantation
- evaluation and monitoring
- modernising (Auger 1986, 48).

The functions named can also be seen as phases or stages:

Ces fonctions peuvent correspondre à autant de phases ou d'étapes qui vont de la conception initiale d'un produit terminologique jusqu'à son implantation auprès d'un groupe-cible selon une planification rigoureusement établie qui suppose à la fois l'identification d'un objectif à atteindre et le recours à une stratégie globale d'intervention (Auger 1986, 48-49).<sup>16</sup>

It is essential, Auger says, to move away from a static model of terminology where terminology products are only tools for the production or translation of specialised texts, with no particular users being targeted (49). This six-fold division has formed the basis of much research, and has been very influential. For example, it is used by Montané March as a defining structure (Montané March 2007, 178). It is also used by Quirion (Quirion 2003a) as a basis for his study

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<sup>16</sup> 'These functions may correspond to a certain number of phases or stages, ranging from the first conception of a terminology product to its implantation within a target group, according to a rigorous planning programme, that presupposes both the defining of a goal and the adoption of a comprehensive strategy of intervention.'

of implantation. Despite this, it is not an accepted paradigm. There are many variations. Alberts (Alberts 2008), for example, briefly refers to the process of terminology as entailing ‘the excerption, documentation, standardisation, publication and dissemination of terms’ (20).

Cabré (1999, 311) lists the stages thus, almost exactly the same as Auger, but giving more detail:

- La investigación, entendida como descripción de la situación de hecho y recopilación de los datos necesarios para abordarla.
- La normalización, conducente a la fijación de las formas de referencia.
- La difusión de la terminología normalizada, contando con diferentes posibilidades y soportes.
- La implantación de la terminología en los medios de trabajo, que supone el punto clave de la normalización.
- La evaluación del proceso anterior, reorganizándolo si es conveniente.
- La actualización permanente de la terminología, por cuanto se trata de un ámbito lingüístico en constante cambio.<sup>17</sup>

Santos (2003) adds two other functions, planning, in the sense of coordination and management of resources; and training.

This is slightly different from the model Cabré uses in another earlier publication (Cabré 1998)<sup>18</sup>:

- Planning, coordination and management of terminological resources, including the planning of work for a specific language and country, the coordination and supervision of the application of this plan, the assessment of the results and the management of the allocated resources.
- Terminological research, including the preparation of systematically structured terminology.
- Standardization of terms, involving the evaluation of alternative terms used to designate a single concept.
- Dissemination of standardized terms and issuing of decisions on consultations about terminology and miscellaneous aspects related to terms.

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<sup>17</sup> ‘Research, understood as a description of the factual situation and the collection of the data needed to address it; standardization, leading to the establishment of reference forms; dissemination of standardized terminology, with different possibilities and supports; the implementation of the terminology in working practices, which is the key point of standardization; evaluation of the previous process, reorganizing if appropriate; continuous updating of the terminology, because it is a constantly changing language field.’

<sup>18</sup> Originally published in Catalan in 1992

- Implementation<sup>19</sup> of terminology among professional groups and specialised areas of activity.
- Training in terminology, involving the education of specialists able to prepare terminologies or participate in a part of the preparation process. A complete training programme includes both the training of terminologists who will take charge of systematic work and the training of other specialists involved (e.g. scientists and technicians, translators, interpreters, technical writers, teachers, specialists in documentation, computational linguists, lexicographers) as well as the training of teachers of terminology (Cabr  1998, 20).

Evaluation and measurement and modernisation are missing from this list, but they could be taken to be implied in the planning, research or management stages.

### *F hndrich*

F hndrich (2005), describing a business model for terminology projects, identifies these phases:

- acquisition
- needs analysis and offering
- planning
- implementation and controlling
- handover and completion
- follow-up

In her view, a terminology project is ‘a project aimed at collating the terminology used in a specific subject field or corpus’ (F hndrich 2005, 227). F hndrich’s approach is different to that taken by Auger and others, above, in that it is focused in large part on the management (rather than the research/ term production) aspects of term planning. This is also the case for the UNESCO- and ISO-type models below.

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<sup>19</sup> This translation may be understood as having the same meaning as ‘implantation’ in English translation; see the following note from Quirion (2003a, 45): ‘The term *implantation* was preferred to *implementation* to refer to that particular stage of a terminology management program where terminologies put forward by governmental language agencies start being used. There are no recorded occurrences of *implantation* nor of *implementation* used in this sense, due to the lack of English literature on the subject. The term *implementation* was discarded in order to avoid any possible confusion with the meaning of “execution, carrying out”, as it is used by many authors in this sense when referring to the means and procedures undertaken by government agencies to bring about linguistic change.’ ‘Implantation’ will be used to denote this concept.

### *UNESCO- and ISO-type management models*

The UNESCO guidelines break policy planning into four general stages: preparation; formulation; implementation; and maintenance.

Based on experience with formulating national information and knowledge policies, the development phases for a terminology policy according to these Guidelines comprise:

- PHASE I – Preparation for the terminology policy;
- PHASE II – Formulation of the terminology policy;
- PHASE III – Implementation of the terminology policy;
- PHASE IV – Sustained operation of the terminology infrastructure and the adaptation mechanism for the terminology policy. (UNESCO 2005, 22)

Terminology planning is defined in ISO 29383:2010 (following ISO 1087-1:2000) as ‘activities aimed at *developing, improving, implementing and disseminating* the terminology of a subject field’ (2010, 1; italics added), and the same four phases as UNESCO are described.

ISO 15188:2001 names four general stages: preparation; planning; action; and review – similar to the stages suggested for a linguistic development plan in ISO/TR 22134:2007 (analysis of the linguistic situation; determination of objectives; planning; implementation; final assessment). A similar but less comprehensive list is given by Onyango (2005, 220): formation of a language institute; setting of goals; term engineering; dissemination; evaluation.

### **A composite structure**

The various approaches cited above are summarised in Table 1. It is clear that there is very little substantive difference between them (although it is obvious that some of them are at a more macro level than others). Eight steps or headings can be identified by synthesising the information<sup>20</sup>:

- preparation/planning
- research
- standardisation
- dissemination
- implantation
- evaluation

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<sup>20</sup> This structure was presented at Euralex 2010 (Nic Pháidín *et al.* 2010).

- modernisation/maintenance
- training.

This synthesis is shown in Table 2 below.

**Table 2: Synthesis of term planning models in the literature**

	Auger (1986)	Cabré (1999)	Santos (2003)	Onyango (2005)	UNESCO (2005)	ISO 29383:2010	Fähndrich (2005)
<b>Preparation/planning</b>							
Formation of language institute				*			
Preparation					*	*	
Acquisition							*
Setting of goals				*			
Needs Analysis & Offering							*
Planning							*
Planning (coordination and management of resources)			*				
<b>Research</b>							
Research	*	*	*				
Formulation					*	*	
Term engineering				*			
<b>Standardisation</b>							
Standardisation	*	*	*				
<b>Dissemination</b>							
Diffusion	*	*	*				
Implementation					*	*	
Dissemination				*			
Handover and completion							*
<b>Implantation</b>							
Implantation	*	*	*				
<b>Implantation/evaluation</b>							
Implementation and controlling							*
<b>Evaluation</b>							
Evaluation and monitoring	*	*	*	*			
Follow-up							*
<b>Training</b>							
Training			*				
<b>Modernisation/maintenance</b>							
Maintenance					*	*	

In selecting these headings, the following, mentioned by particular authors, are omitted or subsumed into different steps:

- Formation of a language institute. This is very situation-specific, and is covered, if necessary, under preparation/planning.
- Setting of goals, formulation. Both included under planning.
- Coordination, management. The coordination and management of a terminology project applies equally to all the steps, and is not a step in itself. Planning for coordination is covered under planning.
- Action, term engineering. Both included under standardisation.
- Measurement. Included under evaluation.
- Reorganisation, review. Included under modernisation/maintenance.

## 2.4 Term planning models in the literature

These eight headings are now used to analyse the literature. In each case, the aim is to establish general trends in the literature, if they exist, or to give an overview of the main discussions taking place. The detailed models mentioned above, and others, are slotted into the steps identified.

### **Preparation/planning**

The preparation and planning phase for a term planning organisation or situation is the time when decisions are made about what term planning work will be done, who will do it, for whom and how. It can also mean ongoing planning, such as budgeting, staffing, strategic planning or decision-making about work priorities. This means looking at term planning at a national, managerial and policy level.

It has been repeatedly found (Onyango 2005; Nic Pháidín and Bhreathnach 2008) that lack of strategic planning and management are detrimental to LP-oriented term planning. Karpova and Averboukh (2008) find that, in term planning for Russian, some areas became fashionable during the 1990s and were much better provided for than other fundamental areas such as machinery, chemistry or the building industry (Karpova and Averboukh 2008, 989), showing a lack of strategic planning. This demonstrates the assertion that ‘terminology policy-making is a complex management process rather than a strictly straight, chronologic, arguments-based and linear top-down process’ (Drame 2009, 18).

Despite assertions about the importance of strategic planning, there is relatively little written about how to plan for terminology work, or even about lessons learned by organisations in preparing to undertake term planning. In general, terminology work has rarely been examined from a project management perspective: ‘To the best of my knowledge, there is no official phase model for terminology projects, or more specifically terminology service projects’ (Fähndrich 2005 234). As seen above, there is relatively little discussion of process



management for terminology. Fähndrich goes on to say that, in her view, 'terminologists pay far too little attention to business matters in general and project management in particular' (Fähndrich 2005, 257). Fontova's conference paper on quality guarantees in term standardisation for Catalan (Fontova 2007) takes a managerial approach to terminology, but it is one of the few.

Two longer reports proposing models for particular languages (Santos 2003 and Bauer *et al.* 2009, for Galician and Scottish Gaelic) have been published, and there are other articles which make recommendations about particular aspects of planning, such as Pozzi (1996), Alberts (2008) and Taljard (2008).

The two basic aims of Santos's model for terminology are to establish an organisational chart and to define the functions of each agency in order to make its activity useful (Santos 2003, 274). The most important point in the new model is to have one entity, a terminology centre, responsible for standardisation, evaluation and modernisation. This could be supported as necessary by academic and professional organisations, with research and some of the training being carried out in an academic setting, and cooperation with many groups particularly needed for implantation. Planning would have to be carried out in conjunction with potential users, service providers, academics, institutions, and other groups.

Bauer *et al.* (2009) is a similar report on corpus technologies for Scottish Gaelic, which addresses terminology planning as well. Emphasis is placed on the need for strategic planning and development of terminology by a single body of experts and professionals (Bauer *et al.*, 16), incorporating aspects such as professional rather than volunteer involvement (Bauer *et al.*, 45), membership in terminology associations, international involvement and training in international standards on terminology development (Bauer *et al.*, 24), open and transparent terminology standardisation (Bauer *et al.*, 30), media involvement (Bauer *et al.*, 46), and cooperation in the development of tools with other Celtic countries (Bauer *et al.*, 31). It was felt that a permanent and independent Gaelic Academy responsible for (or acting as an authority on) term standardisation and development was needed to coordinate work (Bauer *et al.*, 30):

The adage that "many cooks spoil the broth" certainly holds true in terminology development. Either by design or by trial and error; other European minoritised languages have adopted a single independent authority approach or are in the process of doing so. (Bauer *et al.* 2009, 42)

Of the articles discussing strategic terminology planning, Alberts (2008, 20) finds that, in South Africa, 'terminology is officially practiced separately from lexicography... Unfortunately this model does not work for general terminology development for a specific language'. She questions the distinction of terminology work from lexicography work. (Moffet (2004, 19), in a survey, found that users of the *Grand dictionnaire terminologique* expected to find both general language words and specialised terms in the database. This issue is not frequently discussed in the literature, nor is the relationship between terminology planning and language planning.) Pozzi, finding that formal work in term standardisation is not being carried out in any Spanish-speaking country (Pozzi 1996, 173), recommends the establishment of national committees for term standardisation; involvement in ISO/TC 37 and its subcommittees; the establishment of a regional committee for terminology standardisation; and the establishment of a common exchange format between term banks (Pozzi 1996, 175). These are, for her, the bare bones of a term planning model for the Spanish language. In a case study of the creation of a glossary of chemistry terms for Northern Sotho, Taljard (2008) identifies the three main problems faced by the members of the language body: the voluntary nature of the work, the lack of terminological training, and the technical inaccessibility of the term management system.

Planning, as Hübschmannová and Neustupný (2004) point out, must be done with an emphasis on processes, not merely inventories of terms, and management as well as the generation of terminologies:

It is essential to widen the framework for understanding technical, scientific and other special languages beyond the registration and classification of lexical items. Language in general is much more than a static configuration of words, and this must apply to our thinking about terminology as well (Hübschmannová and Neustupný 2004, 85).

The most comprehensive writing on the preparation and planning stage of term planning is the 2005 UNESCO document. A national terminology policy is defined in UNESCO as 'a public strategy formulated at the level of political decision making... with the aim of developing or regulating emerging and existing terminologies for an array of purposes' (UNESCO 2005, 4). The document emphasises the importance of including stakeholders and the general public. For example, it is advised that the public be consulted during the planning phase – through meetings, interviews or surveys – and that an awareness-raising campaign be embarked upon. Because a wide range of specialists – linguists, terminologists, domain experts and others – need to be collaboratively involved in the work, they should be consulted from the outset too. Different groups could be involved in the implementation of a terminology policy:

- one or several departments or (government) institutions

- a committee or other group of people
- an existing external institution or organization which is entrusted with this task
- a newly established institution or organization. (UNESCO 2005, 29; the same list is given in ISO 29383:2010, 11)

Poor public attitude could lead to the failure of the project, although features and degrees of failure are not specified. The terminology institution which might be created is not described in great detail, but it is suggested that its roles might include advising on policy; establishing and evaluating norms; providing an information service; coordinating and supporting projects; and acting as a clearinghouse for private or outsourced terminology work. Education and training should, it is stated, be given priority from the beginning, and a list is given of suggested preparatory documents to be compiled.

It appears that, aside from the UNESCO (2005) document, and ISO 29383:2010, which is based in part on this document, little has been written that is directly related to the planning and preparation phase of a term planning organisation.

ISO 15188:2001 (13), which gives project management guidelines for terminology standardisation, lists criteria for the acceptance of terminology projects as follows:

- The project meets specific user needs.
- The project falls within the general scope of activity of the proposed working group.
- The project enables the achievement of specific overall objectives.
- The project is needed at this time.
- The project aims to produce an original end product.
- The end product may be adapted to produce other products.
- The product may be distributed in an effective manner.
- The end product will be accepted by the user group and there will be a commitment for implantation.

This list of criteria emphasises socioterminological factors such as user needs and implantation.

Coordination with other planning activities is mentioned in ISO 29383:2010, and it is stated that it can be a part of activities such as:

- information planning (e.g. knowledge management, information and documentation strategies)
- education planning (e.g. pre-schooling, primary and higher education)

- scientific-technical innovation planning
- information and communication technology (ICT) planning
- marketing planning (e.g. of a company). (ISO 29383:2010, 4)

It is clear from the literature that the discussion of preparation and planning is very broad, but very shallow. Issues such as strategic planning, awareness-raising, definition of responsibilities and roles, coordination, international involvement, and accessibility of the term management system are mentioned but generally not explored in depth. There seems to be some agreement about the need for user consultation (Santos 2003; UNESCO 2005) and for strategic planning.

## **Research**

For Auger, 'research' means applied research on terminology, and the development of work methods and training of practitioners (which is covered here under 'training'). There are many kinds of research which could be carried out within a term planning organisation, including *ad hoc* work, terminology projects, collection of *in vivo* terms (corpus work, term extraction), and *in vitro* term creation. There are many approaches to terminology research, and there are many texts written about these approaches; some of them were discussed in Chapter 1, and not all are explored in detail here.

Research is the most written-about part of term planning. There are guides and papers on how to do each type of term research, and on how to bring it all together. Some of the most comprehensive terminology texts – L'Homme, Cabré, Sager – cover particular aspects of term planning research in detail. Chapter 4 of Cabré (Cabré 1998), for example, is a discussion of terminography, with a guide to questions such as how to design and fill in a terminological record. *Ad hoc* and systematic terminology work are discussed, as is computerised terminology.

### *Collection of in vivo terms (corpus work)*

L'Homme (2004) is largely concerned with methods for using specialised corpora, term extraction and organisation of term data. She names the following seven stages in the database creation process: corpus development; finding terms, usually in specialised texts; collecting information about the terms; analysis and synthesis of the information; coding; organising terms; and managing the data as term use evolves. She emphasises the fact that the introduction of computer tools invalidated many traditional models and methodologies (L'Homme 2004, 19). Most of the book is concerned with methods for using specialised

corpora, term extraction and organisation of term data, themes also explored by Pearson (1998).

The importance of a high-quality corpus for research work is recognised in a report by Bauer *et al.*:

Although a linguistic tool at first sight, a solid corpus is the foundation for a vast array of common-use tools today. It not only enables linguists to carry out groundwork research into linguistic issues that are needed by developers of SALT [Speech and Language Technology] but it also facilitates the rapid development of up-to-date terminology resources and future, more advanced linguistic research. (Bauer *et al.* 2009, 16)

### *Terminology projects*

A term project is defined in ISO 15188:2001 (2) as a 'project aimed at collecting, developing, analysing and recording the terminology of one or more subject fields'. In the Nordterm booklet, *Guidelines for Terminology Project Management* (Suonuuti 2001), the emphasis is on the planning and the implementation of a particular terminology project. There is a brief discussion of the phases of a terminology project for a group preparing vocabularies. Suonuuti suggests a working group of between five and eight members, with a trained terminologist to assist them, and that a detailed schedule be drawn up. Term dissemination and implementation are not discussed. In general it is suggested that 'the basic methods of project management are well suited for terminology work' (preface) and that during the work itself, 'application of terminological methods actually speeds up the work process and lowers the total costs considerably' (Suonuuti 2001, 6). Most of the short (42 page) guide is comprised of a discussion of how to carry out terminology research. There is also a two-page annex, 'Terminology work in brief', which sets out dos and don'ts, under seven headings: organise the work; record and structure the information; define the concepts; avoid definition errors; formulate the definitions; select the terms; finalise the draft. She identifies the following phases in a terminology project; many of them occur simultaneously:

- evaluating needs
- determining the target group
- identifying concepts
- collecting and recording data
- establishing the term list
- establishing the concept systems
- formulating definitions

- selection and formulation of the terms
- revising the concept diagrams. (Suonuuti 2001, 33)

Similarly, Cabré (1998, 130) breaks the work into six stages: defining and delimiting what is to be done; preparing for the task; writing the terminology; presenting the project; supervising the project; and resolving problematic cases. Strehlow, in his description of ISO 10241:1992 (Strehlow 1997), states that needs analysis, defining the target group, delimiting the subject field, analysing usage, language selection and scheduling are needed in planning a terminology standard. In the case of a terminology project, the questions to ask are about purpose, target audience, content and scope, complexity of entries and delivery or hosting (Fähndrich 2005, 241-242).

Three phases are identified by Auger (1986): project identification; planning of the terminology product (output, timetable, team); creation of the product. The work method needs to be simple but rigorous. Standardisation is achieved by consensus with interested parties.

ISO 15188:2001 has a more detailed breakdown of the stages of an individual terminology project (as well as for a terminology project within ISO), and each stage has its sub-stages:

- Preparation phase. This includes an evaluation of feasibility, description of the legal, financial and organizational framework, and the preparation of specifications.
- Design phase. Includes project leadership (selection of a leader) and project planning.
- Implementation phase. Involves collecting and recording terminological data, definition-writing and term selection.
- Review, evaluation and verification phase. Includes the review of the terminology product, and an evaluation of the project.
- Final phase. Includes preparation of a final report and a financial review.

Antia (2000, Chapter 8) creates a model legislative terminology resource, and the work involved is described. However, much of the description concerns the creation of a MultiTerm database, a subject not relevant to this thesis.

### *Term creation*

ISO 704:2000 ('Terminology work – principles and methods') is the cornerstone of ISO's terminology work. It describes all the basic concepts of terminology, particularly the links between objects, concepts and terms, and describes the principles of concept structures and of term definitions. Its aim is to 'provide a common framework of thinking and explain how this thinking should be implemented by an organization or individuals involved in terminology' (ISO 704:2000, vi), and to 'provide assistance to those involved in terminology management'

(ISO 704:2000, vi). Part of the ISO 704:2000 standard is devoted to the principles of term formation, and a list is given of principles to follow: transparency, consistency, appropriateness, linguistic economy, derivability, linguistic correctness, and preference for native language. Annex A (which is informative rather than normative) gives examples of term-formation methods for English, with the caveat that each language has its own rules. ISO 704:2000 is valuable primarily as a synthesis of the terminology theory canon. Other authors, such as Kocourek (1991) also discuss methods for term formation.

The importance of clear documentation and agreed methodological principles is stressed by Baxter (2004, 276) who finds that ‘an unclear policy creates a tangled knot of mutually incoherent individual proposals... a joint effort by specialists in the appropriate field is needed, all working to clearly defined methodological principles.’

#### *Ad hoc term research*

There is less written about how to do *ad hoc* terminology work, although many terminology services primarily work in this area (for example, the *Grand dictionnaire terminologique*'s contents are mainly developed as a result of users' demands: Moffet 2004, 18). There may even be a negative attitude towards it, as a somehow inferior approach to terminology:

Sans qu'on ne sache trop ni pourquoi ni comment, la recherche terminologique, portant sur des problèmes isolés de terminologie, s'est trouvée dévalorisée aux yeux des terminologues eux-mêmes. On la considérait, non sans une nuance de mépris, comme un «travail de pompier» qui gênait l'application de solutions à long terme par le biais d'une recherche approfondie par thème.<sup>21</sup> (Célestin *et al.* 1984, 7)

Célestin *et al.* (1984) is a detailed description and typology of *ad hoc* terminology work done by the Office de la langue française (Quebec). Four kinds of *ad hoc* work are established: research into the meaning of a term; finding the term which corresponds to a concept; research into correct usage of a term; and finding term equivalents from another language. The research is broken down into three stages: preparation for research (analysis of the request and evaluation of available resources), research (fact-finding, listing of keywords, analysis of the term unit, definition and contexts, establishment of an equivalent, determining usage, and term creation) and conclusion of the research (synthesis of the research,

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<sup>21</sup> ‘Without anyone really knowing why or how, terminology research on isolated terminology problems was devalued in the eyes of terminologists themselves. It was considered, and not without a touch of scorn, as “firefighting”, something that hindered the application of long-term solutions achieved through detailed thematic research.’

communication of results, registration of results). Cabré (1998, 153) talks about three stages: query, search and response.

In sum, there is a considerable amount of literature about terminology research, particularly terminology projects and sub-areas like term extraction or creation. There is less material about *ad hoc* term research or creation.

## **Standardisation**

There is a general agreement on the *meaning* of term standardisation: a group activity, in which specialists are involved, and where consensus is reached on terminology. This can be done by an authoritative body, if such a body exists. Respect for the users means that sociolinguistic evidence cannot be ignored. There is some discussion of standardisation *methods*. The *function or status* of the standardised terminology is not clear in the literature, however.

### *Meaning of standardisation*

Standardisation is understood to be equivalent to the French term *normalisation*. ISO 15188:2001 defines terminology standardisation as the ‘establishment of terminology standards or of terminology sections in technical standards, and their approval by an authoritative body’ (2); Cabré (1998, 195) talks about approval by a ‘representative commission’; this is also the approach taken by Auger (1978, 48). In other sources it is understood as the selection of particular terms as the official or obligatory choice in certain defined situations (‘to direct usage in the various specialized sectors... to indicate preferred, admitted and deprecated terms’: ISO/TR 22134:2007, 7). (Standardisation could also be understood to mean the standardisation of the principles and methods of terminology as a practical endeavour, as carried out by ISO TC37.)

Drame (2009), referring to the ISO approach, lists the most prominent features of standardisation as follows:

- documented agreements
- consensus-driven
- inclusive (all stakeholders)
- promoting conformity for enhanced interoperability and exchange
- generally voluntary (unless incorporated into national legislation). (93)

Suonuuti (2001, 32), discusses harmonisation of concepts and terms rather than standardisation, of which harmonisation is ‘an integral part’.



Cabré argues that standardisation is a 'a group activity that must be achieved by consensus, not by imposition' (1998, 196), with involvement from specialists:

The methodology employed in neological activity must be rigorous and the established criteria for research, decision-making and organization should be adhered to. For this to succeed, specialists who can guide the proposals for neologisms should be involved so that the new creations do not contradict the rules followed by the other units in the special subject field in which it will be used. It cannot be presupposed that forms already in use cannot be uprooted, if considered unacceptable. Above all, a term cannot be standardized without bearing in mind the system of concepts and designations it forms a part of. (Cabré 1998, 208-9)

Poor standardisation can lead to problems, such as those explored by Baxter (2004). Baxter's point that standardisation is a joint effort is reinforced by studies showing that all standardisation needs consensus within the terminology group or committee and then among the intended users:

Il y a lieu de s'interroger sur le fondement des hypothèses sur lesquelles s'appuie la stratégie d'officialisation et de se demander dans quelle mesure on peut contraindre l'acte de rédaction<sup>22</sup>. (Martin 1998 191)

Guespin, similarly, points to the dangers of term standardisers who don't take account of users and prefer great leaps to reasonable proposals: '[au] jardinage simplement raisonnable, le normalisateur terminologique préfère des plus grandes audaces: il plante volontiers des baobabs au Kamtchatka'<sup>23</sup> (Guespin 1993, 213).

Similarly, Kocourek argues that standardisation must take account of language usage, so that recommendations are reasonable:

The essence of these delicate prescriptive activities [does not consist] in arbitrary decisions imposed on the public, but in observation, description and evaluation of terms, resulting in reasonable recommendations that stand a chance of obtaining the consensus of prospective users. (Kocourek 1981, 225, quoted in Kocourek 1991, 223)

Cabré echoes this statement:

Only when the complex reality of languages is fully appreciated and when there is a clear attitude of respect toward speech communities does the intervention acquire a certain amount of legitimacy. (Cabré 1998, 200)

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<sup>22</sup> 'It is worth questioning the foundations of the hypotheses on which the officialisation strategy rests and asking to what extent the act of editing can be controlled.'

<sup>23</sup> 'rather than simple, reasonable gardening, the terminological standardiser prefers bolder measures: he happily plants baobabs in Kamtchatka.'

### *Methods of standardisation*

In discussions of standardisation methods, there are recommendations about which terms are best for standardisation, which are not language-specific. Standardisation of terms follows different rules for different languages, of course, so it is not discussed in detail here, but there are also sociolinguistic, psycholinguistic and formal linguistic criteria to be considered (Cabr  1998, 200).

Auger makes a series of observations: simple terms are more easily implanted; generic names are often used; given the choice between two standardised terms, the one with a vernacular origin or the commercial name is usually preferred. He highlights the need to suggest a choice of terms that reflects the plurality of usages (Auger 1999, 123). Bowman *et al.* (1997) also provide instructions for term management, principally definition writing.

### *Function and status of standardisation*

There seems to be broad agreement about the need for consensus in term standardisation, but the concept clearly raises questions of power and authority. Who performs standardisation? Who should, and is standardisation always needed? There are two basic attitudes in the literature to the meaning of standardisation, a prescriptive attitude and a less forceful attitude of recommending the use of a form (Cabr  1998, 211). This depends on the social, political and linguistic context, as well as the particular subject field. There is a debate in socioterminology, in particular, on this issue, where 'terminology is a linguistic, unstandardizable, and uncategorizable phenomenon' (Drame 2009, 92). There is the suggestion, as seen in Chapter 1, that the aims of prescriptive language planning and those of terminology, even socioterminology, cannot be completely reconciled:

Do prescriptive objectives constitute an obstacle to a sound terminology? The main answer is no. Nevertheless, there is a little "yes", in the same way as general language planning in most communities also constantly runs the risk of neglecting sociolinguistic evidence. (Myking 2001, 63)

In his survey of French computer specialists, Gouadec found that there was a largely positive attitude towards intervention in terminology matters, although a coercive attitude was rejected:

Notre groupe d'informateurs... confirme... que l'intervention des pouvoirs publics est g n ralement «souhaitable, mais avec r serves». Ils affirment que l'action des pouvoirs publics ne doit pas  tre coercitive ou r pressive mais qu'elle doit, au contraire,  tre incitative et rev tir la forme d'une mise en oeuvre d'une politique nationale de francisation de l'informatique, de la cr ation d'un r seau national de francisation de la terminologie, de la mise en place d'une banque de donn es nationale des termes de l'informatique, d'une aide   la diffusion des travaux des groupes de

francisation d'entreprises, et des campagnes de sensibilisation diverses.<sup>24</sup> (Gouadec 1994, 146)

Based on the literature alone, it is unclear whether standardisation in the sense of language prescription is necessary or useful. For Auger, there are different meanings, which could be legislative or broader, such as the way a terminology system regulates itself:

(...) il ne faut pas entendre ici la normalisation terminologique avec le sens restrictif que le terme possède dans la loi 10114 et dans les pouvoirs qui sont donnés à l'Office en cette matière mais avec le sens plus global de processus par lequel un système terminologique donné s'auto-régularise au fur et à mesure que le consensus du milieu concerné est en train de s'effectuer.<sup>25</sup> (Auger 1986: 50).

Standardisation raises questions of power and authority and representativeness, and these are different in each linguistic and legislative situation (not to mention in other terminology situations which are not discussed here, such as within companies). Whether standardisation can or should be enforced is another debate:

Terminology use can only in very few circumstances, which require strict regulation, be prescribed or forced upon the users. And even in such circumstances (e.g. in risk communication) the users first have to agree that (and why) this is necessary, and measures must be taken to prevent nonadherence. Consensus furthermore has to be frequently re-negotiated. (Drame 2009, 63)

Vila i Moreno *et al.* proposes a different distinction between two aspects of standardisation, *in vitro* and *in vivo*, both of which are needed for terminology standardisation to take place:

la *normalització terminològica in vitro*, és a dir, el procés de codificació que condueix a la selecció d'una denominació enfront d'altres, i el seu resultat; i la *normalització terminològica in vivo*, és a dir, el procés i el resultat d'haver-se estandarditzat l'ús de les variants denominatives en favor d'una de sola en les pràctiques lingüístiques reals. En aquestes condicions, hom podria reconceptualitzar fàcilment el terme *normalització terminològica* per a referir-se al cicle complet que duria des de la selecció fins a la implantació, la qual cosa l'aproximaria substancialment a la visió global que té la noció en sociolingüística.<sup>26</sup> (Vila i Moreno *et al.* 2007, 249)

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<sup>24</sup> 'Our group of respondents... confirms... that the intervention of the State authorities is generally "desirable, but with reservations". They insist that the action of State authorities must not be coercive or repressive but should, on the contrary, be encouraging and take the form of the implementation of a national policy of *francisation* of computing, the creation of a national network for *francisation* of terminology, the establishment of a national database of computing terms, assistance for the diffusion of the work of *francisation* groups in companies, and various awareness-raising campaigns.'

<sup>25</sup> 'We should not understand terminological standardisation here in the restrictive sense given to the term in the law 10114 and in the powers given to the Office in this matter but with a more general meaning: the process by which a given terminology system regulates itself while consensus in the area concerned is being achieved.'

<sup>26</sup> '*In vitro terminology standardisation*, that is to say, the process of codification which leads to the selection of one denomination instead of others, and its result; and *in vivo terminology standardisation*,

Similarly, Samuel (2005) points out that in standardisation, there are two kinds of agents, 'deux catégories d'agents: celui des experts qui disent la norme *ex cathedra*, et celui des usagers qui font la norme au quotidien'<sup>27</sup> (Samuel 2005, 513).

In sum, the major question about standardisation not answered in the literature is that of its function or status.

### **Dissemination**

'Dissemination' refers to the way in which terms are made available to their intended users. Effective dissemination influences different levels of use: media, education and official public use, and colloquial and lower spoken registers. How this is done depends, of course, on who the intended users are. Dissemination covers such aspects as publication (on paper or electronically), distribution and marketing.

#### *Dissemination of terms and term resources*

Dictionaries can take different formats, whether paper-based or electronic, and the structure of the resources is also extremely varied. An awareness of users, of their needs and of the way in which terms reach them, is equally important.

In Indonesian terminological products after 1975, the dominant model was the 'dictionnaire monolingue bilingualisé' which served to affirm the autonomy of Indonesian from English. Indonesian entries had an English gloss and there was an English index to find the Indonesian. But Indonesian terminology was still fundamentally translation-based (Samuel 2005, 511).

Dissemination needs to take account of how people use terminology websites, as the study of users of the *Grand dictionnaire terminologique* (Moffet 2004) shows. The interaction between user and dictionary or term resource is an area which is being studied (for example, see Boleslav Měchura 2008). Poor provision of resources can lead to frustration and low take-up, as in the South African case:

The Internet is a slow-growing field in South Africa, especially in languages other than English... Despite being technically possible, there is no chance to access terminology products of any public body online. Instead, those who want information about terms

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that is to say, the process and the result of having standardised the use of the denominative variants in favour of a single one in real linguistic practices. In these conditions, one could easily reconceptualise the term *terminology standardisation* to refer to the complete cycle which would go from selection to implantation, which would bring it close to the global vision which the notion has in sociolinguistics.'

<sup>27</sup> 'two categories of agents: that of the experts who pronounce the norm *ex cathedra*, and that of the users who create the norm on a daily basis.'

and definitions have to rely on “flat files”, such as printable glossaries in Microsoft Word format (.doc), or they have to phone staff members during office hours. To improve informal dissemination of the terminology or queries from journalists, professionals etc. this is absolutely inadequate and largely misses the objective of the organizations being clearing houses for terminology. (Drame 2009, 271)

Similarly, issues with Slovene term provision include lack of availability and heterogeneous methods:

In Slovenia, numerous terminology-related activities are underway, yielding term glossaries and databases from various domains, however they are methodologically heterogeneous and often unavailable for public use. (Gorjanc *et al.* 2008, 971)

Bauer *et al.* emphasises the importance of online terminology resources, particularly for lesser-resourced languages. This is because of their lower costs, ready availability, ease of updating, and the ability to develop other terminology resources as a result:

Traditionally the focus has been on printed dictionaries but in particular within the realm of lesser-resourced languages, there has been a strong shift to online and mobile resources as they reduce production costs, are immediately available to a large number of people and can be updated readily... The shift to digital databases, such as lexical databases and termbases, also enables the development of advanced terminology resources such as TMs, proofing tools, assistive technologies, etc (Bauer *et al.* 2009, 17)

It was found that for Scottish Gaelic, a single online resource was vital, because ‘it was repeatedly stated that the current setup where sources, especially of technical terminology, are spread across more than a dozen different locations is not acceptable’ (Bauer *et al.* 2009, 30). Such a resource should, it was felt, be close to general language resources, containing ‘both technical and non-technical terminology, including place-names, abbreviations, names of official institutions, etc’ (Bauer *et al.* 2009, 31) as well as grammatical information, examples of use, and pronunciation guides or sound.

It is acknowledged that dictionaries and term lists only have indirect influence in term dissemination – ‘The vehicles for dissemination are the documents, the lessons, the radio and television programmes which include the terms; it is only then that they gain independent life in the language’ (Prys 2007, 8); Kummer (1983) also stresses the importance of informal means of dissemination. Auger objects to the use of a ‘static’ model of term provision: dictionaries aren’t read and will not change individuals’ language habits (Auger 1986, 49). Onyango (2005) highlights the importance of planning for these informal means of dissemination. He evaluates the use in Kenya of radio programmes about terminology as a means of development and diffusion, and finds that:

the objective of this terminology effort has up to date remained obscure. Of course whoever listened and absorbed the term benefited generally in terms of enhanced communication but the question of the specific objective, i.e. whether the term(s) was to reach specific Kenyans or as many Kenyans as possible within a specific time frame was not seriously put in place (Onyango 2005, 228).

Other problems with radio as a method of terminology development were the time the programme is aired (there is no perfect time), the fact that members of the public were not given any input into the debate, and the lack of a concept structure or 'conscious scheme of domains'. Drame (2009) suggests alternative approaches to dissemination such as theatre and entertainment-education. So a discussion of dissemination should look at how the term planning organisation ensures that its terms are made available to the target users in other ways as well as dictionary publication. Of course there have been enormous changes here as a result of computing and fast, widespread Internet access, at least in developed countries.

There is a need, in disseminating term resources, to reach a critical mass in users:

'After reaching a critical mass of adopters, any innovation, like the introduction of new terms, the consultation and contribution of databases or relevant forums (electronical or otherwise) becomes self-sustaining. Earlier and later users re-inforce themselves mutually in their decision to continue, abandon or take up this particular innovation.' (Drame 2009, 126)

### *Marketing*

Little is written about the marketing of terminology or terminology resources. There seems to be a complete gap in the literature, apart from the fact that Auger (1986) emphasises the importance of social and linguistic 'marketing' in order to effect change. It is necessary, he says, to make people aware of the advantages of using standardised terminology, and members of the target group should therefore be involved from the beginning of the project. There can be a problem with the media, however – mass media tend not to regard terminology as newsworthy unless it is embedded in a story related to the audience (Drame 2009,127).

In ISO 29383:2010 (12) awareness-raising about the terminology policy itself is mentioned. This can be done through the education system, the media and online through the creation of a website.

There is, then, some little discussion in the literature of the elements of dissemination: the need to put terms in use, the way term resources are used, and ways to present term information. There is very little discussion of marketing or awareness-raising work.

## Implantation

The implantation of suggested or standardised terms among users is of course one of the most essential criteria for the success of a term planning organisation – and perhaps the one over which it has least control. There is recognition of this in the literature for at least the last thirty years:

En terminologie, il ne suffit pas de créer un terme nouveau pour répondre au besoin que l'on a dépisté. Il faut que ce terme pénètre dans l'usage, qu'il soit reçu par l'ensemble des spécialistes d'une discipline afin de faciliter l'intercompréhension et, surtout, que ces experts l'utilisent dans leurs moyens habituels d'expression.<sup>28</sup> (Auger and Rousseau 1978, 59)

It is recognised as important but also difficult:

L'implantation terminologique constitue la pièce maîtresse de l'aménagement terminologique, elle comprend des techniques d'intervention permettant le difficile passage de la connaissance passive d'une terminologie à son implantation dans l'usage linguistique quotidien d'un groupe-cible.<sup>29</sup> (Auger 1986, 51)

Or, from another Canadian source:

Experience acquired in standardization committees both abroad and at home has shown that it is often pointless to try to impose standards unilaterally if the intended users reject them. The active participation of the target audience's representatives is needed, because no consensus on terminological decisions can be reached without prior discussion and exchange of views. (Pavel and Nolet 2001, 97-98)

Dissemination and implantation are of course very closely related, with the methods of dissemination having a huge effect on how many and amongst which groups terms are implanted. In many ways the debate is the same one, but implantation is thought to be influenced by other factors as well as dissemination, including involvement of the target audience's representatives in decision-making, mentioned above.

Despite the recognised importance of term implantation (implantation studies are seen by TERMCAT, for example, as a qualitative measure of the term planning process: Fontova 2007), very few authors have addressed it in depth. Quirion (Quirion 2003b) contains a detailed literature review of the factors thought to affect implantation, in three categories:

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<sup>28</sup> 'In terminology, it is not enough to create a new term to respond to a need which has been discovered. The term must enter into use, it has to be accepted by the community of specialists of a discipline in order to facilitate intercomprehension and, more than anything, these experts have to use it as their usual means of expression.'

<sup>29</sup> 'Implantation is the keystone in terminological management. It includes intervention techniques that permit the difficult transition from passive knowledge of a terminology to its implantation in the everyday linguistic use of a target group.'

terminological factors (the intrinsic characteristics of the term), socioterminological factors (linguistic attitude, role of the speaker, resistance to change, etc.), and procedural factors (the conditions in which the descriptive process was carried out, such as method of compilation, period of time, inclusion of terminology on reference material). In his view, the literature has only very brief explanations of these variables: 'The variables are sometimes simply mentioned without any further discussion; only in a few rare cases is there a brief one- or two-line explanation to be found' (Quirion and Lanthier 2006, 111). Fontova, in her discussion of implantation, lists factors affecting implantation:

le retentissement des moyens de diffusion généraux, la promotion des mécanismes de diffusion puissants et prestigieux, la persévérance dans le cas de certaines propositions qui, parfois, bien que justifiées, ne sont pas favorablement accueillies au début, les actions de formation et, surtout, le temps.<sup>30</sup> (Fontova 2007, 4)

Quirion (Quirion 2003b and Quirion and Lanthier 2006) studied the effect of four terminological factors on term acceptance: conciseness, absence of competing terms, derivative form capability and compliance with the rules of the language, and found that they do in fact all influence term implantation. Gouadec (1994, 145) found that the factors helping the implantation of computing terms in France were transparency, parallelism of the forms with the English, and publicity. Implantation was hindered by low levels of use of the concepts, competition from English, and 'exotic' designations. The four major factors in users' decisions to use the English computing term were the direct implantation of the English term when it first appeared; the 'communication qualities' attributed to English; the prestige of the English terms; and the lack of counter-measures, since the French equivalent appeared too late. Despite this, most of his respondents thought that the use of French terms was important.

Martin (1998) came to the conclusion that very little official terminology had been implanted in official texts, and that this terminology was not propagated from one type of text to another: 'le processus de diffusion et de propagation des officialismes dans les textes ne se produit pas de façon mécaniste comme on le laisse parfois entendre'<sup>31</sup> (Martin 1998, 188). He concludes that the editing can only be controlled to a limited extent (Martin 1998, 191), and warns of the danger of too mechanistic a view of language: writers are also speakers, and are thinking of many more things than mere communication (Martin 1998, 199). One of the

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<sup>30</sup> 'The effect of the overall means of diffusion, the promotion of powerful and prestigious mechanisms of diffusion, perseverance in the case of certain suggestions which, sometimes, although well-founded, are not favourably accepted at the start, training activities, and, more than anything, time.'

<sup>31</sup> 'The diffusion and propagation process for official terms in texts does not advance in a mechanical fashion, as is sometimes suggested.'



problems highlighted is that of diffusion of terminology; for example, a dictionary of education had been produced and distributed, but was largely ignored (Martin 1998, 195).

Rodríguez Río (2003b), in his survey, asks what could be done to improve the use of terms. Little emphasis was placed by respondents on legislative measures. Many thought the use of the language in science and business, or in the media, should be encouraged. He found an ignorance of the potential of computing and telecommunications for terminology. In another context (the development of Indonesian), there is a striking lack of imagination in tackling the problem of implantation, with the only response being a demand for additional power and authority, rather than a reflection on work methods or terms offered:

Il est frappant que, lorsque les dirigeants du P3B envisagent les moyens d'améliorer la diffusion et l'implantation de leurs terminologies, ils exigent toujours plus de pouvoir et d'autorité, ne sachant se départir d'une attitude coercitive et sans penser à remettre en cause leurs méthodes de travail ni leurs créations.<sup>32</sup> (Samuel 2005, 515)

While it cannot still be said, then, that 'cette fonction demeure généralement oubliée lorsqu'on parle d'aménagement terminologique'<sup>33</sup> (Auger 1986, 52), and while the importance of implantation studies seems to be recognised, there is still no agreement on the factors influencing term implantation, or of the best way of measuring them. They may include the users' role in term creation, socioterminological factors, dissemination, training, time, terminological factors and publicity. The 'official' status of a term may have very little influence, however. Terminography is still very much a developing area.

## **Evaluation**

There are many aspects of the term planning process which can be evaluated, such as the production mechanism, the terms themselves, and the dissemination and implantation of the terms. Maurais (1993), for example, identifies two kinds of evaluation – evaluation of terminology works and current needs, and evaluation of the implementation of already standardised terms. The organisation itself can of course also be evaluated.

Evaluation is very important as a means of measuring progress and planning improvements: the absence of evaluation in the development of Kiswahili terminology in Kenya, for example, is 'the major handicap in the attempts to develop terminology' (Onyango 2005, 231). The question is whether there is a consensus on what to evaluate, when and how.

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<sup>32</sup> 'It is striking that, when the directors of P3B consider ways of improving the dissemination and implantation of their terms, they always demand more power and authority, unable to move away from a coercive attitude and without thinking of re-evaluating their work methods or their creations.'

<sup>33</sup> 'this function is still generally forgotten when one speaks of terminology management.'

In evaluating term resources, Smith (1994) and others (Samuel 1996) point out, about Malay, that the numbers of terms or dictionaries produced cannot be used as the sole measure of successful term planning. Quality also means the time spent and the soundness of the methods used, as emphasised by Hübschmannová and Neustupný (2004) who, in a discussion of North-Central Romani, object to the emphasis on term creation rather than use:

The traditional approach to the development of language as employed outside the daily-life domain is through the concept of 'terminology'. However, terminology does not provide a satisfactory framework. It implies (1) concentration on terms, (2) concentration on inventories rather than processes, and (3) a one-sided regard to the generation rather than the management process. (Hübschmannová and Neustupný 2004, 84)

Thus several methods of evaluation are needed, including evaluation of the organisation as a whole and of particular terminology resources and of particular terms. Some of these types of evaluation are discussed below.

#### *Evaluation of terms*

The most basic type of evaluation is the evaluation of individual terms. This can be on the basis of terminological soundness, derivation and suitability, or of how well accepted the term is compared to alternative terms from that language or borrowed terms – that is, evaluation of implantation.

Antia cites a study of Somali lexical modernisation strategies such as semantic shift or transfer, borrowing, derivation and compounding (Caney 1984, discussed in Antia 2000, 39). Other studies of linguistic approaches, particularly of non-European languages, express concern for the loss of scientific meaning and concept structures. For example Kummer (1983, discussed in Antia 2000, 41) finds that the Kiswahili term for 'carbohydrate' translates as 'thick dough', which ignores its chemical composition, while 'chlorophyll' is translated as 'leaf maker', which is inaccurate. Huq (1986) is a similar study of the terms used in Bangla, contrasting the folk-etymological terminologies of the 'half-educated masses of the country' (Huq 1986, 229) with the term creation or adaptation of those involved with technology. It concludes with a list of linguistic recommendations for the creation of new terms. Onyango (2003, 98-101) finds similar problems of imprecision in Kiswahili parliamentary terms.

#### *Evaluation of implantation*

The evaluation of implantation is clearly quite different from the evaluation of terms themselves. Questions to be asked include the following:

Est-ce que les termes adoptés “passent” auprès des utilisateurs ? Quel est le sentiment des personnes visées par le changement ? Le standard terminologique adopté correspond-il aux attentes des futurs utilisateurs ? (Auger 1986, 52).<sup>34</sup>

Research into implantation is discussed in the Implantation section above.

#### *Evaluation of term products and resources*

The evaluation of *terminology products* or resources has received some attention. As Fähndrich points out, customer loyalty depends more on the quality of the product than on adherence to deadlines and budgets (Fähndrich 2005, 251). Criteria for assessment are set out by the Eurotermbank report (2005), with two steps of ‘expertizing’ and approbation. Fähndrich (2005, 251-2) lists some objective criteria for the assessment of a terminology resource: compliance with terminological standards, formal and methodological consistency, accuracy of information, correct allocations of terms and equivalents to concepts, correct spelling and grammar. There are also subjective criteria:

In a service industry, quality is usually not an absolute variable, but a relative and subjective factor and thus difficult to measure. Quality is expressed first and foremost in terms of the customer’s satisfaction with the service provided or the product delivered. Consequently, it is mainly a measure of whether the customer’s expectations were met or exceeded at a reasonable cost. (Fähndrich 2005, 252)

Another way of measuring user satisfaction is to carry out surveys and discussions with users, such as that reported by Moffet (2004). This survey aimed to find out who users of the *Grand dictionnaire terminologique* were, and what their experiences and expectations were of using the database. One of the points arising from the research was that both the database contents and the interface itself were important to users.

ISO 15188:2001 calls for the review of terminology products, to be carried out by terminologists, subject-field experts and users, and of terminology standardisation projects. The ISO standard 23185:2009, which follows on from ISO 15188:2001, lists the criteria to use for assessing terminology resources. It describes four components of a model for assessment, with usability attributes relating to: terminological data, data input, data output and data management. Measurable and non-measurable usability attributes such as linguistic correctness, maintenance of data, and readability are discussed. While this might be a good measure of different terminology resources (especially of those prepared following ISO

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<sup>34</sup> ‘Do the adopted terms ‘pass’ for the users? What do the people targeted by the change feel? Does the terminology standard adopted correspond to the expectations of the future users?’

15188:2001), it is not intended as a measure of the term planning process or of the terms themselves.

Lists of typical user scenarios are given (23185:2009, 3). User scenarios are important, as terminology resources have to be assessed in conjunction with an analysis of their function (purpose of creation, management and potential use). The most prominent functions of terminology data according to ISO 23185:2009 are representation of knowledge at concept level, ordering of knowledge, access to other kinds of content, means or elements of communication and knowledge transfer. This is a different ordering of priorities compared to that of a language planning approach. There, priorities might be means of communication and knowledge transfer, language development, or even economic development (see, for example, Antia 2008).

ISO 29383:2010 lists success factors for terminology policies, which could also be used as criteria for evaluation. Policies should be:

- evidence-based
- visionary (long-term view)
- based on standards and quality management
- support-driven (top-down); participatory (bottom-up)
- sustainable
- consistent and forceful
- participatory and empowering
- transparent and informed
- geared towards capacity building. (ISO 29383:2010, 5)

One evaluation of *term production methods*, Baxter's critique of a Galician project (Baxter 2004), has been discussed above; Antia (2000) contains discussions of several African-language projects. Antia (Chapter 3) evaluates a Nigerian quadrilingual glossary of legislative terms to try to find out if the glossary can support translation, as an instance of communicating, knowledge acquisition and transfer. Antia gave his subjects a piece of legal text to translate from English into Hausa using the glossary, and asked them to verbalise their thoughts. The aim was to find out if the glossary helped to identify and correctly render multi-unit terms, and what kinds of processing the glossary solutions underwent (Antia 2000, 53). There was often, he discovered, a conflict between the subjects' expectations and what they found in the glossary. Proposed

solutions were not adequately justified to the users, and this might have been averted by the use of concept descriptions or definitions.

Fontova (2007) discusses Catalan terminology work in light of the ISO 9000 family of standards for quality management, and the work done by TERMCAT to obtain certification. In particular, she discusses the importance of documenting how standardisation is carried out and the need for quantifiable measurements (such as the number of terms standardised annually, the number of sources and specialists consulted and the number of hours spent by a terminologist per term). The use of the terms by the 'client' – the specialist or, more broadly, the entire linguistic system – is also a key criterion. For a more qualitative approach to evaluation, TERMCAT relies on a policy of two-way communication with specialist groups, the creation of exchange platforms for special interest groups such as the media, and implantation studies.

There are, in the literature, in-depth works on the evaluation of terms, of term use (implantation), of terminology resources such as dictionaries or databases, of terminology projects, and of working methods. One of the challenges in looking at evaluation is the number of things which can be evaluated, and how to separate them. No literature was found dealing with the evaluation of term planning organisations themselves.

## **Training**

Cabré (1998, 219) lists two types of professionals involved in terminology who might need training, and this distinction is also found in Picht and Partal (1997). The first group is subject field specialists, and the translators and interpreters who assist them, for whom terminology is a communication tool. The second is the terminologists, linguists, lexicographers, information scientists and language planners for whom terminology is the object of their work. The training of terminologists and of non-terminologists is discussed below.

### *Training of terminologists*

The importance of training is recognised, for example, by Bauer *et al.* (2009) and by Taljard (2008), who identifies it as one of three main problems faced by the members of the language body in South Africa. There are several aspects to the training of terminologists, including university courses and on-the-job training, as well as participation in the international development of the discipline. Auger talks about:

...La nécessité permanente de la formation de praticiens de la terminologie ou de terminologues par le biais d'un enseignement universitaire approprié et sans cesse

tenu à jour. De plus, le maintien de standards élevés de recherche exige des terminologues qu'ils participent activement au développement et au rayonnement de la science terminologique sur le plan international.<sup>35</sup> (Auger 1986, 49)

Certain skills are needed for terminology work; according to one source, these are analytical capacity, ability to synthesise and to express, objectivity, decision-making and pragmatism – as well as an in-depth knowledge of the linguistic system, of the usual word formation principles and of the methodological principles of terminology work (TERMCAT 2006a, 32).

The RaDT (Rat für Deutschsprachige Terminologie) *Professional Profile for Terminologists* (RaDT 2004) is a concise description of what a terminologist does and the prerequisites for a terminologist, a 'specialist in compiling, describing, maintaining and propagation of monolingual and multilingual specialised vocabularies' (1). It is noted that terminology is an interdisciplinary activity. The terminologist's tasks are categorised into four groups: compiling terminologies (documentation searches, concept systems, drawing up definitions, quality management, and so on); terminology planning activities (drawing up and implementing a terminology-related language policy, standardisation, creation of new terms, and other activities); making terminology collections available (cooperation in planning and design of terminology databases, specifying working methods and routines, evaluation of software products); and advisory and training activities (advising beneficiaries of terminology databases, advisory services, training and mentoring trainees and learners, drawing up terminology courses of study, development of teaching and study materials, and supporting terminology theses and dissertations). Considerable emphasis is placed on the planning, management and training aspects of the terminologist's work.

As well as a list of linguistic and research and teaching competencies, and some specialised skills (knowledge of the principles of terminology and of terminology working methods, mastery of terminology tools, knowledge of information technology and documentation), most of the prerequisites listed in RaDT (2004) are 'general requirements'. They include planning and organisational competence, project management competence, interdisciplinary and intercultural thinking, ability to understand specialised sectors, creativity, negotiation skills, communicative competence, problem-solving abilities and social competence.

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<sup>35</sup> 'The permanent need for training of terminology practitioners or of terminologists by means of appropriate and constantly updated university teaching. Further, the maintenance of high standards of research requires of terminologists that they should actively participate in the development and spread of terminology science on an international level.'

RaDT (2004) does not indicate how terminologists could be trained to acquire these skills, but it is clear that most of the prerequisites listed would not be taught on a specific course. It is also implied that one of a terminologist's tasks is to train newcomers to the field, either trainees and staff within the organisation or students.

Cabré (Cabré 1998) devotes several pages to the training of terminologists. This cannot, she says, be separated from the social context in which future terminologists will have to work. Therefore the specific needs of a language and society, and the work which terminologists will have to do, must be considered. Both theory and practice have to be taught. Theoretical, methodical and technical aspects must be covered, as well as practical experience in a professional setting. Training must be directed at the work participants are likely to be involved in, and provide for specialisation. It can be provided in a variety of formats – extensive or intensive courses, seminars, training periods at terminology centres, lecture series, etc. The training course should cover 'elements from linguistics, particularly lexicology and lexical semantics, logic and classification theory, special subject fields, documentation, sociolinguistics, pragmatics and computing in addition to all the knowledge a specific social situation may require' (Cabré 1998, 222). Fundamentally, she concludes, terminologists need:

a broad-based, solid background that allows them to reflect on their work and to act on their own, as well as specific training so that they can play an active role in the numerous research areas that all languages have to deal with. (Cabré 1998, 223)

An example of a training manual, the *Handbook of Terminology* (Pavel and Nolet 2002) was published (in English – it is also available in French and Spanish) in 2002 by the Canadian Translation Bureau's Terminology and Standardization Directorate. Its stated aim is to share acquired knowledge with 'other organizations, including private companies and the Translation Bureau's various collaborators, interested in adopting a more structured approach to their terminology work' (Pavel and Nolet 2001, ix).

### *Training of non-terminologists*

As well as the training of terminologists themselves, there may be a need to provide training in terminology to others, such as translators, teachers of special languages, researchers, language planners, documentation specialists or subject field specialists (Picht and Partal 1997).

Some terminology databases have training features (such as Termium's Pavel Terminology Tutorial<sup>36</sup>, or the terminology skills course developed by Fiontar for [www.focal.ie](http://www.focal.ie)), but there is

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<sup>36</sup> [http://www.termiumplus.gc.ca/didacticiel\\_tutorial/english/lesson1/index\\_e.html](http://www.termiumplus.gc.ca/didacticiel_tutorial/english/lesson1/index_e.html)

little literature on how such a resource might be set out, or what it should cover, although Picht and Partal (1997) set out model syllabi for traditional taught terminology training courses.

### **Modernisation/maintenance**

The terminological reality changes as time goes by and so different domains have to be constantly 'fed' with terms. Although there is agreement that it is necessary for a terminology organisation to keep up to date (see Table 1 above), there is little or nothing written about this topic, perhaps because it is not something that lends itself to prescription.

## **2.5 Evaluation of the term planning models in the literature**

The available literature on aspects of term planning was examined in this chapter. It is clear that some aspects are much more deeply researched and better described than others. It is also clear that in some cases different authors understand the aspects differently: this is particularly the case with the concept of standardisation.

Term planning studies, it has been seen, come in all shapes and sizes, and there does not seem to be an accepted approach to their conduct or reporting. Terminometry, diachrony and single case studies are among the best-represented types of term planning study, while there are fewer sociological, comparative or management-oriented studies. This lack of uniformity, compounded with the dearth of well-developed term planning guides and models, seems to support the argument that terminology is still an evolving practice rather than a discipline with established paradigms (L'Homme *et al.* 2003).

Although several models of the *steps* of terminology planning were set out in Section 2.3 – the most influential being that of Auger, which is frequently cited – there are far fewer well-developed in-depth models for these steps themselves. Certainly there is no paradigm in a Kuhnian sense. Looking at the literature, it is clear that some areas of term planning theory have been well fleshed out, and there is general agreement; other areas are the subject of debate (though there are fewer of these debates than might be expected, given how much has been written on terminology in the last fifty years); while in other areas there is not enough written to be able to clearly establish where things stand, and certainly no in-depth research. In nearly all cases, there is simply not enough material to be able to say that the literature suggests a consensus or a model, and sometimes there is not even consensus on what the topics for research are.

There is some discussion in the literature of the **preparation and planning** stage, but it is largely for terminology projects rather than for a situation or language as a whole. There are



more reports of term management than studies of how best to manage terminology. UNESCO (2005) is the major exception to this. There is a range of texts dedicated to the **research** phase, but as there are many different kinds of terminology research, this is hardly surprising. On **standardisation**, there is research on the methods of standardisation, but little on the concept of standardisation, such as if and when it should be employed; there does not seem to be agreement on what the term means, even. As for **dissemination**, there is very little written, despite the fact that it is crucial for the implantation of terms. What material is available tends to name areas where terms could or should be disseminated (the radio, for example), but does not provide any guidance. **Implantation** is the one area in which the results of in depth investigations are available, but there is still no definite conclusion or model of the factors affecting it. The broad area of **evaluation** – of terms, of term creation methods, of terminology products – is adequately served, but there is nothing on the evaluation of term planning organisations. There does not seem to be an accepted approach to **training**, particularly for non-terminologists. **Modernisation and maintenance**, although recognised as important, are not discussed at all.

There is no evidence of any real debate in the literature on the best model for term planning. Just like the lack of comparative studies of term planning, this is surprising, as a developed field of research usually has several competing models. Some of the models seen here have a different level of focus to that of the current research. Some (particularly UNESCO 2005, ISO 29383:2010 and Drame 2009) are at a more policy-making level, focusing on the decision to plan terminology and how such a policy decision can be made. This is not within the scope of this study. Other research (including Suonuuti 2001; L'Homme 2004; and Sager 1990) covers a particular aspect of term planning, often term research, in great detail.

It appears that relatively few sets of highly developed guidelines for term planning are made available publicly – those that are available are often, like Suonuuti (2001) or Bowman *et al.* (1997), extremely short. This leads to the conclusion that the situation remains much the same as it was in 1990, when Sager found that:

It is an amazing fact that national standardisation bodies regularly issue glossaries of terms in standards, but very few have firm guidelines for the selection, definition and publication of terminology. (Sager 1990, 116)

This lack of research into term management is reflected in the low number of term planning guides, both in general and for specific languages. ISO is the usual forum for standardisation, but its authority and the quality and usefulness of the standards has been questioned.

Just as there are few term planning guides, there are very few well-developed models for term planning. UNESCO provides a model which is too broad for actual use (it is aimed at decision-makers rather than terminologists), and Santos (2003) is the only model found for a particular language.

This compares unfavourably to the situation in language planning, for example, where there are several very highly-developed planning models (for a summary of these, see Antia 2000, Chapter 1). Rey criticises the current state of theory:

The current state of terminology involves incomplete and archaic theoretical bases, and, according to the areas and subject fields studied, widely divergent heuristic positions and a poorly documented historical background. (Rey 1998/1999, 124)

### **Proof/testing**

A further question is whether any of the existing recommendations have been proven. Quirion and Lanthier discuss this in relation to terminology implantation:

Several authors have expressed their opinions on this matter and enumerated, in all, dozens of factors that could have a bearing on terminology implantation. However, without a scientific measurement of terminology implantation, these factors are founded solely on supposition. (Quirion and Lanthier 2006, 108)

The same might be said of the other stages of term planning. There are many recommendations, but it is unclear whether they have been tested. Many of the works have been written by authors with direct experience of term planning work, but those experiences do not appear to have been compared.

### **Need for a model?**

If there is a significant gap in the literature where studies, models and guides for term planning for a language are concerned, does that mean that they are not needed? The evidence points to the contrary. A look at the EAFT survey (2005) shows that many organisations are loosely structured and produce few results. Pozzi (1996, 173) finds that formal work in term standardisation is not being carried out in any Spanish-speaking country. Terminometry studies consistently find very low levels of implantation of official terminology. Anecdotally, it seems that terminology organisations are often poorly funded and only loosely planned. The need for a model for terminology policies has certainly been recognised by UNESCO, although the publication produced is not a practical one but a statement of needs and aspirations intended to influence policymakers. Antia (2008) also stresses the importance of planned terminology work.

There is the question of whether the same methods are applicable to all situations. Of course they are not, and differences between developing and better-developed languages, for example, must be recognised:

De la distinction entre langue développée et langue en développement, il s'ensuit que la réalisation de projets d'aménagement terminologique ne peut s'effectuer selon des méthodologies identiques<sup>37</sup> (Auger 1986, 53).

Clearly, there are big differences between language situations: the five geopolitical regions recognised by UNESCO (Gadellii 1999, 8) each have special considerations. The level of development of the language itself – whether it is a written language with an agreed orthography and grammar, a dictionary and other resources – is one factor which affects how it is treated. Other factors include the size of the speech community, the level of institutionalisation of language and term planning, and the number and types of domains for which there is terminology. The resources available and the attitudes of those in power are also important, creating a difference between majoritised and minoritised languages (Aguilar-Amat and Santamaria 1998, 75). The model of public administration is another determining factor. The attitude of speakers themselves is another issue; in South Africa, for example, many speakers of indigenous languages do not want their children to be educated in those languages (Finlayson and Madiba 2002, 45). There is a similar problem with other African languages (Antia 2000). Languages for which there are terminology institutions and guides tend to be in developed, affluent countries. Certainly it cannot be assumed that because a language has a terminology policy or department, it will have produced guides or manuals. Quebec, Wales, Catalonia and the Nordterm countries are unusual in having relatively well-developed, freely accessible publications.

The Eurotermbank report (2005), like Auger, recognises that best practice in terminology work is not the same in every context, as each institution or organisation has different goals and objectives:

The way terminology work is arranged depends on the specific goals and activities as well as on who is involved in the management and development of the terms. The stages of terminology work differ as well: some institutions have few stages for terminology development; others include several stages into the process (Eurotermbank 2005, 12).

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<sup>37</sup> 'From the distinction between developed language and developing language, it follows that term management projects cannot be carried out using identical methodologies.'

The surprising dearth of comparative studies between countries or languages seems to indicate a lack of academic interest in the subject of term planning for languages.

It does not seem, however, that term planning organisations simply cannot be compared. Although the situations are different, the objectives are generally the same, and most of the methods are similar too. The fact is that currently every term planning organisation has to learn the same lessons and go through the same process of trial and error with regard to all the basic aspects of terminology. This is problematic as it indicates limited sharing of expertise.

Although practical terminology work is a global undertaking, because it is being done all over the world, in dozens of different countries and in many different languages, terminologists in these language communities are not aware of what is done in other language areas and countries (Budin 2001, 14-15).

This represents a serious gap in the literature.

Terminology has become more globalised 'in the sense that paradigms do not develop any more just along national lines or language community boundaries, but rather according to shared research interests and application areas' (Budin 2001, 19). This means that comparisons between cases are more relevant than ever.

### **A gap in the literature**

As well as focusing on just one case, term planning studies often examine just one aspect of term planning – whether linguistic, terminometrical, diachronic or something else. There is a serious lack of studies of term management or of term planning templates, which would give a much broader overall view. Even the term planning guides usually focus on a specific aspect of term planning, often the use of databases. Publications such as UNESCO (2005) on the other hand, tend to be too broad and non-specific, because they do not focus on any existing cases.

It appears that there is a gap in the literature for a broad-based study of term planning which would encompass sociological and management aspects, but would not be so broad as to be inapplicable to specific cases. It may be true that terminology work shows a 'one-sided regard to the generation rather than the management process' (Hübschmannová and Neustupný 2004, 84). Looking at the kinds of term planning model, there is considerable evidence for this point of view. There is far more written about how to undertake term projects than there is about how to plan terminology for a language. There may be several reasons for this. Term projects are carried out far more often and in far more circumstances (for a language, for a company, for an educational project, for a translation task, for an international organisation) than term planning for a language. It stands to reason, therefore, that there is more written about term projects. They are also much easier to define and specify than term planning for a

language. In many ways, they are like any other process management task (Fähndrich 2005). There is a recognised need for models for term projects, and a comparable need has not really been recognised for term planning for a language. A standardised model for term planning would be valuable in several ways. In many countries there is no organised terminology authority or organisation (in Spanish-speaking South America, for example: Pozzi 1996). A ready-made model of what has worked well in other cases would be useful for fledgling organisations. It would also be useful as a reference point for more established organisations, as a way to identify and justify improvements, to attract funding and to evaluate processes.

### **Implications for this thesis**

The aim of this chapter was to establish a structure of headings for a model for term planning, and to find out what the literature contributes under each of these headings. This model will be used in the case research and in Chapter 4 as a useful heuristic device for structuring information. Its value as the foundation for a term planning model will be assessed in Chapter 5. It has become clear that there is not really enough material to construct a comprehensive model; even the structure of such a model is unclear. Although it is at least reasonably clear that eight aspects of term planning can be established, there is no agreement on the important features of many of them. There is no single agreed-upon paradigm for best practice in terminology, or if there is, it is not represented in the literature. Case studies and comparisons, in particular, are scarce. This will have implications for the case studies in this research in that the basis for comparison is ill-defined.

This literature review has examined terminology studies, guides and models. This thesis fits into two of these categories, that of term planning study and of term planning model. It is a case study, differing from those previously carried out in that several cases are examined (see Chapter 3). This should mean a broad perspective and, perhaps, a more balanced debate.

## 3 Chapter 3. Research Design

### 3.1 Introduction

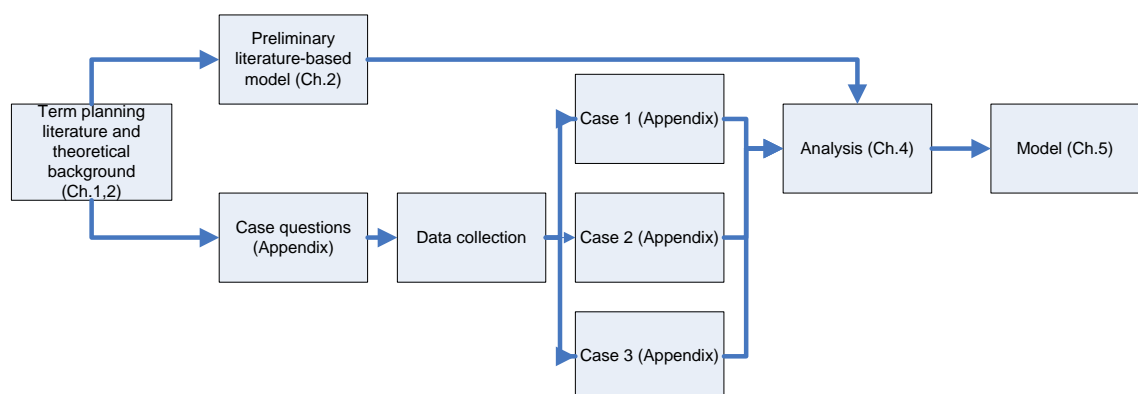
The research design focuses and bounds the collection of data, and forms the cornerstone of solid, methodologically sound case study research. This chapter sets out the research design for this thesis.

In the first part of this chapter, the epistemological approach to research is established, and a method suited to this approach and to the type of information to be gathered is described. This case study method is then discussed, and its strengths and limitations evaluated. Alternative approaches are also appraised. Other aspects of the research design for the thesis are then discussed: case choice, units of analysis, methods for data collection and analysis, and the issues of validity and reliability.

The research design for the thesis is summarised in Figure 1. The methodology may be summarised as follows:

1. Establishment of research questions, of a theoretical background, and of a literature-based proposed model for term planning.
2. Choice of research method (case study) and of cases; establishment of data collection, analysis and reporting approaches.
3. Case study research and reporting.
4. Comparison of cases and the literature model.
5. Development of a best-practice model, based on the case-literature comparison.
6. Conclusions about research questions, discussion of implications for theory, policy and practice.

**Figure 1: Thesis research design**



### 3.2 Choice of method: case study

Terminology is above all a practical rather than a theoretical discipline (UNESCO 2005, 22), and term planning particularly so. Every term planning situation is in a unique language ecology (Spolsky 2004, 6). It is logical, therefore, that most term planning decisions are made by organisations themselves, based not only on some textbook or theory but also on their own standards and criteria, created through lived experience. These individual standards and criteria (and a measured reflection on their usefulness and universality) are fundamental to the development of a best practice in terminology. By looking at two or three sets of standards and criteria in detail, and by comparing them with the textbook model for term planning, we can draw out some common ground and start to construct a new, better model of best practice. This implies a case study approach.

Because term planning is being approached from a socioterminological perspective, it follows that an epistemological approach from sociology rather than the natural sciences should be taken. A positivist, empirical approach to the type of knowledge which may be gathered would not be useful: very few absolute, testable facts can be gathered in a field which relies heavily on cultural understandings and individual decisions. Those empirically testable facts which could be collected – such as, for example, the numbers of terms published, the term use rates in particular publications, or the qualifications of those involved in term creation – are of limited interest on their own (Samuel 1996; Hübschmannová and Neustupný 2004).

An interpretive approach to knowledge is much more promising, and it is likely that more useful information may be gathered if we accept that reality, in this case at any rate, depends on the interpretations of the actors involved, and is open to interpretation by the researcher as well:

The crucial difference [between the social and the natural sciences] is that the objects of the social sciences, like the social scientists who study them, are conscious, reflexive beings who endow their actions with meaning (Benton and Craib 2001, 90).

There are many possible answers to the questions posed in this thesis, and the purpose of the researcher is to seek the most plausible and realistic answers, in co-operation with those most deeply involved.

#### **Strengths of the case study method**

The great advantage of case study research is that it allows the researcher to examine real events in great detail, and in a holistic, meaningful manner. The many factors and variables that could affect those events can be explored, and this process of exploration – if done rigorously – can lead to a high level of *conceptual validity* (George and Bennett 2004, 19). The

level of detail ensures that case studies can be both accurate and insightful. Like all qualitative research, case studies are a 'source of well-grounded, rich descriptions and explanations of processes in identifiable local contexts' (Miles and Huberman 1994, 1).

The exploratory nature of case study research – particularly the amount of detailed field and archival work involved – means that the case study is an excellent way of *fostering new hypotheses*. The researcher can identify new variables that affect a phenomenon, and has a good chance of being able to derive entirely new theories. (Statistical methods do this only by studying deviant cases, 'but in and of themselves these methods lack any clear means of actually identifying new hypotheses': George and Bennett 2004, 21.)

Case studies are particularly good for *exploring causal mechanisms* (George and Bennett 2004, 21), the way in which different factors or events affect each other. This is why the case study is often the best way to approach a 'how' or 'why' question, 'because such questions deal with operational links needing to be traced over time, rather than mere frequencies or incidence' (Yin 2003, 6).

The major strength of the case study method for this thesis is, as well as the detail and exploratory nature of the approach, that it is a good way of testing the literature model (or proposition) against reality. This leads to a new, practical view of what is actually feasible in term planning.

### **Limitations and challenges**

The case study, if carried out rigorously, is not an easy approach to research. There are challenges with each phase of the project, from research design and data collection to data analysis and report composition. It is difficult to ensure that the research is valid and reliable, and this is just as necessary in a qualitative, interpretivist study as in a quantitative one. It is particularly important in case study work that research is carefully and exhaustively planned from the beginning.

The case study method suffers from some limitations compared to other research methods. Many of these arise because no definite methodology has yet been established for case study research and analysis. As a result it is easy for the researcher to lose *rigour*:

Too many times, the case study investigator has been sloppy, has not followed systematic procedures, or has allowed equivocal evidence or biased views to influence the direction of the findings and conclusions. Such lack of rigor is less likely to be present when using the other strategies – possibly because of the existence of numerous methodological texts providing investigators with specific procedures to be



followed. In contrast, few, if any, texts... cover the case study method in similar fashion (Yin 2003, 10).

Yin (2003) and George and Bennett (2004) alike emphasise the importance of rigour, both during research design and while research is being carried out. The use of a research design and case study protocols, and attention to validity and reliability, can help.

Case study research is entirely qualitative. A common criticism of the case study method is that it provides *no basis for scientific generalisation* from the results obtained. It is true that unlike a survey, it is impossible to generalise statistically from a case study to a population or universe, as the sample would be much too small. It is possible, however, to analytically create general theoretical propositions on the basis of the case study and of theory. These can then be further tested, and, if upheld, can be considered compelling. Recommendations for such further testing are made in Chapter 6.

Since the results of case study research cannot safely be generalised to the wider population, the researcher must very carefully define and limit the scope of his or her findings to a 'well-specified population that shares the same key characteristics as the cases studied' (George and Bennett 2004, 25). Case studies do not aspire to be directly representative of diverse populations, except perhaps in contingent ways.

Case studies are good at identifying causal mechanisms and variables which affect events, but they are not very good at *quantifying* how much gradations of a particular variable affect the outcome:

Case studies are much stronger at identifying the scope conditions of theories and assessing arguments about causal necessity or sufficiency in particular cases than they are at estimating the generalized causal effects or causal weight of variables across a range of cases (George and Bennett 2004, 25).

The results of a case study, then, can provide valuable information about *whether* and *how* a particular factor matters, but not about *how much* that factor matters, or even about whether that factor is necessary. Further,

even when a plausible argument can be made that a factor is necessary to the outcome in a particular case, this does not automatically translate into a general claim for its causal role in other cases (George and Bennett 2004, 27).

This affects how the findings of a case study must be phrased. This is particularly important if the cases selected are in some way 'extreme' (such as if they are all examples of best practice):

For the scholar doing quantitative analysis the problem in analyzing such cases is, on average, that of *underestimating* the main causal effects that are under investigation. By contrast, for case-study and small-N analysts, given their tendency to discover new

explanations, the risk may also lie in *overestimating* the importance of explanations discovered in case studies of extreme observations, involving what we called complexification based on extreme cases. (Collier and Mahoney 1996, 88)

Given that the case study cannot be used as a vehicle for statistical generalisation, it is not necessary to study a large number of cases, to select the cases randomly, or to employ statistical methods in analysing the results of research. As will be seen below, cases with the same outcome (the same dependent variable) can be selected. The risk, however, is that cases might be selected whose dependent (outcome) variables *and* independent (influencing the outcome) variables vary in accordance with the researcher's theory, ignoring cases that appear to contradict that theory; this must be avoided. In this case, the use of a relatively structured method (see Section 3.3 below) for case choice lends credence to the research.

Miles and Huberman (1994, 2) note other, practical problems that case study researchers face, such as the labour-intensiveness of data collection, with the consequent risks of data overload and the huge time demands of data processing and coding. Again, the use of a tightly-structured research design – which means the researcher knows exactly which questions to ask of the case – helps to counter this problem.

### **Alternative approaches**

Because the study is of an exploratory rather than a confirmatory nature (that is, searching for success factors for term planning, and exploring the limits of the literature model), and because of the interpretivist epistemological approach being taken, it seems clear that a qualitative approach is the most suitable.

A quantitative study such as a survey would not be sensitive to the differences and nuances of different language situations; a survey taking account of all the possible variables would be impossible to design; and no experiment could be carried out in a situation over which the researcher has no control. Although the results of such a hypothetical quantitative study would have the benefit of being testable and generalisable, they would hardly be revealing.

It would be revealing, although far beyond the scope of this thesis, to test the application of the best practice model constructed by means of *action research*. If the organisations affected were willing to get involved, this would form a relevant and important piece of post-doctoral research, which could have positive consequences for terminology planning.

### **3.3 Case choice**

It is better to have more than one case, where possible. Given two or more cases, it is possible to employ *replication logic*, as one would for multiple experiments. In essence, this means

that, if the theory is correct, the findings in the cases corroborate each other. As examples of best practice in term planning, it would be expected that the cases would match the model created from the literature. Similar results (literal replication) are predicted, and if two cases differ from the literature in a particular area, this will make the results more generalisable – though of course not universally valid.

It was decided to carry out three case studies in total because, within the time and resource limits of the thesis, this was likely to provide sufficient evidence, of a robust and compelling nature, which is generalisable.

### **Issues of selection**

Case choice has to be rooted in the research objective (George and Bennett 2004, 83), which in this study is to investigate best practice in term planning. Case choice is focused on finding the best (or perceived best) cases of term planning. This is paradoxical in that cases must be selected as the 'best' before they have been examined or compared with other candidates.

It is recognised (for example, by Collier and Mahoney 1996) that case selection is a fraught issue in qualitative research, with no clear, recognised solutions such as exist for quantitative analysis (sampling methods). It is particularly important to avoid selection bias which would lead to cases with similar independent variables (variables which influence the outcome). In this instance, these independent variables are reasons why they are best practice cases. Therefore the danger here is selecting the cases because they share a particular quality – such as 'having a large budget' – which may turn out to be one of the criteria for success.

An assessment of the terminology resources produced by term planning organisations, carried out by following ISO 23185:2009, might provide a way of identifying cases of good term planning, but this would be problematic in several respects. The ISO criteria for assessment are limited to the usability attributes of terminological data, and have nothing to do with the quality of the terms themselves, or with how they are used or promoted. Therefore no scope is provided for terminology in a sociolinguistic sense. The guidelines seem best suited to assessing small individual terminology resources, such as those developed for a particular product, or for concept representation. Such an assessment would leave questions unanswered: a perfectly-developed terminology resource is of no use for language planning if it is not used or not trusted by users.

A method for selecting cases must be found which avoids selection bias, such as selecting cases with high scores on a related explanatory variable.

If investigators have a special interest in cases that have high scores on the dependent variable, another solution may be to select cases that have extreme scores on an *explanatory* variable that they suspect is strongly correlated with the dependent variable. This should yield a set of cases that has higher scores on the dependent variable, and if this explanatory variable is then incorporated into the analysis, selection bias should not occur, although other risks of bias and error may arise. (Collier and Mahoney 1996)

International recognition among experts (other terminologists) is strongly related to best practice as an explanatory variable. This is not an outcome-influencing factor: 'enjoying international recognition' is not itself a cause for success in the same way that 'having a large budget' can be; it is a result of success. To use the judgements of a group of terminologists would therefore help to avoid selection bias.

### **A survey of experts**

There is no established way to obtain the judgement of terminology experts about best practice. Surveys which have been carried out, such as EAFT (2005) or LISA (2005: this covers trends in terminology management by companies within the localisation industry), are incomplete. There is no central authority on term planning which can pronounce judgement. There is no acknowledged industry leader, and there are no measures available which would rank term planning organisations. Apart from one article in which a best case of multilingual term management was selected (Gorjanc *et al.*; Krek and Vintar 2008, which chose the EuroTermBank project), no studies were found in the literature which selected best practice cases.

To address this problem, it was decided to use a survey of subject experts in order to find the best cases of term planning. The experts were asked to respond semi-anonymously to a questionnaire, which was then analysed and a new set of questions devised to further investigate the questions raised. The experts could then review their answers in the light of others' replies. This meant that the testimony of experts could be had, and individual biases were diluted. Group judgement is more reliable and impartial than individual judgement. This technique, formalised as the Delphi method, is used particularly frequently in the discipline of nursing for gathering views from patients and practitioners (for example, Shaw and Coggin 2008) and in education (for example, Tigelaar *et al.* 2004, or Christman 2008); and querying knowledgeable people is also suggested by Yin (2003, 78).

A semi-anonymous survey approach is useful for this research because there is no consensus on what the best cases of term planning are, and there is not enough literature available to make a balanced decision. It seems, therefore, that the only people qualified to suggest best cases are the recognised experts in the field. Most of these experts are, however, in some way

affiliated with a particular term planning situation. The feedback from the first round might create new ideas and stimulate discussion. Because they were likely to know one another and to be influenced (or even offended) by each other's views, the semi-anonymity offered by a simplified Delphi-type analysis was helpful.

The result, the median of the group judgement, is of course nothing but the sum of opinions and is not statistically significant, and thus is open to challenge:

Because the number of respondents is usually small, Delphis do not (and are not intended to) produce statistically significant results; in other words, the results provided by any panel do not predict the response of a larger population or even a different Delphi panel. They represent the synthesis of opinion of the particular group, no more, no less. (Gordon and Helmer 1964, 5).

Other disadvantages of this approach are, on a practical level, the danger of a very low response rate, and the time consumed. Despite these limitations, the technique is considered a good way of making the best of a less than perfect availability of information.

### **Implementation of the survey**

Because the results of a survey of experts only represent the opinions of that particular group (and is not generalisable), the choice of respondents is very important. In this case, it was necessary to get responses from the most informed members of the international terminology community. With this in mind, a list of experts was compiled, drawing on the following sources:

- contributors to the 2005 UNESCO document, *Guidelines for Terminology Policies*
- editors and members of the board of *Terminology* journal
- authors of significant texts or studies, as found during the literature review and in *Terminology* journal.

It was intended to also contact current members of ISO TC 37/SC 1/WG4 (Principles and Methods), responsible for the creation of ISO/TR 22134:2007 (*Practical Guidelines for Socioterminology*). Despite several efforts, however, the secretary of that group was not contactable, and a list of names of members was not available.

It was decided not to contact EAFT members (unless they fit into one of the other categories, of course), because this might give too European a focus to the survey results.

These groups were considered to represent the most authoritative, well-read experts on terminology, who would be likely to have an international perspective and be aware of current developments. A list of fifty-three experts was drawn up; six were not contactable and forty-

seven emails were sent in September 2008 (see Appendix 1 for a copy of the email). Sixteen responded, and nine of these responses were not useful (declining the request due to lack of expertise; promising an answer which did not arrive; forwarding the email to a colleague who did not respond). Seven gave a useful reply.

**Table 3: Breakdown of responses to the survey of experts (first email)**

Emails sent	47
Useful response	7
Reply: declining to participate/ no expertise	9
No response	31

The responses were compiled and a synopsis and follow-up email (Appendix 1) sent to the seven respondents. Only two useful replies were received to this email. Although there are other examples in the literature of seven-person Delphi studies (see Christman 2008, for example), this is still a very small sample.

Although the number of responses is low, the seven respondents are all very well known in the field of terminology (see Table 4), and although small in number, they rank qualitatively highly in their field.

**Table 4: Survey respondents.**

Expert	Organisation	Country	Reason for inclusion	Publications/other qualifications
Chan, Nelida	Government of Ontario	Canada	UNESCO contributor	Terminologist with the Government of Ontario, active member of ISO TC37
Loubier, Christiane	Office québécois de la langue française	Canada	Author (literature review)	Loubier 1993, Martin, Loubier 1993, Loubier 2003
Quirion, Jean	Univ. du Québec en Outaouais	Canada	Author (literature review)	Quirion 2003a, Quirion 2003b, Quirion and Lanthier 2006
Wright, Sue Ellen	Kent State Univ., Institute for Applied Linguistics	USA	UNESCO contributor	Wright, Budin 1997 Active member of ISO TC37
Drame, Anja	Infoterm/Termnet	Germany	UNESCO contributor	Deputy director, Infoterm. Member of staff, TermNet
Auksoriūtė, Albina	Lithuanian Language Institute	Lithuania	UNESCO contributor	Auksoriūtė 2005 Head of the Lithuanian LKI terminology centre, member of EuroTermBank project team
Gambier, Yves	University of Turku	Finland	<i>Terminology</i> board member	Gambier 1987, Gambier 1991, Gambier 1994, Gambier 2001

## Results

The following organisations were named in response to the question: Which, in your opinion, are the two or three best term planning organisations worldwide, and why?

**Table 5: Organisations recommended in survey responses**

Number of mentions	Organisation
5	OQLF (Office québécois de la langue française) /GDT ( <i>Grand dictionnaire terminologique</i> ) [= Banque de terminologie de Québec]
4	TERMCAT
2	Terminologocentrum TNC (the Swedish centre for terminology)
2	Termium/Translation Bureau of the Terminology and Standardization Directorate of the Public Works and Government Services Canada (PWGSC)
1	Danterm
1	Dewan Bahasa Dan Pustaka (DBP), Malaysia
1	Institute of Kiswahili Research (IKR) at the University of Dar es Salaam
1	PanSALB (Pan South African Language Board)
1	Terminology Commission of the Latvian Academy of Sciences (TC of LAS)
1	Terminology Coordination Section of the National Language Services (Department of Arts and Culture of the Republic of South Africa)

A respondent to the second email pointed out that there are no national standardisation organisations (such as the Terminology Standards Committee at the German Institute for Standardization) in the list, though they exist in many countries and their technical committees are involved in terminology work (in TC37, for example).

## Analysis of responses

The analysis of the responses gives a list of perceived criteria for success. There are not enough responses to attempt any kind of statistical ranking, but some themes emerge. Table 6 gives an overview of the keywords, given as direct quotations from the responses. Several contributors acknowledged that their personal contact and familiarity – as well as their areas of research and their expertise – influenced their choices. This is to be expected, and it is worth noting that some experts contacted decided not to participate because of a lack of expertise.

Of course, both the cases selected and the reasons given have an inherent bias towards international renown and accessibility. The cases most often mentioned are likely to be those most widely-known, most written about and most presented at conferences and other international fora. They are also, consequently, likely to be well-funded and well-supported, and operating in an affluent society. They are also likely to be organisations that value international contact and collaboration. This accessibility and internationalism is then likely to

be identified by respondents as a positive trait, giving rise to a skewed set of values. This should be borne in mind when reading the following analysis.

On a political level, international cooperation, collaboration and leadership are seen as important. The fact that an organisation offers support for 'other terminologists around the world' and is 'very active and interested in global cooperation' is mentioned. Partnership and collaboration with other organisations, in an open-minded cooperative way, such as 'creating strong networks within and outside the government (media, universities, businesses, etc.)' is highly regarded, as is providing other agencies with support; one case is praised because it 'offers terminological services and supports public agencies, organisations and companies that pursue terminological work'. The promotion of the language itself and of its terminology is cause for praise in some cases. The longevity of an organisation and of its work is also specifically mentioned as a criterion for choice.

The work done by the organisations is also discussed. 'Tangible results', the 'long-term creation of viable resources' and 'high quality in general terms' are criteria for success. This is achieved through good working methods: 'mastery of the working methods helps the terminologist... to work in a constantly changing environment'. Theoretical soundness and pragmatic work practices are both needed, and work, some respondents assert, must be based on terminological theoretical principles. This is not mentioned at all by other respondents. One organisation is praised for the 'development of a uniform and scientifically grounded national terminology system harmonised with the international concept systems and theoretical principles of terminology work'. More specifically, highly accurate documentation is mentioned.

Finally, the importance of renewal, change and innovation is recognised. 'Quickly adopting the latest technologies and methods' in order to achieve goals, carrying out upgrades as needed and being 'at the forefront' are positive attributes. Training activities are also mentioned, as is responsiveness to user needs.

Dissemination of terminology resources is several times used as a criterion of success – availability of terminology 'to be able to communicate in... all specialized fields of knowledge'. Term collections 'should be accessible to the national user community'. Implantation is mentioned, too, but less frequently.

**Table 6: Key comments in survey responses**

Expert	Key comments
1	at the centre [of Quebec's francization program]



Expert	Key comments
	<p>worked in partnership with... industrial sectors</p> <p>effectively promoted the development of French terminology for many years by sponsoring conferences, maintaining a terminology database, publishing specialized glossaries, issuing infoguides on correct usage, maintaining a website and developing language policies.</p> <p>at the forefront in creating neologisms in the field of technology, especially Information Technology</p> <p>recommended terms have been adopted world-wide.</p> <p>very active in promoting the use of the... language</p> <p>creates neologisms and disseminates them through the publication of specialized glossaries and a terminology database.</p>
2	(none – only a list of suggestions given)
3	<p>has historically been a leader in the field of language planning and terminology planning: ideas, reflections, and politics</p> <p>obtains tangible results</p> <p>very active in trying to ensure that the... language gets recognition and wider usage, quickly adopting the latest technologies and methods in order to achieve its goals</p> <p>open-minded and collaborative, creating strong networks</p> <p>renewing itself constantly</p>
4	<p>long-term creation of viable resources that are widely disseminated and used in their language communities</p> <p>rigorous theoretical background applied to pragmatic practices</p> <p>serious upgrades over the years that have vastly improved upon initial efforts</p> <p>long-term collaboration and support for other terminologists around the world</p> <p>highly accurate documentation</p> <p>responsiveness to user needs</p>
5	<p>this question is indeed difficult to answer</p> <p>willingness/actions to cooperate on international scale</p> <p>longevity and success</p> <p>does a good job</p> <p>is a well known and respected agency in the region and international community</p> <p>have been active also in terminology planning for software localization</p> <p>has been in place for many decades</p> <p>well documented case</p> <p>very active and interested in global cooperation (e.g. in International Standardization, joint projects, training...).</p>
6	<p>high quality in general terms</p> <p>good knowledge of the principles of terminology</p> <p>mastery of the working methods</p> <p>work in a constantly changing environment</p> <p>terminologists are specialists in knowledge handling and communication</p> <p>deal with this in a systematic way</p> <p>availability – terminology must be available to external users</p> <p>training activities</p> <p>based on terminological theoretical principles.</p> <p>harmonization (concepts and terms)</p>
7 (dissenting opinion)	<p>je ne vois pas comment on peut rapprocher, puis comparer au niveau mondial des organismes qui ont des besoins, des attentes, des objectifs, des moyens différents.</p> <p>un "comité" terminologique d'une entreprise commerciale, industrielle (multinationale, nationale ou locale), d'une association à but non lucratif, d'une organisation scientifique/technique internationale, d'une agence de service (internationale ou pas), d'une administration (nationale, régionale – type UE) ne fonctionnera pas selon le même modèle et avec la même démarche. Je prends "comité" au sens vague (= groupe de travail permanent ou temporaire, institutionnalisé ou pas, mixte (spécialistes et terminologues) ou pas (que des terminologues), composé de professionnels ou pas, etc.)</p> <p>par ailleurs, selon que la terminologie a une visée aménagiste, traductionnelle, documentaire, disciplinaire, rédactionnelle, la planification ne sera pas identique.</p>

Expert	Key comments
	<p>enfin, les projets multinationaux et multilingues ne répondent pas sans doute aux mêmes exigences que les travaux terminographiques monolingues (ou même bilingues avec anglais L2).</p> <p>certains "lieux" sont "excellents" dans leur planification (avec/grâce à des ressources publiques) mais "faibles" dans leur dissémination (ce n'est pas leur objectif principal), tandis que d'autres, aux moyens plus limités, font un travail plus "efficace" jusqu'au bout (avec distribution, implantation).</p> <p>élaborer un modèle universel de bonne pratique revient, à mon avis, à nier les réalités (techniques, financières, culturelles, professionnelles) et surtout à nier les divers services que peut rendre le travail terminologique.</p> <p>l'ISO/TC 37 s'est déjà suffisamment engagé dans cette voie...(ou impasse?)<sup>38</sup></p>

It should be noted that one respondent questions the concept of a best practice model which would cover all term planning organisations, and objects that it is not possible to compare organisations which all have different needs, expectations, objectives and means. This respondent takes 'term planning organisation' in the broadest possible sense, however, covering public and private, monolingual and multilingual, and all possible types of terminology work – for language planning, translation, documentation, discipline, and editing. Although some organisations might have substantial public resources and do excellent term planning, they might have 'weak' distribution because that is not their objective; others might work more efficiently but on limited means. The creation of a universal best practice model, in this opinion, is a denial of the different technical, financial, cultural and professional realities in which terminology work is done, and a denial of the different services which can be provided by terminology work. This issue is addressed in Chapter 6.

There were only two responses to the second email (Appendix 1), which contained an anonymised summary of the points made and asked for feedback. Both respondents agree

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<sup>38</sup> 'I don't see how one can relate, and then compare, on a global level, organisations which have different needs, expectations, aims and means. Terminology "committees" of a commercial or industrial enterprises (multinational, national or local), nonprofit associations, scientific/technical International organizations, service agencies (international or not), governments (national, regional – EU-type) will not all work on the same model and with the same approach. I use "committee" in a vague sense (= permanent or temporary working group, institutionalised or not, mixed [specialists and terminologists] or not [only terminologists], composed of professionals or not, etc.). Moreover, depending on whether the terminology has a developmental, translational, documentary, disciplinary, or drafting aim, planning will not be identical. Finally, multinational and multilingual projects do not of course have the same requirements as monolingual (or even bilingual with English L2) terminographical work. Some "places" are "excellent" in their planning (with/thanks to public funds) but "weak" in their dissemination (this is not their main objective), while others, with more limited means, do more "efficient" work and see it through to the end (with distribution, implementation). Developing a universal model of good practice amounts, in my opinion, to denying the realities (technical, financial, cultural, professional) and particularly to denying the various services that terminology work can perform. ISO / TC 37 has gone far enough down this road... (or into this impasse?)'

that it is difficult to find a best practice model which would cover all organisations, since 'working environment, political support and interest in the work by the society differs tremendously and is also changing constantly', and since the activities of different organisations 'are based on different traditions and... have grown from different terminology schools'.

### **Case choice**

Based on the survey carried out, it appears that the two term planning organisations most highly regarded are the OQLF and TERMCAT, followed by Terminologicentrum TNC and Termium/Translation Bureau of the Terminology and Standardization Directorate of the Public Works and Government Services Canada (PWGSC).

TERMCAT were contacted and agreed to participate in the research. A study visit was organised for 27-30 April 2009.

Despite repeated emails and telephone calls over a period of several months, a response was not received from OQLF. A decision was therefore taken to contact TNC, who agreed to participate in the research. A study visit was organised for 25-29 August 2009.

The expert survey alone is not sufficiently convincing evidence on its own for case choice. As discussed above, the results of any Delphi-type study have no statistical merit and are only the sum of the opinions of one group of experts. In this case, that group was very small, and there were only two responses to the second email, so there was no real, robust discussion of the choices made.

Based on the literature, and on anecdotal evidence from academics and terminologists, however, the choice of TERMCAT and TNC as best examples of term planning seems justified. These organisations seem to work in a critical, reflective fashion, as their members are aware of and often contribute to international trends and theories, and their work is often presented at conferences (for example, TERMCAT was presented at TAMA 2008 and EURALEX 2008; full list at [www.TERMCAT.cat/index\\_mapa.htm](http://www.TERMCAT.cat/index_mapa.htm)). Their work is highly documented (for TERMCAT, see TERMCAT 2006a; for TNC, see <http://tnc.se/publikationslista.html>) and both organisations are very active internationally in terminology research. By contrast, there is very little written about some of the organisations which are only mentioned once. There is probably more to be gained from studying these internationally involved and open situations than other, more isolated ones; the nature of collaboration is likely to be superior and the quality of the research thus enhanced.

One of the three case studies is Irish, because that is the area of specific interest for this researcher. Although the Irish case may not be among the recognised best cases of term planning, its use may be justified, in part, by the fact that there is a long tradition of terminology work for Irish, and some aspects of term planning and provision for the language are well-developed. (As well as this, the fact that term planning is not carried out by one single organisation provides a contrast to the other two cases.) Terminology standardisation by the Irish Terminology Committee is cited as a model of good practice by Bauer *et al.* (2009, 16), and was also cited by one expert in the survey.<sup>39</sup>

The choice of the Irish case raised potential issues, particularly relating to conducting research in one's own organisation (Fiontar, DCU), or with closely related, sponsoring or cooperating organisations (Department of Community, Equality and Gaeltacht Affairs; Foras na Gaeilge; Translation Section, Houses of the Oireachtas). These potential issues include difficulty in adopting a neutral and detached perspective, potential discomfort among interviewees in appraising aspects of Irish terminology work in which the researcher is involved, and the problem of having to 'cross departmental, functional or hierarchical lines' (Coghlan and Brannick 2010, 115). There is also the danger, present in all three cases but more pronounced in the Irish case, where multiple organisations are involved, of interviewees using the circulation of the case report for review as an opportunity to make claims arising from the complicated power dynamics between organisations.

There are also advantages to researching a case with which one is very familiar. These include the opportunity to acquire 'understanding in use' rather than 'reconstructed understanding' (Coghlan and Brannick 2010, 101), as well as access to decision-makers in the organisations and a positive, helpful attitude from interviewees.

There are considerable differences between the three cases from a sociolinguistic perspective. In all three cases, however, the languages are well developed and fully codified with well-established grammars, orthography and lexicons.

In the cases of Irish and Catalan, but not Swedish, the languages are spoken in a bilingual situation where there are no monolingual speakers. Swedish is not in a bilingual situation, but despite this, domain loss is a cause for concern; discussions about the inability to use Swedish

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<sup>39</sup> 'I just realize that I have also been impressed with the work of Fidelma Ní Ghallchobhair and her colleagues working on an Irish terminology resource, but since French and to a degree Catalan are languages that I actually use in my own work, I am simply more familiar with these two resources than with the others.'

within certain domains and the influence of English on the Swedish language have been frequent (Bucher 2004). This is particularly true of the production of written treatises and papers in the natural and medical sciences in higher education and research, and, also increasingly, in companies engaged in international business. A perception has emerged that the choice of Swedish as the preferred language in various domains in Sweden merits attention and support (see the case report for a further discussion of this).

There is considerable interest in the Catalan language itself and considerable language loyalty. For specialists, however, this interest in the language does not necessarily lead to its use in their field of work. Similarly, written commercial materials are not always available in Catalan, and this has knock-on implications for term use. This situation is far more pronounced in the Irish case, where there are far fewer speakers. Irish is also unusual among lesser-used languages in that many of its daily users are not native speakers. In fact, they are predominantly L2. The language is rarely, if ever, used for activities such as industry, trade and medicine. On the other hand, some thousands of daily speakers use Irish in a variety of high-level domains, principally education, media, public administration and law, and Irish has a strong status in national and EU legislation. Translation to comply with language legislation is now one of the major language-related industries. Although Irish is in a strong position from a status and an official point of view, the natural everyday use of the language is limited, as is the language community itself.

Although this was not an intended result of the survey, all three cases are situated in affluent European countries, where well-documented and elaborated Indo-European languages are spoken and have a high status, although that status is different in each case. Swedish is both the main language of Sweden and an official EU language; Irish is the first official language of Ireland and an official EU language, although it is very much a minority language; and Catalan is a co-official language in the Spanish autonomous communities of Catalonia, but not an official EU language. Swedish and Catalan both have large numbers of speakers (about 6 million Catalan speakers in Catalonia; about 9.3 million Swedish speakers in Sweden), while Irish has only 83,000 daily speakers (Rialtas na hÉireann 2010, 9), although about 1.66 million claim an ability to speak it (2006 census: [census.cso.ie](http://census.cso.ie)).

This means that the case study results are not representative of or universal to all language situations, particularly those in developing countries. There is a risk that this could limit the representativeness of the resulting model; this issue is addressed in Chapter 6.

### 3.4 Case study questions and units of analysis

The approach taken is necessitated in part by the dearth of other similar studies. Ideally, the study questions would be based on those used in other research, so that the findings would be directly comparable. In this case, however, the literature review reveals no other comparable studies of term use or planning. Much PhD research in terminology is concentrated in terminography, and takes a qualitative approach. Coluzzi (2006) is a PhD thesis using a case study approach in a related field, that of minority language planning. There are only two other known PhDs that investigate term planning for Irish, for example. One, Ó Riain (1985), is a comparative case study on language planning in general, and the other (Ní Ghearáin, 2011) relies on a qualitative survey. There is no comprehensive discussion in Ó Riain of the case study methodology employed. The lack of case studies is not surprising, as this is a relatively new and under-studied discipline. The EAFT survey (2005) mentioned in Chapter 2 included questions on objectives, description, main activities and comments, which is very general, but probably deliberately so, in order to allow members to contribute as much or as little information as they wished. Santos' (2003) study of terminology production for Galician covers the details of individual publications but not the general language situation.

Having considered the options, this thesis adopts an approach where the literature and the theoretical background are examined and a provisional model created, a model which describes how, according to the literature, term planning is best carried out. Exemplary cases of real-life term planning are then compared to this model; they are asked, 'this is how the model suggests term planning should be carried out; how does this differ and with what results?'. The proposition is that the best practice model for term planning is the same as that identified in the literature.

The advantages of this approach are:

- It is well structured.
- Instead of creating an entirely new (and possibly very superficial) model, the existing model is broadened and deepened.
- This new model can be compared with the original model.
- The questions to ask of the case studies are very well defined.

The focus of the thesis is on the case studies as a *method* for testing and adapting a model.

The literature model and Chapter 1 are used to create a list of questions to be asked of each case (Appendix 2). The eight stages of a term planning model identified are used as a structure

for the study. If justified by the case study evidence, these can form the steps of a best-practice model for term planning. This is illustrated in Figure 1.

The research is also founded on the socioterminological perspective, as discussed in Chapter 1.

This means an emphasis throughout on:

- The social, cultural and linguistic context and situation. Terminology is to be examined as part of the culture of the language and of the community.
- Terminology management as an aspect of language planning, particularly in light of the phenomenon of popularisation.
- LSP and LGP as a continuum, so that LGP planning, if any, must also be considered.
- The promotion and diffusion of terminology.
- Questions of language in practice and term use.
- A practical focus on how terminology work is actually done.

Details of term creation and derivation specific to each language are not examined, as this would be of limited use for drawing general conclusions.

The case studies rely primarily on information supplied by the members of the terminology organisations being studied. It could be argued that term users should also be involved in research on term planning, and that those in charge of processes are unreliable witnesses. The term-user research approach is not being taken for the following reasons.

First, because the object of research is term planning *methods*, information about term use and the attitudes of term users would only provide some of the information needed. This would constitute a full study of its own. Term planning takes account of use, but does not drive it. It would give an indication of whether the methods being followed are successful or not, but it would not reveal what those methods are.

In the TNC and TERMCAT case studies, secondly, research on term users would be problematic as a research topic for an outsider with limited knowledge of the language, culture or circumstances. Any secondary evidence of the opinions of term users and other parties (such as results of studies), or data collected by organisations on their users, is however included.

Lastly, in the case of Irish, research on term users has already been undertaken by Helena Ní Ghearáin (2011) in her doctoral research. A repetition of this work in the same time frame and under the same circumstances would not be appropriate.

A more thorny question is whether the language situation itself or the terminology organisation, or the terminology process or activity, is the unit of analysis. An argument can be

made for either. Terminology change and use take place in the language, and there are many more factors which influence this than any particular group or organisation. The educational system, publishers, the media, and domain experts – as well as fashions and trends – all have an effect on the language choices made by speakers. These influences are, however, very difficult to measure. It would also be difficult to find a basis for comparison between languages. Finally, there is little point in developing a model or recommendations for a language in general, because there are so many factors involved that significant, planned change would be difficult to effect.

The study of a terminology organisation or of the different organisations working on terminology (if there is more than one) is therefore more practical and likely to be more fruitful in terms of measurable results and conclusions which can be drawn. It is necessary to bear in mind, however, that (particularly from a socioterminological perspective) no terminology organisation is in complete control of term development or use, and each is in a unique situation. In the Swedish and Catalan cases, it is clear (and was further established during the case study research) that TNC and TERMCAT are the sole organisations with responsibility for terminology policy implementation in those languages in Sweden and Catalonia respectively. In the Irish case there was no single organisation with this responsibility. The analysis was therefore broadened to cover the organisations responsible for all aspects of term planning for Irish.

### **3.5 Data collection**

The three main principles for data collection, according to Yin (2003), are to use multiple sources of evidence, to create a case study database, and to maintain a chain of evidence.

In the cases, semi-structured interviews (of 25-110 minutes as appropriate) with key participants are the main form of primary evidence, but these are supplemented with interviews with external experts, and with reviews of documentation and articles. The data needed is collected from various sources, both primary and secondary. Secondary sources include such publications as books, articles, conference papers and web pages.

The TNC interviews were all conducted in English, with no obvious language barriers. The interviews in the Irish case were conducted in Irish or in English, by agreement with interviewees. In the Catalan interviews, language limitations caused some communication problems with interviewees who were not comfortable in using English, but these were largely averted by carrying out interviews in French and in a combination of Italian (interviewer) and Spanish (interviewee).



In the case of TNC and TERMCAT, internal interviewees were nominated by the organisations themselves, once the list of case questions had been received. Contact people in the organisations, and other external contacts, were asked to nominate potential external interviewees. In the Irish case, the relevant person in each organisation was approached directly, and a list of external interviewees was compiled in consultation with the thesis supervisor.

The same approach to data collection is taken in the Irish as in the other cases, with interview material supplemented by the researcher's pre-understanding of the facts of the situation. The researcher's own analyses and judgements are not included in the case report. A detached, objective and neutral position to the data is adopted. The intention is not change-oriented action research but a traditional research approach – the focus is on the organisation viewed in as detached a way as possible. Sending the finished report to participants for comment was one important method of avoiding and catching bias.

There was a minor ethical issue in that the thesis supervisor, Dr Nic Pháidín, in her position as Head of School and terminology project coordinator at Fiontar, was an important informant. There was no alternative informant at this level. Advice was sought on this issue from the Dean of Research in DCU, Dr Gary Murphy, and it was agreed that she should participate in the process as an interviewee. (The form submitted to the DCU Research Ethics Committee is reproduced in Appendix 4.)

A case study database containing all the evidence collected, as well as signed consent forms (a blank example is given in Appendix 3), is available. Interviews (in MP3 format and transcribed copies) are stored externally. The researcher's field notes are also available, so that other investigators could review the evidence. This evidence is summarised in the case reports.

Maintaining a chain of evidence means that the reader must be able to trace the steps from the initial research questions through to the conclusions of the study, and *vice versa*. In order to achieve this, case study reports make considerable citation back to the relevant parts of the case study database – such as particular documentation and interviews. Further, there is a clear link between the research questions and the case questions – see Figure 1.

### 3.6 Data analysis

Analysis takes place in three concurrent areas of activity – data reduction, including the research design and data collection (discussed above); data display (because extended text is unsuitable for analysis); and conclusion drawing and verification (Miles and Huberman 1994, 10).

The transcribed interviews and other material were coded using Nvivo software. The case questions (listed in Appendix 2) were used as coding categories and as headings in the case reports. The response to each question is supported in the case reports by extensive quotations.

The format of the case report is the same for each case. In each case, the field procedures are given, including interview methodology, coding, analysis and feedback, as well as a schedule of data collection activities. A brief historical and general background is given in each case report, with an overview of the key issues, as identified by interviewees. The case study issues are then addressed in question and answer format.

Although a roughly similar number of interviews was carried out in each case, the three case reports differ in length by up to 90 pages (see Table 7). This was influenced by several factors including the number and length of translations required and the loquacity of interviewees. Because the interviews were semi-structured, interviewees were not stopped or discouraged from explaining their opinions in detail, and interviews were not concluded until the interviewee felt that he or she did not have more to add to the discussion. This means that many of the extracts quoted are long, and that the length of the extract needed to illustrate a point varies from interviewee to interviewee. In the Irish case, in particular, interviews were lengthy and many translations were required.

The relative length of the case reports, or of particular sections of the reports, does not influence their treatment in Chapter 4.

**Table 7: Comparison of Case Reports 1, 2 and 3**

Case report	Number of interviews (email responses are not included)	Total length of recordings (mins)	Number of footnoted translations in case report	Length of case report (pages)
Case report 1: TERMCAT	9	479	133	106
Case report 2: TNC	8	375	4	144
Case report 3: Irish	9	582	239	197

The case study chapter (Chapter 4) takes the form of a cross-case analysis, addressing each of the parts of a term planning model. The findings from all the case studies are used together in

this analysis. It should be easy for the reader to move between the analysis in Chapter 4 and the relevant information in the Appendix.

### **3.7 Validity and reliability**

Theories must be tested for representativeness, reliability and replicability. Among the tests are triangulation, weighting evidence, looking for negative evidence, and looking for, and testing, rival explanations. It is also important to seek feedback. Miles and Huberman (1994) list methods for carrying out this work.

When the case study has been drafted, Yin strongly suggests that, as a validating procedure, it should be reviewed by the participants in, and informants of, the research, with an invitation to make observations, corrections or comments. This review was carried out for each case. Responses and corrections (usually minor and stylistic, although in some cases comments were made about other participants' analyses, or missing information was supplied) were incorporated and a final version sent to participants. This is an excellent way of corroborating the facts and evidence in the case report, though not necessarily the conclusions: 'the informants and participants may still disagree with an investigator's conclusions and interpretations, but those reviewers should not disagree over the actual facts of the case' (Yin 2003, 159). The accuracy and therefore the construct validity of the research are thus increased.

In order to guarantee validity and reliability in this study, data gathered is triangulated from different sources, and rival explanations and negative evidence (such as from external commentators) are considered. The procedures used are documented and interviews and other evidence retained. The individual case reports, contained in the appendices, are available to the reader, so that the validity of the conclusions drawn in the cross-case analysis can be considered.

The issue of validity is particularly sensitive in the case of Irish, since the present researcher is employed in Fiontar, one of the term planning organisations being studied and discussed. This is discussed in 3.5 above.

A separate test, mentioned by Miles and Huberman (1994, 280), is that of pragmatic validity: 'Even if a study's findings are "valid" and transferable, we still need to know what the study does for its participants, both researchers and researched – and for its consumers'. Policy studies, in particular, ought to lead to more intelligent action, so the test of a study's pragmatic validity is in the use made of it. Some suggested guiding questions include the accessibility (intellectually and physically) of findings to potential users, and the level of usable

knowledge (insights, theories to guide action, or policy advice) offered in the study. In order to increase the pragmatic validity of the research, Chapter 5 (the proposed model) is written in as clear and precise a way as possible.

## 4 Chapter 4. Case study and literature comparison

### 4.1 Introduction

The aim of this chapter is to take the literature model created in Chapter 2 and to compare it with the three case studies identified in Chapter 3 – TERMCAT, TNC, and term planning for the Irish language. By categorising and contextualising the data, this is expected to show up similarities and differences between the theoretical model and actual practice.

The structure of the chapter is as follows. In Section 2, each aspect of the literature model (Chapter 2) is compared to the cases (eight stages). Differences are noted. Each case study is documented in a separate case study report. These serve as appendices/supporting documentation to this chapter and should be consulted in advance or simultaneously; more detail about any of the items referred to here can be found by consulting the relevant sections of the case studies. There is also considerable reference to Chapter 2, the literature review.

As was seen in the literature review, there are no directly comparable term planning models, and the most important documents found are the ISO/TC 37 standards and UNESCO (2005). These are especially important because they were created and agreed in a process of consultation with a wide range of experts. It has been seen, however, that UNESCO (2005) is very broad, and that the ISO standards tend to be more detailed and specific than required for the construction of a best practice model. Several other documents identified in the literature review are also important, particularly Suonuuti (2001), Fähndrich (2005), RaDT (2004) and Auger (1986). These, and other material mentioned in Chapter 2, are referred to as appropriate.

The cases are discussed in the past tense because in some instances changes both minor and major have happened since the case study research was done; for example, TERMCAT has since been awarded ISO 9000:2005 certification, and TNC has suffered a reduction in staff numbers. The cases are therefore discussed as they were in May 2009 (TERMCAT), September 2009 (TNC) and January/February 2010 (Irish) respectively. For Irish, where there is no single term planning organisation, both the Terminology Committee and Fiontar (DCU) are discussed, as well as other structures and organisations where appropriate. These are referred to collectively as 'term planning for Irish' or 'the Irish case' (this issue is more fully developed in Section 3.4 of Chapter 3).

The analysis carried out in this chapter will be further elaborated in Chapter 5, with the development of a model of best practice.

## **Items to be explored**

The approach, and the issues discussed, are based on Chapters 1, 2 and 3. The structure established in Chapter 2 forms the basis of the case study. Details of term creation and derivation specific to each language are not examined, as this would be of limited use for drawing general conclusions on term planning. There is a full discussion of the methodology in Chapter 3, and a list of the questions asked of the cases can be found in Appendix 2.

The major questions for each stage are ‘does this work in the best-practice cases as the literature suggests it should?’ and ‘did issues emerge in the cases that are ignored in the literature?’

In Chapter 2, some general principles towards a model of best practice were identified in the literature, although it was found that the literature does not provide a comprehensive model of term planning. As was seen in Chapter 2, some stages of terminology planning are barely addressed. These include the modernisation and maintenance stages, as well as training. In other cases, particular aspects of stages (the evaluation of term planning organisations, for example) are unexplored. Because the literature is so sparse, it was seen that no clear, definitive model can be created on this basis. It is important to emphasise these limitations of the source literature and not to see the literature as a uniform canon or as espousing a uniform ideology. The literature as it stands constitutes a range of contributions rather than a comprehensive basis for analysis.

## **4.2 Discussion**

In this section, the similarities and differences between the literature, TERMCAT, the Irish case and TNC are discussed.<sup>40</sup>

### **Preparation/planning**

UNESCO (2005, 23) recommends a thorough assessment of the language and terminology environment of a language before a terminology policy is implemented, and emphasises the need for ‘the systematic design, formulation, implementation, operation, promotion and maintenance of a terminology policy with clear objectives and perspectives as well as application areas and targets’ (14). In the three cases studied, the terminology policy was already in place, whether it had been originally planned, or had grown organically, and whether it was explicitly stated in law or not. In the Swedish case, a new language law stated

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<sup>40</sup> A short glossary of entities frequently mentioned (such as Cercaterm, Rikstermbanken, Focal, Foras na Gaeilge, Antena de Terminologia, etc.) is given at the start of the thesis.

that 'Government agencies have a special responsibility for ensuring that Swedish terminology in their various areas of expertise is accessible, and that it is used and developed' (Ministry of Culture 2009:600); there were, however, no sanctions or enforcement mechanisms. There was no specific law for terminology in Catalan: terminology matters were referred to in the general language policies. The British-Irish Agreement Act (1999) transferred responsibility for developing Irish-language terminology and dictionaries to the newly-constituted Foras na Gaeilge, but there was no further discussion of terminology policy for the language.

The three cases each had different ways of situating terminology work within the larger language-planning structures. Structurally, the organisations were managed, staffed and resourced differently, and each had a different customer- or user-base. Different responsibilities were assumed and different aspects of term planning work were emphasised. There were different relationships with Government, with academia and with other organisations. There were different kinds of involvement and participation on an international level. These aspects of preparation and planning are examined in turn.

#### *Organisational structure*

There are few suggestions in the literature about organisational structures for terminology planning. UNESCO (2005) and ISO 29383:2010 suggest that different groups could be involved in terminology policy implementation, such as one or several departments or (Government) institutions; a committee or other group of people; an existing external institution or organisation which is entrusted with this task; or a newly established institution or organisation (UNESCO 2005:29; ISO 29383:2010, 11).

Structurally, the three cases were quite different. TNC was a non-profit making private company, with shareholders such as the Swedish Standards Institute, the Swedish Academy, the Finnish Centre for Technical Terminology (TSK) and representatives from areas such as construction, mechanical engineering, geographic information, chemistry and information technology. Advantages of this structure included increased dynamism, flexibility and independence, compared to a state body. TNC had been in operation for over seventy years, and had (it was felt) built up a reputation as a reliable, serious and trustworthy institution.

TERMCAT was a consortium; its directory board consisted of members of the Catalan Government, of the Institute of Catalan Studies, and of the Consortium for Language Normalisation. The president of the consortium was the secretary for language planning of the Government. It was felt that being a small consortium rather than part of the Government

administration was important to allow independence in management, as well as dynamism – similar sentiments to those expressed at TNC.

In the Irish case, the national Terminology Committee, part of Foras na Gaeilge, was the statutory entity responsible for terminology approval and publication (overseen by a Government department, the Department of Community, Rural and Gaeltacht Affairs<sup>41</sup>). The Committee consisted of a group of volunteer language and subject experts (with wide representation), and a permanent secretariat. Fiontar, the Irish-medium unit within Dublin City University, was contracted to carry out terminology projects for both Foras na Gaeilge and the sponsoring department. This work included the design, development and management of the National Terminology Database ([www.focal.ie](http://www.focal.ie)). Editorial development and technical development were also carried out by Fiontar in collaboration with the Terminology Committee. For example, Fiontar was researching a new dictionary of sports terms for publication on Focal. There was close collaboration between the two organisations; a Fiontar terminologist was a member of the Terminology Committee. Quarterly meetings of the project steering group were held. Other terminology projects in Fiontar, which were funded directly by the sponsoring department, included the digitisation and extraction of terms from a collection of statutory instruments, and the development of terms for the IATE database. Because there was no single agency looking at all aspects of terminology work, however, it was felt that there was little or no discussion about term planning, on a macro level, for Irish.

UNESCO (2005, 15) recommends the active participation of ‘those institutions that are most dedicated in their commitment to language planning policies... [and] the whole language community’. The directory structure, in the Swedish and Catalan cases, and the Committee membership, in the Irish case, are an illustration of the involvement of language planning institutions, although there was little evidence in any case of the active involvement of the ‘whole language community’.

### *Staff*

TNC had thirteen staff (subsequently reduced to ten), most of whom were working as terminologists. Most of the terminologists were involved in all aspects of TNC’s work, including administration, training and marketing. The staff had different backgrounds, both linguistic and scientific, and a variety of skills, and this was regarded as a key strength. One interviewee,

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<sup>41</sup> The title of this Department was changed to the *Department of Community, Equality and Gaeltacht Affairs* in June 2010 but its functions in relation to the language remain unchanged.



a mathematician, explained that her background meant that she could read and understand technical documents, and discuss issues with experts; it also made her work more interesting for her. The level of cooperation between staff was also regarded as a strength, and there was an emphasis on sharing competencies and on flexibility.

TERMCAT had about twenty-five full-time staff, complemented by contractors and people working on a part-time basis or from home (about forty to fifty people in total). These were divided into different departments such as administration, communications, sectoral research (on dictionary projects), computing, the advisory service, and neology and standardisation.

In the Irish case, the Terminology Committee had a permanent secretary and occasional contract staff; members of the Committee worked on a voluntary basis. The voluntary nature of the Committee could, it was felt, create problems because of the significant amount of time commitment involved (particularly for those members living outside Dublin), and because it meant that planning and decision-making relied largely on the wishes and interests of particular members, rather than being decided at a more strategic-planning level. (This reliance on volunteerism is seen as problematic in another context: Taljard 2008.) It was acknowledged by interviewees that the Committee was not, and had rarely been, allocated an adequate staff. Fiontar had a staff of thirteen, including a project manager, editorial manager, technical manager, terminologist and nine editorial assistants, all of whom were also working on other (non-terminology) projects and held other academic duties. The 'full time equivalent' staff cohort engaged in terminology work was approximately five.

In the case of TERMCAT, candidates for employment were examined to assess terminological ability as part of the selection process; in Fiontar, candidates took a language and grammar test. Finding suitably qualified staff was problematic for TNC, due to the lack of university training in terminology. The approach taken was to aim for a selection of backgrounds and competencies, and then provide the terminology training as an 'add-on'.

In TNC, it was felt that it was important to recruit staff with different linguistic and scientific backgrounds, and that those with a scientific background often made better terminologists, because of their analytical approach; as well as that, as one interviewee said, they were more likely to understand and enjoy researching their subject area. A full linguistic training was not a prerequisite. In one case a job advertisement called for a technician with language interests. The importance of having a variety of skills, including interpersonal skills, was also emphasised. In fact, it was felt that the specific training and role of the terminologist was not widely enough recognised. This approach was consistent with the very broad list of prerequisites for a

terminologist listed by RaDT (2004), of which linguistic competencies are only a small component.

### *Budget*

TERMCAT had a budget of €1.5m annually from the Catalan Government department dealing with language policy; this had been consistent over the years. This covered ninety-five per cent of costs, and was supplemented by occasional charges for specific projects, for private companies and for other Government departments. These charges only covered additional costs, and not staff salaries. Sponsorship was also received for particular projects; for example, a bank sponsored a plant names project. Income from sales of publications was not significant.

TNC was financed partly (about fifty per cent) by funding from the Ministry of Enterprise, Energy and Communications. This funding came to about €820,000 annually, and was used to pay for awareness-raising work rather than specific terminology projects. This funding was awarded on an annual basis. Because only half of the work was State-funded, TNC had both a public and a profit-making aspect. The second main source of funding was from work on terminology projects, usually for the public sector. This varied from year to year, but was generally similar in value to the amount received from the Ministry. Other less significant sources of income included dictionary sales, a subscription service for terminology advice, and courses and classes. Consistent with this, UNESCO (2005, 21) finds that fee-based consultancy services should not be excluded, although whether this is suitable presumably depends on the terminology situation. In any event, it is recommended that the national terminology infrastructure should 'fully collaborate with private industry by providing terminological and terminographical assistance and/or training'.

The funding structure could be problematic for TNC, as there was a dependence on obtaining contracts. There had been a financial crisis at the end of the 1990s, for example, when EU project work had dried up. Work which was not funded could not be undertaken, which for some interviewees meant that term creation in some domains was neglected – having an income-based corporation as an official terminology body meant that non-commercial terminology needs suffered. On the other hand, interviewees pointed out that research that was paid for was usually responding to a real need and likely to be valued and used.

The Irish Terminology Committee was not an independent entity but a part of Foras na Gaeilge, and did not have a set budget, and other organisations also funded terminology work. Staff costs were paid directly by Foras na Gaeilge. Much of the work was outsourced, however. Foras na Gaeilge spent €472,816 on terminology work during 2010 (including the cost of

focal.ie), and Fiontar also received €364,807 in 2010 for its other contract for terminology work, directly funded by the Department of Community, Rural and Gaeltacht Affairs.

### *Responsibilities*

UNESCO (2005, 16) states that the role of institutions providing terminology services is ‘to advise and support the Government in the formulation, development, implementation and maintenance of strategies concerning terminology and terminology development’. It is suggested that their roles might include advising on policy; establishing and evaluating norms; providing an information service; coordinating and supporting projects; and acting as a clearing-house for private or outsourced terminology work, as well as education and training.

In each case, the term planning organisations had different responsibilities. In TERMCAT’s and TNC’s cases, these responsibilities were set out very clearly in the mission statements. TERMCAT had responsibility for the creation and diffusion of terminology; for the creation of linguistic and terminological criteria for terminology work; for the standardisation of terminology where necessary; and for advising other organisations and the public about terminology. In practice, the focus was on *ad hoc* work in response to enquiries; dictionary production; standardisation; and the development of terminology tools, as well as advising on policy, publishing research, and organising conferences. TERMCAT was thus, as interviewees said, the coordination centre for Catalan terminology work. Terminology research, such as research into implantation, was not carried out at TERMCAT. This was done in cooperation with various universities, however, and conferences were frequently attended.

TNC’s responsibilities also included an element of coordination, and also covered awareness-raising (about terminology), term research, consulting services, *ad hoc* work as part of the query service, education and training.

The Irish Terminology Committee provided an information service and responded to *ad hoc* requests; advised on term policy and formation; engaged in term creation and validation; and coordinated and supported projects carried out by other parties. It was unclear whether it also had responsibility for training in terminology. Fiontar, under contracts from the Terminology Committee and the sponsoring department, managed the national terminology database, carried out term research work, created terminology tools, and published research.

### *Networks and relationships*

UNESCO (2005, 9) emphasises the importance of a systematic approach and coordination in terminology planning, and particularly the inclusion of stakeholders, since ‘formulating and

implementing a terminology policy is an activity that needs to be endorsed by a large number of persons and institutions' (33). Similarly, ISO 29383:2010 states that:

In most cases, terminology planning both informs and is informed in turn by existing language planning. The degree of the interdependence between terminology planning and language planning varies according to the specific circumstances of the language community. (3)

Coordination with other planning and development activities is emphasised in ISO 29383:2010 (4, 9). UNESCO (2005, 22) emphasises that 'the integration of [terminology] policies into and coordination with other policies must not be neglected' and that terminology policy should not be seen as an isolated matter, and that it may be worth developing a terminology policy integration statement (27).

In the three cases, there were different networks and relationships, with Government, with academia and with others. There was, for historical reasons, a complex network of organisations and agencies with responsibility for corpus planning for Swedish. The importance of creating and sustaining networks was recognised, and there was a quarterly meeting of ten different organisations working with language planning, including those in the media. At these meetings, information was exchanged, language policy matters were discussed and fundamental language issues were decided by consensus. The existence of different language planning or cultivation agencies was not perceived as problematic.

TERMCAT was, similarly, part of the larger language planning structure for Catalan. Its responsibility for Catalan terminology was delegated to it by its parent organisation, the Academy of the Catalan Language, and members of that Academy participated in planning and standardisation decisions. There was an understanding that it was important to provide a cohesive service; for example, a helpline and search portal belonging to the Academy also covered TERMCAT's term resources. An emphasis was placed on what was described as a cooperative model of participation and social involvement. This is in line with UNESCO (2005, 29) which calls for 'the pro-active involvement of administrators, politicians, legislators, the media and of prominent figures in society'.

In the Irish case, as for Swedish, a variety of agencies with responsibility for language planning had developed over the years, but interviewees agreed that there was not always optimum coordination between these different agencies, and that institutional jealousies existed. There was no forum above the level of the Terminology Committee itself for discussion and exchange of information, such as the quarterly meetings mentioned in the Swedish case. For example, responsibility for the official standard grammar for the written language was for many years

entirely separate from responsibility for terminology and lexicography, and legal and educational terminology planning were managed in separate organisations and allowed to drift apart. Issues such as this caused considerable frustration for some interviewees. Concern was also expressed about the diffusion of resources and goodwill. This experience seems to strengthen UNESCO's (2005, 33) observation about 'negative attitudes that may arise if stakeholders feel overlooked, disregarded or left out', and Drame's argument that the policy-making process is largely an act of communication (Drame 2009, 11).

The Terminology Committee was, however, part of Foras na Gaeilge, the organisation with responsibility for the development of terminology and lexicography, and there was close cooperation with Irish-language lexicography work. The Terminology Committee and Fiontar worked closely together in maintaining coherence in their work, and it was felt that there was general institutional and public goodwill towards terminology work (shown, for example, by the amount of voluntary work done by members of the Terminology Committee), and a recognition of its necessity.

TNC also had other kinds of relationships; Government departments and other organisations subscribed to TNC's services. Although TNC was the only organisation responsible for terminology work in Sweden, there were other entities with an involvement, such as the national standards organisation, Government departments developing their own term resources, and other organisations. One of TNC's aims was to bring all these term resources together in one place, and terminology collections from more than seventy organisations had been contributed to Rikstermbanken. This was consistent with UNESCO (2005, 17) which states that a national terminology institution 'may need to become a clearing house for terminology work' (with the caveat that it is important to have effective coordination and workflow management). There were also 'Joint Groups' working on terminology in particular areas, such as computing, and these were coordinated by TNC.

In the case of Galician, Santos (Santos 2003) suggests that the most important point in a new model is to have one entity, a terminology centre, responsible for standardisation, evaluation and modernisation. Santos (2003) suggests that the terminology centre could be supported as necessary by academic and professional organisations, with research and some of the training being carried out in an academic setting, and cooperation with many groups particularly needed for implantation. Planning would have to be carried out in an integrated way, in conjunction with potential users, service providers, academics, institutions, and others. Thus she recommends the separation of research and practical terminology planning functions – a separation which is used in TERMCAT.

TNC had no links with academic research on terminology, and little terminology research was carried out in Sweden, a fact regretted by interviewees. TERMCAT, on the other hand, worked in cooperation with two Barcelona universities to research term implantation and develop research tools. In this way, terminology research and practice were kept distinct; the academic role was to teach terminology, to carry out research on methods and theory, and to critically evaluate TERMCAT's work. This link with academia was considered an important strength. Academics were also relied on as subject specialists. The Irish Terminology Committee had some links with academia, through its membership, and particularly through the contracts with Fiontar. Academic research and practice were not kept as distinct as in the Catalan case; Fiontar worked on term creation, technological development and terminology research, although evaluative research (such as implantation studies) was not carried out in any institution. Academic research by postgraduate students was undertaken in close collaboration with Fiontar project work.

### *Users*

Because of the different sociolinguistic situations, the term planning organisations were serving rather different user bases. In the Irish case, where there was a considerable amount of neology and the language was often used in a translation or educational context, the main 'customers' were translators, as well as writers, educators, the media and other users of the written language; many of them were not native speakers. Because of the official status of the language in Ireland and in the EU, a considerable amount of terminology was needed for translation of legal and official documents, and – similarly to Sweden – a large cohort of EU-based translators used the term bank. It was also felt important, however, to reach non-professional users such as school pupils and students.

For TERMCAT, similarly, the main user group was translators and other linguists, along with the administration, universities and the media. Those working in public administration were required to use terms standardised by TERMCAT. The private sector (as for Irish) was less involved in providing services through the language. It was felt that 'real' users such as journalists or subject specialists (rather than language professionals) might not be as aware of TERMCAT, and that language specialists often acted as intermediaries. Interviewees felt that the general public was not really the target group, since other (general) language services were available to them. There was, however, a high level of interest in the language itself, reflected in a high rate of dictionary publication.

For TNC, most users of the term bank and customers of training courses were public sector workers and translators. As well as ministries and public agencies, some private companies

used TNC's services, although not as many as TNC would have liked. Although TNC's roots lay in sciences and engineering, many users had backgrounds in the humanities and social sciences as well as economics and management. Unlike the Irish and Catalan cases, users could also be working in a Swedish monolingual context, such as law, technical communication and other subject field areas. It was emphasised that communication, and not language development or preservation, was the aim of terminology work for TNC – this was described as a 'social' rather than a 'cultural' ideal. This was reflected by the fact that funding came from the Ministry of Enterprise, Energy and Communications, and not the Ministry of Culture, which funded the Swedish Language Council. Despite this, interviewees felt that there was a concern, in society, about language issues and domain loss in particular.

UNESCO (2005, 14) states that a terminology policy can be geared towards the development of the general language as a means of domain communication in general; or the SPL (special purpose language) of a certain subject field, or both. It can be seen that the Swedish case tended towards SPL, whereas the Irish and Catalan cases were much more focused on the general language.

### *Resource planning*

Fähndrich (2005) states that, in the case of planning a terminology project, the questions to ask are about purpose, target audience, content and scope, complexity of entries and delivery or hosting (241-242). UNESCO (2005) emphasises the importance of including stakeholders and the general public in planning work. For example, it is advised that the public be consulted during the planning phase – through meetings, interviews or surveys – and that an awareness-raising campaign be embarked upon. Because a wide range of specialists – linguists, terminologists, domain experts – need to be collaboratively involved in the work, they should be consulted from the outset too. ISO 15188:2001 (13) lists criteria for the acceptance of terminology projects as follows:

- The project meets specific user needs.
- The project falls within the general scope of activity of the proposed working group.
- The project enables the achievement of specific overall objectives.
- The project is needed at this time.
- The project aims to produce an original end product.
- The end product may be adapted to produce other products.
- The product may be distributed in an effective manner.

- The end product will be accepted by the user group and there will be a commitment for implantation.

This list of criteria emphasises socioterminological factors such as user needs and implantation.

Resource planning decisions were made in different ways in the three organisations. In the Irish case, decisions on tasks were taken by the Terminology Committee and its secretary, with little involvement from others. Because of staffing problems, most of the committee's time was spent in responding to *ad hoc* term requests, and major new terminology projects were not undertaken directly. Initiatives from external bodies, or suggestions from voluntary Committee members, were often accepted, but there was no long-term strategic planning<sup>42</sup> at management level. This was similar to what Santos found in the Galician case, that there was no planning which would prioritise tasks according to criteria such as demand, thematic hierarchy, potential interest of users, or university subjects (Santos 2003, 239). It contrasts with some of the findings in the literature, that lack of strategic planning and management are detrimental to term planning for language planning (Onyango 2005; Nic Pháidín and Bhreathnach 2008), and that planning must be done with an emphasis on processes, not merely inventories of terms, and management as well as the generation of terminologies (Hübschmannová and Neustupný 2004, 85), and seems to corroborate the assertion that 'terminologists pay far too little attention to business matters in general and project management in particular' (Fähndrich 2005, 257).

In the case of work contracted out to Fiontar, resource planning decisions were made in a process of discussion between Fiontar and the funding bodies. The decision to develop a dictionary of sport was taken, for instance, because it was felt that there was a gap in provision, that such a dictionary would have a wide appeal, and that it would be interesting to develop. Suggestions from service users were often taken into account but there was no formal consultation process.

TERMCAT usually selected new terminology projects as a result of a request from a particular group, often Government departments. The need for the dictionary was investigated, possible collaborators were identified, and the budget was determined before a final decision was made. It was felt that if a project was requested, this indicated a real need.

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<sup>42</sup> ISO 29383 defines a strategic plan as a 'comprehensive, integrative programme that considers, at a minimum, the future of current decisions, overall policy and organizational development, representing what must be done in order to achieve long-term objectives and goals' (2010, 1).



Half of TNC's priorities were determined by the funding ministry, but the funding letter left scope for interpretation; most of this funding was used for awareness-raising. Terminology development projects, on the other hand, were carried out on a contract basis. That meant, as interviewees pointed out, that TNC carried out terminology work when asked to, and not always where it saw a need. The advantage, of course, was that terminology that was requested and paid for would be used; the disadvantage was that some areas were not covered at all. Most work was done in the scientific and technical areas, and mostly for the public sector. Private sector requests were less frequent. The board of directors was involved in policy decisions.

### *International involvement*

In all three cases the importance of international networks and involvement was recognised. ISO TC37 was the organisation most often discussed. TNC was strongly involved in ISO standard formation, and had been for many years. This was seen by interviewees as a valuable way to get new knowledge and information, and to contribute to the international work on terminology. In Ireland, both the Terminology Committee and Fiontar had representation on ISO TC37; it was felt that it was an important opportunity to discuss different language situations. Because Catalan was not an official language, TERMCAT did not have direct involvement in ISO TC37, but was involved as a representative of EAFT.

TERMCAT took a very proactive role in international networks, with an emphasis on Spanish and Latin-language organisations and European associations. Staff were regularly sent to conferences (seventeen papers were given in 2008, for example), and international visits were facilitated. TNC also valued these international associations, particularly with EAFT, Infoterm, Termnet and Nordterm. Nordterm, established to encourage Nordic cooperation, was considered particularly important for the regional exchange of expertise and experiences, although not of terminology itself: this had been found to be problematic due to differences in approach and linguistic issues. The biannual Nordterm conference was a particularly important platform for exchange of experiences. In Ireland, both the Terminology Committee secretary and a member of the Fiontar editorial staff were members of EAFT, which had been helpful in discussing ideas in an international context. There was some cooperation with Welsh terminology work but nothing as structured as Nordterm or the pan-Latin organisations.

TNC had had a strong involvement with EU terminology structures since before Sweden's accession to the EU in 1995. There had been large term creation projects, particularly at the time of accession, and the Rikstermbanken was based on ideas from IATE and from other sources such as the Lithuanian term bank and EuroTermBank. This had led, it was felt, to a

good understanding of the international research situation, and a solid international network. Similarly in the Irish case, there was a close connection with IATE because of a large term production project to populate IATE with Irish-language terms, which had been an opportunity to share Irish technical expertise.

There were also partnerships, such as a TERMCAT agreement for terminology exchange with Quebec, and cooperation between TERMCAT and international Olympic terminology committees. For TERMCAT, this international involvement was important because it meant a high level of international recognition. TNC interviewees were also very positive about international cooperation and the importance of knowing what was going on in different countries in order to develop new ideas and build competence.

UNESCO (2005, 22) finds that ‘the study of existing examples and experiences elsewhere in the world may be extremely useful’; this seems to apply in the three cases.

## **Research**

In the three cases, the types of research done were categorised differently. TERMCAT had three departments for term research work: the *ad hoc* query service, specific terminology projects, and the standardisation department (discussed separately below). For TNC, there were three types: *ad hoc* terminology work for the query service, traditional-type terminology projects (that is, projects based on concept structures and definitions, not on equivalents in different languages), and translation-oriented terminology projects. In the Irish case, the Terminology Committee had both an *ad hoc* query service and, through subcommittees, it worked on specific terminology projects. Fiontar carried out project work as well. It was regretted by interviewees in the Irish case that research into traditional terminology or *in vivo* term creation was not being carried out. In this section, *ad hoc* term research work is discussed first, followed by the other, project-based, work.

### *Ad hoc research*

*Ad hoc* term research, in response to enquiries, took place in all three cases, but the work was structured differently in each.

In TERMCAT, the *ad hoc* terminology work had its own department, with two members of staff dealing with about 3,000 requests annually. Questions tended to be about the translation of a particular term into Catalan, usually from English. The terminology queries were usually researched and answered straight away by the helpdesk staff, in consultation with a network of experts. The responses were published on Cercaterm, and a detailed record was kept of users and of responses. Some external interviewees complained that the service was too slow

for the needs of the media. Queries not related to terminology matters were referred to a general language helpdesk run by the language institute.

In the Irish case, the Terminology Committee staff spent most of their time responding to and processing *ad hoc* queries, with about 5,000 requests annually. Some of these enquiries related to translation for official purposes as well as more general enquiries about subjects as diverse as house names, gravestone inscriptions, signage for business, and even tattoos. Queries not related to terminology matters were sometimes referred to a general language helpdesk, but this service was not at all well known (several interviewees were not aware of it and felt that one was needed); interviewees also felt that the Terminology Committee was often contacted because of the lexicographic deficit and because of a lack of language training and confidence, as well as a failure to consult general-language dictionaries. Almost all queries were for Irish equivalents of English terms; requests for definitions or concept clarifications, such as those received by TNC, were almost unknown.

Queries were researched by the Terminology Committee staff among existing resources and domain experts were sometimes consulted, where such experts existed for Irish. The suggested terms were then submitted to the monthly day-long meeting of the Terminology Committee. Simple terms were not discussed at all but were uploaded to an extranet a week prior to the meeting; if there were no comments, they were considered accepted. Only other, more complicated, questions were discussed. The terms ultimately approved were input into Focal.

In terms of productivity, the Irish working method was considered very good, but questions were raised by interviewees about consistency, about a lack of detailed research, and about over-dependence on English and international roots in term formation, rather than a more imaginative (and time-consuming) approach based on existing traditional usage. Numerous shortcuts, such as splitting the monthly meeting into subgroups, had to be taken in order to keep up with the number of term requests, and it was felt that this had an effect on the quality of work done.

TNC had a query service for which a charge was made. People contacting the service for the first time (and potential customers) would usually be given a quick answer, and were advised that if they wanted thorough research to be carried out, they would be invoiced. Some organisations had subscriptions to TNC's services, and these subscriptions could be used for the query service. Not surprisingly, then, TNC had fewer queries than in the other two cases (140 to 150 annually), with one or two members of staff spending one day per week on the work.

There were many types of enquiry to TNC's service, showing a broader range than in the other two cases: a wide variety of subject fields was covered, and definitions of terms, equivalents to English and other languages, translation issues, and grammar issues (such as spelling) were common queries. Because responses to queries were not published on Rikstermbanken, the same queries were responded to again and again.

When a query was received by TNC, it was researched in the internal term bank, which contained material, such as responses to older enquiries, not found on the public database. There was also an extensive in-house reference library (regarded as an excellent reference source), and a network of domain experts who could be contacted. Difficult concepts were informally discussed among colleagues, and completed work was also circulated to colleagues for comment.

TNC also had a second system for dealing with new terminology, such as in computing. Joint groups had been established to research areas such as computer terminology, life sciences terminology and terminology of the built environment. In the case of computing, this was in direct reaction to the amount of English terminology – such as very frequently used terms like 'email' – that was appearing in Swedish. These joint groups had a language-planning role that the rest of TNC's work did not have. They generally worked on an *ad hoc* basis, as questions arose. Members, who met monthly, included general-language experts, terminologists, subject-field experts and media representatives. TNC viewed these joint groups as a sort of 'emergency ward' for term problems. Their recommendations were published on a dedicated website. The initiative was considered successful, particularly because of the media involvement.

### *Project-based research*

In general, the three cases relied on extensive research, communication with experts and some form of committee work to carry out project-based research. This work was thoroughly documented in TERMCAT's case, but less so for the Irish and Swedish organisations.

UNESCO (2005) states that the standardisation of terminologies should be based on standardised principles and methods, and based on scientific theory. It is implied that ISO standards can form the basis of these principles and methods. In each case, the influence of ISO standards was acknowledged, but the standards were not always strictly adhered to. There also appears to be a conflict in the literature between the ideal as suggested by ISO and a pragmatic description of actual terminology work (for example, Auger and Rousseau 1978). TNC was the organisation which most closely followed ISO standards, although even then,

terms were not always defined, for example, depending on the project requirements. In the Irish case, it was felt that the standards assumed that work was being done in an extremely thorough fashion on a very small number of terms, and that this was not realistic where terminology projects contained up to 10,000 concepts and resources were limited. Despite this, working methods were sometimes found to converge with ISO theory, and it was accepted that although a compromise was inevitable, it was important to be aware of theoretical developments. In the Catalan case, too, norms were studied but not always followed completely, although the work was closely based on them and on best practice in other organisations, such as the Office québécois de la langue française.

There was a difference between the languages in the amount of term creation carried out: in Irish, terms often had to be created, in Swedish, new terms were only rarely created, and Catalan was somewhere between the two. The emphasis in TNC's work was on researching and documenting existing terms and, sometimes, recommending one term over another, usually the one most in use (with a preference for Swedish terms). Translation of term lists from other languages was considered a poor method of research, although it was often requested by customers. In the Catalan case, as well, term research was done in Catalan, based on term extraction from sources. In the Irish case, on the other hand, the basic lists of terms for project work were generally in English, and Irish was added later. There was little spontaneous term creation in the language, so there was a strong need for (and a huge reliance on) *in vitro* term creation. In all three cases, terms other than nouns were researched and included in term collections.

In all three cases a distinction was made between general language (LGP) and specialised language (LSP), and there were different bodies responsible for LGP development. Interviewees generally recognised, however, how difficult it was to make a clear distinction, particularly in the 'grey area' between the two. This is also stated in UNESCO (2005, 10), and Alberts (2008, 20) argues that the separation of lexicography from general terminology development for a specific language does not work. The distinction between general and specialised language is 'fragile' (Martin 1998, 27).

TNC placed particular emphasis on the LGP-LSP distinction in their training work. TERMCAT, in defining the parameters of the dictionary of sport, excluded very general-language concepts and colloquialisms, such as those found in sports commentary. In the Irish case, perhaps because of the lexicographic deficit, more general-language terms tended to be included; in Fiontar's sports dictionary, for example, commentating terms and expressions were included, and a panel of sports journalists comprised the expert committee.

There was, in TNC, an interest in the social use of terms, and it was planned to carry out research into the terminology practices of Government agencies. Popularisation and determinologisation were not studied, however, as this was done by the Swedish Language Council. In the case of TERMCAT, both specialist and general use of terms was studied, sometimes through the Antena de Terminologia, and sometimes by term extraction from collected relevant sources. In the Irish case, there was regular contact with the media, and the language corpus was also researched for evidence of term use, but not as much of this was carried out as could be done, due to lack of staff. In any case, available sources rarely contained many *in vivo* term creation efforts, reflecting the minoritised state of the language.

Because there was no language observatory of Irish, language usage was not scientifically monitored; in the other two cases, work such as this was carried out. In TNC, terms were continuously extracted from journals and publications, and catalogued internally for future reference. TERMCAT had collaborated with the Open University of Catalonia to develop an observatory of technical terms.

The organisation's project team varied from case to case. In TNC, a working group, ideally of about five to eight members, was established, consisting of domain experts and at least one terminologist who could provide training in terminology methods. TERMCAT selected a team to undertake the work, generally consisting of terminologists, specialists, documentalists and computer technicians; in one case (a dictionary of videogames), there was a team of one terminologist, a project manager and seven specialists. It was a policy matter to consult widely with domain experts during the research process, which, although it made the work complex, led to a higher success rate for the final product. In the Irish case, domain experts formed the basis of the project subcommittees, with a secretary-terminologist. There was a problem in finding domain experts in some subject areas which were rarely discussed in the language (such as medicine and other technical areas), but these areas were not the focus of terminology project work. In Fiontar's work on IATE terminology, this was frequently an issue, however – one example was a collection of high-speed railway terminology.

Project size could vary considerably. For TNC, a normal project covered about 200-300 terms. Most Irish collections were far larger, of between several hundred and up to 13,000 terms. TERMCAT's collections also varied in size, but a recent dictionary of videogames terminology contained 265 terms; projects could be as big as 6,000 terms. This was in conflict with ISO 15188:2001, which recommends that the number of concepts per working group should be less than about 200.

The steps of terminology project work, for TERMCAT, were as follows. The project was first defined and the team was established. After analysis, a concept structure was established and term extraction was carried out; terms were discussed with experts in meetings and by email. Definitions and other additional information were added, and if necessary, terms were submitted for standardisation. The material was revised thematically and alphabetically. Additional material (illustrations, bibliography, thematic indexes) was added, and the dictionary was published and distributed, as well as being made available on Cercaterm.

For TNC, the steps were different depending on who had requested (and was funding) the project, and depending on the scope of the project. In a typical project, the working group's first step was to define the potential users and their needs (such as, for example, communication between experts or communication with the general public). The customers (who had commissioned the work) were also helped to delimit the project and decide what subfields would be included, as well as what kinds of information – definitions, perhaps, or equivalents in other languages. Available documentation was then used to identify the main concepts. Again, the onus was on the customer to identify important documentation in the area. Term extraction, usually manual because of difficulties with automatic term extraction, was carried out. A concept system was established and conceptual diagrams were drawn. Depending on the project, definitions were written. Equivalents in other languages were added at the end of the project. Experts were involved in all stages of this work. If new terms had to be created, this was done by researching the concept, by looking at related terms, and by consulting TNC's reference material and the experts. TNC estimated that in an in-depth terminology project, one term record took up to seven hours to create, from start to finish.

TNC's work method was closely related to that set out by Nordterm (Suonuuti 2001), and this document was frequently referenced. Suonuuti suggests a working group of between five and eight members, with a trained terminologist to assist them, and that a detailed schedule be drawn up, comprising: evaluating needs; determining the target group; identifying concepts; collecting and recording data; establishing the term list; establishing the concept systems; formulating definitions; selection and formulation of the terms; and revising the concept diagrams. There is also a two-page annex, 'Terminology work in brief', which sets out dos and don'ts in these areas, under seven headings: organise the work; record and structure the information; define the concepts; avoid definition errors; formulate the definitions; select the terms; finalise the draft. This structure is similar to L'Homme (2004), who names the following seven stages in the database creation process: corpus development; finding terms, usually in specialised texts; collecting information about the terms; analysis and synthesis of the information; coding; organising terms; and managing the data as term use evolves.

For Irish term project work, a subcommittee of the Terminology Committee was established, and they identified the scope of the project, and the relevant resources. Core concepts were identified and set out in tables or lists by Terminology Committee staff. The available Irish terms were then collected, and matched with the (English) concept lists. These terms were reviewed by the subcommittee, and missing terms were discussed and recommended. Once the subcommittee's work was done, the editorial work began, often raising previously unnoticed conceptual difficulties. The Terminology Committee approved the finished product.

The work was occasionally structured into concept diagrams in the Irish case (although, with large collections, this was considered impractical), but this was nearly always done in the Swedish and Catalan cases.

Expert involvement was important in all three cases, and in all three cases a committee-based approach was taken. This is in line with UNESCO (2005, 13), which states that the best results are achieved when linguists, terminologists and domain experts work together in committees, and with ISO/TR 22134:2007 (15), which states that 'speakers in a given professional environment will have a greater propensity to use the terms appearing in a standard if they know that the choice has been made by their peers'. ISO 15188:2001 recognises that there are different organisational models for these committees. Auger and Rousseau (1978, 21) stresses the importance of a diversity of expert types, coming from industry, education, research, the public sector and professional associations.

TERMCAT used a series of in-house bespoke databases for terminology work. Some work, such as interaction with specialists, was also done outside the databases, in Excel or Word documents. In the Irish case, Fiontar also used in-house databases for its work on IATE and sports terms, and lists were shared with external experts either through a dedicated extranet (for sharing proposed IATE terms with EU translators) or using file sharing software such as Google Docs. The advantage of using an extranet was that all comments were incorporated in the database, and no processing was required. TNC used databases, or lists, depending on project size.

TERMCAT had documented its terminology work methods in a series of publications; these publications also covered topics such as how to form the plurals of loanwords, Catalan names of plants, and names of professions. This documentation was being completely revised in light of the application for ISO 9000:2005 certification. In the opinion of interviewees, it was very important to publish a description of the methodology in order to ensure consistency and in order to explain work methods. TNC documented its research in a manual published by Nordterm as well as referring directly to ISO standards. Fiontar used a set of unpublished



manuals describing the research process and provided detailed reports on its work to funders on a quarterly basis; the Terminology Committee distributed a manual of term creation methods and recorded details of the work in minutes of meetings. Thus in all three cases there were the 'firm guidelines for the selection, definition and publication of terminology' recommended by Sager (1990, 116) and by Baxter (2004, 268), who speaks of the importance of a set of 'overall coherent guiding principles'.

The steps of research projects in the three cases can be compared to the project management guidelines for terminology standardisation set out in ISO 15188:2001. This divides the steps into preparation, design, implementation and review. The preparation phase involves feasibility evaluation (such as identifying users and their needs) and description of the legal, financial and organisational framework. This is most comparable to the TERMCAT approach, although advance planning was also done in the other cases. The design phase includes the selection of a project leader and project planning. The scope has to be clearly defined and needs analysed. Preliminary provisions for dissemination and maintenance of the terminology are also established – something not mentioned in any of the cases. The implementation phase consists of collecting and recording terminological data. The review, evaluation and verification phase includes a review of the terminology products (by terminologists, specialists and users), and a review of the standardisation project itself. The final phase is the preparation of a final report and a financial review. Several checklists are given for the acceptance of terminology projects and for a final evaluation of the product. This description of the stages of a terminology project corresponds roughly to the procedures followed in the three cases.

## **Standardisation**

### *Meaning of 'standardisation'*

It emerged in the discussion of standardisation that all three cases had a different understanding of the meaning of the concept and of its implementation. In the case of TERMCAT, there was a very clear distinction between standardised and non-standardised terms; in TNC, standardisation was not carried out; and in the Irish case, there was no clear, defined understanding of what standardisation meant.

For TERMCAT, standardisation was a specific process which was carried out in the case of occasional terms which were considered problematic, mainly because a loanword or calque was in use, but also when there were different designations for the same concept or variations in spelling. Terms which had been standardised were obligatory for certain users, primarily the Catalan administration.

The terms 'term standardisation' and 'language standardisation' were not used in TNC. TNC's work was to give recommendations, and its terminology had no particular legal or administrative authority; there was no normative body for Swedish terminology. This was in line with Swedish language policy in general.

In practice, however, because term project work was done in cooperation with, and at the initiative of, subject specialists, TNC's recommendations were generally accepted. Occasionally TNC terms or collections were referred to in legislation and thus indirectly became standards. Because of TNC's status, its terminology was often regarded as normative.

Questions of term standardisation were not a priority for Swedish because new terms were rarely created; usually, one term out of several possible ones was recommended – harmonisation (as in Suonuuti 2001). In some cases, where the concept was not sufficiently clear, no recommendation at all was made. The situation was further complicated by the fact that the Rikstermbanken database contained both TNC's own term collections (TNC's recommendations) and terminology collections from many other sources (not recommended by TNC). A user might therefore be presented with several choices of term and definition, and the distinction between sources was not always noticed.

For the Irish case, there was no clear shared understanding among interviewees of what exactly standardisation meant. It was generally agreed, however, that it was important to have an agreed set of terms for legal and administrative spheres where precision was important, and that in the case of legal translation it was very important to respect precedent.

Insofar as there was a standardising authority, this was the Terminology Committee, which oversaw, directed and approved the work of the Terminology Committee staff and subcommittees and of other agencies such as Fiontar. However there was no legal obligation on public bodies or on others to use terms approved by the Terminology Committee. Its work was prescriptive, but without enforcement. This created problems where cooperation and agreement was necessary between organisations, such for the IATE database for example, where Fiontar created terms and the Terminology Committee approved them, for use by EU translators. Different traditions even within the administration meant that recommended terms were not always accepted and there was no accepted point of reference for settling (sometimes long-standing) disagreements about term choice.

In the Irish case, it was clear that the distinction between description and prescription was not as important as ease of availability. Regardless of their official acceptance status, term resources which were easily available were usually used. For this reason – because the Focal

database was easily available – the Terminology Committee’s terms were generally accepted, although translators of legislation did not always accept them, and nor did broadcasters.

In different contexts, then, ‘standardisation’ meant different things, and this is not clearly defined in the literature. There is no consensus on the need for, or uses of, standardisation.

It was seen in Chapter 2 that in some sources standardisation is understood as the choice of particular terms as the official or obligatory choice in certain defined situations; others (such as Auger 1986, 50) see it as the way a terminological system regulates itself, or a committee of experts that oversees and validates the terminologist’s research (Auger and Rousseau 1978, 48). Other authors question the value of officialisation strategies and how much writers’ and editors’ decisions can be forced (Martin 1998), except in certain very limited circumstances, which require strict regulation (Drame 2009, 63). The literature (such as Auger 1986, Guespin 1993, Baxter 2004) emphasises the importance of consensus and negotiation with users in achieving standardisation.

ISO 15188:2001 defines terminology standardisation as the ‘establishment of terminology standards or of terminology sections in technical standards, and their approval by an authoritative body’ (2). Drame (2009, 93), referring to the ISO approach, lists the most prominent features of standardisation as: documented agreements; consensus-driven; inclusive (all stakeholders); promoting conformity for enhanced interoperability and exchange; and generally voluntary (unless incorporated into national legislation).

A further step in the standardisation process, as described by Vila i Moreno *et al.* (2007, 249), as well as consensus and officialisation/legislation, could be the acceptance or implantation stage, thus creating a complete cycle which would go from selection to implantation. Similarly, Samuel points out that in standardisation, there are two kinds of agents, experts who pronounce on a norm, and users who create the used norm (Samuel 2005, 513).

### *Standardisation methods*

Before making a standardisation recommendation, TERMCAT carried out very detailed investigations into definitions, context and usage, and consulted a minimum of five subject experts. About 125 sources were consulted in each case, and a minimum of two days were spent on each concept. The media might also be consulted through the Antena de Terminologia. This evidence was considered at a fortnightly one- to two-hour meeting of a supervisory council, which was also responsible for approving general policies on terminological matters. The supervisory council, which had more authority than TERMCAT itself, consisted of two philologists from the language academy, two TERMCAT terminologists,

and three specialists, one each from science, from the humanities and from technology. Thus what TERMCAT considered the three vertices of the concept of a term – a *linguistic denomination* referring to a *concept* used in a *particular area of specialisation* – were reflected in the group's composition (it is also in line with UNESCO 2005, 13).

The terms thus standardised had a higher status in the Cercaterm database than other terminology work done by TERMCAT, and their use was obligatory for the Catalan administration. About 300 terms were standardised per year, and these requests came from TERMCAT's work on dictionaries, from the media and from the public. It took about two months for a question to be processed. Socioterminological criteria such as the likelihood of term implantation were taken into account: if, after a period of time, it became clear that a standardised term was not in use, the case could be re-opened (consistent with ISO/TR 22134:2007, 15, and with Sager 1990, 119).

The TERMCAT approach was thus in line with ISO/TR 22134:2007 (7) which recommends that standardisation be carried out 'in close association with the targeted professional people', based on a description of usage, and that terms 'shall be selected taking account not just of the usual terminological criteria, but also of implantability criteria. Standardization requires a socioterminological approach.' The 'prior consultation with the users' suggested in the report took place in discussions with the subject experts.

The Irish Terminology Committee consisted of people chosen for their expert knowledge of the spoken and historical language and most of them were academics from Irish-language departments. There were representatives from academia, lexicography, terminology, Government departments, the media and the translation sector. They met monthly. In some cases the Committee had in-depth discussions; in others, work was approved but not discussed. The level of detail of the work – and of the evidence submitted to the Committee – was not comparable to that of TERMCAT, but far more terms were approved annually.

### **Dissemination**

Dissemination had at least two aspects for the cases studied: the publication of term resources, and marketing (in a broad sense, including for example terminology awareness-raising, and promotion of the organisation itself and of term products). These are examined in turn.

#### *Publication of term resources*

In all three cases, the most important means of making terms available was online. TERMCAT's Cercaterm database had been online since 2000; the Irish Focal site had been online since

2006, and TNC's Rikstermbanken had been recently launched, in March 2009. Both the Terminology Committee and TERMCAT provided all their terminology resources online; TNC provided all terminology resources as well as a large amount of external data, but did not provide responses to *ad hoc* term enquiries. In the Irish case some ancillary glossaries and other corpora of terms published by other organisations were also online, but they did not constitute a significant resource.

In TERMCAT's case, online dissemination was available through simple searching of the Cercaterm database (which contained about 230,000 Catalan terms), and terms could also be downloaded, under a creative commons licence, as TBX (TermBase Exchange) files. Fiontar planned to introduce this resource as an aid to translators later in 2010. Cercaterm could also be searched through the general language service's search tool (Optimot).

Focal had been created by merging all the term lists and collections produced by the Terminology Committee (about 130,000 Irish terms), a process that had taken a staff of between four and eight about two years to complete (and during which occasional inconsistencies had come to light, and been resolved through cooperative disambiguation work). This process had added value to the collection, because of the addition of grammar information, variant forms, and other lexical resources. There was also a complex search mechanism, with a focus on user-friendliness.

The Rikstermbanken had been created by compiling (but not merging) term collections belonging to over seventy organisations, mostly public; the user was therefore likely to get different definitions and terms from different sources. It contained about 60,000 records and 250,000 terms, most of them in Swedish.

In the Irish and Catalan cases, it was felt that the online databases were well known among target user groups; in TNC's cases, it was felt that the (very newly available) database was not well known and had limited influence but that this was likely to change. There was competition in the Swedish case from other online resources such as the national Swedish Encyclopaedia and Wikipedia, as sources for definitions. One problem in the Catalan case, not attributable to TERMCAT, was the fact that Cercaterm was often misused as a Spanish termbase, just as Focal was often misused as an LGP resource. This confusion in users' minds between LGP and LSP resources is also pointed out by Moffet (2004, 19), who found that users of the *Grand dictionnaire terminologique* expected to find both general language words and specialised terms in the database.

Interviewees considered Cercaterm – and the ease and speed with which it could be used – a key strength of Catalan term planning work, although, interestingly, TERMCAT staff described it as rather old and unwieldy. Focal (and technological innovation, in general) was considered a key strength and opportunity for Irish term planning. Similarly, UNESCO (2005, 32) emphasises the importance of ‘maintaining a close connection to technological innovation and knowledge transfer’.

There were other ways of making term collections available, even if they were comparatively less important and less accessible. In all three cases, dictionaries were published and sold, although these did not represent a significant income stream and sales were falling. TERMCAT’s dictionaries were sometimes published by publishing houses specialising in the field, in order to enhance their status.

In TERMCAT’s case, term collections were sometimes made available as posters, leaflets or other ‘decorative resources’.

TERMCAT’s free telephone and email advisory service was another way of disseminating terms, although the number of requests for already-existing terms had fallen after the introduction of Cercaterm. The Terminology Committee also provided a free advice service, responding to email and telephone requests. TNC had a similar query service, but this was usually on a paying basis, something seen by interviewees as problematic, because would-be customers were often unwilling to pay.

Other less significant means of dissemination included, for TERMCAT, publication of standardised terms in the official journal of the Government, distribution of minutes of meetings to the Language Academy, and a dictionary of neologisms. For Irish, they had occasionally included the publication of lists in literary magazines. Terms were also distributed through school textbooks, for which much of the terminology had originally been created. It was felt that there were few other places in which Irish-language technical or scientific terms were used, and that a publication such as a science journal for young people would be useful in bringing terms into circulation. In TNC’s case a blog was planned for discussing particular terms in detail.

General-language terms were regularly published in the normative dictionary of the Catalan language. Terminology was also available through Optimot, a language website which searched general language dictionaries and TERMCAT’s databases. In the Irish case, because there was no modern LGP dictionary, this was not possible.

Dissemination of terms among the media was regarded as particularly important and challenging in all three cases. There are several mentions in the literature of planning for informal means of dissemination of terminology, since dictionaries, etc., only have indirect influence in term dissemination (Onyango 2005; Prys 2007, 8; Kummer 1983). TERMCAT had developed a particular tool to deal with this, the *Antena de Terminologia*. This was an occasional email distribution list comprising all the main media working through Catalan. Although relatively small, it had considerable impact among the media and with other observers, such as the universities and the Consortium for Language Standardisation. It was an exchange platform, allowing members of the media to give TERMCAT information about the use of terms and allowing TERMCAT to inform the media of new terminology. It also allowed consensus-building in difficult cases. Interviewees were in general very satisfied with this tool. Requests from the media were also given high priority with the advisory service.

There was no such media network in the Irish case, a fact regretted by interviewees. It was felt that a network, or stronger media representation on the Terminology Committee, would be useful. It was suggested by interviewees that there was a need for an imaginative means of term dissemination, although there were no clear ideas about ways of doing this: perhaps an interactive discussion programme sponsored by the Terminology Committee or a sociolinguistic project in which terminology could be discussed publicly. This was particularly needed as there were very few fora in which scientific terminology was used in Irish.

In Sweden, there was a sense that the media was not aware of (or, perhaps, interested in) terminology or TNC, and although there was a media language discussion group, TNC was not involved. The only exception was the joint terminology groups, which did have media representation.

### *Marketing*

UNESCO (2005, 30) stresses the importance of publicity and promotion for the implementation of terminology policies: 'ultimately the terminology policy and its implementation will fail, if the attitude of the general public is indifferent or even hostile towards the policy'; as was seen, there is little in the literature about this subject. The three cases examined had very different approaches to the idea of marketing, although all three shared the problem of limited budgets.

TERMCAT had a three-person communications department to deal with marketing and awareness-raising; in the other two cases marketing work was taken on by other staff members, who did not usually have a background in such work, when they had the time. A

comprehensive communications plan had been developed by TERMCAT in order to create a unified image (using the logo, for example, on every publication) and in order to market terminology work. The main aim was the promotion of Catalan terminology itself and of new term collections. TERMCAT also hoped to convince organisations that the use of correct terminology was important from an image point of view. There was, it was felt, little interest among specialists in specialised language, unless that specialist was particularly interested in Catalan.

In TNC's case, marketing and awareness-raising about terminology was a specified task for which funding was received. It was also important in order to raise awareness about TNC and to bring in contracts to create income. Marketing of specific term resources was a secondary consideration, although a publicity campaign had been embarked on for the new term bank. Because there was no dedicated marketing department, the approach was to share the tasks among people with some knowledge of or interest in marketing work, who formed an internal marketing group. Lack of time was the major hindrance.

Because of the need for external funding, there was a feeling in TNC that it was necessary to make contacts and to reach out to potential customers. It was also important to raise awareness, not of specific terminology resources, but of the importance of terminology in general. The long-term strategy was to make specialists aware of the need for terminology (consistent with Auger 1986), and, as a by-product of that, of the need for TNC – to make them understand that they needed support with terminology. Training was therefore an important aspect of awareness-raising. A four-step programme proposed by TNC (called Term-O-Stat) would offer Government departments and bodies an analysis of their term resources; term extraction; the development of new resources; and terminology training. This would serve to raise awareness and highlight potential improvements which could be made with TNC's help. A certain amount of direct contact was also made with potential customers, and free breakfast seminars were offered. An occasional e-newsletter was produced by TNC and distributed to customers and potential customers, such as those who had availed of the query service.

Marketing campaigns were used by TNC to promote both the Rikstermbanken and the courses offered. Among the ideas discussed or used were posters, brochures, catalogues, bookmarks, and a sash worn by staff members when speaking about the term bank. Fiontar had used a few specially-created products, such as a wall clock and bookmarks, to target specific user groups. TERMCAT also produced attractive brochures dealing with specific subject areas, such as health spas. An external interviewee also suggested using interactive, fun approaches to diffusion, such as competitions, prizes, games and posters, which would involve people in the



discussion and creation of terminology. Direct advertising, it was felt in TERMCAT, was expensive and not always the best way of reaching users. Online marketing, such as using Google Adwords, was carried out to a small extent by Fiontar.

In the Irish case, little effort was devoted to marketing work of any kind, and there was only minimal direct marketing of term resources, with an almost complete reliance on word-of-mouth within the Irish-language community. It was felt that this constrained awareness and usage, particularly among the predominantly English-speaking community. This had been the case even before the severe economic downturn.

Marketing of specific term resources, such as new dictionaries, was, it was felt, perhaps not done sufficiently by TNC. In TERMCAT's case this was undertaken very comprehensively, starting with a market study to identify target groups. All marketing work was then done with these groups in mind; advertising, for example, was in specialist magazines.

In launching new resources, TERMCAT, having identified its target groups, emphasised the importance of so-called 'real events' – events that would bring users or specialists together and create interest. Conferences were organised biannually, and collections were rooted, as far as possible, in the real context of use. For example, the *Dictionary of Psychiatry* was produced in consultation with the academic association of the mental health service; it was sponsored by a pharmaceutical company and supported by the Catalan health department; it was published by Elsevier-Masson, a prestigious biomedical publishing house; and it was launched in a hospital. This was a guarantee of quality, of prestige and of probable use. The ideal, as had happened in the case of the 1992 Barcelona Olympic Games, was to publish dictionaries (in this case of sport) to coincide with newsworthy events. Media events and activities such as these were recommended by UNESCO (2005, 30).

TNC's website was considered an important marketing tool, because it contained a lot of terminology-related information. The new term bank was another natural way of raising TNC's profile. New media opportunities, such as a blog or a Facebook account, were considered important for TNC. TNC felt that in future a blog would allow it to produce news items and participate in debates without having to produce full articles or conference papers. Gimmicks, such as a terminology video game to promote a dictionary of videogames terminology, were sometimes used by TERMCAT to create interest, and news items were posted regularly. Similarly, Focal contained a considerable archive of information and articles about Irish-language terminology work.

In all three cases, inexpensive marketing, such as press releases and presentations to schools and universities, was considered important. Presentations at conferences were also important. Word of mouth was particularly relevant for TNC, particularly among specialists working on a specific project. This conforms with Rodríguez Río's (2003b) findings about the importance of informal means of dissemination and marketing.

In TNC's case, it was felt that, despite the effort invested, the results of marketing work were not particularly good, and that there was only limited knowledge of TNC itself, or appreciation of what terminology was, even among key groups such as translators. There was generally little media interest in terminology work; this was also felt by TERMCAT. Drame (2009, 127) also finds that the mass media tend not to regard terminology as newsworthy unless it is embedded in a story related to the audience. TERMCAT, predictably, had better results, with a twenty-five per cent increase in new visitors to the website since its communications plan had been implemented.

UNESCO (2005, 30) suggests using the educational system for publicising terminology policies, but there was little evidence of this in the three cases studied, apart from third level.

### **Implantation**

In all three cases, questions were raised about the implantation (or, often, the non-implantation) of terms, and suggestions were made about possible causes for this. In both the Irish and the Catalan cases, the diffusion and implantation of terms were considered the major weaknesses in term planning work.

Terms were not always accepted by their target users; in TERMCAT's case and in the Irish case, for example, the media sometimes declined to use the recommended term. (In the literature, Martin (1998, 199) warns of the danger of too mechanistic a view of language: writers are also speakers, and are thinking of many more things than mere communication.) On the other hand, if the media were involved in term creation, there was a better chance that the term would be used, and in the Irish case, it was felt to be particularly important for the media to use the recommended term – this sentiment is also found by Rodríguez Río (2003b) in his survey. Similarly for TERMCAT, considerable emphasis was placed on media involvement.

Reasons given for not using terms included that they did not sound right or did not give the right impression of education or culture. For example, the terms 'hardware' and 'software' might be used instead of their Catalan equivalents, or the French term 'fondue' might be used on a restaurant menu, to show that the user was not ignorant of foreign languages (similar to the socioterminological factors for non-implantation mentioned by Quirion: 2003b). There

were no clear answers about the causes for the non-implantation of some terms however, and this is reinforced by the literature on the subject.

This perception issue was particularly important for Irish, it was felt, and many interviewees identified term acceptance as *the* major problem for term planning for the language. Particularly in informal language registers and among native speakers, there was, it was felt, a big gap between term creation and use. There was also a sense that, although considerable term resources were being created and used for EU and other official purposes, this was of limited use for the long-term development and survival of the language.

The level of acceptance of terminology depended rather on the level of specialisation of the target user. TNC, because their terminology work was descriptive of use rather than prescriptive, and because their work was done on foot of demand, were able to assume that their published terms were used by the experts who had originally suggested them. This reflects the point that 'the active participation of the target audience's representatives is needed, because no consensus on terminological decisions can be reached without prior discussion and exchange of views' (Pavel and Nolet 2001, 97-98).

In TNC's case, it was felt that implantation had been limited because the terminology was not very visible, but that that would change, as the term bank was recently available online.

In TERMCAT's case, although not in the others, there was an element of obligation, as standardised terms had to be used by the administration, but there was no enforcement of this, and it was therefore not known what effect this approach had on implantation. This is similar to the Quebec situation discussed by Martin (1998), where the French language charter made the use of standardised terms and expressions obligatory in certain situations of official communication, but very little of the official terminology had actually been implanted in those official texts. Rodríguez Río (2003b) found that such legislative measures were relatively unimportant to term users.

UNESCO (2005, 16) suggests that 'in all cases the process of terminology creation and adoption requires close collaboration among terminologists, subject specialists, linguists, translators, and educators.' In all three cases, it was unclear whether this close collaboration took place, and if so, at what stage of term provision or implantation.

## **Evaluation**

UNESCO (2005, 30) mentions the importance of a 'monitoring mechanism' for the implementation of term planning, with 'an evaluation and assessment mechanism, which

allows for timely corrections and adjustments in the operational and organizational planning of the implementation'. This is reinforced by other authors; for example, the absence of evaluation in the development of Kiswahili terminology in Kenya is 'the major handicap in the attempts to develop terminology' (Onyango 2005, 231). Other authors warn that management – and thus evaluation – cannot be limited to term production alone: Hübschmannová and Neustupný object to the '(1) concentration on terms, (2) concentration on inventories rather than processes, and (3) a one-sided regard to the generation rather than the management process' (Hübschmannová and Neustupný 2004, 84).

There was a considerable difference between the three cases in the importance attributed to evaluation, and in the amount of time and effort spent on this aspect of work. TERMCAT had a highly developed approach; in the case of Irish and TNC, things were somewhat less coordinated, and, although several types of evaluation were aspired to, these were not, in fact, carried out. This was most evident in the case of implantation studies.

#### *Implantation studies*

Implantation studies were recognised as important in all three cases (and in the literature – Martin 1998, 205, and Auger 1999, 123, for example), but only TERMCAT actually ensured that they were carried out as a measure of the term planning process. By working with external parties (two Barcelona universities), to ensure fairness, both qualitative and quantitative studies were carried out. The challenges of implantation studies, a relatively new area of research, were recognised, particularly in collecting material and in knowing which material to study. The results obtained from one implantation study (Vila i Moreno *et al.* 2007) showed that TERMCAT terms were more likely to be used in formal contexts, but that often they were neither known nor used – that is, *in vitro* work was not translated into *in vivo* results. This was recognised as problematic. These studies were published by TERMCAT, and TERMCAT had begun to tackle the problem with the development of a communications department and a communications plan.

TNC did not have the resources to carry out research on term implantation, but it was felt that this was important work. Students were encouraged to undertake such work, although no financial sponsorship was available.

In the Irish case, there was a recognised problem with term implantation, and a recognised need for research on implantation. This had been suggested to students as a possible research area, but a comprehensive study had yet to be completed.

### *Website/database evaluation*

How people use terminology websites (Moffet 2004) and the interaction between user and dictionary or term resource (Boleslav Měchura 2008) are both mentioned in the literature as areas for evaluation.

Both TERMCAT and Fiontar carried out statistical evaluation of the number and behaviour of visitors to their websites. In Fiontar's case these statistics provided detailed information about user behaviour, term popularity, terms which were requested and not found, and common spelling errors. This information could be used in the future to decide strategic priorities.

### *Evaluation of marketing work*

Since TERMCAT had recently implemented a communications plan, it was important for it to measure its impact, and that of its marketing work, and references to TERMCAT were measured using an RSS tool. TERMCAT was considerably more aware than in the other two cases of the impact of communications work and devoted rather more effort to measuring this.

### *User-based evaluation*

Interaction with users of the websites was important in all three cases. Cercaterm users were encouraged to submit feedback, make suggestions or point out errors. In the case of TNC, users were invited to comment on particular terms or to send in feedback. Feedback was recorded and questions were replied to; term records were corrected as necessary. Just as in the Irish case, most contact was about terms that were not available, or pointing out spelling and other errors. In the Irish case, a third significant category of emails comprised requests for general language information. Users of Focal had also suggested technical improvements, many of which were implemented during the development phase. Users of Focal could make requests for *ad hoc* terms directly to the Terminology Committee using an enquiry form on the website.

More structured interaction with user groups was sometimes carried out, usually for particular purposes. During the creation of its communications plan, TERMCAT surveyed different sets of users to ascertain their levels of satisfaction about TERMCAT and its products. During the development of Rikstermbanken, a test group gave feedback to TNC on a prototype version. Fiontar had carried out several minor surveys of users, and during the rollout of a new interface in 2009, interaction with users was particularly important. A strong sense of ownership was displayed by regular users. No major investigation into Irish user behaviour (such as Moffet 2004) had been carried out, however. The Irish Terminology Committee did

not engage with the public in a proactive way about development plans or term provision, but feedback, when offered, was accepted. This approach was questioned by one interviewee as being very traditional and top-down.

TERMCAT specified this two way contact with the public as an important control mechanism, but it is clear that it was important in all three cases.

#### *Evaluation of training courses*

TNC, because it carried out more terminology training work than the other two cases, placed more emphasis on gathering feedback from seminars and other training programmes.

#### *Term production and project evaluation*

ISO 15188:2001 calls for the review of terminology products, to be carried out by terminologists, subject-field experts and users, and of terminology standardisation projects. The ISO standard 23185:2009 lists the criteria to use for assessing terminology resources. It describes four components of a model for assessment, with usability attributes relating to: terminological data, data input, data output and data management. Measurable and non-measurable usability attributes such as linguistic correctness, maintenance of data, and readability are discussed. Emphasis is placed on the importance of coherence, for example in using unified spelling and phraseology.

The standard is not intended as a measure of the term planning process or of the terms themselves, but is limited to the usability attributes of terminological data, and has nothing to do with the quality of the terms themselves, or with how they are used or promoted. There are no criteria for measuring or evaluating use in a socioterminological sense, but it is pointed out that it is necessary to assess terminology resources in conjunction with an analysis of their purpose (purpose of creation, management and potential use). The standard was not used for evaluation purposes in any of the cases.

In evaluating term resources, Smith (1994) and others (Samuel 1996) point out that the numbers of terms or dictionaries produced cannot be trusted as the sole measure of successful term planning. Quality also means the time spent and the soundness of the methods used, as emphasised by Hübschmannová and Neustupný (2004). Fähndrich (2005, 251-2) lists some objective criteria for the assessment of a terminology resource: compliance with terminological standards, formal and methodological consistency, accuracy of information, correct allocations of terms and equivalents to concepts, correct spelling and grammar, as well as the subjective criteria of whether the customer's expectations were met or exceeded at a reasonable cost.

Term production methods were monitored in TERMCAT, and a final evaluation was carried out at the end of each project (consistent with ISO 15188:2001). Targets were set in Fiontar through work contracts agreed with funding agencies at the commencement of each project phase, typically every two years. Term projects in TNC were informally evaluated by participants; in some cases, this was done more thoroughly using a written survey. TNC interviewees particularly emphasised the importance of using sound terminological work principles as a criterion for success.

In order to measure term quality, it was planned in TERMCAT to do an evaluation of samples taken from dictionaries, by measuring the standard of the terms, definitions, grammar categories and other criteria. Similarly, Fiontar analysed a random selection of concepts from the Focal database on a quarterly basis, and ranked the results against target standards for correct spelling, grammar information and layout, as well as measuring website response times and database availability. Responsibility for evaluating the quality of the terms themselves rested with the Terminology Committee.

In TNC, terminology work was monitored and discussed within the organisation; for example, responses to *ad hoc* enquiries were circulated to all staff and they were reviewed and commented on. Informal monitoring and feedback among the staff was valued highly.

#### *Quality certification*

One step in evaluation taken by TERMCAT and not in the other cases was preparation for ISO 9000:2005 quality certification, which created a need for quantifiable measurements and detailed documentation work, as well as external evaluation. It also entailed the evaluation of the performance of the organisation at all levels.

#### *Research*

Because of its university status, Fiontar relied on and participated in academic research and discourse as a long-term evaluation mechanism.

#### *Reporting and external evaluation*

In all three cases, there was an external body to which reports had to be made. In TERMCAT's case, this was the external directory board. For Fiontar, it was the funding bodies, who received quarterly reports. External evaluation of Fiontar was carried out annually by an external consultant, who mainly looked at the technical solutions and the management processes. On the other hand, the Terminology Committee, although a part of Foras na Gaeilge, was not regularly evaluated by Foras. TNC had to report to its board of directors on an

annual basis, and there were quarterly board meetings. Because grants were given on an annual basis, the Ministry of Enterprise, Energy and Communications also received an annual report. This was available on TNC's website and through the Companies Registration Office.

## **Training**

For Auger (1986), a complete training programme includes both the training of terminologists who will take charge of systematic work and the training of other specialists involved (e.g. scientists and technicians, translators, interpreters, technical writers, teachers, specialists in documentation, computational linguists, lexicographers) as well as the training of teachers of terminology (Cabré 1998, 20).

The three cases had, in some ways, completely different approaches to the question of training; on the other hand, common challenges were acknowledged. It emerged that there were at least four kinds of training: training of terminologists; training of people working with the terminology organisation on terminology work, such as expert members of a terminology committee or of a working group; training of professionals working closely with terminology (such as translators, or subject field experts); and training of the 'general public'. As Cabré (1998, 222) states, 'training people in terminology should not be confused with training terminologists'. These are examined in turn here.

### *Training of terminologists*

UNESCO (2005, 15) recommends that 'a systematic action plan for human capacity building should be in place to facilitate the training of the terminology experts needed to carry out all aspects of the formulated terminology policy'. Cabré finds that theoretical, methodical and technical aspects must be covered in the training of terminologists, as well as practical experience in a professional setting, provided in a variety of formats – extensive or intensive courses, seminars, training periods at terminology centres, lecture series, etc. (Cabré 1998, 222). The training should cover 'elements from linguistics, particularly lexicology and lexical semantics, logic and classification theory, special subject fields, documentation, sociolinguistics, pragmatics and computing in addition to all the knowledge a specific social situation may require' (Cabré 1998, 222). Outside of the organisations themselves, this did not appear to be the case in any of the three cases.

Staff training was approached in a broadly similar way in the three cases.

Work process documentation and user manuals were provided in all three cases, but most learning was 'on the job'. The training was recognised as being an informal apprenticeship, similar to what Suonuuti (2001, 5) says: 'the most helpful asset in actual terminology work is...



long experience and practice in the field'. Further training for Fiontar staff was provided through attendance at conferences (in order to keep up with new developments), and external training courses, such as Termnet's Terminology Summer School or courses on resources such as Trados. TERMCAT staff were offered foreign language classes and were given training on methodology and research tools, and Fiontar staff were given advanced training in grammar. It is implied in RaDT (2004) that one of a terminologist's tasks is to train newcomers to the field, either trainees and staff within the organisation or students, and this seems to correspond to the reality of all three cases.

Both TERMCAT and TNC, however, acknowledged that finding high-level training for staff was problematic. For TNC, this was exacerbated by the lack of terminology instruction or of a school of terminology in Swedish universities, and by the fact that the organisation itself was immersed in practical rather than academic work. Any terminology training available in Sweden was provided by TNC itself. In this, Fiontar, being university-based and with an emphasis on research, was in a different position, and encouraging further academic study, such as PhD research, was seen as a form of training, coinciding with Auger's view that the maintenance of high standards of research necessitates that terminologists actively participate in the development and spread of terminology science on an international level (Auger 1986, 49), and Cabré's view that they should 'play an active role in the numerous research areas that all languages have to deal with' (Cabré 1998, 223). Other ways to tackle the problem included, in TNC, an occasional study circle among staff. This lack of high-level training contrasts with UNESCO's emphasis on research-based methods and policies (2005, 32).

A joint Nordic master's degree in terminology was under development. For Swedish, like Irish, it was felt that there was no tradition of terminology work in the universities.

A two-year graduate internship programme in Fiontar planned for 2010, involving the Terminology Committee and other partners, was one practical approach to the problem of provision of training in terminology work; these interns would also be encouraged to carry out MA or PhD research into terminology and other language areas. This was another example of the different approach taken by Fiontar due to its university status.

TERMCAT also worked with the universities and gave visits and talks, as well as accepting students on internships and study visits. The universities were acknowledged, in all three cases, as valuable collaborators or potential collaborators in advancing research and gaining insight into key areas such as term implantation. Encouraging students to carry out such research was viewed as important.

### *Terminology committee members*

Expert members of terminology committees or working groups were another group that could need training, and this training is recommended in ISO 15188:2001:

The project leader should take appropriate measures to ensure that the members are familiar with the principles and methods of terminology work. To this end, an introductory tutorial in practical terminology work should be arranged for all the group members. The project leader should ensure that all members have ready access to ISO/TC 37 standards, general language dictionaries, technical vocabularies and other appropriate resources. (ISO 15188:2001, 5)

In the case of Irish, committee and working group members were given no particular training on the principles or methods of terminology work, and generally learned from others or from listening to discussions. Because some Terminology Committee members had been there for a long time, new members could learn from their expertise and from that of the staff. In TNC, on the other hand, working group members were offered an introductory seminar or workshop, to ensure agreement about the aims and approaches to the work and to address questions such as the meaning of a concept or of a term.

### *Professionals working closely with terminology*

The professionals working closely with terminology differed from case to case. For Irish, these were generally translators, because specialised work, in the sciences, for example, was rarely done through Irish. In the case of Swedish, as well as translators, large organisations often needed help with organising their Swedish terminology work. (Employers often found it hard to find trained in-house terminologists, again, because of the lack of training in universities.) TERMCAT was somewhere in between these two cases. After linguists and translators, the administration, the Government, the universities and the media were the main user groups, but the private sector was less well represented.

TNC was the organisation most involved with this kind of specialist training, running frequent general and tailor-made terminology workshops and seminars. Subscribers, such as Government departments or the national standardisation body, could avail of this training. TNC also provided training courses to EU translators. This is consistent with UNESCO (2005, 20) which states that consultancy services and training can be needed for aspects such as application of terminology principles and methods, selection and application of terminology tools, and terminology project management. It was found that 'today's subject field experts frequently have not studied the basic theory of logic and epistemology underlying the philosophy of science or information science, and need training in the theoretical and

methodological basics of terminology science and terminography' (UNESCO 2005, 20). A similar point was frequently made by TNC interviewees.

In the case of TERMCAT and Irish, less emphasis was placed on training, with the feeling being that it was more important to make term resources readily available, especially given that external specialists were not usually doing their own terminology work. In the case of Irish, there was some concern about the misuse or overuse of terms in general language, and it was acknowledged that awareness of this was an important part of training for translators. Similarly for Catalan, it was important to train students to choose the right term for the context, and to use an authoritative source such as Cercaterm. It was generally recognised in all three cases that training for journalists in the correct use of terminology was desirable, but not provided enough, if at all. Terminology training for teachers in Irish-medium schools was felt to be particularly inadequate.

### *The general public*

The general public were given information about the use of terminology in several ways.

Students could be offered information, visits and internships, which was done in all three cases, and felt by all to be very important. In TNC, it was felt that students in every subject area should ideally be offered introductory courses in terminology, and TNC worked with the universities to provide accredited terminology courses within study programmes such as medicine informatics, translation training and linguistics, as well as for any interested student. The fact that students were prepared to pay for these courses illustrated the level of interest generated.

Information and training resources for the public could be made available online, such as Fiontar's short terminology skills course, and the large quantity of documentation on TERMCAT's website. TNC also emphasised the importance of web-based training courses.

For TERMCAT, the consensus seemed to be that detailed training was not needed for terminology users, and that the most important message was the existence and whereabouts of term resources – in other words, dissemination. This attitude was also prevalent in the Irish case (with the caveats that users had to learn the appropriate use of terms, and that language awareness training was needed), but not for TNC, where terminology training was seen as essential. This could be because the Irish and Catalan languages were used in a bilingual environment, but not usually in original research. It could also be because of a different theoretical leaning or a greater emphasis on classic terminology theory on TNC's part.

Innovative ways of providing training included, in TNC, free breakfast seminars on specific subjects such as the cost-benefit of terminology work or terminology awareness. Because for TERMCAT training was mostly about alerting users to the availability of resources, emphasis was placed on imaginative advertising and the promotion of resources.

### **Modernisation/maintenance**

In looking at the three cases, we can identify several aspects of terminology work which were subject to routine maintenance or occasional modernisation, although because of the different nature of their work and approaches, the three cases did not have the same priorities. The main aspects were: keeping up with new research technologies; technical improvements; maintenance of the terminology resources; organisational modernisation; and maintenance of research standards.

There was a feeling that, for TERMCAT, it was important to maintain dynamism, enthusiasm and innovation, and to exploit existing positive attitudes towards TERMCAT's work. Similarly, for Irish, attitudinal change was considered important, including involvement of stakeholders and users, perhaps in some kind of social project, as one interviewee suggested.

#### *New technologies*

Keeping up with new research technologies was recognised as important in all three cases. For TERMCAT, supporting research which could have practical spin-offs in the future was important; one example was the development, in cooperation with a university, of an observatory of technical terms. TNC also planned to cooperate with public agencies to carry out term extraction work. Fiontar was working on new term extraction techniques in legal terminology and papers were being published on topics such as links to corpora. For TNC, it was problematic that there was little or no terminology research in Swedish universities, and TNC's terminology work had not been studied at doctoral or other levels.

#### *Technical improvements*

Technical improvements to databases and to work methods were important in all three cases, and included such work as improving search functions or creating new categories of information fields, or allowing other groups to use the databases for their own terminology work. The fact that such changes needed to be made on a continuous basis highlighted the importance of having a technical team who understood terminology work and were available to make improvements.

Fiontar, as part of its work contracts, was working on improvements to the database from both an editorial and a user perspective. There was a recognition of the need for creative development of the technology, and plans were being formulated for a complete overhaul of the work platform for all its lexical databases in 2011.

#### *Maintenance of resources*

The terminology resources themselves were kept up to date in part by responding to information, to requests and to suggestions from the public, and in all three cases term users were encouraged to make email contact. If TERMCAT found that a particular standardised term was not in use, the case could be re-opened and further research carried out, leading, perhaps, to a review of the standardised term. A full review and a new or updated edition were regarded as the final stage of any terminology project.

In TERMCAT and in the Irish case, though not in TNC, responses to *ad hoc* requests from the public were immediately added to the database.

In the Irish case, however, it was recognised that it was impossible to keep term resources up to date, because of the speed with which concepts changed and new terms emerged. The need to periodically address and revise the official written standard of spelling and grammar was also recognised.

#### *Organisational modernisation*

The three cases differed considerably in their approach to organisational modernisation. TERMCAT had several methods of creating change. Preparation for ISO 9000:2005 quality certification was seen as an initiative to improve the organisation and better document work processes. The creation of a comprehensive communications plan was another way of evaluating current work and then improving it. The communications department was created in response to the results of implantation studies, which found a low level of knowledge of terminology.

In TNC, modernisation (such as the inclusion of sign language terms or additional support to public agencies) was often carried out at the behest of the funding authorities. International cooperation was also important for generating new ideas leading to modernisation.

In the case of the Irish Terminology Committee, there was a sense that there was too much pressure on the system (because of the demand for terminology, and because of staffing issues) to be able to contemplate, plan or implement new methodologies or work methods. For Fiontar, on the other hand, because contracts had to be applied for relatively frequently

(every two to three years), priority was given to regular evaluation, change and improvement of work methods and structures. Long-term planning was impossible, however, because of the constraints of time-bound contracts.

#### *Maintenance of research standards*

Research standards were maintained in TERMCAT and TNC, and in the Irish case, by the training of new staff and comprehensive documentation. Focal maintained a complete history of user changes, which meant that work standards could be monitored and problems addressed.

### **4.3 Conclusion**

The aim of this chapter was to take the literature model created in Chapter 2 and to compare it with the three case studies identified in Chapter 3 – TERMCAT, TNC, and term planning for the Irish language. By categorising and contextualising the data, similarities and differences between the theoretical model and actual practice have been demonstrated. Some similarities between the cases were found under all the headings. In the next chapter, this analysis is used to create a best-practice model for term planning.

## 5 Chapter 5. A best-practice model for term planning

### 5.1 Introduction

The aim of this chapter is use the lessons implied in Chapters 2 and 4 about good ways to carry out term planning in order to create a general model of best practice which is more precise and more detailed than the literature currently provides. The literature-based structure (of eight aspects or headings) was found to be a useful way to describe the work. There is therefore no need to change it. There was a problem, however, in the meanings attaching to some aspects; ‘standardisation’ was the most problematic instance of this.

The aspects of term planning were divided into sub-aspects in Chapters 2 and 4, where necessary, based on topics that came up both in the literature and in the case studies, and these sub-aspects are maintained here:

- The preparation/planning sub-aspects are largely based on the discussion in UNESCO (2005), due to the scarcity of other literature.
- In the case of research, there is a clear distinction in both the literature and the cases between *ad hoc* and project-based research.
- It became obvious in the discussion of dissemination that both publication and marketing were important, as well as interaction with the media, although that distinction is not made in the literature.
- Training is broken down into four types according to the audience envisaged, a distinction made in the literature and reinforced in the cases.

In the rest of the chapter, these aspects and sub-aspects are elaborated on and fleshed out as practical measures, based on the discussion in Chapters 2 and 4. In each case, a short description is given of the meaning and aims of the relevant aspect of term planning, and of its connection with other aspects. The literature and cases in which they are discussed are listed in brackets, in no particular order (and a more detailed description of the approach taken in each case can be found in Chapter 4 and in the case reports themselves). The model suggested here is not limited to any one particular situation of term planning for a language, and is therefore both general and adaptable. The intention is that it can be adapted to suit particular cases. The model is summarised in Table 8 below.

For the sake of convenience, the rest of this chapter refers to ‘the term planning organisation’ in the singular. This does not mean, however, that term planning work must be limited to a single organisation and that tasks cannot be shared between organisations or institutions. Such an approach can *only* work, however, as long as all the tasks mentioned here are clearly

assigned, where there is a forum for strategic planning, and the organisations work seamlessly together (see 'organisational structure' below).



**Table 8: Overview of the best-practice model for term planning**

Aspect	Sub-aspect	Measure	Case study evidence	Cited in guidelines	Cited in major literature sources
Preparation/ planning	Organisational structure	1: Create a structure that allows dynamism and flexibility.	TERMCAT, TNC		
		2: Involve language planning institutions and other interested parties in the executive structure.	TERMCAT, TNC, GA	UNESCO 2005	
		3: If there are two or more organisations, ensure that there is close cooperation and a coordination point for leadership and decision-making.	GA		
		4: Ensure that there is an organisation with clear responsibility for each aspect of term planning.	TERMCAT, TNC, GA	UNESCO 2005	
	Staff	5: Ensure staff have a variety of backgrounds.	TNC	RaDT 2004	
		6: Have professional terminologists; do not rely on volunteerism.	GA		Taljord 2008, Bauer <i>et al.</i> 2009
	Budget	7: Have a reliable funding source.	TNC		
		8: Supplement funding, if necessary, with charges and sponsorship.	TNC, TERMCAT	UNESCO 2005	
	Networks and relationships	9: Ensure cooperation in provision of language resources.	TERMCAT, TNC	UNESCO 2005, ISO 29383:2010	
		10: Maintain contact with user groups.		UNESCO 2005	Santos 2003
		11: Find out who users are and plan for their needs.	TERMCAT, TNC	UNESCO 2005	
		12: Maintain structured links with academia.	TERMCAT, TNC, GA		Santos 2003
	Resource planning	13: Develop a strategic plan for terminology development.	GA		Santos 2003
		14: Consider criteria such as need, likely results, adaptability, distribution and likely implantation.		ISO 15188:2001	
		15: Carry out terminology work on request	TERMCAT, TNC		
	International involvement	16: Ensure involvement in international organisations.	TERMCAT, TNC, GA	UNESCO 2005	Bauer <i>et al.</i> 2009
		17: Participate in partnerships and international projects.	TERMCAT, TNC, GA	UNESCO 2005	Bauer <i>et al.</i> 2009

Aspect	Sub-aspect	Measure	Case study evidence	Cited in guidelines	Cited in major literature sources
Research	Ad hoc research	18: Respond promptly to enquiries.	TERMCAT, TNC, GA		
		19: Publish responses promptly.	TERMCAT, GA		
		20: Use an enquiry form.	GA		
		21: Refer general-language queries to a separate service.	TERMCAT, GA		
		22: Have a documentation and training system that ensures quality.	TERMCAT		Célestin <i>et al.</i> 1984
		23: Record all enquiries and responses.	TERMCAT, TNC		Célestin <i>et al.</i> 1984, Cabré 1998
		24: Maintain a network of useful contacts.	TERMCAT, TNC, GA		
		25: Maintain useful reference works and/or a corpus.	TNC		Bauer <i>et al.</i> 2009
	Project-based research	26: Set up a project team.	TERMCAT, TNC, GA	ISO 15188:2001	Suonuuti 2001
		27: Provide training in terminology methods.	TERMCAT, TNC		
		28: Identify content, scope, users, sources and helpers.	TERMCAT, TNC, GA	UNESCO 2005, ISO 15188:2001	Suonuuti 2001, Cabré 1998
		29: Make decisions about dissemination and maintenance.		ISO 15188:2001	
		30: Use a database to organise the work, if practicable.	TERMCAT, TNC, GA		L'Homme 2004
		31: Carry out term extraction and corpus research.	TERMCAT, TNC	ISO 15188:2001	L'Homme 2004, Suonuuti 2001, Pearson 1998, Cabré 1998 and others
	32: Gather information from as many sources as possible, including expert and media contacts.	TERMCAT, TNC, GA	UNESCO 2005, ISO/TR 22134:2007, ISO 15188:2001	Auger and Rousseau 1978	
	33: Follow international standards if possible.	TERMCAT, TNC	UNESCO 2005	Bauer <i>et al.</i> 2009	
	34: Create new terms if necessary.	TERMCAT,		Cabré 1998 and others	

Aspect	Sub-aspect	Measure	Case study evidence	Cited in guidelines	Cited in major literature sources
			TNC, GA		
		35: Document the work.	TERMCAT, TNC, GA		Sager 1990, Baxter 2004
		36: Review the work.	TERMCAT	ISO 15188:2001	
Standardisation		37: Define the meaning of 'standardisation' in the administrative/legal context.	GA, TERMCAT		Drame 2009
		38: Have a representative standardisation committee.	GA, TERMCAT	UNESCO 2005, ISO/TR 22134:2007	Cabré 1998, Auger and Rousseau 1978
		39: Only standardise terms which have been exhaustively researched.	TERMCAT		
		40: Review standardisation decisions when necessary.	TERMCAT	ISO/TR 22134:2007	Sager 1990
Dissemination	Publication of term resources	41: Disseminate term resources online; make everything available online.	TERMCAT, TNC, GA		Bauer <i>et al.</i> 2009
		42: Make the resource easy to use.	GA, TERMCAT		
		43: Monitor the user experience	GA, TERMCAT		
		44: Maintain close links with general language resources.	GA, TERMCAT		Moffet 2004, Bauer <i>et al.</i> 2009
		45: Keep resources dynamic and modern.	GA	UNESCO 2005	
		46: Provide an <i>ad hoc</i> query service and respond to users.	TERMCAT, TNC, GA		
		47: Make other tools available.	TERMCAT		Bauer <i>et al.</i> 2009
		48: Develop resources for online publication first.	GA		
	Interaction with the media	50: Develop a media contact network.	TERMCAT		
		51: Spread the terminology 'message' in the media.	TERMCAT		
	Marketing and awareness-raising	52: Have a communications department and a communications plan.	TERMCAT		
		53: Identify target groups.	TERMCAT		
		54: Share information about terminology work.	TERMCAT, TNC		

Aspect	Sub-aspect	Measure	Case study evidence	Cited in guidelines	Cited in major literature sources
		55: Bring terms into circulation.	TERMCAT, TNC, GA		
		56: Use inexpensive and innovative marketing resources.	TERMCAT, TNC, GA		
		57: Encourage users to value terminology.	TERMCAT, TNC, GA		
		58: Attend conferences and publish research.	TERMCAT, TNC, GA		
Evaluation		59: Establish an evaluation and assessment mechanism.	TERMCAT	UNESCO 2005	
		60: Have a range of participants in evaluation: staff, user groups, external evaluators.	TERMCAT, TNC, GA		Moffet 2004
		61: Encourage research as an evaluation mechanism.	TERMCAT, GA		
		62: Work towards quality certification.	TERMCAT		
		63: Evaluate dissemination and implantation.	TERMCAT		Auger 1999, Martin 1998, Quirion and Lanthier 2006
		64: Evaluate research, term production and standardisation.	TERMCAT	ISO 15188:2001, ISO 23185:2009	Fähndrich 2005
		65: Evaluate term resources.	GA, TERMCAT		
		66: Evaluate database/website user behaviour.	GA, TERMCAT		
		67: Evaluate marketing work.	TERMCAT		
		68: Evaluate training.	TNC		
Training	Training of terminologists	70: Provide training for the jobs to be done.	TERMCAT, TNC, GA		
		71: Provide in-house training to new staff.	TERMCAT, TNC, GA	RaDT 2004	
		72: Give training in both terminology theory and methods.	TNC		Cabré 1998
		73: Provide documentation and user manuals.	TERMCAT, TNC, GA		

Aspect	Sub-aspect	Measure	Case study evidence	Cited in guidelines	Cited in major literature sources
		74: Provide continuous training to staff.	TERMCAT, TNC, GA		
		75: Provide opportunities for research.	GA	UNESCO 2005	Auger 1986, Cabré 1998
		76: Provide training opportunities for future terminologists.	GA, TERMCAT		
	Terminology committee members	77: Provide introductory training on terminology principles and methods.	TNC	ISO 15188:2001	
	Professionals working closely with terminology	78: Ensure terminology training is provided on professional courses, if needed.	TNC	UNESCO 2005	
		79: Provide workshops and seminars as needed.	TNC		
	The general public	80: Assume term users have not been trained.	TERMCAT, GA		
		81: Provide information resources online.	TERMCAT, TNC, GA		
		82: Give training to students.	TNC		
	Modernisation/maintenance		83: Implement changes suggested by evaluation.	TERMCAT, TNC, GA	
84: Plan and carry out technical improvements to databases and work methods.			TERMCAT, TNC, GA		
85: Keep resources up to date.			TERMCAT, TNC, GA		
86: Maintain research standards.			TERMCAT, TNC, GA		
87: Keep up with and use new research technologies.			TERMCAT, TNC, GA		
88: Carry out organisational modernisation.			TERMCAT		

## **Choice of model structure**

There are no best-practice models in the area of term planning, and therefore there is no ready-made structure or layout for a model which could be adapted. There are two comparable models (or sets of instructions) for term research, Bowman *et al.* (1997), which is a list of 'Do's and Don'ts of Terminology Management' (mainly related to definition-writing) and Suonuuti (2001), which also gives a list of 'Do's and Don'ts'. Both have a similar structure to this chapter, with a list of measures.

In some cases, in order to illustrate the model, an interesting or illuminating approach to a particular issue taken in one of the cases is given as a boxed example. Although not part of the best-practice model, these examples help to illustrate it and ground it in the research (this approach is similar to that taken by Yin 2003). A full description of each case can be found in the appendices.

## **Theoretical framework**

A socioterminological approach for the thesis was established in Chapter 1 and it was stated that this would be reviewed in light of the case studies. This socioterminological approach, as it has been developed to date, implies an interest in the relationship between society, language and terminology, and specifically:

- The use of corpora and an emphasis on description: a move away from definition or the opinion of the domain expert as the only determinant of meaning, towards the inclusion of non-experts. The meaning of terms is socially allocated and negotiated, it was found – it is not just circumscribed by the definition. This reaffirms the importance, for terminologists, of studying, documenting and describing terms as they are actually used before recommendations are made, so that they can have real authority.
- A move towards a linguistic approach (i.e. one that recognises that terminology is a branch of applied linguistics, and not confined to technical and scientific standardisation).

Both of these points imply the bridging of the gap between LGP and LSP. A socioterminological approach is much closer to the methods of lexicography than to traditional terminology, since terms are part of language, and not just signs for concepts.

There was convergence between this approach and the cases in some aspects. Corpora were important for research, and term use was recognised as important. Lexicographic methods were often used. The relationship between society and terminology was recognised, and particularly that terminology was needed for 'popularisation' activities such as translation, journalism and education; and emphasis was placed on the importance of good

communication strategies. The use of terms is important in socioterminology, and this was reflected in all three cases, where implantation studies were highly valued.

On the other hand, domain experts were still often the main (or only) source of information in term research and choice. There was also in some cases (though not for TNC) a prescriptive attitude in standardisation, which could be seen by socioterminologists as problematic, although the emphasis on thorough research into usage and expert opinion (especially in TERMCAT) countered this somewhat. It is implied in socioterminology that the terminologist should be a describer, not a prescriber.

It was also seen in Chapter 1 that the themes of socioterminology are limited and as yet underdeveloped. There is no consensus as yet on its definition, limits and boundaries, and it does not tackle questions such as training, planning and preparation, *ad hoc* research, and dissemination, which all emerged in the cases. Many issues are not addressed in socioterminology and it is primarily focused on redefining terminology research methods.

Given the limits of what is understood by 'socioterminology', the model proposed here (which is a model for term planning for a language) can more accurately be described as a 'sociolinguistic approach to terminology'. This implies the importance of social contexts. Fasold (1984) distinguishes a 'socio-linguistic' approach to language from an instrumental approach and defines it as follows:

Scholars with this philosophical orientation don't attempt to improve the aesthetic and functional qualities of languages as instrumental tools. Rather, they see language as a resource that can be used in improving social life. This way of practicing language planning would attempt to determine which of the available linguistic alternatives is most likely to improve a problematic situation. Then orderly steps are to be taken that will make the best alternative the one that actually succeeds. (Fasold 1984, 250)

Similarly, Fasold (1990, 269) states that 'research in the sociolinguistics of language has always been accompanied by a strong emphasis on applications of the results to social problems'.

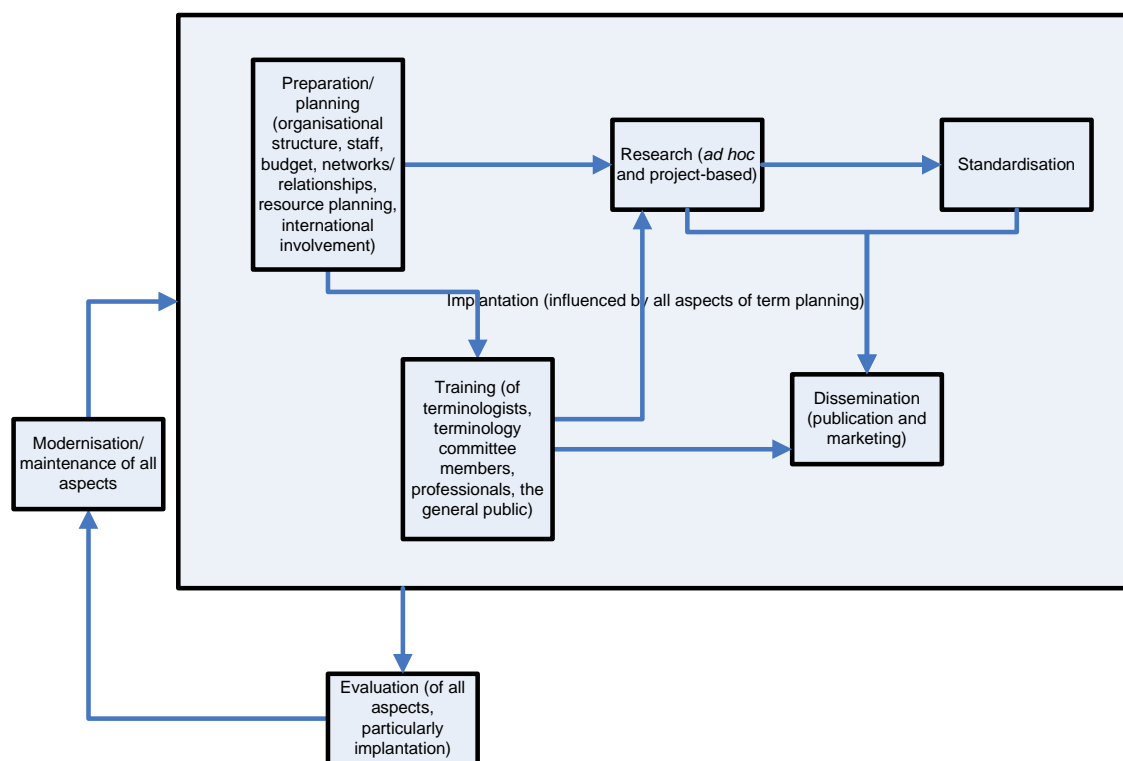
Specifically, the sociolinguistic approach is seen in the following aspects of this model:

- Seeing terminology as an aspect of language planning, and the importance of close links to other aspects of language planning (particularly in the organisational and decision-making structures, and in dissemination of term resources).
- Close connection with language users in planning and in research/standardisation work, including research into language usage, and close interaction with opinion-leaders in language choice, particularly subject specialists and the media.
- The importance of social aspects of term use; emphasis on usage and likely usage (implantability) in term choice and standardisation.

## The place of implantation in the model

Despite its place in many term planning models (as discussed in Section 2.3 above), examination of the literature and of the cases themselves shows that implantation is a passive stage, and not something the term planning organisation can actively 'do', although it can clearly influence the outcome. On the other hand, implantation, from a sociolinguistic perspective, is the most important result of successful term planning. For this reason implantation is not treated as a heading here, but in the case of each heading, the effect on implantation is discussed. This relationship is illustrated by Figure 2.

Figure 2: Aspects of term planning



The present research has, however, helped widen the debate about term implantation and the factors influencing it. One of the main differences between the cases and the literature is the emphasis placed in the cases (particularly in TERMCAT and TNC) on disseminating and marketing term resources and on making them visible. The term planning organisation clearly has some limited influence over term implantation. Implantation is also influenced by many other factors, including:

- Acceptance by the media, which is in turn influenced by their involvement in term creation and dissemination.
- Public attitude to the language and to the discussion of specialised subjects in that language, which may in turn be influenced by the awareness-raising work of the term-planning organisation.



- Active participation by representatives of the target audience in the research and decision-making processes.
- Quality of the terms themselves, including conciseness, absence of competing terms, derivative form capability and compliance with the rules of the language.
- Timely provision of terms in easily accessible formats.

It is clear, therefore, that implantation is affected by the planning, research, dissemination (publication and marketing) and training aspects of term planning work, as well as by the quality of the overall strategic planning. Implantation, if carefully evaluated, is a good measure of the term planning organisation's work as a whole, and it is therefore vital that it is assessed.

## 5.2 Preparation/planning

Preparation and planning covers all the organisational aspects of term planning, including what work is done and by which organisations, what the staffing and financial arrangements will be, and what networks and relationships there will be, as well as resource planning and international involvement.

### *Links with other aspects of term planning*

The way in which preparation and planning are done affects all aspects of term planning work, including where, when, how and by whom they are done. The establishment of priorities (strategic planning) and the limits set by budget and by the kind of staff recruited are particularly important in this regard.

### **Organisational structure**

#### *Measure 1: Create a structure that allows dynamism and flexibility*

A term planning organisation needs to be able to change and evolve in response to new research and to user and language needs; it also needs to be able to take research initiatives. It is therefore important to have a dynamic, flexible organisation. This may mean that the organisation is not a part of the Government administration, or that part of its work is delegated to a private company or a university.

#### *Measure 2: Involve language planning institutions and other interested parties in the executive structure*

Whether the term planning organisation is a state-funded consortium or another kind of organisation, interested parties such as the language academy or institute (if there is one), the national standards institute, the Government department with responsibility for language

planning (if there is one), specialist organisations, publisher or media groups, and academics with expertise in the area should be represented on the decision-making board.

**Example Box 1: Organisational structure for TERMCAT**

TERMCAT is a consortium, whose directory board consists of members of the Generalitat de Catalunya [the Government], of the Institut d'Estudis Catalans [Institute of Catalan Studies], and of the Consorci per a la Normalització Lingüística [the Consortium for Language Normalisation]. The president of the consortium is the secretary for language planning of the Government. The director of TERMCAT acts as secretary to the board.

They usually meet twice a year and supervise all our plans and activities. The president of the consortium is the Secretary for language planning of the Government, and the vice president is the President of the Institute of Catalan Studies. (Colomer)

TERMCAT is thus part of the larger language planning structure for Catalan, under the aegis of the Institut d'Estudis Catalans, and terminology and other language planning work are under the auspices of the same organisations, so that there is a reduced risk of inconsistency between different groups. TERMCAT is still its own organisation, however.

We are not strictly Administration. We are a public organisation, but as we are a consortium, we have some independence which gives us more agility in management. (Colomer)

This structure therefore allows dynamism and flexibility, while at the same time ensuring that terminology planning is closely coordinated with language planning in general, and that there is close collaboration in matters such as dissemination of terminology in dictionaries. The model could easily be adapted to term planning structures for other languages.

*Measure 3: If there are two or more organisations, ensure that there is close cooperation and a coordination point for leadership and decision-making*

If two or more organisations are working on aspects of terminology planning, close cooperation is essential. It is important to ensure that there is regular debate on the way in which they work together, on aspects that may be over- or under-emphasised, and on future plans.

*Measure 4: Ensure that there is an organisation with clear responsibility for each aspect of term planning*

It should be clearly stated which organisation is responsible for planning of terminology work for a language, for research (both *ad hoc* and project-based), for standardisation, for dissemination (including publication and marketing), for ensuring implantation, for evaluation, for planning for modernisation and maintenance, and for training (of terminologists and of others). It may also be necessary to act as a clearing-house for private or legacy terminology work.

## Staff

### *Measure 5: Ensure staff have a variety of backgrounds*

Having a variety of backgrounds can make a team of terminologists work better together, with improved results. Linguistic skills are only one of the many attributes required. It is particularly useful to have a team with members from the sciences, law, linguistics, computing and other related fields, because of the range of research interests, skills and approaches. In particular, a scientific background may mean a more analytical approach. If terminologists will also be carrying out administrative, training and marketing work, it is useful to find staff with these backgrounds.

### **Example Box 2: Staff recruitment for TNC**

Most of TNC's thirteen staff were involved in all aspects of TNC's work, including administration, training and marketing. The staff had a variety of skills, including interpersonal skills, and different backgrounds, both linguistic and scientific, and this was regarded as a key strength:

It's sort of two departments, without being departments in an organisational way, so you have a science department, where you have a mathematician, a chemist, a nurse, a geologist and a computer scientist. Then you have the traditional terminology personnel profile, linguistics, language, information science, translation, language consultant... (Nilsson)

A full linguistic training was not a prerequisite for recruitment to TNC. In one case a job advertisement called for a 'technician with language interests'. It was felt that those with a scientific background often made better terminologists, because of their analytical approach: 'just a hunch we get when we teach non-linguistic students, science students, or other groups, with engineers or standardisers, it seems that they get the picture quicker or in another way' (Nilsson). One interviewee, a mathematician, explained that her background meant that she could read and understand technical documents, and discuss issues with experts; it also made her work more interesting for her ('when I call somebody and ask a question, I can usually understand the answer': Waldén).

This approach is consistent with the very broad list of prerequisites for a terminologist listed by RaDT (2004), of which linguistic competencies are only a small component. This broad approach to staff recruitment, and the emphasis on having a variety of backgrounds, was regarded as a key strength for TNC:

I think what you can learn from us is to think of these qualifications or qualities in a person when you employ a terminologist or a terminologist-to-be: that should be a person who is socially competent, open to deal with others, analytical and problem-oriented. (Bucher)

In light of this example, when recruiting staff, it may be useful for term planning organisations to consider the existing skill sets, and to identify gaps. Recruiting only trained linguists or terminologists is too restrictive.

*Measure 6: Have professional terminologists; do not rely on volunteerism*

The term planning organisation should have adequate staff to carry out all aspects of terminology work without volunteer assistance, although a network of expert advisers and interested parties (who may or may not be remunerated) is essential. This means that planning and decision-making can be done at a strategic planning level, and is not solely reliant on the wishes and interests of individuals. It also means that work can be dispassionately evaluated and remedied as necessary.

## **Budget**

*Measure 7: Have a reliable funding source*

Organisations should be funded in a way that allows them to carry out long-term planning, as many term resources take several years to develop. Financing should take account of the need for different aspects of terminology planning – dissemination and marketing, for example, should be supported as well as term research, and budget decisions should be consistent with the strategic plan.

*Measure 8: Supplement funding, if necessary, with charges and sponsorship*

If Government departments and private companies are charged, even a small amount, for terminology work or for consultancy services, this may mean that the work done will be valued and used, and that it will be commissioned in response to a real need. On the other hand, *only* carrying out work for which there is a charge could mean the neglect of term creation in some domains, for example those for which there is no representative body. Sponsorship can be a way of obtaining funding for projects and can also help with subsequent marketing.

## **Networks and relationships**

*Measure 9: Ensure cooperation in provision of language resources*

Cooperation in provision of language resources is extremely important, including coordination with corpus and status planning. This coordination should arise from the way in which language planning structures are set out, and from good inter-institutional relations, even where historical structures are not 'rationalised' but still work well. Practical examples of such cooperation could be the inclusion of terminology in general language dictionaries, and the availability of a 'one-stop shop' online language resource, as well as advance provision of terminology for new initiatives such as an education programme or a change in language status or use. Many term planning projects occur as a direct result of such a planned change in status or use.

It is very important to create and sustain communication networks of language planning organisations, including stakeholders in the media or otherwise outside a state structure. Regular meetings for information exchange and discussion of policy matters and fundamental language issues are advisable. These will help avoid negative attitudes if stakeholders feel disregarded or overlooked.

*Measure 10: Maintain contact with user groups*

Contact with users is important while planning is being carried out. A sense of involvement and ownership will lead to better research and, often, better eventual term implantation. Users can be asked for their input into planning decisions by carrying out surveys and focus groups.

*Measure 11: Find out who users are and plan for their needs*

The users of the products of term planning could include some or all of the following, depending on the language situation:

- professional language users in a range of areas: translators, proofreaders and correctors, whether for administration, legal or official documents, private translation work or localisation
- educators
- the media: journalists, as well as editors and proofreaders
- public administration and other public sector workers
- private companies and private individuals
- specialists working in a mono- or bilingual context.

It is important to find out – by analysing user statistics, or by carrying out surveys or other research – who the main users of the term resources are, and how their needs can best be served. If most users are translators, for example, provision of resources for translation memories may be particularly useful. If journalists are an important group, access to quick solutions and out of hours service is obviously important. It may be worth targeting them with resources or services.

*Measure 12: Maintain structured links with academia*

Academic research into terminology can have benefits for the term planning organisation, including new approaches to tasks and an independent evaluation mechanism. Students can also carry out useful research projects into term use, implantation or determinologisation. Training is also provided in an academic setting, possibly in coordination with the term planning organisation.

## Resource planning

### *Measure 13: Develop a strategic plan for terminology development*

There should be a long-term strategic plan for term planning (not just for the development of term resources). This should be decided in consultation with language planning organisations and with user groups, and it should inform research, dissemination and training decisions, as well as determining issues such as staff and budget.

### *Measure 14: Consider criteria such as need, likely results, adaptability, distribution and likely implantation*

A list of criteria for acceptance of term projects should be established, and it should be based on the objectives set out in the strategic plan. The following criteria (adapted from ISO 15188:2001, 13) should also be considered:

- The project meets specific user needs.
- The project falls within the general scope of activity of the term planning organisation.
- The project enables the achievement of specific overall objectives, as specified in the strategic plan.
- The project is needed at this time.
- The project aims to produce an original end product.
- The end product may be adapted to produce other products.
- The product may be distributed in an effective manner.
- The end product is likely to be accepted by the user group and there will be a commitment for implantation.

### *Measure 15: Carry out terminology work on request*

If a new terminology resource is requested by a particular group, such as a Government department or a specialist association, then that is an indication that the resource is needed and will be used if developed, and that specialist support will be available for the research. If investigations confirm the need for a dictionary, if it fits in with the strategic plan, and if a budget is available (possibly with a contribution from the requesting organisation), then carrying out this work is a good idea.

#### **Example Box 3: Project choice in TNC**

Terminology development projects in TNC were carried out on a contract basis. That meant, as interviewees pointed out, that TNC carried out terminology work when asked and paid to do so ('they come to us. They have realised that they have a problem': Bucher). All terminology

work done was requested and paid for, and it was likely that it would be used.

Among the problems with this approach for TNC, however, were that most work was done for the public sector, as the private sector was often unwilling to pay for terminology services. This problem could (perhaps) be alleviated by marketing and training to show the added value of terminology work. Another problem was that some areas, in which there was a need for terminology, were not served because there was no willing 'customer'. This demonstrates the fact that request-based terminology work, although valuable, must be balanced with strategic planning for the language, and it may be better if it constitutes only one component of resource planning.

## **International involvement**

### *Measure 16: Ensure involvement in international organisations*

Involvement in international and regional terminology organisations has many benefits: keeping abreast of new information and research; contributing to international terminology work; discussing different language situations; further training for staff; exchange of expertise and experiences. It also provides an opportunity to attend conferences and present work.

### *Measure 17: Participate in partnerships and international projects*

Provision of terms or expertise to international terminology projects (such as IATE in the EU) can provide an incentive to develop terminology resources to a measurable international standard. It can also lead to a wider dissemination of terms among translators, and lend status to the terms, as long as they are also included in the primary dissemination resource. Partnerships can also be developed for information exchange between similar languages or language situations.

## **5.3 Research**

Term research can be divided into two distinct areas: *ad hoc* research and project-based research on a group of concepts or a dictionary (including research into *in vivo* term use, and *in vitro* term creation). Other kinds of research are also carried out, of course: research into new work methods; or research in order to compile style guides and manuals, as well as the kinds of research listed in the evaluation section.

### *Links with other aspects of term planning*

In both *ad hoc* and project-based research, it is important to document the work carefully. This is important to guarantee quality, but also in training new staff members and in creating a basis for evaluation and modernisation. Besides *ad hoc* and project work, if the term planning organisation has a large terminology database, time will have to be set aside for the

continuous updating and cleaning of that material. (This is discussed under modernisation/maintenance below.)

### ***Ad hoc research***

A very large proportion of term provision may be done on an *ad hoc* basis, and not as part of term research projects. This is particularly the case for terms in current usage or newly emerging domains, or for particular user groups, such as the media. The ways in which this work is done are therefore important, and it must not be seen as an 'extra' task to be taken on as time permits, but as an integral part of the organisation's work. Queries to an *ad hoc* service could include requests for terms, for concept clarifications, and for definitions of terms; or questions about terminology usage.

#### *Measure 18: Respond promptly to enquiries*

A query service should be able to respond promptly to email and telephone enquiries. In *ad hoc* work, response times are very important, particularly for the media. It is difficult, however, to balance a fast response with accuracy, consistency, authority and adequate research. There is a danger that research will be rushed, and that hastily-made decisions will be reversed later. This reinforces the importance of clear processes, documentation, reference resources and a specialist network.

#### *Measure 19: Publish responses promptly*

Publishing and diffusing the responses quickly means that those terms related to current affairs or which are just entering into usage are more likely to be used, and staff will not have to respond to the same query several times.

#### *Measure 20: Use an enquiry form*

An enquiry form on the organisation's website can force enquirers to give certain information about the term or information being sought – such as a domain, usage example or context, and equivalents in other languages – which makes the task much easier and leads to a more useful, relevant result.

#### *Measure 21: Refer general-language queries to a separate service*

The query service is likely to be sent requests that have nothing to do with terminology, but may be related to general language, to translation issues or to grammar questions. In order to ensure an adequate response to such enquiries (which terminologists may not be competent to answer, and which are time-consuming), there should be a general-language query service available. Both services should work hand in hand, redirecting enquiries as appropriate.



#### Example Box 4: Query services for Catalan (TERMCAT and Optimot)

There are two official and free query services for Catalan speakers, TERMCAT and Optimot ([optimot.gencat.cat](http://optimot.gencat.cat)), which deals with general language problems such as spelling and lexicography. Optimot has a search engine and also handles queries, just as TERMCAT does for terminology. Queries are passed to and fro as necessary:

When they receive a terminological question that they can't solve, they pass it on to us. Terminology and general language have a separate treatment... We are coordinated and we both are public services. (Bofill)

The Optimot search engine searches the language dictionaries and it also searches TERMCAT's databases; this is another means of disseminating terminology.

Because the two services work together, users are likely to receive a useful and prompt response, and because terminology resources are not kept separate from other language resources, they may be more likely to be implanted. An integrated approach such as this is vital in order to serve users' needs and in order to ensure effective dissemination.

#### *Measure 22: Have a documentation and training system that ensures quality*

It is important to set up a system to ensure high quality. In order to ensure consistency, it is very important to have clear documentation of term research and creation methods, and to provide terminologists with training on how to use those methods. (This is discussed under training at 5.7 below)

#### *Measure 23: Record all enquiries and responses*

It is important to record all enquiries and responses. These provide information about user needs and expectations, which can be used to evaluate the resources provided and the way in which they are presented. The contact details of enquirers can also be used in targeted awareness-raising about new developments or resources, or in surveys for evaluation purposes.

#### *Measure 24: Maintain a network of useful contacts*

In order to respond to miscellaneous enquiries, it is important to have a network of contacts in a range of domains, who can be contacted as needed. As with project-based research, the more domain experts and opinion leaders who participate, the better – both to ensure quality and to assess implantability. In the case of frequently-occurring domains, it may be worth setting up a group or committee of domain experts and, if possible, media representatives, who can discuss the questions as they arise, perhaps using an email discussion group.

#### *Measure 25: Maintain useful reference works and/or a corpus*

A comprehensive collection or corpus of reference works is important and allows for faster and more accurate responses.

## **Project-based research**

The most important issues for project-based term research, used to compile a term collection or dictionary, are

- comprehensive project planning, to ensure that the work is done on time and within the budget allowed
- participation by domain experts and opinion-leaders, to ensure quality and implantation
- research into *in vivo* language use
- thorough research and documentation, to ensure consistency and accuracy, especially in *in vitro* term creation.

### *Measure 26: Set up a project team*

A team is first selected to undertake a terminology project. It is important that as many specialists as possible are involved. A project manager (usually the terminologist) is also needed. Whether the specialists are paid depends on the situation; in any case, it is important that their contribution is valued and acknowledged in some way, and that they can gain from the exchange. This will lead to a better contribution. Whether a linguist is also involved depends on the terminologist's experience and qualifications.

### *Measure 27: Provide training in terminology methods*

Training in terminology methods should be offered to members of the project team. (This is discussed under training at 5.7 below.)

### *Measure 28: Identify content, scope, users, sources and helpers*

As a first step once the project team has been assembled, the content and scope of the project must be decided, along with identifying the term users and their needs: will the terms be needed for communication between experts, or for communication with the public, or for use in education? The subject experts should help to delimit the project and the subfields involved, as well as the kinds of information which will be needed – definitions, usage examples, or equivalents in different languages. A list also needs to be compiled of the most important sources. A network of informants and interested parties should also be formed.

Decisions should be made about how strict a distinction will be made between general and specialised language, and whether the general use (the terminologised use) of specialist terms will be studied. This depends largely on the term users who have been identified, and on how well elaborated the language is.

*Measure 29: Make decisions about dissemination and maintenance*

Decisions should be made at an early stage as well about how the finished terminology will be disseminated – whether, for example, it will be published on paper as well as electronically, or published as a dictionary. A decision should also be made about how the terminology will be maintained after the end of the project, particularly in a dynamic field.

*Measure 30: Use a database to organise the work, if practicable*

The way in which the project will be organised and managed depends on the size of the project. Using a database with the same record structure as the database in which the finished project will be stored (or using the same database, with unfinished work hidden or labelled) means that no editing work will have to be done when the dictionary is finished.

If there is a comprehensive search tool, it also means that the data can be searched and sorted in ways in which a static document cannot. A list system is unsuitable for large projects because conceptual difficulties and other inconsistencies can be missed, leading to additional editorial work at the end of the project.

The database should allow selected terms to be shared with specialists and others in an easy-to-use extranet format, and allow them to comment on the work. It is also important that a full history of database changes is kept, and that editorial notes explaining decisions can be saved.

*Measure 31: Carry out term extraction and corpus research*

Once sources have been identified and the scope of the project defined, initial term extraction can be carried out. Whether this is done in the source or the target language depends on the language situation and on the strength of the target language. A concept or domain system can be established (depending on the subject area).

Corpus research is important in order to establish the real use of terms. This information will complement data gathered from experts. A language observatory or an observatory of specialised language is a prerequisite for an accurate understanding of the functioning of language. Journals and other publications should be systematically searched and added to a corpus.

*Measure 32: Gather information from as many sources as possible, including expert and media contacts*

The more experts are consulted, the more reliable the research results will be. Involving experts and media contacts (such as, for example, sports journalists and commentators in the case of a sports dictionary) will also create interest in and knowledge of the project, which will

be an aid to dissemination and implantation of the terms, particularly if specialist users know that the term decisions were made by their peers.

*Measure 33: Follow international standards if possible*

International standards, particularly the ISO standards, should be followed as far as is practicable. Where aspects of the standards are not followed, there should be a good reason for this, and this should be documented. Good practice in other organisations should also be studied, perhaps through study visits for terminologists. It must be recognised, however, that aspects of the ISO approach do not fit all languages, particularly minority languages and in larger projects where there may be more pressure to create comprehensive term resources quickly.

*Measure 34: Create new terms if necessary*

Depending on the situation, a little or a lot of term creation (neology) will be needed: whether there is much *in vivo* term creation in the language is the main factor. When new terms are needed, this work can be done by researching the concept, by looking at related terms, and by consultation with experts. Sociolinguistic criteria – which term is likely to be accepted – are also vital.

*Measure 35: Document the work*

Documentation of the work methods is important in order to achieve consistency, and in order to be able to provide an explanation of work methods. It is also important so that the work done can be evaluated and improved. Policies on term creation methods and principles also need to be documented.

*Measure 36: Review the work*

At the end of the process, a full review and evaluation is needed, both of the project and of the resulting product. Terminologists, subject specialists and users will have different perspectives. This evaluation can be used to improve future work processes, documentation, and training.

## **5.4 Standardisation**

In both the literature and the cases, there are different understandings of what terminology standardisation might mean. Most aspects of standardisation methods are unproblematic, however: for example, the need for a committee structure with expert and other representation.

For the purposes of this model, standardisation is the selection by a representative committee of recommended terms to be used in a defined field, such as in education or administration. It

may be decided to only standardise a certain type of term, such as those over which there is controversy, or cases in which there is no agreed term, and where this causes problems. Or every term which has been thoroughly researched and discussed by a certain committee may be considered standardised.

This may or may not be reinforced by an element of obligation; for example, translators working for the government might have to use the standardised term in legal documents. Whether this is necessary or desirable depends on the language policy, on the language situation and on the administrative culture. In either case, standardisation must be supported by good term resources and effective dissemination, as well as agreement and cooperation in implementation; obligation alone is not sufficient.

#### *Links with other aspects of term planning*

Standardisation can only be carried out in cases where comprehensive research (either *ad hoc* or as part of a terminology project) has been done.

#### *Measure 37: Define the meaning of 'standardisation' in the administrative/legal context*

If a label such as 'standardised' (or 'recommended', or 'approved') is used in the terminology database or in other publications, it must be clear what this means. It should be clearly stated (on the website or in the publication) when, by whom, how and for what purpose the term has been standardised, and what implications, if any, this has for the user. In some cases it may mean that the term has been researched in detail or that it has been discussed at a committee; in other cases, it means that a translator working on certain documents is obliged to use it. Similarly, if a term is marked 'deprecated', it should be clear exactly what this means.

#### **Example Box 5: The meaning of 'standardisation' for TERMCAT**

TERMCAT had a clear and unambiguous policy on standardisation:

**When?** The situations in which terms are to be standardised were set out, published (TERMCAT 2006a) and agreed. The criteria were the following:

- concepts without an established designation
- variations in spelling or morphology
- different designations for the same concept
- loan words or loan translations
- inappropriate designations
- unclear concepts

- registered trademarks. (Sabater ppt)

**By whom?** a seven-member supervisory council was responsible for standardisation, and decisions made by the supervisory council could be overruled if necessary by the academy of the language. Three council members were subject experts (from technology, the sciences and the humanities), two were from the philological department of the language academy and two were terminologists from TERMCAT, usually the director and another member.

**How?** Standardisation research started with a *very* detailed investigation of the concept, its definitions, contexts, use, denominations in other languages and so on. About 125 sources and at least five subject experts were consulted in each case (Fontova 2007). This was done by staff in the standardisation department, and the findings were distributed to the members of the Supervisory Council to study before their meeting. The Supervisory Council met fortnightly and meetings lasted an hour or two. Ten or fifteen concepts were discussed at each meeting. The decisions were recorded and brought to the subsequent meeting, where they could be modified or the discussion re-opened.

**For what purpose?** The standardised terms had a higher status in Cercaterm than other terminology work done by TERMCAT, and were obligatory for the Catalan administration.

The meaning of standardisation was clearly defined for TERMCAT. Although the criteria and structures need not be identical in other language situations, they should be just as unambiguously defined.

*Measure 38: Have a representative standardisation committee*

The standardisation committee should be representative both of the user community and of the different aspects of term work. In order to represent different aspects of term work, terminologists, language experts (philologists, perhaps from the language academy, if there is one) and a range of domain experts should be on the committee. In addition, representatives from academia, Government departments, the media and the translation sector might represent the user community.

Whether the specialists are paid depends on the situation and on the workload; in any case, it is important that their contribution is valued and acknowledged in some way. Whether short meetings are held weekly or fortnightly or longer meetings are held at monthly intervals depends on geographic and other factors.

*Measure 39: Only standardise terms which have been exhaustively researched*

Before a standardisation recommendation is made, very detailed investigations should be carried out into definitions, contexts, usage and likelihood of implantation. A set number of sources and experts should be consulted in each case, and the media could be consulted using the media contact network (discussed in Example Box 7 below). This work might be done as part of *ad hoc* or project-based research. This research should be circulated to standardisation committee members well before a meeting.

#### *Measure 40: Review standardisation decisions when necessary*

In some cases, standardised terms may not be accepted by the user community even after a considerable period of time, or new evidence may emerge about usage or the definition. In such cases, standardised terms can be reviewed. Such reviews should be carried out as infrequently as possible, however, because they could undermine confidence in the standardisation process.

## **5.5 Dissemination**

Dissemination covers a broad field in terminology, including at least the following aspects:

- publication of term resources
- publication of information about terminology
- drawing the attention of users to resources
- creating debate about, interest in, and appreciation of terminology work.

All this work is vital if term resources are to be used and implanted. Dissemination should not be left to chance or approached in a haphazard fashion. The overall aim of dissemination should be to empower language users to use and actively engage with terminology resources. This active engagement should be aimed at creating interest in terminology work: the term planning process is more effective, the more people are involved and interested in it; in fact, participation in the research process is one of the best ways of guaranteeing term use. As with all language matters, a sense of ownership and involvement is important. Getting more language users and specialists involved is also useful for the terminologist, as it means a broader spread of information sources. It is also a way of bridging the gap between *in vivo* and *in vitro* term creation.

#### *Links with other aspects of term planning*

Dissemination is closely tied to other aspects of term planning, especially term implantation.

The results of evaluation, particularly the user experience of term resources, and the evaluation of term awareness, will inform the communications policy.

### **Publication of term resources**

#### *Measure 41: Disseminate term resources online; make everything available online*

Online dissemination of terms is the most effective, both for the planning organisation and for the user. Good online dissemination is therefore vital. This means a simple, easy to use portal to a database which allows users to find the information they need quickly.

As much material as possible should be made available online, thus reducing the amount of time spent responding to the same questions and enquiries. If material is not made available, it will not be used or implanted. If term resources judged to be of a high quality have been developed by other organisations or individuals, they could also be made available online, particularly if this means that the portal will be viewed as a 'one-stop shop'. As mentioned above, cooperation with other language resources is vital.

*Measure 42: Make the resource easy to use*

Searching should be as easy as possible, and it should be assumed that the user has no specific knowledge about terminology.

*Measure 43: Monitor the user experience*

The information needed by users differs from case to case, so it is very important to consult users, and to analyse user behaviour. The user experience should be closely monitored, because it is important to understand what users are searching for, and, if they do not find a satisfactory result, what the reasons for this are: whether because of database layout, search functionality or unavailability of the terms. This is an important strand of the evaluation discussed below. Depending on the language situation and on users' needs, it could be important to provide grammar information, variant forms and other lexical resources. Whether definitions are always needed also depends on the situation.

**Example Box 6: Monitoring the user experience on Focal.ie**

The editorial interface for Focal.ie incorporated tools to monitor the way in which users engaged with the resource. The type and number of searches for particular terms could be monitored, and the most popular searches over a given time period examined. Searches which did not produce a result could be viewed, as well as the searches carried out by a particular user over time. Users' locations could also be tracked.

These tools had a number of uses: they could be used to prioritise *ad hoc* research or updating of the database according to term popularity; they could be used to inform strategic planning (by examining the domains in which users were most interested); or they could be used as an aid to marketing and securing funding. Monthly usage statistics were published on the website and circulated to stakeholders. These statistical tools served as a complement to daily interaction with users and user groups, and to more detailed surveys and other data gathering.

Terminology databases should be designed with a view to allowing editors as much information as possible about user habits; it is also important to understand which statistics are significant and valuable, and to make practical use of them for strategic planning purposes.

*Measure 44: Maintain close links with general language resources*

For many users, especially in a bilingual situation, the term resource will be used as a lexical resource, and this should be borne in mind when presenting data. Most users cannot be



expected to distinguish in an academic way between lexicographic and terminographical resources. As with all online resources, it is impossible to anticipate the characteristics or needs of all users, so room for error should be minimised. Users may not want to have to search two different resources. If there is a general language resource, therefore, it should be linked to the terminology database, so that a simultaneous search of all resources can be carried out. Different resources for a language should, as far as possible, be integrated.

*Measure 45: Keep resources dynamic and modern*

Term resources tend to change over time, as a result of both feedback from users and editorial suggestions, as well as the need to keep resources dynamic and modern. It is therefore important to have a technical team which appreciates terminology needs; if term resources are developed in-house, this is especially important. Close cooperation between the technical and editorial teams is essential.

*Measure 46: Provide an ad hoc query service and respond to users*

No matter how well developed the terminology resource, there will always be a need for a service to deal with queries. Such an *ad hoc* terminology service can be advertised on the website. There should also be an easy way for users to notify the database editors of mistakes, omissions or errors, and these should be corrected immediately. Besides improving the quality of the data, this gives the user a sense of ownership.

*Measure 47: Make other tools available*

Other tools can be made available on the terminology portal, such as downloadable lists and TBX (TermBase Exchange) files. These are another way of making terminology available to professional users, such as translators.

*Measure 48: Develop resources for online publication first*

If resources are initially developed as online resources, they can easily be adapted for publication in traditional printed format, whereas the transition from static to database form is more difficult, requiring considerable editorial input.

*Measure 49: Publish paper dictionaries if necessary and if resources allow*

Other less important ways of disseminating term resources include the publication of paper dictionaries for specific audiences or covering particular domains. They may be expensive to produce, however, and sales may be low. They are unlikely to provide a significant source of revenue, but may be useful in attracting new terminology users. Dictionary production will be a secondary consideration to online publication, however. When dictionaries are published,

this can be done in coordination with organisations and professionals in particular fields, to lend credibility and status to the work.

### **Interaction with the media**

There is a need for close coordination with the media as an important user group. As well as being consumers of terminology, journalistic choices largely determine what terms language users will encounter, and, as a consequence, what terms will be implanted. They are the main mediators between term creators and end users. This is particularly the case for terms linked to current events (such as ‘swine flu’). The media will have particular needs – and speed of response to *ad hoc* requests is very important.

#### *Measure 50: Develop a media contact network*

It may be worth developing a special method to coordinate with the media. An email discussion group comprising interested parties in the media (and elsewhere) can be used informally for the following purposes:

- to disseminate information – such as about new terms that are in the public eye, or about newly available resources
- to gather information about the use of terms
- to process and discuss term requests.

It can be a tool for consensus-building about term choices. Obviously, this will only work if all parties feel that their input is valued and important, and if time is invested in making it work. It probably will not work if journalists are viewed as passive consumers of term provision, which of course they are not. The added advantage of such an approach is that term use can be demonstrated in natural use.

#### **Example Box 7: The TERMCAT Antena di Terminologia**

TERMCAT developed a method of interacting with the media, known as the Antena de Terminologia, which is a distribution list comprising a broad membership of the media, including two news agencies, ten dailies, ten radio stations and six television stations, as well as other observers. The Antena had three main uses.

It was used to provide the media with information about new terms (‘cuando hay alguna forma normalizada que nos parece especialmente relevante para los medios de comunicación, la damos a conocer a través de ella’<sup>43</sup>: Sabater).

It was also used to gather opinions in difficult cases or to find specialists:

De temps en temps le TERMCAT utilise l'antenne pour faire des consultations, par exemple, ils sont en train de préparer un vocabulaire du golf. Alors ils essaient de trouver des spécialistes, des gens qui parlent de golf dans les medias. Alors ils nous demandent s'il y a quelqu'un entre nous. Pas un linguiste, simplement un journaliste qui parle de ça.<sup>44</sup> (Camps)

Finally, it was a way for the media to notify TERMCAT of new terminology needs:

De temps en temps, il y a quelques medias qui découvrent un mot qu'ils ne sont pas satisfaits d'utiliser un mot ou un autre, et alors c'est les medias qui demandent au TERMCAT de faire un consulte généralisé et voir si on trouve les mots le plus justes pour dire ça.<sup>45</sup> (Camps)

A mechanism such as the Antena is extremely valuable both for research and for dissemination, costs little, and could be adopted by other term planning organisations, and perhaps adapted to reach other target groups apart from the media.

#### *Measure 51: Spread the terminology 'message' in the media*

Spreading the 'message' of terminology work in the media can be problematic. Ways to overcome this include linking terminology work to news stories. Of course, it is not realistic to always expect an event such as a local Olympic games in order to publicise a dictionary of sport (as happened for TERMCAT in Barcelona in 1992), but the principle remains. Examples of how this could be achieved include publication or awareness-raising in conjunction with an event in the specialised field. If debate can be created about the importance of, and methods for, term research, so much the better. It is important to focus on the relevant media for the domain and the targeted user group.

#### **Marketing and awareness-raising**

Information about term resources needs to be made available as widely as possible. Word-of-mouth alone, though useful, will not spread the information beyond a certain core group. Potential users need to be made aware of term resources and of term planning work. This is so that they can use the resources, of course, but also so that they can become involved in planning and decision-making.

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<sup>43</sup> 'when there is a standardised form which we think is particularly relevant for the communications media, we send it out.'

<sup>44</sup> 'From time to time TERMCAT uses the antenna to consult with us, for example, they're preparing a golf term list. So they try to find specialists, people who speak about golf in the media. So they ask us if there is one of us. Not a linguist, just a journalist who talks about it.'

<sup>45</sup> 'From time to time, there are some media which discover a word or they're not happy to use one word or another, and then it's the media which ask TERMCAT to do research and to see if they can find the best words to say that.'

*Measure 52: Have a communications department and a communications plan*

Because of the importance of term dissemination and of marketing, there should be a dedicated communications department, or section, and a communications plan. The plan, developed and modified through organisational and user evaluation, can cover such issues as the methods and procedures for term dissemination, methods of awareness-raising, giving a unified 'look' to publications, press releases and other interactions with the media, and measurement of dissemination.

**Example Box 8: The TERMCAT communications department**

TERMCAT had a communications department, with three members of staff. A comprehensive communications plan had been developed, and was used throughout the organisation to create a unified image and to market terminology work. This plan was based on the idea that all staff members should be able to communicate TERMCAT's work: 'all of us are communicators' (Cuadrado, Cortés). The following were among the communications department's aims:

The main aim of the communication department was the promotion of terminology and of new term collections.

When a product is published, we make sure that we have done a market study for every target group. Then we make sure that all products, all contexts and all terminology contents are going to reach this target. We do this market study while we work on a product in order to identify the real users. (Colomer, Cuadrado)

Another aim of the communications plan was to make TERMCAT itself known, and the logo, for example, was visible on every piece of stationery and on every publication: 'the information which is really important for us is to let them know who TERMCAT is, what TERMCAT offers and what TERMCAT could be useful for' (Cuadrado, Cortés).

A related goal was to convince organisations that the use of correct terminology is important from an image point of view.

After the communications plan was implemented, new visitors to the website increased by about twenty-five per cent. The impact of marketing work such as press releases was continuously evaluated, and the impact of this had also grown.

Of course, the impact of the press releases has increased since the Communication Plan was implemented. Every time we have a new product or a relevant event relating to Catalan terminology the Communication department issues a press release to the media. After that, an extract from this press release is sent to the specific target groups, this is probably why the impact has been increasing (Colomer email)

The TERMCAT experience demonstrates the value of a unified, planned approach to communications and marketing, and could be adapted by other organisations.

*Measure 53: Identify target groups*

In advertising a new dictionary or term resource, it is important to correctly identify possible target groups. This depends on the language situation, but usually includes, at a minimum,

translators, language specialists, technical writers, legislators and the media, as well as the education system.

*Measure 54: Share information about terminology work*

Information should be shared about different aspects of the terminology work. This includes term resources themselves, but also information about the value and use of terminology, how terms are compiled and created, the choices to be made about terminology use, and how to best use term resources. A distinction is to be made between directing people to term resources, and creating a debate about terminology and term use. One way of sharing this information is through publishing documentation, about term creation processes, for example.

It is a good idea to bring users or specialists together to create interest. If this is done in a place and with a group associated with the domain, so much the better (and the more newsworthy). For example, a medical dictionary, on which a group of doctors have worked, could be launched in a hospital. Or a videogames dictionary could be publicised using a term-based video game (as done by TERMCAT).

*Measure 55: Bring terms into circulation*

This model assumes that the term planning organisation works towards not only the provision but also the implantation of terms in the language. This is mostly done by providing and disseminating resources.

It can also be done by modelling term usage and providing ‘real’ examples of specialised language usage: whether this is important depends on the amount of natural term usage taking place in the language, the level of term implantation, and whether this needs to be accelerated. Ways to undertake this include supporting the publication of material incorporating specialised terminology, whether for the education system or for the general public. This could be in the form of a blog or of a print publication or of a regular feature in the media, whether printed or broadcast. Such material could be archived on the website, to provide usage examples. The media discussion group (Example Box 7 above) is another way to encourage the natural use of terminology.

*Measure 56: Use inexpensive and innovative marketing resources*

Because term planning organisations may not have a large budget to spend on advertising or marketing work, it is important to use marketing and media resources intelligently. Inexpensive or free resources (although costly in terms of staff time) include blogging, press releases and visits to schools, universities and others. The publication of pamphlets and

posters with terms targeted to particular audiences, as 'decorative resources', could be particularly useful in visual fields. A newsletter or similar can also be used to keep interested parties updated.

It may also be possible to approach organisations (whether public or private) that use terminology and offer to analyse and suggest improvements to their in-house terminology usage. This would have the dual effect of improving terminology usage and raising awareness of its importance.

#### *Measure 57: Encourage users to value terminology*

Public attitude is important, and it is important to create an atmosphere in which terminology is valued and where organisations, even in the private sector, feel that the use of correct language and terminology is a way of making themselves look good, and to make them aware of the need for terminology. This is especially the case in a minority language situation, where domain loss may be problematic. Training is therefore also a marketing activity.

#### *Measure 58: Attend conferences and publish research*

Conferences and other publications are important for raising the organisation's profile among researchers and internationally.

## **5.6 Evaluation**

Evaluation is a very important aspect of term planning; it allows for corrections and adjustments in the organisation's work, and positive evaluation is an important mark of progress. If evaluation is limited to 'push' factors such as term production alone, this will give an untrue portrait of term use and acceptance. Comprehensive documentation will make evaluation easier and more useful.

#### *Links with other aspects of term planning*

All the aspects of this model can and should be evaluated regularly. Evaluation of implantation is – from a sociolinguistic perspective – the most important measurement of the term planning organisation's success.

### **General points for evaluation**

#### *Measure 59: Establish an evaluation and assessment mechanism*

A mechanism for regular evaluation of the term planning activities should be established. One of the benefits of having a clear model or policy for term planning is that there is a standard against which to evaluate progress.

*Measure 60: Have a range of participants in evaluation: staff, user groups, external evaluators*

Term users should be encouraged to contact the terminologists, and answered promptly when they do so. Emails from users who feel valued and involved are an excellent way of finding random errors in the database. If there is a positive attitude towards the work of the term planning organisation, this is a resource that should be used. More structured interaction with user groups can be carried out for particular purposes, such as the development or testing of a new resource.

Regular external reporting and evaluation, whether by a funding body, a board of directors or an external consultant, can lead to innovative ideas and fresh perspectives.

*Measure 61: Encourage research as an evaluation mechanism*

Research carried out by staff or by external researchers is an important evaluation tool, and should be encouraged. Some research should be carried out independently, to ensure objectivity.

**Example Box 9: Implantation research for TERMCAT**

Implantation studies were, for TERMCAT, a measure of the term planning process. Implantation studies were not carried out in-house, but in cooperation with two universities (Pompeu Fabra University and Barcelona University, both in Barcelona). Both quantitative and qualitative studies were carried out. The policy of working with external evaluators ensured fairness and kept research and practice distinct. It was felt that the academic role in critical evaluation was vital.

The results of one of the implantation studies (Vila i Moreno *et al.* 2007) indicated that TERMCAT terms were more likely to be used in formal contexts, but that often they were neither known nor used – that is, *in vitro* work was not translated to *in vivo* results. This was recognised as problematic, and steps, such as the creation of a communications department and plan, were taken to improve implantation.

The TERMCAT approach illustrates some key strategies for implantation studies: external evaluation; both quantitative and qualitative research; publication of results; and a commitment to act on the results obtained.

*Measure 62: Work towards quality certification*

It may be possible for the organisation to work towards or to attain a quality certification, such as ISO 9000:2005 or the national equivalent. The advantages to this process are that it entails quantifiable measurement of work, detailed documentation and external evaluation. The ensuing certification is a mark of quality and may increase user confidence.

## **Aspects of evaluation**

### *Measure 63: Evaluate dissemination and implantation*

In this sociolinguistic model, term implantation is the major goal of term planning work. Implantation studies are therefore the single most important tool for assessing the results of the term planning effort and particularly of term dissemination. It is therefore vital that both quantitative and qualitative studies be carried out regularly and in accordance with the most recent research. In order to ensure impartiality and fairness, they should not be carried out by the organisation itself. Sponsoring a PhD or postdoctoral researcher may be the most cost-effective way of carrying out this work.

Decisions must be made about the types of implantation to be measured – the domain, the medium (whether written or spoken), the user groups (subject specialists, the media, etc.) – and this should reflect the organisation's priorities as set out in the strategic plan.

### *Measure 64: Evaluate research, term production and standardisation*

The research work should be measured against a list of criteria for success. These criteria could include measures such as compliance with terminological standards, formal and methodological consistency, accuracy of the information, correct allocations of terms and equivalents to concepts, and correct spelling and grammar. This evaluation can be done by participants or by an external evaluator.

Informal discussion of research work within the organisation can also have an important role here, particularly in mentoring less experienced terminologists.

Research projects can be assessed against project planning measures: whether budget and time constraints were adhered to, and whether participants' expectations were met. Participants (such as subject experts) can also be asked about their experience of the project – whether they found it useful, whether the work was well-paced, and whether the right training and tools were provided for the task.

### *Measure 65: Evaluate term resources*

The term resources should be routinely assessed, and users should be canvassed for their opinions, either using surveys or focus groups or other methods. Sensible suggestions for technical or editorial improvements should be implemented within a reasonable timeframe.

Term resources should also be assessed for their quality – random checking of the database against set performance indicators for accuracy and consistency is important. These editorial and technical performance indicators could include quality and consistency of data, response



times, and accurate search results. Target standards should be set in advance. If standards fall below these targets, this may indicate that more time should be spent on editorial improvements.

*Measure 66: Evaluate database/website user behaviour*

Analysis of statistics about user numbers and behaviour can be used to decide strategic priorities. For example, if fruitless searches are consistently carried out in particular domains, this might influence resource planning or set priorities for *ad hoc* work. If common search mistakes mean that results are not found, a more sophisticated search strategy might be necessary.

The terminology website and database should be designed from the outset so that the usage made of each aspect can be measured. In this way user behaviour can be tracked, as well as term popularity, missing items, common search errors, and other information. This information can prove valuable in planning terminology projects. Visits to other parts of the site, such as training modules or information pages, should also be measurable and tracked over time.

*Measure 67: Evaluate marketing work*

If a communications plan has been put in place, its effectiveness can be measured in part by assessing the number of references to the organisation or to its work. The impact of press releases and other publicity measures should be tracked.

*Measure 68: Evaluate training*

Feedback should be gathered from participants on training programmes.

*Measure 69: Evaluate evaluation*

Finally, there should be a periodic discussion about the evaluation taking place and the methodologies employed, and their value or otherwise.

## **5.7 Training**

There are at least four aspects to training, from the point of view of a term planning organisation. These are:

- training of terminologists (term planning organisation staff and future terminologists)
- training of specialists and others advising the terminologist
- training of professionals working closely with terminology
- training/education of the general public.

### *Links with other aspects of term planning*

Training work is important both to improve the quality and use of term resources, and to foster understanding of the use and importance of terminology. It is therefore closely related to dissemination and implantation work. The training of terminologists and of terminological advisers is vital to successful research work. Some types of training, such as research into term implantation conducted as postgraduate research, can also constitute evaluation.

### **Training of terminologists**

#### *Measure 70: Provide training for the jobs to be done*

Term planning agency staff need different kinds of training, depending on the work they are carrying out and on their own background. In some cases, staff perform a variety of functions, such as marketing and training work, as well as terminology research.

Terminologists will also need a variety of other skills, including interpersonal skills. If they will be involved in tasks such as planning, marketing, advising the public, database design, or training others, the need for training in this work should also be borne in mind.

#### *Measure 71: Provide in-house training to new staff*

In many cases, trained terminologists will not be available for recruitment, so most training will, of necessity, be done in-house by other, more experienced terminologists. The training received will be an addition to the skills already possessed by the staff member.

#### *Measure 72: Give training in both terminology theory and methods*

The training programme provided to new staff will depend on their prior experience and on the tasks assigned to them, but a background in both terminology theory and work methods should be given. This should include knowledge of the principles of terminology and of terminology working methods, and mastery of terminology tools.

#### *Measure 73: Provide documentation and user manuals*

It is important to provide documentation and user manuals, but most training will take the form of an on-the-job apprenticeship or internship.

#### *Measure 74: Provide continuous training to staff*

In-house training can be provided in language skills, methodology and research tools. Mentoring by more experienced staff can be particularly useful, perhaps in the form of a study circle.

Advanced training for terminologists can be difficult to find. Some ways to provide such training include attendance at conferences, membership of international organisations, study visits to term planning organisations in other countries, and external training courses such as the Terminology Summer School run by Termnet. Online postgraduate courses are a further opportunity. Because terminology and related areas such as documentation and computing are evolving fields, continuous training opportunities are important.

**Example Box 10: Continuous training for TNC staff through study circles**

One way to facilitate the continuous learning of staff, in the absence of advanced training opportunities, is through informal internal exchange of information and study circles. This approach is taken by TNC. Responses given to *ad hoc* queries are circulated periodically to all terminologists for review and comment. There is also an occasional study circle on aspects of terminology theory:

We do a theoretical [study circle] where we can go in-depth on theory, we started with the concept of 'concept' and it took a whole six months. One colleague prepared a selection of readings and we discussed it. (Nilsson)

A study circle such as this is an excellent (and easily-organised) way of furthering knowledge and creating discussion among terminologists.

*Measure 75: Provide opportunities for research*

It is important for the terminologist to also carry out research work. In some cases the organisation is directly involved in academic research; in other cases the terminologist will have to find a supervisor outside the organisation. There will nearly always be an aspect of the organisation on which research – and, perhaps, consequent improvements – can be carried out. If this work is carried out at an international level, this benefits both the organisation and the development of terminology as a discipline.

*Measure 76: Provide training opportunities for future terminologists*

The term planning organisation can offer internships and study visits for students and graduates intending to work as terminologists; these could cover both practical work experience and research.

**Example Box 11: Trainee internships in Fiontar**

A two-year internship programme for six graduates (administered by Fiontar and funded by the Department of Community, Rural and Gaeltacht Affairs), planned for 2010, was a practical approach to the problem of provision of training in Irish-language terminology work. The interns would be paid and would move between Fiontar, where they would carry out term creation and research work, the Terminology Committee, where they would assist with the *ad hoc* query service, and the Placenames Branch, where they would carry out placenames research. A continuous education programme, one day per week, would include selected

readings and seminars about terminology theory and methods, grammar and related issues. The interns would also be encouraged to embark on MA or PhD research in terminology and other language areas. The intention was that, at the end of their internships, the graduates would be well qualified for careers in terminology, editing, or other work requiring language, editorial and research skills.

A similar internship programme could be developed in other language situations. The benefits to the organisation include relatively inexpensive training of potential future terminologists, and the development of a cohort of trained individuals who can carry out terminology research.

### **Terminology committee members**

As stated above, training of terminology committee members should be a stage in the preparation of new term resources.

#### *Measure 77: Provide introductory training on terminology principles and methods*

An introductory tutorial on the principles and methods of terminology work, as well as the provision of key resources, will have the effect of improving the work quality and reducing confusion. It is also important, of course, to agree on the aims of the project being undertaken, and this will be easier if there is a common understanding of the principles of terminology work.

### **Professionals working closely with terminology**

Two types of professionals work with terminology: those for whom it is an object of work (language planners, terminographers, etc.), and those for whom it is a communication tool (subject field specialists). Both may benefit from the provision of training. Training is no substitute for providing clear, easily-used resources, however, and, as with general users, it should not be assumed that professionals have received training in terminology.

#### *Measure 78: Ensure terminology training is provided on professional courses, if needed*

A certain, limited, amount of training may be needed by professionals working closely with terminology, covering such issues as the need for terminology, usage of terms and terminology tools, application of terminology principles and methods, and, in some cases, terminology project management. Such training could also cover topics such as term choice, language registers, and term resources.

These professionals may include translators, educators and journalists. Training for teachers and journalists in the correct use of terminology is particularly important, because of the influence their choices will have. Most of this training can be provided through undergraduate and professional courses, and the term planning organisation could liaise with these courses to

ensure a high quality of training. Close liaison with these professions (such as using an email exchange forum) can also mean that ongoing information resources can be provided in a non-obtrusive fashion.

*Measure 79: Provide workshops and seminars as needed*

Where subject field specialists or in-house terminologists in public or private bodies are working closely with terminology as a communication tool, or are creating new terminology, a more intensive type of training is necessary. If there is demand, a programme of workshops and seminars could be developed for use in different situations.

### **The general public**

*Measure 80: Assume term users have not been trained*

It is impractical to provide terminology training to the general public, and educational resources and 'help' files on websites are often little used. The provision of training tools, therefore, does not mean that terminology resources can be any less easy to use or intuitive; it should be assumed that users have not been trained.

*Measure 81: Provide information resources online*

A module or other resource providing information about terminology or terminology skills can be provided online for interested users and as a tool for trainers. Such a module can cover the topics mentioned for professional training, above. Information should be shared about different aspects of the terminology work. This includes term resources themselves, but also information about the value and use of terminology, how terms are compiled and created, the choices to be made about terminology use, and how to best use term resources.

*Measure 82: Give training to students*

Students can be targeted for terminology training. This could be particularly useful for translation and linguistics students, but also for students in the sciences. Guest talks and visits can raise awareness of terminology resources and of the importance of terminology, and are also a forum for dissemination.

## **5.8 Modernisation/maintenance**

Modernisation and maintenance are necessary in order to keep a high standard of work in each of the aspects of term planning.

### *Links with other aspects of term planning*

Modernisation is heavily reliant on the results of evaluation and on reacting in a positive way to findings.

### *Measure 83: Implement changes suggested by evaluation*

Evaluation of the different aspects of term planning, whether done within the organisation, with service users or with external evaluators, will throw up modernisation ideas, and highlight areas or services which are not adequately developed or maintained.

### *Measure 84: Plan and carry out technical improvements to databases and work methods*

The database may need to be upgraded or redesigned to respond to requests from the editorial team or from users, as well as in order to keep up with changing technologies. If the technical team understands terminology work, this makes this technical-editorial cooperation much easier. Creative and not just reactive development is important.

### *Measure 85: Keep resources up to date*

In a large database, particularly one to which new resources or terms are continually being added, continuous maintenance and updating is necessary. Concepts will need to be aligned; terms which conflict with each other will need to be harmonised in discussion with specialists. Evidence of real usage of terms may lead to certain cases being reopened. Certain sources of definitions may become obsolete, and so may usage samples. This work may be done in part by responding to information and requests received from users.

Technical, as well as editorial, maintenance is needed. This relates to matters such as hosting, security and technical infrastructure.

### *Measure 86: Maintain research standards*

Research standards are maintained by comprehensively documenting the work and through staff training. If the database keeps a history of user changes, this makes it easier to monitor work standards and intervene if necessary.

### *Measure 87: Keep up with and use new research technologies*

It is important to keep up with new research technologies as they emerge. It is a good idea to support research which could have practical spin-offs in the future, and to keep up with international research which can provide new ideas. Being at the forefront of such changes is stimulating for staff and leads to a more dynamic work environment.

### *Measure 88: Carry out organisational modernisation*

Organisational modernisation can be carried out by bringing in an external evaluator, or by preparation for quality certification such as ISO 9000:2005 or a national equivalent. This provides an incentive to improve the organisation and to better document work processes. It may lead to planning for improvements in particular areas, such as communications or research methods.

## **5.9 Conclusion**

This chapter has set out a model for best-practice in term planning for a language, based on the lessons learned from the literature and from three cases.

The model suggested here is not limited to any one particular situation of term planning for a language, and is therefore both general and adaptable; in some cases, specific measures will be more or less important. If measures are omitted, this choice should be justified by the circumstances. A good term planning organisation will cover all of the aspects above, and not just some of them. If there are several organisations working together on term planning, they should cover all the aspects between them.

The overall approach is a sociolinguistic one, with an emphasis on providing high-quality resources to the language user, and ensuring as far as possible that those resources are used. The model assumes that the term planning organisation works towards not only the provision but also the implantation of terms in the language. The importance of the media in term dissemination is cited throughout. Terminology work is most likely to be successful when it is carried out in an open, inclusive way, with the users involved as much as possible. This includes: public consultation in advance planning and preparation; extensive research into *in vivo* term usage; the most widespread dissemination possible; investment in marketing; research into term success; and user training.

A term planning model should be both top-down and bottom-up. The bottom-up aspects of this model are particularly the evaluation aspect, which is largely reliant on feedback from users, and the research aspect, in which as many users as possible are involved. The top-down aspects are the strategic planning and the dissemination and marketing work.

## 6 Chapter 6. Conclusions and directions for further research

### 6.1 Conclusions about research questions

The research questions below were set out in the Introduction, and can now be addressed.

**Is there an existing best-practice model for term planning? If it has not been set out explicitly, can an agreed model be inferred from the existing literature on terminology?**

There is no existing best-practice model for term planning at a management level. Some literature exists at a policy-making level, focusing on the decision to plan terminology and how such a policy decision can be made. Other works cover a particular aspect of term planning, often term research, in great detail. Although several models of the *steps* of terminology planning were set out, well-developed in-depth models for these steps are less developed.

By looking at the literature as a whole, some consensus on certain aspects of best practice emerges. Some aspects of term planning are much more deeply researched and better described than others. It is also clear that in some cases different authors understand these aspects differently: this is particularly the case with the concept of standardisation. There is some discussion of the preparation and planning stage, but it is largely for terminology projects rather than for a situation or language as a whole. UNESCO (2005) is the major exception to this. There is a range of texts dedicated to the research phase, but as terminology research is a well-defined, coherent topic, this is hardly surprising. There is research on the methods of standardisation, but little on the concept of standardisation, such as if and when it should be employed; there appears to be little consensus on the meaning of the term itself. As for dissemination, there is very little written, despite the fact that it is crucial for the implantation of terms. What material is available tends to name areas where terms could or should be disseminated (the radio, for example), but does not provide any guidance. Implantation is the one area in which the results of in depth investigations are available, but there is still no definitive conclusion or model of the factors affecting it. The broad area of evaluation – of terms, of term creation methods, of terminology products – is adequately served, but there is nothing on the evaluation of term planning organisations. There does not seem to be consensus on the issue of training. Modernisation and maintenance, although recognised as important, are not discussed at all. In nearly all cases, there is simply not enough material to be able to say that the literature suggests a consensus or a model.



**Can this best-practice model, if it exists, be expanded and improved by looking at how term planning work is carried out in real-life situations?**

There is a gap in the literature for a broad-based study of term planning which would encompass sociological and management aspects, but would not be so broad as to be inapplicable to specific cases. This gap is problematic as it indicates limited sharing of expertise.

Although the situations are different, the objectives of term planning organisations are generally the same, and most of the methods are similar too. Each organisation has to go through the same process of trial and error with regard to all the basic aspects of terminology: research, standardisation, publication, dissemination and so on. Despite this, it was found, in reviewing the literature, that much term-planning knowledge is not widely published: most of the resources on which terminologists rely are internal working documents, not easily accessible to the external researcher. Further, many terminology policies are not explicitly formulated, much less written down.

By looking at term planning organisations in their daily work, some of the assertions made in the literature can be tested and their importance weighted, and the areas not discussed (dissemination and marketing of term resources, for example, as well as the organisational structures that work) can be expanded. The result is a much more detailed model, with a firmer basis in experience.

**Is the best-practice model for term planning, as derived from case study research, the same as that set out in the literature?**

Although the model for term planning derived from the case study research keeps much the same structure as that found in the literature, there are several key differences. Implantation is recognised as being a vital result of good term planning, but not an active stage in term planning, although it is often listed as such (Auger 1986, Cabré 1999, Santos 2003).

The most interesting finding is the importance, in the cases, of aspects of term planning which are hardly mentioned in the literature. This is particularly so with methods of dissemination, in the sense both of publication, and of marketing and awareness-raising about term resources. Although these are essential for term implantation, they are hardly discussed in the literature. Similarly, there is little discussion in the literature of *ad hoc* term research, although this is just as important as project-based research in certain instances.

Other aspects repeatedly discussed in the literature appear less important in the cases. Interviewees in the cases acknowledged taking a pragmatic, case-based approach to the

implementation of ISO standards, and much terminology work – because it was on an *ad hoc* basis, or because the projects were too big – did not suit the ISO approach. Although terminology work should be based on standardised principles and methods, and based on scientific theory, this is not always the case in practice. The steps of research projects in the three cases were similar to the project management guidelines for terminology standardisation set out in ISO 15188:2001. ISO 23185:2009 was not used in any of the cases for evaluation – although this may be because it was only published in 2009. The concept of standardisation, unclear in the literature, was not further clarified by the cases. It was obvious, however, that ISO/TR 22134:2007 was correct in stating that standardisation should be carried out in close association with the targeted users, based on a description of usage, and that term selection should take account of implantability criteria. Standardisation requires a socioterminological approach.

### **Is a socioterminological approach to term planning useful?**

Aspects of the socioterminological approach are useful, but the term planning model covers issues that are not discussed in socioterminology at all, and the cases diverge from the socioterminological approach in several ways (see the introduction to Chapter 5).

The main limitation of socioterminology as an approach to term planning, however, is the fact that it is underdeveloped. There is no consensus on what it means exactly, and it does not tackle questions such as training, planning and preparation, *ad hoc* research, and dissemination, which all emerged in the cases. Many issues are not addressed in socioterminology and it is primarily focused on redefining terminology research methods.

It is therefore more useful to speak of a sociolinguistic approach to term planning. This implies the importance of social contexts. Specifically, the sociolinguistic approach is seen in the following aspects of the model:

- Seeing terminology as an aspect of language planning, and the importance of close links to other aspects of language planning (particularly in the organisational and decision-making structures, and in dissemination of term resources).
- Close connection with language users in planning and in research/standardisation work, including research into language usage, and close interaction with opinion-leaders in language choice, particularly subject specialists and the media.
- The importance of social aspects of term use; emphasis on usage and likely usage (implantability) in term choice and standardisation.

## 6.2 Implications for theory

The comparison of the literature with the best-practice cases in Chapter 4 showed that some principles repeatedly mentioned in the literature were not, in fact, useful in practice (for example, the ISO standards were not followed completely in any of the three cases). This raises questions about the usefulness of some term planning literature for practical terminology work.

It also became evident how little theory there is on some aspects of term planning. It is to be hoped that this will be rectified. In particular, much more needs to be written about what factors favour term implantation among user communities, and how term resources can best be presented, disseminated and advertised. More research in this field would be extremely beneficial to term planning work. The use of online term resources, and how to measure aspects of this, is also an area for research.

## 6.3 Implications for policy and practice

The model developed in Chapter 5 of this thesis could be adapted for use in an existing or a planned term planning situation. It also provides a basis for the evaluation and development of existing term planning organisations.

The way in which the model is applied depends on practical considerations such as financing but also on the sociolinguistic situation and the state of development of the language in question. It is unlikely, however, that any aspect could be ignored entirely, or that any entirely new aspects would emerge.

An issue, mentioned by several authors, that came up in the case discussion of research, dissemination and training is the fact that LGP and LSP are not as separate as terminology theory sometimes claims – for terminologists or for terminology users. Users of language resources expect to find both in the same place, and do not make a distinction. This raises questions for language planning – should all these resources be kept separate? For more general users, it is clearly important that resources are clear and simple enough to use without specialised training, especially when there is no clear distinction between LGP and LSP.

The case study research raises questions about the place and the provision of training in terminology. The need for high-level research and for advanced training opportunities for terminologists was highlighted, as well as for the training of future terminologists. More terminology modules in universities would be useful. Terminology research at doctoral or post-doctoral level has benefits for the term planning organisation and for the development and adoption of new technologies and methods.

## 6.4 Limitations of the study

This is the first known academic study of its type in the field of terminology planning. Case study research is useful in examining real events in detail and from a holistic perspective but it can prove to be limited by the challenges of research design, data collection, analysis and reporting. PhD research is also restricted in time and scope. This study is therefore limited in several key ways.

### **Limitations to case choice, number of cases and data collection**

Although every effort was made to choose cases in a well-motivated way (see 3.3 above), there were still limitations caused by the low response rate from experts contacted.

Gathering data from more cases would lead to a more nuanced and representative model, but three was considered a reasonable number within the time and resource parameters available. The model developed here is based on a limited data set. No claims can therefore be made about its universal usefulness and there is a danger of overestimating the importance of explanations discovered in the case studies (Collier and Mahoney 1996, 88). This is generally true of all qualitative research, however. It is a common feature of case study research that it provides no basis for scientific generalisation from the results generated. The model as developed could be tested against further case studies, and if other cases were used, the model derived might vary somewhat.

In each case, a limited number of interviews was carried out with key players, but in the Swedish and Catalan cases the study visits were restricted to one week each. A longer visit or more in-depth interviews might have yielded more detailed or nuanced information. Although about sixty-five questions were asked about each case there were many other questions that could also have been asked. Little micro-level information (for example, on term creation methods, or on database specifications) was gathered. On the other hand, the case questions were based on the literature, and every interviewee had the opportunity to read and comment on the finished report.

### **Limited representativeness and scope for comparison between cases and for extrapolation**

Comparison between the three cases of term planning is limited by the considerable sociolinguistic and other differences between the cases. These differences can be found in the status of the languages, language history, culture, administrative culture, and a wide range of other factors (discussed in the section beginning on page 81) .

As seen in Chapter 3, one of the survey respondents objected to the premise of this research, saying that organisations with different needs, expectations, objectives and means cannot be compared. Although this respondent took a broader view of term planning organisations than this thesis does (by including, for example, industrial and commercial enterprises), there are still serious questions raised. The respondent pointed out that the goals of different language planning organisations vary, and so do the language orientations (monolingual, bilingual, multilingual). The respondent concluded that ‘élaborer un modèle universel de bonne pratique revient, à mon avis, à nier les réalités (techniques, financières, culturelles, professionnelles) et surtout à nier les divers services que peut rendre le travail terminologique’<sup>46</sup>.

Although this thesis considers a smaller range of term planning situations than envisaged by the respondent, this objection is valid in pointing out the inherent methodological difficulty of comparing cases. (The problem also arises in reviewing the literature; it was seen, for example, that concepts such as ‘research’ and ‘standardisation’ are understood differently by different authors, depending on their research and professional backgrounds.) It was noted in Chapter 3 that the results of any case study research cannot safely be generalised to the wider population, and that the researcher must very carefully define and limit the scope of his or her findings to a ‘well-specified population that shares the same key characteristics as the cases studied’ (George and Bennett 2004, 25). The issue raised is therefore not unique to this particular research topic, and case study research has been usefully employed to inform best practice in other fields.

Despite the acknowledged differences, however, the cases studied are very close in several ways. They are all situated in affluent Western European countries, where well-documented and elaborated Indo-European languages are spoken and have a high status, although that status is different in each case. This means that the case study results are not representative of or universal to all language situations, particularly those in developing countries. None of the five major European languages were included either.

The findings of the research are therefore rather limited, and assumptions are made for the purposes of the model about levels of financing, resources, staff, user and staff education and the state of development of the language itself, which are not valid in all term planning situations.

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<sup>46</sup> ‘Developing a universal model of good practice amounts, in my opinion, to denying the realities (technical, financial, cultural, professional) and particularly to denying the various services that terminology work can perform.’

To tackle this issue, the model is designed to be very general, and none of the recommendations is language- or culture-specific. As stated above, the model is an *ideal* and implementation depends on practical considerations. Furthermore, no matter what the specific sociolinguistic situation, the objectives of the type of term planning organisations considered in this research are generally the same, and most of the methods are similar too.

It should also be noted that 'term planning' is understood throughout this thesis to refer to a language planning context, and not, for example, to terminology resources within a corporate or purely academic context, although some aspects of the model could be useful in these cases as well.

## 6.5 Recommendations for further research

As seen in Chapter 2, this is a new field in which little research has been carried out. Especially in view of the inherent limitations of this study, which is very broad-based, there are several ways in which further research on term planning could be carried out. The following types of research would all be academically interesting and potentially useful to the term planning community.

### **Research into aspects of term planning**

This research covers eight aspects of term planning, and it was seen in Chapter 2 that little has been written about some of them, particularly dissemination, (*ad hoc*) term research and (some aspects of) evaluation. Detailed research into any of these aspects would help to granulate the model. For example, research could be carried out into the best ways of accessibly presenting terminology resources. This kind of micro-level planning would complement the macro-level model presented in this thesis.

It was seen in Chapters 2 and 4 that there is a question about what standardisation for terminology means, and about whether the imposition of standardised terminology by a regulatory authority (as in the Catalan and Quebec cases, for example) works. This could form the subject of further substantial research.

### **Comparison with best practice in related fields**

It would be interesting to compare approaches to best practice in terminology planning with the more developed fields of language planning, standardisation or other areas of public policy planning. This could lead to a more nuanced approach.

### **Testing of the model**

The best-practice model proposed in Chapter 5 is based on the literature and on a study of three cases. It would be interesting and useful to compare it with more cases, both with those that are considered successful and those that are considered problematic. Ideally, aspects of the model could also be tried out in practice on real organisations with real financial and other constraints (action research). This would form a relevant and important piece of research, which could have positive consequences for terminology planning.

## References

*British-Irish Agreement Act. Act number 1 of 1999*, Stationery Office, Dublin.

*Official Languages Act. Act number 32 of 2003*, Stationery Office, Dublin.

Abdulaziz, M.H. 1988, "Development of scientific and technical terminology with special reference to African languages", *Kiswahili*, vol. 56, pp. 32-49.

Aguilar-Amat, A. & Santamaria, L. 1999, "Terminologia i llengües minoritzades", *Quaderns. Revista de traducció*, vol. 3, pp. 101-112.

Alberts, M. 2008, "National language and terminology policies - a South African perspective", *eDITion*, vol. 1, pp. 18-21.

Alloni-Fainberg, Y. 1972, "Official Hebrew terms for parts of the car", *International Journal of the Sociology of Language*, vol. 1, pp. 67-94.

An Coiste Téarmaíochta 2008, *Lámhleabhar Téarmeolaíochta*, In-house manual

Antia, B.E. 2000, *Terminology and Language Planning: an Alternative Framework of Practice and Discourse*, John Benjamins, Amsterdam & Philadelphia.

Antia, B.E. 2001, "Terminological investigations into specialized knowledge and texts: A case study of legislative discourse", *Terminology*, vol. 7, no. 1, pp. 5-30.

Antia, B.E. 2008, "Vision and terminology policy", *eDITion*, vol. 1, pp. 10-13.

Askira, M.G. 1994, *A Linguistic Analysis of the Translation of English into Kanuri and Hausa by the Borno State Electronic Media*, M.A. dissertation, University of Maiduguri.

Auger, P. & Rousseau, L. 1978, *Méthodologie de la recherche terminologique*, L'Éditeur Officiel du Québec. Office de la Langue Française, Service des Travaux Terminologiques, Québec.

Auger, P. 1986, "Francisation et terminologie : l'aménagement terminologique" in *Terminologie et coopération internationale : la terminologie, outil indispensable au transfert des technologies. Colloque international de terminologie*, eds. G. Rondeau & J.C. Sager, Girsterm, Québec, pp. 47-55.

Auger, P. 1999, *L'implantation des officialismes halieutiques au Québec : essai de terminométrie*, Office de la langue française, Québec.

Auger, P. 2006, "Le phénomène de l'anglicisation de la langue forestière au Québec : essai de socioterminologie diachronique" in *Aspects diachroniques du vocabulaire*, eds. D. Candel & F. Gaudin, Publications des Universités de Rouen et du Havre, Mont-Saint-Aignan, pp. 137-156.

Auksoriūtė, A. (ed) 2005, *Pabaltijo Tauty Terminologijos Problemos ir Europos Sąjunga [Problems of Baltic States. Terminology and the European Union]*, Lietuvių Kalbos Instituto Leidykla, Vilnius.

Bauer, M., Ó Maolalaigh, R. & Wherrett, R. 2009, *Survey of Gaelic Corpus Technology* [online], University of Glasgow. Available: <http://www.gaidhlig.org.uk/Downloads/Rannsachadh/CR09-003%20Teicneolas%20Corpais%20BnG100406%20Corpus%20Technology.pdf> [Accessed 03.01.11]



- Baxter, R.N. 2004, "Terminology setting for 'minority' languages within an ultra prescriptive framework: A case study of corpus planning in Galizan", *Terminology*, vol. 10, no. 2, pp. 265-280.
- Benton, T. & Craib, I. 2001, *Philosophy of Social Science: The Philosophical Foundations of Social Thought*, Palgrave, Basingstoke.
- Bhreachnach, Ú. 2007, "[www.focal.ie](http://www.focal.ie) - A new resource for Irish", *Translation Ireland*, vol. 17, no. 2, pp. 11-18.
- Bhreachnach, Ú. 2009, "Is there a best-practice model for terminology planning?", Paper given at LPLL conference, Limerick, 18-20.06.09.
- Boleslav Měchura, M. 2008, "Giving Them What They Want: Search Strategies for Electronic Dictionaries" in *Proceedings of the XIII EURALEX International Congress (Barcelona, 15-19 July 2008)*, eds. E. Bernal & J.A. DeCesaris, IULA, Documenta Universitaria, Barcelona, pp. 1295-1299.
- Bouchard, P. 1995, *L'implantation de la terminologie française au Québec : bilan et perspectives (Présence francophone)*, Office de la langue française, Québec.
- Bourigault, D. & Slodzian, M. 1999, "Pour une terminologie textuelle", *Terminologies nouvelles*, vol. 19, pp. 29-32.
- Bouveret, M. 1996, *Néologie et terminologie : production du sens du terme*, PhD edn, Université Montpellier III.
- Bover, J. 2005, *Presentació de l'elaboració del Diccionari dels Esport. Comunicació presentada a la Jornada Tècnica de la Unió de Federacions Esportives Catalanes celebrada a Calonge el 29 d'abril de 2005*.
- Bover Salvadó, J. & Grané Franch, M. 2008, "Gestor de terminologia multilingüe d'accés lliure" in *Proceedings of the XIII EURALEX International Congress (Barcelona, 15-19 July 2008)*, eds. E. Bernal & J.A. DeCesaris, IULA, Documenta Universitaria, Barcelona, pp. 937-939.
- Bowker, L., Pearson, J., Uí Bhraonáin, D. & Way, A. 2000, "Short Notes: Terminological Activity in Ireland", *Terminology*, vol. 6, no. 1, pp. 145-149.
- Bowker, L. 2002, "An empirical investigation of the terminology profession in Canada in the 21st century", *Terminology*, vol. 8, no. 2, pp. 283-309.
- Bowman, C., Michaud, D. & Suonuuti, H. 1997, "Do's and Don'ts of Terminology Management" in *Handbook of Terminology Management. Volume 1: Basic Aspects of Terminology Management*, eds. S.E. Wright & G. Budin, John Benjamins, Amsterdam and Philadelphia, pp. 215-217.
- Breachnach, C. 1993, "Spléachadh ar obair na Téarmaíochta", *Teangeolas*, vol. 32, pp. 17-24.
- Breachnach, C. 1997, "Gnó an Choiste Téarmaíochta agus obair an iriseora" in *Ar Thóir an Fhocail Chruinn*, eds. M. Nic Eoin & L. Mac Mathúna, Coiscéim, Dublin, pp. 38-44.
- Breachnach, C. 2007, *An Téarmaíocht agus an Reachtaíocht*, lecture delivered to EAFT conference, Dublin, July 2007
- Bucher, A. & Kalliokuusi, V. 2000, *How to survive after 60 years or after 25 years as a national terminology centre? Views from two Nordic countries*, Unpublished version of a presentation to Conférence sur la coopération dans le domaine de la terminologie en Europe, Union Latine.

- Bucher, A. 2007, "Terminology work the Swedish way", *Terminologija*, vol. 14, pp. 37-48.
- Bucher, A. 2008, "Terminologiepolitik und Terminologieinfrastruktur in Schweden", *eDITion*, no. 2, pp. 22-25.
- Budin, G. 2001, "A critical evaluation of the state-of-the-art of terminology theory", *Terminology Science and Research*, vol. 12, no. 1-2, pp. 7-23.
- Cabré, M.T. 1998, *Terminology: Theory, Methods and Applications*, John Benjamins, Amsterdam & Philadelphia.
- Cabré, M.T. & Sager, J.C. 1998/1999, "Preface: towards a theory of terminology", *Terminology*, vol. 5, no. 1, pp. 1-3.
- Cabré, M.T. 1998/1999, "Do we need an autonomous theory of terminology?", *Terminology*, vol. 5, no. 1, pp. 5-19.
- Cabré, M.T. 1999 (2005), *La Terminología. Representación y comunicación*, 2nd edn, lula, Barcelona.
- Cabré, M.T. 2000, "Elements for a theory of terminology: towards an alternative paradigm", *Terminology*, vol. 6, no. 1, pp. 35-57.
- Cabré, M.T. 2001, "L'influence de l'Office de la langue française et du Québec sur la terminologie catalane", *Terminogramme*, vol. 101-102, pp. 131-148.
- Cabré, M.T. 2003, "Theories of terminology: Their description, prescription and explanation", *Terminology*, vol. 9, no. 2, pp. 163-200.
- Cabré, M.T. 2005, "La Terminología, una disciplina en evolución: pasado, presente y algunos elementos de futuro", *Revista Debate Terminológico*, [online], vol. 1, Available from: <http://riterm.net/revista/ojs/index.php/debateterminologico/article/view/23>. [Accessed 23.11.06]
- Calvet, L. 1993, *La sociolinguistique*, PUF, Paris.
- Calvet, L. 1999, *Pour une écologie des langues du monde*, Plon, Paris.
- Calvet, L. 2002, *Le marché aux langues : les effets linguistiques de la mondialisation*, Plon, Paris.
- Calvet, L. 2006, *Towards an Ecology of World Languages*, Polity Press, Cambridge.
- Candel, D. & Gaudin, F. (eds) 2006, *Aspects diachroniques du vocabulaire*, Publications des Universités de Rouen et du Havre, Mont-Saint-Aignan.
- Caney, J. 1984, *The Modernisation of Somali Vocabulary, with Particular Reference to the Period from 1972 to the Present*, Helmut Buske, Hamburg.
- Célestin, T., Godbout, G. & Vacheron-l'Heureux, P. 1984, *Méthodologie de la recherche terminologique ponctuelle : essai de définition*, Office de la Langue Française, Gouvernement de Québec, Québec.
- Centre linguistique de l'entreprise 1984, *La francisation des entreprises et l'implantation réelle des terminologies françaises*, Centre linguistique de l'entreprise, Montreal.
- Christman, D. 2008, "'Living on Barbed Wire': Resilient Women Administrators in Educational Leadership Programs", *Educational Administration Quarterly*, vol. 44, no. 1, pp. 3-29.

- Coghlan, D. & Brannick, T. 2010, *Doing Action Research in your own Organization*, 3rd edn, Sage, London.
- Collier, D. & Mahoney, J. 1996, "Insights and pitfalls: selection bias in qualitative research", *World Politics*, vol. 49, no. 1, pp. 56-91.
- Colomer Artigas, R. 1997, "Dimensión social de la normalización terminológica" in *International Congress on Terminology*, eds. UZEI & HAEE-IVAP, UZEI; HAEE-IVAP, Donostia, Gasteiz, pp. 295-306.
- Colomer Artigas, R. & Cuadrado, S. 2008, "Catalan terminological planning: a model based on social participation" in *Special EAFT Seminar: Minority Languages and Terminology Policies. Proceedings*, eds. F. Ní Ghallchobhair & B. Nájera, TermNet Publisher, Vienna, pp. 103-111.
- Coluzzi, P. 2006, *Minority language planning and micronationalism in Italy. Three case studies: Friulian (compared with Galician), Cimbrian (compared with Aranes) and Milanese (compared with Asturian)*, PhD thesis, University of Bristol.
- Coluzzi, P. 2007, *Minority Language Planning and Micronationalism in Italy. An Analysis of the Situation of Friulian, Cimbrian and Western Lombard with Reference to Spanish Minority Languages*, Peter Lang, Bern.
- Cortès, C. (ed) 2004, *Des fondaments théoriques de la terminologie*, Cahier du Centre Interlangue d'Études en Lexicologie, Paris.
- Costa, R. & Silva, R. 2006, *Metodologia para a investigação aplicada em Terminologia. Guião apresentado ao INE*. Centro de Linguística da Unviersidade Nova de Lisboa, Lisboa.
- Creswell, J.W. 2003, *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*, 2nd edn, Sage Publications, Thousand Oaks, California.
- Daoust, D. 1987, *Le changement terminologique dans une entreprise de transport*, Office de la langue française, Québec.
- Daoust, D. 1991, "Le comportement terminologique et les attitudes face aux langues en contexte de changement planifié : Une analyse comparative de deux milieux de travail", *Revue québécoise de linguistique*, vol. 20, no. 2, pp. 145-168.
- Daoust, D. 1992, "L'analyse de quelques facteurs extra-linguistiques et leur rôle dans une éventuelle politique d'implantation terminologique" in *Actes des colloques annuels de l'association de linguistique des provinces atlantiques*, pp. 23-66.
- de Besse, B. 1980, "Terminology committees in France: balance and perspectives", *International Journal of the Sociology of Language*, vol. 23, pp. 43-49.
- De Bhaldraithe, T. 1959 (1977), *English-Irish Dictionary*, An Gúm, Dublin.
- De Bhaldraithe, T. 1978a, *English-Irish Dictionary: Terminological Additions and Corrections*, Stationery Office, Dublin.
- De Bhaldraithe, T. 1978b, "An foclóir nua (agallamh)", *Feasta*, August 1978, pp. 5-7.
- De Bhaldraithe, T. 2004, "Irish dictionaries" in *Corpas na Gaeilge 1600-1882*, ed. Ú.M. Uí Bheirn, Acadamh Ríoga na hÉireann, Dublin, pp. 72-88.
- De Schaetzen, C. (ed) 2004, *Terminologie et société*, La Maison du Dictionnaire, Paris.

- de Vecchi, D.M. 1999, *La terminologie en entreprise. Formes d'une singularité lexicale*, PhD thesis, Université de Paris 13.
- de Yzaguirre, L., Tebé, C., Alonso, A. & Folguerà, R. 2003, "El seguimiento de la implantación de términos vía internet: estrategias de cálculo y control", *Terminologia e indústrias da língua, Actas do VII Simpósio Iberoamericano de Terminologia* [online] ILTEC, Lisbon. Available: <http://www.riterm.net/actes/7simposio/indice00.htm> [Accessed 04.01.11]
- Delavigne, V. & Gaudin, F. (eds) 1994, *Implantation des termes officiels (Actes du séminaire de Rouen)*, Special edition of *Terminologies Nouvelles*, no.12.
- Delavigne, V. & Gaudin, F. (eds) 1997, *Implantation des avis d'officialisation terminologique de l'Office de la langue française*, Office québécois de la langue française, Québec.
- Delavigne, V. 2001, *Les mots du nucléaire. Contribution socioterminologique à une analyse de discours de vulgarisation*, PhD thesis, Université de Rouen.
- Delavigne, V. 2006, "La formation du vocabulaire de la physique nucléaire : quelques jalons" in *Aspects diachroniques du vocabulaire*, eds. D. Candel & F. Gaudin, Publications des Universités de Rouen et du Havre, Mont-Saint-Aignan, pp. 89-107.
- Delisle, J. 2008, *La terminologie au Canada. Histoire d'une profession*, Linguattech, Quebec.
- Department of Community, Rural and Gaeltacht Affairs 2010, *Ó Cuív announces Review of Official Standard for Irish* [online]. Available: <http://www.pobail.ie/en/PressReleases/2010/March/htmltext,10206,en.html> [Accessed 22.05.10].
- Department of Justice, Equality and Law Reform 2009, *Ahern welcomes appointments to the Irish Legal Terms Advisory Committee* [online]. Available: <http://www.inis.gov.ie/en/JELR/Pages/Ahern%20welcomes%20appointments%20to%20the%20Irish%20Legal%20Terms%20Advisory%20Committee> [Accessed 22.05.10].
- Depecker, L. & Mamavi, G. (eds) 1997, *La mesure des mots : cinq études d'implantation terminologique*, Université de Rouen, Rouen.
- Depecker, L. 2001, *L'invention de la langue : le choix des mots nouveaux*, Armand Colin/Larousse, Paris.
- Depecker, L. 2002, *Entre signe et concept : éléments de terminologie générale*, Presse Sorbonne Nouvelle, Paris.
- Depecker, L. (ed) 2005, *La terminologie: nature et enjeux*, Larousse, Paris.
- Diki-Kidiri, M. 2000, "Une approche culturelle de la terminologie", *Terminologies nouvelles*, vol. 21, pp. 27-31.
- Dobrina, C. 2006, *Terminology on demand: Maintaining a terminological query service*, Paper given to the "Terminology and Society" conference, Antwerpen, 16-17.11.06.
- Drame, A. 2008, "Terminologieplanung ist weit mehr als Sprachplanung - und betrifft (fast) jeden", *eDITion*, vol. 1, pp. 5-9.
- Drame, A. 2009, *Terminology Policies and Communication for Social Change: Promoting Linguistic Diversity and Terminology in South Africa.*, PhD thesis, University of Vienna.
- Dubuc, R. 1997, *Terminology: A Practical Approach*, Linguattech, Quebec.

- Dubuc, R. 2002, *Manuel pratique de terminologie*, Linguatex, Montréal.
- Dury, P. 2000, *Étude comparative et diachronique de l'évolution de dix dénominations fondamentales du domaine de l'écologie en anglais et en français*, Presses universitaires du Septentrion, Villeneuve d'Ascq.
- Dury, P. 2006, "La dimension diachronique en terminologie et en traduction spécialisée : le cas de l'écologie" in *Aspects diachroniques du vocabulaire*, eds. D. Candel & F. Gaudin, Publications des Universités de Rouen et du Havre, Mont-Saint-Aignan, pp. 109-124.
- Eisenhardt, K.M. 1989, "Building theories from case study research", *Academy of Management Review*, vol. 14, no. 4, pp. 532-550.
- Eisenhardt, K.M. 2007, "Theory building from cases: Opportunities and challenges", *Academy of Management Review*, vol. 50, no. 1, pp. 25-32.
- Elkhafaifi, H.M. 2002, "Arabic language planning in the age of globalization", *Language Problems and Language Planning*, vol. 26, no. 3, pp. 253-269.
- European Association for Terminology 2005, *Entities involved in terminology activities* [online]. Available: <http://www.eaft-aet.net/fileadmin/files/Directory.pdf> [Accessed 03.12.10].
- Eurotermbank 2005, *D1.1 Current Standards and Best Practices Assessment Report* [online], Eurotermbank. Available: <http://project.eurotermbank.com/uploads/D1.1%20Current%20Standards%20and%20Best%20Practices%20Assessment%20Report.pdf> [Accessed 04.01.11]
- Eurotermbank 2005, *D1.2 Final Methodology Report* [online], Eurotermbank. Available: <http://project.eurotermbank.com/uploads/D1.2%20Final%20Methodology%20Report.pdf> [Accessed 04.01.11]
- Eurotermbank 2005, *D2.1 Identification of existing terminology resources* [online], Eurotermbank. Available: <http://project.eurotermbank.com/uploads/D2.1%20Identification%20of%20existing%20terminology%20resources.pdf> [Accessed 04.01.11]
- Fähndrich, U. 2005, "Terminology project management", *Terminology*, vol. 11, no. 2, pp. 225-260.
- Fainberg, Y. 1977, *Linguistic and Socio-demographic Factors influencing the Acceptance of Hebrew Neologisms*, Hebrew University, Haifa.
- Fargas Valero, X. (ed) 2005, *Manlleus i calcs lingüístics en terminologia*, Termcat, Barcelona.
- Fargas Valero, X. (ed) 2008, *Espais Terminològics 2007. Neologia terminològica: el tractament del manlleus*, Termcat, Barcelona.
- Fasold, R. 1984 (2004), *The Sociolinguistics of Society*, Blackwell, Oxford.
- Fasold, R. 1990, *The Sociolinguistics of Language*, Blackwell, Oxford.
- Finlayson, R. & Madiba, M. 2002, "The intellectualisation of the indigenous languages of South Africa: Challenges and prospects", *Current Issues in Language Planning*, vol. 3, no. 1, pp. 40-61.
- Fiontar, D.C.U. 2007, *Lámhleabhar Eagarthóireachta*, In-house manual, Dublin.
- Fiontar, D.C.U. 2007, *Torthaí ar shuirbhé/Focal.ie survey results* [online]. Available: <http://www.focal.ie/Ceistneoir.aspx> [Accessed 02.05.08].

- Fishman, J.A. 1983, "Modelling rationales in corpus planning: modernity and tradition in images of the good corpus" in *Progress in Language Planning*, eds. J. Cobarrubias & J.A. Fishman, Mouton, Berlin, pp. 107-118.
- Fishman, J.A. 1991, *Reversing Language Shift*, Multilingual Matters, Clevedon.
- Fishman, J.A. 2006, *DO NOT Leave your Language Alone. The Hidden Status Agendas Within Corpus Planning in Language Policy*, Lawrence Erlbaum Associates, Mahwah, New Jersey.
- Fontova, G. 2007, "Les garanties de qualité dans la normalisation terminologique", *Terminologie: Approches transdisciplinaires* Université de Québec en Otaouais, Otaouais.
- Gadellii, K.E. 1999, *Language Planning: Theory and Practice. Evaluation of language planning cases world-wide*, UNESCO, Paris.
- Galinski, C., Budin, G. & de V. Cluver, A.D. 1999, "Terminologieplanung und Sprachplanung" in *Fachsprachen/Languages for Special Purposes. Ein internationales Handbuch zur Fachsprachenforschung und Terminologiewissenschaft*, eds. L. Hoffmann, H. Kalverkämper & H.E. Wiegand, deGruyter, Berlin/New York, pp. 2205 - 2215.
- Gambier, Y. 1987, "Problèmes terminologiques des pluies acides: pour une socio-terminologie", *Meta*, vol. 32, no. 3, pp. 314-320.
- Gambier, Y. 1991, "Travail et vocabulaires spécialisés : prolegomènes à une socioterminologie", *Meta*, vol. 36, no. 1, pp. 8-15.
- Gambier, Y. 1994, "Implications méthodologiques de la socio-terminologie", *ALFA*, vol. 7/8, pp. 99-115.
- Gambier, Y. 2001, "Socioterminologie : une terminologie remise sur ses pieds", *Terminogramme*, vol. 102-102, pp. 107-118.
- Gaudin, F. 1993a, *Pour une socioterminologie : des problèmes sémantiques aux pratiques institutionnelles*, Université de Rouen, Rouen.
- Gaudin, F. 1993b, "Socioterminologie: du signe au sens, construction d'un champ", *Meta*, vol. 38, no. 2, pp. 293-301.
- Gaudin, F. 1994, *La socioterminologie : présentation et perspectives*, Réseau Langage et Travail, Paris.
- Gaudin, F. 2003, *Socioterminologie : une approche sociolinguistique de la terminologie*, Duculot, Louvain.
- Gaudin, F. 2005a, "La socioterminologie", *Langages*, vol. 157, pp. 80-92.
- Gaudin, F. 2005b, "Point de vue d'un socioterminologue" [online], *Conférence TIA-2005, Rouen, 4 et 5 avril 2005*, Available: <http://www.loria.fr/~yannick/TIA2005/doc/gaudin.pdf> [Accessed 04.01.11]
- George, A.L. & Bennett, A. 2004, *Case Studies and Theory Development in the Social Sciences*, MIT Press, Massachusetts.
- Gordon, T.J. & Helmer, O. 1964, *Report on a Long-Range Forecasting Study*, The RAND Corporation (P-2982), Santa Monica, CA.

Gorjanc, V., Krek, S. & Vintar, Š. 2008, "Slovene terminology web portal" in *Proceedings of the XIII EURALEX International Congress (Barcelona, 15-19 July 2008)*, eds. E. Bernal & J.A. DeCesaris, IULA, Documenta Universitaria, Barcelona, pp. 971-996.

Gouadec, D. 1994, "Implantation des termes officiels de l'informatique. Attestations, francisation, normalisation, assimilation", *Terminologies nouvelles*, no. 12, pp. 141-147.

Guespin, L. 1993, "Normaliser ou standardiser", *Le Langue et l'Homme*, vol. XXVIII, no. 4, pp. 213-222.

Guespin, L. & Gaudin, F. 1993, *Enquête sur l'impact des arrêtés terminologiques. Rapport final*, Délégation générale à la langue française, Paris.

Heller, M. 1982, *Le processus de francisation dans une entreprise montréalaise, une analyse sociolinguistique*, Office de la langue française, Québec.

Höglund, P. 2005, 7 December-last update, *Ciclipéid na hOllchruinne* [online]. Available: <http://www.geocities.com/faolchu.geo/ollchruinne.html> [Accessed 11.03.07].

Holzem, M. 1999, *Terminologie et documentation. Pour une meilleure circulation des savoirs*, ADBS éditions, Paris.

Hualde, J.I. & Zuazo, K. 2007, "The standardization of the Basque language", *Language Problems and Language Planning*, vol. 31, no. 2, pp. 43-68.

Hübschmannová, M. & Neustupný, J.V. 2004, "'Terminological' Processes in North-Central Romani", *Current Issues in Language Planning*, vol. 5, no. 2, pp. 83-108.

Hult, F.M. 2005, "A Case of Prestige and Status Planning: Swedish and English in Sweden", *Current Issues in Language Planning*, vol. 6, no. 1, pp. 73-79.

Humbley, J. 1997a, "Is terminology specialized lexicography? The experience of French-speaking countries", *Hermes – Journal of Language and Communication Studies*, vol. 18, pp. 13-32.

Humbley, J. 1997b, "Language planning and terminology planning: The Francophone experience" in *Handbook of Terminology Management. Volume 1: Basic Aspects of Terminology Management*, eds. S.E. Wright & G. Budin, John Benjamins, Amsterdam and Philadelphia, pp. 261-277.

Humbley, J. 2004, "La réception de l'oeuvre d'Eugen Wüster dans les pays de langue française", *Les cahiers du CIEL 2004*, pp. 33-51.

Huq, M.D. 1986, "Soliolinguistic [*sic*] aspects of standardization of terminology in Bangladesh" in *Termia 84 : terminologie et coopération internationale : la terminologie, outil indispensable au transfert des technologies. Colloque international de terminologie.*, eds. G. Rondeau & J.C. Sager, Girsterm, Québec, pp. 226-235.

IATE (European Commission DG Translation – D.03 – Terminology Coordination) 2008, *Style Guide*, In-house manual, Luxembourg.

International Organization for Standardization 1992, *ISO 10241:1992. International terminology standards - Preparation and layout*, International Organization for Standardization, Geneva.



International Organization for Standardization 2000, *ISO 1087-1:2000. Terminology work - Vocabulary - Part 1: Theory and application*, International Organization for Standardization, Geneva.

International Organization for Standardization 2000, *ISO 704: 2000. Terminology work - principles and methods*, International Organization for Standardization, Geneva.

International Organization for Standardization 2001, *ISO 15188:2001. Project Management Guidelines for Terminology Standardization*, International Organization for Standardization, Geneva.

International Organization for Standardization 2005, *ISO 9000:2005. Quality management systems -- Fundamentals and vocabulary*, International Organization for Standardization, Geneva.

International Organization for Standardization 2007, *ISO/TR 22134:2007. Practical Guidelines for Socioterminology*, International Organization for Standardization, Geneva.

International Organization for Standardization 2009, *ISO 23185:2009. Assessment and benchmarking of terminological resources - general concepts, principles and requirements*, International Organization for Standardization, Geneva.

International Organization for Standardization 2010, *ISO 29383:2010. Terminology policies - Development and implementation*, International Organization for Standardization, Geneva.

Jara, M.N. (ed) 2008, *L'ordenació de termes*, Termcat, Barcelona.

Jernudd, B. 1994, "Ter(minological) problems" in *Applications and Implications of Current LSP Research*, eds. M. Brekke, O. Andersen, T. Dahl & J. Myking, NHH, Bergen, pp. 72-83.

Kageura, K. 1998, "Theories 'of' terminology: A quest for a framework for the study of term formation", *Terminology*, vol. 5, no. 1, pp. 21-41.

Karpova, O. & Averboukh, K. 2008, "New voices in bilingual Russian terminography with special reference to LSP dictionaries" in *Proceedings of the XIII EURALEX International Congress (Barcelona, 15-19 July 2008)*, eds. E. Bernal & J.A. DeCesaris, IULA, Documenta Universitaria, Barcelona, pp. 989-996.

Keeney, S., Hasson, F. & McKenna, H. 2006, "Consulting the oracle: ten lessons from using the Delphi technique in nursing research", *Journal of Advanced Nursing*, vol. 53, no. 2, pp. 205-212.

Kewley Draskau, M.J. 2001, "The Sociolinguistics of Terminology, with especial reference to Less Widely-Used and Revitalised Languages", *Language and Society on the Threshold of the New Results and Prospects*, [online], Available from: <http://dbweb.liv.ac.uk/manxstudies/sm/papers/jenniferk-d.pdf> [Accessed 28.11.08].

Kocourek, R. 1981, "Prerequisites for an applicable linguistic theory of terminology" in *Actes du 5e Congrès de / Proceedings of the 5th Congress of l'Association internationale de linguistique appliquée*, eds. J.G. Savard & L. Laforge, Presses Université Laval, Montreal, pp. 216-228.

Kocourek, R. 1991, *La langue française de la technique et de la science : vers une linguistique de la langue savante*, Brandstetter, Wiesbaden.

Kummer, W. 1983, "Probleme des Sprachausbaus in Entwicklungsländern. Terminologieprägung im Swahili" in *Sprache im politischen Kontext (Ergebnisse aus Bielefelder Forschungsprojekten zur Anwendung linguistischer Theorien)*, ed. P. Finke, Max Niemeyer, Tübingen, pp. 77-118.



- Kyyak, T.R. 2004, "Terminologie in der Praxis der Ukraine" in *Russian Terminology Science (1992-2002)*, eds. S.D. Shelov & V.M. Leichik, TermNet Publisher, Vienna, pp. 415-423.
- Lasimbang, R. & Kinajil, T. 2004, "Building Terminology in the Kadazandusun Language", *Current Issues in Language Planning*, vol. 5, no. 2, pp. 131-141.
- Laurén, C., Myking, J. & Picht, H. 1998, *Terminologie unter der Lupe: Vom Grenzgebiet zum Wissenschaftszweig*, TermNet Publisher, Vienna.
- Leichik, V.M. & Shelov, S.D. 2004, "Terminology: where is Russian science today?" in *Russian Terminology Science (1992-2002)*, eds. S.D. Shelov & V.M. Leichik, TermNet Publisher, Vienna, pp. 15-48.
- L'Homme, M. & Heid, U. 2001, "Editorial Statement", *Terminology*, vol. 7, no. 1, pp. 1-6.
- L'Homme, M., Heid, U. & Sager, J.C. 2003, "Terminology during the past decade (1994-2004)", *Terminology*, vol. 9, no. 2, pp. 151-161.
- L'Homme, M. 2004, *La terminologie : principes et techniques*, Les Presses de l'Université de Montréal, Montreal.
- L'Homme, M. 2006, "A Look at some Canadian Contributions to Terminology" in *Modern Approaches to Terminological Theories and Applications*, ed. H. Picht, Peter Lang, Bern, pp. 55-75.
- LISA (Localization Industry Standards Association) 2005, *LISA Terminology Management Survey: terminology management practices and trends* [online], LISA, Available: <http://www.lisa.org/Terminology-Management.461.0.html> [Accessed 26.07.08].
- Loubier, C. 1993, *L'implantation du français comme langue du travail au Québec : vers un processus de changement linguistique planifié*, Office de la langue française, Québec.
- Loubier, C. 2003, *Les emprunts : traitement en situation d'aménagement linguistique*, Office de la langue française, Québec.
- Mac Amhlaigh, L. 2008, *Foclóirí agus Foclóirithe na Gaeilge*, Cois Life, Dublin.
- Mac an Iomaire, P. 1983, "Tionchar na tionsclaíochta ar Ghaeilge Chonamara Theas", *Teangeolas*, vol. 16, pp. 9-18.
- Mac Lochlainn, A. 2008, "A translator's view of Irish terminology" in *Special EAFT Seminar: Minority Languages and Terminology Policies. Proceedings*, eds. F. Ní Ghallchobhair & B. Nájera, TermNet Publisher, Vienna, pp. 65-71.
- Mac Lochlainn, D. 2008, *Taighde Turgnamhach ar Úsáideoirí an Bhunachair Téarmaíochta Gaeilge* [www.focal.ie](http://www.focal.ie), MA dissertation, Dublin City University.
- Mac Mathúna, L. 1997, "Ar thóir an fhocail chruinn: polasaí agus cur chuige lucht iriseoireachta, téarmaíochta agus oideachais" in *Ar Thóir an Fhocail Chruinn*, eds. M. Nic Eoin & L. Mac Mathúna, Coiscéim, Dublin, pp. 55-62.
- Magris, M., Musacchio, M.T., Rega, L. & Scarpa, F. (eds) 2002, *Manuale di terminologia. Aspetti teorici, metodologici e applicativi*, Ulrico Hoepli Editore, Milan.
- Mahmud, U.A. 1986, "Sociolinguistic determinants in terminology planning: the case of Mauritania" in *Termia 84 : terminologie et coopération internationale : la terminologie, outil*

- indispensable au transfert des technologies. Colloque international de terminologie*, eds. G. Rondeau & J.C. Sager, Girsterm, Québec, pp. 100-111.
- Martin, A. & Loubier, C. 1993, *L'implantation de français - Actualisation d'un changement linguistique planifié*, Office de la langue française, Québec.
- Martin, A. 1998, *Les mots et leurs doubles : étude d'implantation de la terminologie officialisée dans le domaine de l'éducation au Québec*, Office de la langue française, Québec.
- Mason, J. 1996, *Qualitative Researching*, Sage, London.
- Matras, Y. & Reershemius, G. 1991, "Standardization beyond the state: The cases of Yiddish, Kurdich and Romani" in *Standardization of National Languages. Symposium on Language Standardization. 2-3 February 1991*, eds. U. von Gleich & E. Wolff, John Benjamins, Amsterdam & Philadelphia, pp. 103-123.
- Maurais, J. 1984, *La langue de la publicité des chaînes d'alimentation - étude sur la qualité de la langue et sur l'implantation terminologique*, Office de la langue française, Québec.
- Maurais, J. 1993, "Terminology and language planning" in *Terminology: Applications in Interdisciplinary Communication*, eds. H.B. Sonneveld & K.L. Loening, John Benjamins, Amsterdam & Philadelphia, pp. 111-126.
- Mbodj, C. 1994, "L'activité terminologique au Sénégal", *Terminologies nouvelles*, vol. 11, pp. 3-9.
- Meyer, I. & Mackintosh, K. 2000, "When terms move into our everyday lives: An overview of de-terminologization", *Terminology*, vol. 6, no. 1, pp. 111-138.
- Miles, M.B. & Huberman, A.M. 1994, *Qualitative Data Analysis: an Expanded Sourcebook*, 2nd edn, Sage Publications, Thousand Oaks.
- Ministry of Culture 2009, *Language Act (2009:600)*, Sweden.
- Moffet, V. 2004, *Évaluation de l'appréciation et des attentes des utilisateurs du Grand dictionnaire terminologique (document de travail)*, Office Québécois de la langue française, Québec.
- Montané March, A. 2007, "La implantació de la terminologia normalitzada en llengua catalana. Primera aproximació" [online], Universitat Pompeu Fabra, Available: [http://www.upf.edu/pdi/iula/amor.montane/docums/amm\\_proj.pdf](http://www.upf.edu/pdi/iula/amor.montane/docums/amm_proj.pdf) [Accessed 04.01.11].
- Mulokozi, M.M. 2004, "Kiswahili as a national and international language" [online], Available: <http://www.helsinki.fi/hum/aakkl/documents/kiswahili> [Accessed 11.12.07].
- Mwansoko, H.J.M. 1990, *The modernization of Swahili technical terminologies: an investigation of the linguistics and literature terminologies*, PhD thesis, York.
- Myking, J. 1997, "Standardization and language planning of terminology: the Norwegian experience" in *International Congress on Terminology*, eds. UZEI & HAEE-IVAP, UZEI; HAEE-IVAP, Donostia; Gasteiz, pp. 227-248.
- Myking, J. 2000, "Sosioterminologi, ein modell for Norden?" in *I terminologins tjänst. Festskrift för H.Picht på 60-årsdagen*, eds. A. Nuopponen, B. Toft & J. Myking, Vaasan Yliopiston julkaisuja, Vaasa.

- Myking, J. 2001, "Against Prescriptivism. The 'Social-critical' challenge to Terminology", *Terminology Science and Research*, vol. 12, no. 1-2, pp. 49-64.
- Nahir, M. 2002, "Corpus planning and codification in the Hebrew Revival", *Language Problems and Language Planning*, vol. 26, no. 3, pp. 271-298.
- Neundorf, A. 1982, "Terminology development in Navajo", *International Journal of American Linguistics*, vol. 48, no. 3, pp. 271-276.
- Ní Chatháin, M. 1997, "Ag réiteach ábhair don chló" in *Ar Thóir an Fhocail Chruinn*, eds. M. Nic Eoin & L. Mac Mathúna, Coiscéim, Dublin, pp. 22-26.
- Ní Dheirg, Í. 1992, "Glór gan chabhair choigríche? Smaointe ar théarmaíocht na Gaeilge agus ar ról na nua-iasachtaí", *Teangeolas*, vol. 30/31, pp. 12-15.
- Ní Ghallchobhair, F. 2003, 13 June 2003-last update, *An Téarmaíocht i gComhthéacs* [online]. Available: <http://www.acmhainn.ie/coiste.htm> [Accessed 23.02.07].
- Ní Ghallchobhair, F. & Nájera, B. (eds) 2008, *Special EAFT Seminar: Minority Languages and Terminology Policies. Proceedings*, TermNet Publisher, Vienna.
- Ní Ghallchobhair, F. 2009, "An Coiste Téarmaíochta (The Irish-language Terminology Committee). Content of the Focal.ie database", Powerpoint presentation to NPLD seminar, 8.12.09.
- Ní Ghearáin, H. 2008, "Pobal na Gaeilge agus na 'dictionary words': Taighde eimpíreach ar an bpleanáil téarmaíochta sa Ghaeilge", *Taighde agus Teagasc*, vol. 6, pp. 78-101.
- Ní Ghearáin, H. 2009, *Terminology planning in the lesser-used language and the dynamics of acceptance: insights from sociolinguistic research in the Gaeltacht*, Paper given at LPLL conference, Limerick, 18-20.06.09
- Ní Ghearáin, H. 2011, *Athnuachan Foclóra sa Ghaeilge: Pleanáil, Údarás, Cumhacht*, PhD thesis, University of Limerick.
- Nic Eoin, M. & Mac Mathúna, L. (eds) 1997, *Ar Thóir an Fhocail Chruinn*, Coiscéim, Dublin.
- Nic Eoin, M. 1997, "Teidil, téarmaí agus Béarlagair: fadhbanna aistriúcháin i meáin chumarsáide na Gaeilge" in *Ar Thóir an Fhocail Chruinn*, eds. M. Nic Eoin & L. Mac Mathúna, Coiscéim, Dublin, pp. 1-9.
- Nic Pháidín, C., Ní Ghallchobhair, F. & Ó Baoill, D. 1999, *Ar Thóir na bhFocal*, Bord na Gaeilge, Dublin.
- Nic Pháidín, C. 2008, "Corpus planning for Irish - dictionaries and terminology" in *A New View of the Irish Language*, eds. C. Nic Pháidín & S. Ó Cearnaigh, Cois Life, Dublin, pp. 93-107.
- Nic Pháidín, C. & Bhreathnach, Ú. 2008, "Téarmaíocht na Gaeilge: turgnamh in vitro", *Taighde agus Teagasc*, vol. 6, pp. 1-31.
- Nic Pháidín, C., Ó Cleircín, G. & Bhreathnach, Ú. 2010, "Building on a terminology resource – the Irish experience" in *Proceedings of the XIV Euralex International Congress (Leewarden, 6-10 July 2010)*, eds. A. Dykstra & T. Schoonheim, Fryske Akademy, Ljouwert, pp. 954-965.
- Nilsson, H. 2004, "Terminoloogiatöö Rootsi moodi (Terminology work - the Swedish way)", *Eesti oskuskeel 2003 : rahvusvaheline terminoloogikonverents 10. ja 11. oktoobril 2003*.

- Nilsson, H. (ed) 2008, *Med tydlig intension. En festskrift till Anna-Lena Bucher på 60-årsdagen*, Terminologacentrum TNC, Solna.
- Nilsson, H. 2009, "The realisation of a national term bank - how and why?" in *Ελληνική Γλώσσα και Ορολογία* Τεχνικό Επιμελητήριο Ελλάδας, Athens, pp. 346-359.
- Nilsson, H. 2010, "Towards a national terminology infrastructure – the Swedish experience" in *Terminology in Everyday Life*, eds. M. Thelen & F. Steurs, John Benjamins, Amsterdam, pp. 61-77.
- Ó Caomhánaigh, C. 2004, *Dictionary of Bird Names in Irish* [online]. Available: <http://gofree.indigo.ie/~cocaomh/HomePage.htm> [Accessed 11.03.07].
- Ó Casaide, G. 1997, "Ag aistriú don Státchóras" in *Ar Thóir an Fhocail Chruinn*, eds. M. Nic Eoin & L. Mac Mathúna, Coiscéim, Dublin, pp. 45-48.
- Ó Catháin, L.S. 2001, *Focal sa Chúirt*, Coiscéim, Dublin.
- Ó Ciardubháin, C. 2007, *Cluichí le Ciú*, MA dissertation, UCD.
- Ó Cróinín, B. 1987, "Cúrsaí téarmaíochta sa Ghaeilge", *Seirbhís Phoiblí*, vol. 8, no. 3, pp. 60-64.
- Ó Domhnaill, N. 1951, *Forbairt na Gaeilge*, Sáirséal agus Dill, Dublin.
- Ó Dónaill, N. (ed) 1977, *Foclóir Béarla-Gaeilge*, Stationery Office, Dublin.
- Ó Gaora, P. 1997, "Ceart na teanga agus riachtanais na hiriseoireachta" in *Ar Thóir an Fhocail Chruinn*, eds. M. Nic Eoin & L. Mac Mathúna, Coiscéim, Dublin, pp. 10-13.
- Ó hÓgáin, É. 1983, "Téarmaí teicniúla sa Ghaeilge: caighdeánú agus ceapadh le céad bliain anuas", *Teangeolas*, vol. 17, pp. 27-33.
- Ó hÓgáin, É. 1999, "Technical terminology in twentieth century Irish" in *Modernisierung des Wortschatzes europäischer Regional- und Minderheitensprachen*, ed. G. Spieß, Gunter Narr Verlag, Tübingen, pp. 121-133.
- Ó Laoire, M. 2005, "The Language Planning Situation in Ireland", *Current Issues in Language Planning*, vol. 6, no. 3, pp. 251-314.
- Ó Luineacháin, D. 1997, *Ó Ghliomáil go Giniúint: Foclóir na Collaíochta*, Coiscéim, Dublin.
- Ó Máille, T.S. (ed) 1974, *Liosta Focal as Ros Muc*, Irish University Press, Dublin.
- Ó Murchú, S. 1991, "Scientific translation in languages of lesser diffusion and the process of normalisation", *Senez*, [online], vol. 12, Available from: <http://www.eizie.org/Argitalpenak/Senez/19911001/Seosamh> [Accessed 28.11.08].
- Ó Néill, E. 1997, "Iriseoirí sa líne tosaigh" in *Ar thóir an Fhocail Chruinn*, eds. M. Nic Eoin & L. Mac Mathúna, Coiscéim, Dublin, pp. 27-30.
- Ó Riain, S. 1985, *Pleanáil Teanga in Éirinn agus i Québec*, Ph.D thesis, TCD.
- Ó Riain, S. 1994, *Pleanáil Teanga in Éirinn 1919-1985*, Carbad i gcomhar le Bord na Gaeilge, Dublin.
- Ó Ruairc, M. 1993, "Forbairt na Gaeilge - caoga bliain amach", *Teangeolas*, no. 32, pp. 35-44.
- Ó Ruairc, M. 2007, *Aistrigh Leat*, Cois Life, Dublin.

- Ó Siadhail, M. (ed) 1978, *Téarmaí Tógála agus Tís as Inis Meáin*, Dublin Institute for Advanced Studies, Dublin.
- O'Connell, E. & Pearson, J. 1991, "Language planning, terminology and the Irish language", *Terminology Science and Research*, vol. 2, no. 2, pp. 82 - 93.
- O'Connell, E. & Walsh, J. 2006, "The translation boom: Irish and language planning in the twenty-first century", *Administration*, vol. 54, no. 3, pp. 22-43.
- Onyango, J.O. 2003, *The National Language Policy Implementation and Experience: The Case of Kiswahili in the Parliament of Kenya*, PhD thesis, University of Vienna.
- Onyango, J.O. 2005, "Issues in national language terminology development in Kenya", *Swahili Forum*, no. 12, pp. 219-234.
- Oumarou, I.A. 1994, "Pour la création d'un centre national d'aménagement linguistique au Niger", *Terminologies nouvelles*, no. 11, pp. 10-18.
- Paul, S., Depecker, L. & Goillot, C. 1991, *Introduction à l'étude de la télédétection aérospatiale et de son vocabulaire*, MEN.
- Pavel, S. & Nolet, D. 2001, *Précis de terminologie*, Travaux publics et services gouvernementaux Canada, Ottawa.
- Pavel, S. & Nolet, D. 2002, *Handbook of Terminology*, Translation Bureau. Terminology and Standardization Directorate, Canada.
- Pearson, J. & O'Connell, E. 1988, "A systematic approach to terminology for the translator", *Teanga*, no. 8, pp. 58-67.
- Pearson, J. 1998, *Terms in context*, John Benjamins, Amsterdam & Philadelphia.
- Perichon, B. 2001, *Le vocabulaire de l'écologie, environnement, nature, éco-, bio-, vert- (1974-1994)*, Université Aix-Marseille 1.
- Picht, H. & Partal, C.A. 1997, "Aspects of terminology training" in *Handbook of Terminology Management. Volume 1: Basic Aspects of Terminology Management*, eds. S.E. Wright & G. Budin, John Benjamins, Amsterdam and Philadelphia, pp. 305-321.
- Picht, H. (ed) 2006, *Modern approaches to terminological theories and applications*, Peter Lang, Bern.
- Powell, R. 2004, "Terminological Creation and Language Shift in Malaysia's Legal System", *Current Issues in Language Planning*, vol. 5, no. 2, pp. 109-130.
- Pozzi, M. 1996, "Terminological activities in Spanish-speaking countries", *Terminology*, vol. 3, no. 1, pp. 171-176.
- Prys, D. 2007, *Guidelines for the Standardization of Terminology for the Welsh Assembly Government Translation Service and the Welsh Language Board*, Bwrdd yr Iaith Gymraeg (Welsh Language Board), Cardiff.
- Quirion, J. 2003a, "Methodology for the design of a standard research protocol for measuring terminology usage", *Terminology*, vol. 9, no. 1, pp. 29-49.
- Quirion, J. 2003b, *La mesure de l'implantation terminologique: Proposition d'un protocole. Etude terminométrique du domaine des transports au Québec*, Office de la langue française, Québec.

- Quirion, J. & Lanthier, J. 2006, "Intrinsic qualities favouring term implantation: verifying the axioms" in *Lexicography, Terminology and Translation. Text-based Studies in Honour of Ingrid Meyer*, ed. L. Bowker, University of Ottawa Press, Ottawa, pp. 107-118.
- RaDT (Rat für Deutschsprachige Terminologie) 2004, *Professional Profile for Terminologists*, Rat für Deutschsprachige Terminologie, Bern.
- Rannóg an Aistriúcháin 1958, *Gramadach agus Litriú na Gaeilge: An Caighdeán Oifigiúil*, Stationery Office, Dublin.
- Rey, A. 1992 (1979), *La terminologie noms et notions, Que sais-je?*, Presses Universitaires de France, Paris.
- Rey, A. 1998/1999, "Terminology between the experience of reality and the command of signs", *Terminology*, vol. 5, no. 1, pp. 121-134.
- Rialtas na hÉireann 2010, *Straitéis 20 Bliain Don Ghaeilge 2010 – 2030* [online]. Available: <http://www.pobail.ie/ie/AnGhaeilge/Straiteis/Strait%C3%A9is.pdf> [Accessed 07.01.11].
- Rirdance, S. & Vasiljevs, A. (eds) 2006, *Towards Consolidation of European Terminology Resources. Experience and Recommendations from EuroTermBank Project*, Tilde, Riga.
- Rodríguez Río, X.A. 1996, "Os traballos terminolóxicos en lingua galega: unha aproximación á súa situación e ás súas necesidades", *Cadernos de Lingua*, vol. 13, pp. 35-74.
- Rodríguez Río, X.A. 2003a, *Metoloxía do traballo terminográfico puntual en lingua galega*, Consello da Cultura Galega, Sección de Lingua, Santiago de Compostella.
- Rodríguez Río, X.A. 2003b, "Os traballos terminográficos galegos vistos polos seus potenciais usuarios" in *Terminologia e indústrias da lingua, Actas do VII Simpósio Iberoamericano de Terminologia*, ed. M. Correia, ILTEC, Lisbon, pp. 881-900.
- Rouges-Martinez, J. & Villebrun, I. (eds) 1997, *Terminologies nouvelles*, RINT, Paris.
- Rousseau, L. 1993, "Terminology and languages in contact in Québec" in *Terminology: Applications in Interdisciplinary Communication*, eds. H.B. Sonneveld & K.L. Loening, John Benjamins, Amsterdam & Philadelphia, pp. 35-42.
- Rousseau, L. 2005, "Terminologie et aménagement des langues", *Langages*, vol. 157, pp. 93-102.
- Sager, J.C. 1990, *A Practical Course in Terminology Processing*, John Benjamins, Amsterdam & Philadelphia.
- Sager, J.C. 1994, "Terminology: Custodian of knowledge and means of knowledge transfer", *Terminology*, vol. 1, no. 1, pp. 7-16.
- Sager, J.C. 1998, "In search of a foundation: Towards a theory of the term", *Terminology*, vol. 5, no. 1, pp. 41-59.
- Samsom, R. 1991, "The dynamics of car engineering in Swahili" in *Language Standardization in Africa*, eds. N. Cyffer, K. Schubert, H. Weier & E. Wolff, Helmut Buske, Hamburg, pp. 235-244.
- Samuel, J. 1996, "La politique terminologique indonésienne : esquisse d'un bilan", *Terminology*, vol. 3, no. 1, pp. 125-153.

- Samuel, J. 2005, *Modernisation lexicale et politique terminologique : Le cas de l'Indonésien*, Éditions Peeters, Paris/Louvain.
- Santos, I.G. 2003, "A Terminoloxía en Galicia" in *O proceso de normalización do idioma galego (1980-2000). Volume III: Elaboración e Difusión da lingua*, eds. H. Monteagudo & X.M. Bouzada, Consello da Cultura Galega, Sección de Lingua, Santiago de Compostela, pp. 229-288.
- Sauberer, G. 2008, "Case study. International best practice: Republic of South Africa (RSA)" in *Special EAFT Seminar: Minority Languages and Terminology Policies. Proceedings*, eds. F. Ní Ghallchobhair & B. Nájera, TermNet Publisher, Vienna, pp. 141-149.
- Seale, C. 1999, *The Quality of Qualitative Research*, Sage, London.
- Shaw, M.D. & Coggin, C. 2008, "Using a Delphi technique to determine the needs of African American breast cancer survivors", *Health Promotion Practice*, vol. 9, pp. 34-44.
- Shelov, S.D. & Leichik, V.M. (eds) 2004, *Russian Terminology Science (1992-2002)*, TermNet Publisher, Vienna.
- Shelov, S.D. 2004, "Terms, termness and term definitions (seven steps towards terminological theory)" in *Russian Terminology Science (1992-2002)*, eds. S.D. Shelov & V.M. Leichik, TermNet Publisher, Vienna, pp. 79-110.
- Smith, B.D. 1994, "Language choice and terminology for national development in Negara Brunei Darussalam", *Terminology*, vol. 1, no. 2, pp. 291-301.
- Spolsky, B. 2004, *Language Policy*, Cambridge University Press, Cambridge.
- Strehlow, R. 1995, "Ninety years of terminology management in ASTM", *Terminology*, vol. 2, no. 2, pp. 259-272.
- Strehlow, R. 1997, "ISO 10241: Preparation and Layout of Terminology Standards" in *Handbook of Terminology Management. Volume 1: Basic Aspects of Terminology Management*, eds. S.E. Wright & G. Budin, John Benjamins, Amsterdam and Philadelphia, pp. 203-208.
- Suonuuti, H. 2001, *Guide to Terminology*, 2nd edn, TNC, Solna, Sweden.
- Taljard, E. 2008, "Terminology practice in a non-standardized environment: A case study" in *Proceedings of the XIII EURALEX International Congress (Barcelona, 15-19 July 2008)*, eds. E. Bernal & J.A. DeCesaris, IULA, Documenta Universitaria, Barcelona, pp. 1073-1080.
- Temmerman, R. 1997, "Questioning the univocity ideal. The difference between socio-cognitive Terminology and traditional Terminology", *Hermes – Journal of Language and Communication Studies*, vol. 18, pp. 51-90.
- Temmerman, R. 1998/1999, "Why traditional terminology theory impedes a realistic description of categories and terms in the life sciences", *Terminology*, vol. 5, no. 1, pp. 77-92.
- Temmerman, R. 2000, *Towards New Ways of Terminology Description: the Sociocognitive Approach*, John Benjamins, Amsterdam & Philadelphia.
- TERMCAT, C.d.T. 1990, *Metodologia del treball terminològic*, Departament de Cultura de la Generalitat de Catalunya, Barcelona.
- TERMCAT, C.d.T. 2006a, *Recerca terminològica: el dossier de normalització*, TERMCAT, Centre de Terminologia, Barcelona.



- TERMCAT, C.d.T. 2006b, *La Normalització terminològica en català: criteris i termes 1986-2004*, Publicacions de l'Abadia de Montserrat, Barcelona.
- Tigelaar, D.E.H., Dolmans, Diana H. J. M., Wolfhagen, Ineke H. A. P. & van der Vleuten, Cees P. M. 2004, "The development and validation of a framework for teaching competencies in higher education", *Higher Education*, vol. 48, no. 2, pp. 253-268.
- Tkacheva, L.B. 2004, "Sociolinguistic approach to investigation of terminology" in *Russian Terminology Science (1992-2002)*, eds. S.D. Shelov & V.M. Leichik, TermNet Publisher, Vienna, pp. 345-367.
- Toft, B. 2001, "Review of 'Towards New Ways of Terminology Description; the sociocognitive approach' by Rita Temmerman", *Terminology*, vol. 7, no. 1, pp. 125-128.
- Tolédano, V. & Candel, D. 2006, "Mouvance terminologique, l'espace d'une courte diachronie, dans les dictionnaires et dans la presse : le cas de la 'mondialisation-globalisation'" in *Aspects diachroniques du vocabulaire*, eds. D. Candel & F. Gaudin, Publications des Universités de Rouen et du Havre, Mont-Saint-Aignan, pp. 157-183.
- Tran, D.T. 1999, *La terminologie médicale vietnamienne*, PhD thesis, Université de Rouen.
- Trousseau, M. 1996, *Une politique terminologique pour la communauté française de Belgique : bilan et prospective. Mémoire de stage de secrétaire d'administration*, Ministère de la Culture et des Affaires sociales, Service de la langue, Brussels.
- Troy, J. & Walsh, M. 2004, "Terminology Planning in Aboriginal Australia", *Current Issues in Language Planning*, vol. 5, no. 2, pp. 151-165.
- Uí Bhraonáin, D. 1997, "Obair an Téarmeolaí i réimse an staidéir ghnó" in *Ar Thóir an Fhocail Chruinn*, eds. M. Nic Eoin & L. Mac Mathúna, Coiscéim, Dublin, pp. 49-54.
- Uí Bhraonáin, D. (ed) 2004, *Foclóir Fiontar Gaeilge-Béarla/English-Irish Dictionary of Terminology*, Fiontar, Dublin.
- Uí Bhraonáin, D., Nic Phóidín, C. & Bhreathnach, Ú. 2006, "[www.focal.ie](http://www.focal.ie) terminology project", *Proceedings, XII Euralex International Congress*, eds. E. Corino, C. Marelllo & C. Onesti, Edizioni dell'Orso, Alessandria, pp. 807 - 812.
- UNESCO 2005, *Guidelines for Terminology Policies. Formulating and implementing terminology policy in language communities. Prepared by Infoterm*, UNESCO, Paris.
- Vacheron-l'Heureux, P. no date, "Standardisation, normalisation et officialisation en aménagement terminologique au Québec" [online], Available: <http://www.uzei.com/Modulos/UsuariosFtp/Conexion/archivos14A.pdf> [Accessed 04.01.11].
- Vila i Moreno, F.X., Pich, M.N. & Vila i Moreno, I. (eds) 2007, *Estudis d'implantació terminològica. Una aproximació en l'àmbit dels esports*, Termcat, Barcelona.
- Williams-van Klinken, C. 2004, "Developing Electoral Terminology for a New Official Language: Tetun in East Timor", *Current Issues in Language Planning*, vol. 5, no. 2, pp. 142-150.
- Wright, S.E. & Budin, G. (eds) 1997, *Handbook of Terminology Management. Volume I: Basic Aspects of Terminology Management*, John Benjamins, Amsterdam & Philadelphia.
- Wright, S.E. 1997, "Terminology Standardization: Management Strategies" in *Handbook of Terminology Management. Volume 1: Basic Aspects of Terminology Management*, eds. S.E. Wright & G. Budin, John Benjamins, Amsterdam and Philadelphia, pp. 197-202.



Wüster, E. 1979, *Einführung in die allgemeine Terminologielehre und terminologische Lexikographie*, Springer, Vienna/New York.

Yin, R.K. 2003, *Case Study Research: Design and Methods*, 3rd edn, Sage Publications, Thousand Oaks.

Zarnikhi, A. 2005, "Language development and scientific development: A case study of physics terminology creation in Persian", *Terminology*, vol. 11, no. 2, pp. 293-310.

Zarnikhi, A. 2010, "Towards a model for terminology planning" in *Presenting terminology and knowledge engineering resources online: models and challenges. TKE (Terminology and Knowledge Engineering) Conference 2010*, eds. Ú. Bhreathnach & F. De Barra-Cusack, Fiontar, Dublin, pp. 107-154.

## Appendix 1: Emails sent during the survey of experts

### Initial email (September 2008)

Subject: Evaluation of term planning organisations worldwide

[Vous trouverez, ci-après, une version française de cette lettre]

Dear ...,

I am writing to you as a recognised expert in the field of terminology. I wish to ask for a few minutes of your time as part of my doctoral research.

Under the supervision of Drs Rute Costa (Universidade Nova de Lisboa) and Caoilfhionn Nic Pháidín (Dublin City University), I am analysing the practice of term planning organisations. I have developed a model of best practice based on the literature, and intend to test this model against the actual practice of two or three leading organisations in the term planning field.

At present, there is no way of knowing which organisations are, in fact, the leading ones. I am therefore writing to a number of experts in the field (approximately 50) to see to what extent a consensus exists. (The experts are the following: contributors to the 2005 UNESCO publication, *Guidelines for Terminology Policies*; members of the board of *Terminology* journal; and recognised authors in the literature.)

If you are willing to participate in this process, your reply will be compared and compiled with those of the other participants, and I will send you my analysis of the replies for your comments. All replies and comments quoted will remain anonymous; a simple list of contributors will appear in the final thesis.

My question: Which, in your opinion, are the two or three best term planning organisations worldwide, and why? (Please give three reasons for your selection.)

Believing as I do that this is a valuable project, that the results will make interesting reading and that they will benefit the field in general, I would be most grateful for your time in considering and answering the above question. I hope to receive your reply, by email, before 30 September, 2008. If you have any questions about the project, please contact me by email or at (+353 1) 700 8083.

Thank you in advance for your help.

Yours sincerely,

Úna Bhreathnach

PhD student

Editor, [www.focal.ie](http://www.focal.ie)

Sujet : Évaluation des organisations responsables de la planification de la terminologie à travers le monde

Madame, Monsieur,

Dans le but d'avancer mes recherches de doctorante, je contacte des spécialistes de la terminologie et je me permets, à cet égard, de solliciter quelques minutes de votre attention.

Sous la direction du Dr Rute Costa (Universidade Nova de Lisboa) et du Dr Caoilfhionn Nic Pháidín (Dublin City University), je suis en train d'examiner la pratique des organisations responsables de la planification de la terminologie. Ayant formulé à partir de la littérature un modèle de pratique optimum, j'entends le comparer à la pratique actuellement en vigueur dans les deux ou trois organisations à la pointe dans ce domaine.

Il est cependant difficile de choisir ces organisations. Je suis donc en train d'écrire à une cinquantaine d'experts en la matière (collaborateurs de la publication *Principes directeurs sur les politiques en matière de terminologie* éditée par l'UNESCO en 2005 ; membres du comité de direction de la revue *Terminology* ; auteurs d'ouvrages reconnus) afin de déterminer dans quelle mesure un consensus existe.

S'il vous est possible d'apporter votre contribution, votre réponse sera mise en comparaison avec celles des autres participants et je vous ferai parvenir mon analyse de l'ensemble, afin de recevoir vos éventuels remarques. Toutes les réponses et commentaires cités resteront anonymes ; seule une liste des participants apparaîtra dans la version définitive de la thèse.

Voici ma question : À votre avis, quelles sont les deux ou trois meilleures organisations responsables de la planification de la terminologie à travers le monde ? Pourquoi ? (Veuillez donner trois raisons à votre choix.)

Convaincue de l'intérêt des résultats de ce projet et de leur utilité pour d'autres chercheurs, je vous serai reconnaissante de m'apporter votre collaboration en répondant à la question posée précédemment. J'espère recevoir votre réponse, par courriel, avant le 30 septembre 2008 et demeure à votre disposition pour toute information complémentaire, par courriel ou par téléphone : (+353 1) 700 8083.

Je vous remercie dès à présent, et je vous prie de croire, Madame, Monsieur, à l'assurance de mes salutations distinguées.

Úna Bhreathnach

Doctorante

Rédactrice de [www.focal.ie](http://www.focal.ie)

## Second email, sent October 2008

Subject: Evaluation of term planning organisations worldwide: summary

Dear ...,

Firstly, thank you for your considered response to the question set out in my last email. I appreciate the time taken. As promised, your reply was compared and compiled with those of the other participants, and I am now sending you my synthesis of the replies for your comments (please find this attached). All replies and comments quoted are anonymous and any comments you make will be as well.

I have done two things with the information gathered. Firstly, I have created a list of all the term planning organisations mentioned. Looking at this list of ten organisations, you are welcome to comment, to suggest others that may have been left out, and to number them in order of importance.

Secondly, I have compiled the reasons given for these choices, and created a list of what seem to be the criteria for excellence in a term planning organisation. I would be grateful if, in looking at this analysis, you would add your comments and note what may be omissions or invalid reasons.

I will send you a new summary when I have compiled these replies, and I hope that it will be more precise and more focused than this one as a result of your comments. I will not, of course, be expecting a reply to that email.

My question, again, was: Which, in your opinion, are the two or three best term planning organisations worldwide, and why? (Please give three reasons for your selection.)

Believing as I do that this is a valuable project, that the results will make interesting reading and that they will benefit the field in general, I would be most grateful for your time in considering and answering the above question. I hope to receive your reply, by email, before 14 November, 2008. If you have any questions about the project, please contact me by email or at (+353 1) 700 8083.

Thank you in advance for your help.

Yours sincerely,

Úna Bhreathnach

PhD student

Editor, [www.focal.ie](http://www.focal.ie)

### Attachment: 'Synopsis 31.10.08.doc'

#### Results

The following organisations were named in response to the question: *Which, in your opinion, are the two or three best term planning organisations worldwide, and why?* (Please give three reasons for your selection.) Looking at this list of ten organisations, you are welcome to comment, to suggest others that may have been left out, and to number them in order of importance.

- Danterm

- Dewan Bahasa Dan Pustaka (DBP), Malaysia
- Institute of Kiswahili Research (IKR) at the University of Dar es Salaam
- OQLF (Office québécois de la langue française) /GDT (*Grand dictionnaire terminologique*) [= Banque de terminologie de Québec]
- PanSALB (Pan South African Language Board)
- TERMCAT
- Terminology Commission of the Latvian Academy of Sciences (TC of LAS)
- Terminology Coordination Section of the National Language Services (Department of Arts and Culture of the Republic of South Africa)
- Terminologikum TNC (the Swedish centre for terminology)
- Termium/Translation Bureau of the Terminology and Standardization Directorate of the Public Works and Government Services Canada (PWGSC)

### Analysis

I would be grateful if, in looking at this analysis, you would add your comments and note what may be omissions or invalid reasons.

This analysis of the responses gives a list of perceived criteria for success. There are not enough responses to attempt any kind of statistical ranking, but some themes emerge. Several contributors acknowledge that their personal contact and familiarity – as well as their areas of research and their expertise – influenced their choices. This is to be expected, and it is worth noting that some experts contacted decided not to participate because of a lack of expertise.

On a **political level**, international cooperation, collaboration and leadership are seen as important. The fact that an organisation offers support for ‘other terminologists around the world’ and is ‘very active and interested in global cooperation’ is mentioned. Partnership and collaboration with other organisations, in an open-minded cooperative way, such as ‘creating strong networks within and outside the government (medias, universities, businesses, etc.)’ is highly regarded, as is providing other agencies with support; one case is praised because it ‘offers terminological services and supports public agencies, organisations and companies that pursue terminological work’. The promotion of the language itself and of its terminology is cause for praise in some cases. The longevity of an organisation and of its work is also specifically mentioned as a criterion for choice.

The **work** done by the organisations is also discussed. ‘Tangible results’, the ‘long-term creation of viable resources’ and ‘high quality in general terms’ are criteria for success. This is achieved through good working methods: ‘mastery of the working methods helps the terminologist... to work in a constantly changing environment’. Theoretical soundness and pragmatic work practices are both needed, and work, some respondents claim, must be based on terminological theoretical principles. This is not mentioned at all by other respondents. One organisation is praised for the ‘development of a uniform and scientifically grounded national terminology system harmonised with the international concept systems and theoretical principles of terminology work’. More specifically, highly accurate documentation is mentioned.

Finally, the importance of renewal, change and innovation is recognised. ‘Quickly adopting the latest technologies and methods’ in order to achieve goals, carrying out upgrades as needed

and being 'at the forefront' are positive attributes. Training activities are also mentioned, as is responsiveness to user needs.

Dissemination of terminology resources is several times used as a criterion of success – availability of terminology 'to be able to communicate in... all specialized fields of knowledge'. Term collections 'should be accessible to the national user community'. Implantation is mentioned, too, but less frequently.

It should be noted that one respondent questioned the concept of a best practice model which would cover all term planning organisations, and objected that it is not possible to compare organisations which all have different needs, expectations, objectives and means. This respondent took 'term planning organisation' in the broadest possible sense, covering public and private, monolingual and multilingual, and all possible types of terminology work – for language planning, translation, documentation, discipline, and editing. Although some organisations might have substantial public resources and do excellent term planning, they might have 'weak' distribution because that is not their objective; others might work more efficiently but on limited means. The creation of a universal best practice model, in this opinion, is a denial of the different technical, financial, cultural and professional realities in which terminology work is done, and a denial of the different services which can be provided by terminology work.

## Appendix 2: Case Study questions

Questions from this questionnaire were used in the interviews, selected according to each interviewee's area of competence.

### *Background*

As my thesis research, under the supervision of Drs Caoilfhionn Nic Pháidín (Dublin City University) and Rute Costa (Universidade Nova de Lisboa), I am analysing the practice of term planning organisations. I have developed a model of best practice based on the literature, and now hope to test this against actual practice in two or three case studies. The result will be a new model of term planning. The thesis title is 'A Best-Practice Model for Term Planning', and the expected completion date is mid to late 2010.

The aim of this case study work is to examine how term planning work is carried out for Irish/how TNC carries out/how TERM CAT carries out term planning work. I have a series of questions based on the literature and my studies.

It is expected that these interviews will lead to a full picture of the term planning methods used for Irish/by TNC/by TERM CAT. I also hope to understand from you what you consider the strengths, weaknesses, opportunities and threats for term planning for Irish/TNC/TERM CAT.

The questions I want to ask you are divided up into sections. I expect that this interview will take about an hour. There are of course far too many questions here to ask of a single interviewee. They will be divided up according to the interviewee's area of competence. Answers do not need to be very long, and please feel free to pause for reflection before answering.

I will record the interview. [test equipment]

[Consent form]

### *Start of interview*

Could you tell me, first, your name, your position, and your responsibilities [in TNC/in TERM CAT]?

### *Preparation/planning*

These first questions are about how Irish term planning/TNC's work/TERM CAT's work is done in general, and how the organisation is structured. I also want to find out about how your terminology work is planned.

### *Policy and planning: Irish/Swedish/Catalan networks*

Which entities share responsibility for standardisation, evaluation and modernisation of terminology in Irish/Swedish/Catalan?

How is coherence and consistency between different groups working in terminology and in general corpus planning (and language planning) achieved?

What are the relationships and partnerships between the Irish term planning organisation/TNC/TERM CAT, academia, government agencies, the main language planning body and others? Who does what? Is the Irish term planning organisation/TNC/TERM CAT linked to academic research in the terminology field?

What part of the overall language planning work for Irish/Swedish/Catalan is the Irish term planning organisation/TNC/TERMCAT responsible for (prompts: advising on policy; establishing and evaluating norms; providing an information service; coordinating and supporting projects; and acting as a clearinghouse for private or outsourced terminology work)?

Are areas of term planning not covered by the Irish term planning organisation/TNC/TERMCAT covered by others? Is there an overlap between any of these groups, or are there any gaps? Are there any areas which are not really covered at all?

How is the Irish term planning organisation/TNC/TERMCAT involved in policy formation for Irish/Swedish/Catalan language planning?

#### *Policy and planning: International networks*

Is the Irish term planning organisation/TNC/TERMCAT involved in ISO/TC 37 policy formation? How? What is the Irish term planning organisation's/TNC's/TERMCAT's involvement in ISO/TC 37 and its subcommittees?

What other international networks are there (for example with EU bodies such as IATE, with ISO, with UNESCO, with Celtic/Scandinavian language networks, with Termilat...)? Are there practical benefits and results?

#### *Policy and Planning: Resource planning*

How do you decide which domains (or other priorities) to undertake? Who makes the decision? How are domains selected and prioritised?

When you are deciding on terminology and term planning work to do – such as which area to concentrate on – who do you talk to (potential users, service providers, academics, institutions...)?

Who pays for the Irish term planning organisation's/TNC's/TERMCAT's work? What financial support do you receive?

Is outsourcing of research work for term creation used? How does this work?

Who are the Irish term planning organisation's/TNC's/TERMCAT's 'customers' or term users? How do you know?

#### *Research*

Now I'd like to get an idea of how term research is carried out in the Irish term planning organisation/TNC/TERMCAT.

#### *Research: theoretical approaches*

Where does terminology work stop – how strict a distinction do you make between general language and specialised language?

Is a semasiological or an onomasiological approach to research taken, or is this distinction relevant? Is the work based on translation of existing terms in other languages, or is the research done from the Irish/Swedish/Catalan side (on concepts)?

Where do most of your terms come from? Who ultimately decides on their use or meaning?

What do you study (social use; popularisation and functioning of terms; corpora...)? Is the use of terms outside their original fields (popularisation and determinologisation) studied?



How much *ad hoc* work is done in response to enquires etc?

Who do you work with in research (linguists, terminologists, domain experts...)? When and how do you consult them?

### *Research: Methods*

How is terminology research carried out? What are the process and the research methods?

What internal research systems do you use (e.g. in-house or commercial software, particular methods)?

How is the research work documented (e.g. training manual, history of database changes)?

How is the research work structured – do you use concept systems to lay out the work?

How much of the research work carried out by the Irish term planning organisation/TNC/TERMCAT is based directly on current theory about how research should be done? How pragmatic are you when theory and the reality of research vary? Could you give me some examples?

### *Standardisation*

It is often unclear what exactly the term ‘standardisation’ means; I’d like to get an idea of what it means for Irish term planning/for TNC/for TERMCAT.

What does ‘standardisation’ mean for Irish term planning/for TNC/for TERMCAT?

When is standardisation needed?

Who is responsible for term standardisation?

Could you tell me about how terminology is standardised for Irish/Swedish/Catalan?

Are there national committees for term standardisation? If so, what is the structure? Who are the members of national committees for term standardisation, and how are they chosen? How often do they meet? What do national committees for term standardisation discuss? Is standardisation work carried out at meetings or online?

Are the subject experts alone considered responsible for term creation decisions?

Are new terms based on the historical language, on the language as it is spoken now, or on new creations?

How are term candidates themselves evaluated, and for what? (examples: compliance with terminological standards, formal and methodological consistency, accuracy of information, correct allocations of terms and equivalents to concepts, correct spelling and grammar...).

Are ISO/TC 37 and its standards used as a model? Are they adhered to? Why and how?

Do you consult term users about proposed terms (before or after term standardisation work, or both), and how?

Does the organisation’s terminology work have a descriptive or a prescriptive role? Has this situation changed over the years?

### *Dissemination*

Now I'd like to find out how terms – and other resources, of course – are made available to users.

#### *Dissemination: Awareness-raising*

What is the Irish term planning organisation's/TNC's/TERMCAT's approach to marketing? What marketing work is carried out?

Do you raise awareness about terminology or about term planning? How do you do that? What are you raising awareness about?

#### *Dissemination: Publication*

How are terms made available?

It is often suggested that dictionaries and term lists only have limited, indirect influence (that 'real people don't read dictionaries'). Is this recognised, and, if so, what steps are taken to address the issue? Are other means of dissemination used? What are they?

How have methods of dissemination changed, and why? (And is there any quantitative data for this?)

How freely are term collections available?

How are the needs of particular user bases, such as translation, education and the media, responded to? Are there other specific user groups?

### *Evaluation*

The evaluation of terminology work is important, of course. I'd like to find out about what kind of evaluation is carried out here.

#### *Evaluation: User feedback*

Is research carried out into the use of focal.ie/TNC's website/TERMCAT's website? What have you found out about this?

How interactive is the website? Do you hear much from your users?

What is done with feedback about terms or about the way they are made available?

Do you consult the public (through meetings, interviews or surveys)? About what? How do you consult the public (online surveys, focus groups...)?

#### *Evaluation: Implantation*

Do you study the dissemination and implantation of already standardised terms? How important is this? What are the findings?

How important is it for the Irish term planning organisation/TNC/TERMCAT to research how and which terms are in use?

#### *Evaluation: Methods and products*

Do you monitor term production mechanisms, such as the number of terms, time spent, and quality of methods used?

What evaluation is carried out of terminology products and resources, such as dictionaries and databases?

ISO 23185 is one mechanism mentioned in the literature for the assessment and benchmarking of term resources: terminological data, data input, data output and data management. Is this used by the Irish term planning organisation/TNC/TERMCAT? Why? Are other mechanisms (such as ISO 9000) used?

What do you in the Irish term planning organisation/TNC/TERMCAT consider 'good' terminology research (transparency, consistency, appropriateness, linguistic economy, derivability, linguistic correctness, and preference for native language...)?

#### *Evaluation: Organisational and general*

Is the organisation as a whole evaluated, and if so, by whom and how?

What is done with the results of these evaluations? Are they published?

What else (apart from what we have discussed) is evaluated by the Irish term planning organisation/TNC/TERMCAT,, and how?

#### *Modernisation/maintenance*

Do you use new research technologies and methods, and work practices, as they are developed? Could you give me an example of some recent innovations?

How do you ensure that terminology resources are kept up to date?

How is modernisation of the organisation carried out?

What changes have been made within the Irish term planning organisation/TNC/TERMCAT in recent years, as a result of evaluation?

How are research standards maintained (manual, training of new staff, etc?)

#### *Training*

Are university courses in terminology available for Irish/Swedish/Catalan terminologists? Are they appropriate and up to date?

Are terminology users given training and educational resources? (For example, journalists, teachers?)

What kind of on-the-job training is provided to new and old staff?

#### *Conclusion of the interview*

#### *Evaluation: general reflections*

How effective, in your opinion, are the Irish term planning organisation's/TNC's/TERMCAT's research methods, as they are now? How could they be improved?

If you were evaluating term planning for Irish/Swedish/Catalan, what would be the main points you would make? What are the strengths and weaknesses? What are the opportunities and threats?

Is there anything you would like to add to what we have discussed? Do you think anything important has been left out?

Would you like me to send you a copy of the transcript for checking? Would you like to see and comment on a draft of the case report?

## Appendix 3: Case study consent form

### CONSENT TO PARTICIPATE IN INTERVIEW

**Purpose of Research:** The aim of this work is to examine how TNC carries out term planning work for Irish/Swedish/Catalan. This forms part of my PhD research, entitled 'A Best-Practice Model for Term Planning'. The expected completion date is 2010.

**Results:** Results will be shared in a case report once all the research is completed. Confidentiality, if requested, will be maintained, and any direct quotes from your participation will be available for your review. As a participant in my research, an electronic copy of the finished thesis will be available to you if you request one.

The contents of the interviews – including yours – will be transcribed and analysed during the course of the research. The findings will be included in a submitted PhD thesis, and later lodged in the University Library. They may also be used in published works, such as academic journal articles or scholarly texts. This written work may include quotations from some of the interviews, including yours. I would be grateful if you could confirm, by signing this form, that you consent to the use of the recorded interview or extracts from it in this way.

**Right of Exclusion or Withdrawal:** If you feel uncomfortable with the content of the discussion during the interview you are free to terminate participation. You will not be asked to answer any questions unwillingly.

*I agree that the interview may be electronically recorded. Any questions that I asked about the purpose and nature of the interview and assignment have been answered to my satisfaction.*

Choose a), b) **or** c):

*a) I agree that my name may be used for the purposes of the PhD thesis only and not for future publication.*

OR

*b) I agree that my name may be used for the purposes of the PhD thesis and I understand that the student may also wish to pursue publication at a later date and my name may be used.*

OR

*c) I do not wish my name to be used or cited, or my identity otherwise disclosed, in the PhD research or in future publication.*

Name of interviewee \_\_\_\_\_

Signature of interviewee \_\_\_\_\_

Date \_\_\_\_\_

Please contact Úna Bhreathnach ([una.bhreathnach@dcu.ie](mailto:una.bhreathnach@dcu.ie)) with any questions or concerns.

Supervisor: Dr Caoilfhionn Nic Pháidín, Fiontar, DCU, Dublin 9, Ireland

Tel. +353 1 700 5173; [caoilfhionn.nicphaidin@dcu.ie](mailto:caoilfhionn.nicphaidin@dcu.ie)

## Appendix 4: Research Ethics Committee Notification Form

### Research Ethics Committee: Notification Form for Low-Risk Projects and Undergraduate Dissertations

DCU Research Ethics Committee has introduced a procedure for notification to the committee of

1. low-risk social research projects, in which personal information that is deemed not sensitive is being collected by interview, questionnaire, or other means
2. dissertations on undergraduate programmes in all disciplines.

The committee requires researchers to concisely answer the following questions within this form (before the project starts):

<p>Project Title: 'A Best-Practice Model for term Planning'</p> <p>Applicant Name and E-mail: Úna Bhreathnach, <a href="mailto:una.bhreathnach@dcu.ie">una.bhreathnach@dcu.ie</a></p> <p>If a student applicant, please provide the following:</p> <p>Level of Study (Undergrad/Taught MSc/Research MSc/PhD): PhD</p> <p>Supervisor Name and E-mail: Dr Caoilfhionn Nic Pháidín</p>
<p>Questions:</p> <p>1. Provide a lay description of the proposed research (approx. 300wds):</p> <p>The research aims to create a best practice model for term planning. Although there is no universal best practice in term planning, it is possible to construct a general model of best practice which can be adapted to different language situations.</p> <p>The aim of my thesis is to take a model created from the literature in the area, and to compare this to actual practice in two cases of best practice, and Irish. This will lead to the construction of a new model for term planning. This model is based in a socioterminological approach to terminology.</p>
<p>2. Detail your proposed methodology (1 page max.):</p> <p>Case study research is used. The three case studies (TNC in Sweden, TERMCAT in Catalonia and the Irish language situation) involve a series of interviews with key participants in and observers of the language planning process. These interviews are semi-structured; a list of questions is sent out about a week beforehand.</p> <p>The interviews generally last 40-60 minutes. At the beginning of the interview, the participant is asked to state his or her name and area of responsibility. He or she is also asked to sign a consent form.</p> <p>Interviews are transcribed and compiled into a case report. Individual interviews are stored separately. Each interviewee is sent a copy of the case report and asked to make amendments or comments.</p> <p>In the case of Irish language term planning, one of the interviewees is my supervisor, Dr Caoilfhionn Nic Pháidín. The issue of research validity is particularly sensitive in the case of Irish, since the present researcher is employed in Fiontar, one of the term planning</p>

organisations being studied and discussed. There is a real possibility that my position as editor of the national terminology database could lead to a biased perspective, as well as pushing interview participants in a certain direction.

In order to counter this potential issue, the following steps were taken. As well as conducting interviews, the literature on Irish language term planning was extensively consulted. This, as well as my own knowledge of the case, was used to draft initial answers to case study questions. Interviews will then be used as in the other two cases, with a particular emphasis on evaluation. After interviews have been carried out, the case report will be returned to participants and they will be asked to review it and to point out any errors or imbalances in reporting. In selecting interviewees, an effort will be made to find experts from outside the Terminology Committee/Fiontar circle.

3. Detail the means by which potential participants will be recruited:

The two best-practice cases are found through a process of Delphi research (a survey of experts in the area). The other case, that of the Irish language, has already been selected. After that, the organisation is contacted and asked for permission to visit. The head of the organisation is asked to nominate people in different areas (such as marketing, research, IT) who could be interviewed. A schedule is set out.

The head of the organisation is also asked for suggestions of external experts who could be contacted. Other contacts are also used in order to find suitable interviewees.

4. How will the anonymity of the participants be respected?

The interviews are not anonymous, unless the interviewee requests this in the consent form.

5. What risks are researchers or participants being exposed to, if any?

None.

6. Have approval/s have been sought or secured from other sources? Yes

If Yes, give details: From supervisor.

7. Please confirm that the following forms are attached to this document:

Informed Consent Form Yes

CONSENT TO PARTICIPATE IN INTERVIEW

**Purpose of Research:** The aim of this work is to examine how TNC carries out term planning work for Swedish. This forms part of my PhD research, entitled 'A Best-Practice Model for Term Planning'. The expected completion date is 2010.

**Results:** Results will be shared in a case report once all the research is completed. Confidentiality, if requested, will be maintained, and any direct quotes from your participation will be available for your review. As a participant in my research, an electronic copy of the finished thesis will be available to you if you request one.

The contents of the interviews – including yours – will be transcribed and analysed during the course of the research. The findings will be included in a submitted PhD thesis, and later lodged in the University Library. They may also be used in published works, such as academic journal articles or scholarly texts. This written work may include quotations from some of the interviews, including yours. I would be grateful if you could confirm, by signing this form, that

you consent to the use of the recorded interview or extracts from it in this way.

Right of Exclusion or Withdrawal: If you feel uncomfortable with the content of the discussion during the interview you are free to terminate participation. You will not be asked to answer any questions unwillingly.

I agree that the interview may be electronically recorded. Any questions that I asked about the purpose and nature of the interview and assignment have been answered to my satisfaction.

Choose a), b) or c):

a) I agree that my name may be used for the purposes of the PhD thesis only and not for future publication.

OR

b) I agree that my name may be used for the purposes of the PhD thesis and I understand that the student may also wish to pursue publication at a later date and my name may be used.

OR

c) I do not wish my name to be used or cited, or my identity otherwise disclosed, in the PhD research or in future publication.

Name of interviewee \_\_\_\_\_

Signature of interviewee \_\_\_\_\_

Date \_\_\_\_\_

Please contact Úna Bhreathnach ([una.bhreathnach@dcu.ie](mailto:una.bhreathnach@dcu.ie)) with any questions or concerns.

Supervisor: Dr Caoilfhionn Nic Pháidín, Fiontar, DCU, Dublin 9, Ireland

Tel. +353 1 700 5173; [caoilfhionn.nicphaidin@dcu.ie](mailto:caoilfhionn.nicphaidin@dcu.ie)

Plain Language Statement No

NB – The application should consist of one file only, which incorporates all supplementary documentation. The completed application must be proofread and spellchecked before submission to the REC. All sections of the form should be completed. Applications which do not adhere to these requirements will not be accepted for review and will be returned directly to the applicant.

The administrator to the Research Ethics Committee will assess, on receiving such notification, whether the information provided is adequate and whether any further action is necessary. Please complete this form and e-mail to [fiona.brennan@dcu.ie](mailto:fiona.brennan@dcu.ie)

Please note: Project supervisors of dissertations on undergraduate programmes have the primary responsibility to ensure that students do not take on research that could expose them and the participants to significant risk, such as might arise, for example, in interviewing members of vulnerable groups such as young children.

In general, please refer to the Common Questions on Research Ethics Submissions for further guidance on what research procedures or circumstances might make ethical approval necessary ([http://www.dcu.ie/internal/research/questions\\_ethics\\_submissions.pdf](http://www.dcu.ie/internal/research/questions_ethics_submissions.pdf))