

Theories of terminology

Their description, prescription and explanation

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During the past decade, the theory of terminology has been a subject of debate in various circles. This article examines some of the reasons why this topic has been receiving so much interest lately. I will first discuss the theory developed by Wüster and analyse the motivations behind his model. Then, I will explain why the Wüsterian theory was not questioned or challenged for a long time. This will lead us to the reasons why so many critical voices have been raised recently, both from inside traditional viewpoints and outside. I will also look at the reception these new ideas have had in terminology circles. Finally, I will present my own definition of a theory of terminology, by examining important issues such a theory should take into account and see what I can offer to this debate.

Keywords: theory of terminology, history of terminology, General Theory of Terminology, Communicative Theory of Terminology

Introduction

It is surprising that after many years of inactivity in terminological theory all of a sudden there has been a rush of critiques of established principles and suggestions proposing new alternatives to the traditional theory. This movement is evidenced by several seminars, organised in 2003, devoted to re-establishing the foundations of a theory of terminology on its own or in contrast to linguistics or lexicography, in particular the Workshop on Theory of Terminology at the International Congress of Linguists in Prague, the XIVth European LSP Symposium in Surrey, a Colloquium about Terminology as a Scientific Discipline in Paris, a Round Table on theory of terminology at the Congress of the Portuguese Association of Linguistics in Lisbon and a seminar

on terminology and lexicography convened by the European Association for Terminology, also in Lisbon.

Over the last 15 years, in contrast to the previous 30, numerous publications have appeared on this topic. Among those most representative of this type of concern we cite Gaudin (1993), Volume 18 of *Cahiers de Linguistique Sociale* (1991), the proceedings of the colloquia on *Terminologie et Intelligence Artificielle (TIA)* (1995, 1997, 1999, 2001), Cabré (1999b), the proceedings edited by Cabré (1999c) and Cabré and Feliu (2001a), both outcome of international summer seminars held at the University Pompeu Fabra in Barcelona, number 21 of *Terminologies Nouvelles*, entitled *Terminologie et diversité culturelle*, a volume of essays edited by Béjoint and Thoiron (2000), and especially Temmerman (2000).

Parallel to this welter of publications, but before the many meetings of 2003 mentioned above, two other seminars are worth recalling which have been particularly meaningful for this discussion of theories of terminology: the restricted seminar on theory of terminology held in Barcelona in January 1999, the papers of which were published in *Terminology* (1998/1999) and the seminar *Terminology science at the crossroads?*, held in Vasa in 2001 as part of the European LSP Symposium, published as Volume 13 of *Terminology Science & Terminology Research* (2002).

The Barcelona seminar assembled specialists in linguistics, psychology, history of science and philosophy who through their publications had expressed critical views about the so-called traditional theory of terminology as represented essentially by the works of E. Wüster.

The Vasa seminar assembled supporters of the traditional theory with the purpose of analysing the meaning and significance of the existing critical opinions. These experts in terminology, who themselves have taken a critical stance regarding Wüster's work, propose to supplement the deficiencies of this theory.

Both seminars have led to certain conclusions. The first underlined the need to develop a theory about terminological units, rather than of terminology, which could account for the complexity of terms — the metaphor of a polyhedron was used — in their real and varied communicative context. The second seminar discounted the critical views of outsiders because — it was said — they did not know Wüster's work or ignored the subsequent publications of his followers. It was also argued that cultural and linguistic traditions created barriers to mutual understanding between these two camps.

This paper will briefly attempt to answer the following questions:

1. Why did Wüster develop his particular theory?

2. Why has so much time passed before innovative theoretical contributions were made to the study of terminology?
3. Why, all of a sudden, have so many critical voices been raised, both from inside traditional viewpoints and outside?
4. How have these new ideas been received?
5. What kind of theory would be required to account for terminology?
6. What can I contribute to this debate?

1. Why did Wüster develop his particular theory?

Wüster (1898–1977) an engineer with a strong interest in information science, one-time active Esperantist, and fierce proponent of unambiguous professional communication, developed a theory of terminology on the basis of his terminographic experience in compiling *The Machine Tool. An interlingual Dictionary of Basic Concepts* (Wüster 1968), a systematically arranged French and English dictionary of standardised terms (with a German supplement) intended as a model for future technical dictionaries. This project was sponsored by the Organisation for Economic Cooperations and Development (OECD) of the United Nations and published in 1968.

It is fair to say that all Wüster's life was devoted to terminology. With his work he pursued a number of objectives, intended:

1. To eliminate ambiguity from technical languages by means of standardisation of terminology in order to make them efficient tools of communication.
2. To convince all users of technical languages of the benefits of standardised terminology.
3. To establish terminology as a discipline for all practical purposes and to give it the status of a science.

In order to achieve these objectives he set himself three major tasks, namely:

1. The development of standardised international principles for the description and recording of terms.
2. The formulation of general principles of terminology (Terminologielehre) which he initially saw as a branch of applied linguistics but later as an autonomous field of study. (It is to be noted that Wüster himself never spoke of a "Theorie" — the German word exists and is widely used — but always of "Lehre" which implies practical guidelines rather than a purely theoretical approach to a subject.).

3. The creation of an international centre for the collection, dissemination and coordination of information about terminology, which became *Infoterm*, under the sponsorship of Unesco.

But the structural approach to the theory of linguistics prevailing in Wüster's time was too restrictive and oriented towards formal aspects of languages to be able to account for the specificity of the semantic aspects of specialised signs. This explains why Wüster in the end saw his "Terminologielehre" as an autonomous interdisciplinary field of study, as he stated in his "Die allgemeine Terminologielehre — Ein Grenzgebiet zwischen Sprachwissenschaft, Logik, Ontologie, Informatik und den Sachwissenschaften" (1974).

While his numerous articles express his ideas — albeit at times hesitantly — the final explicitation of Wüster's principles was carried out posthumously by H. Felber, on the basis of Wüster's lecture notes (1972–74), and published as *Einführung in die allgemeine Terminologielehre und terminologische Lexikographie* in 1979. The title *The General Theory of Terminology* only appeared in later references to this work in French, English and Spanish.

Unfortunately most critiques of the traditional theory of terminology take this book as the most representative of Wüster's ideas and address their objections and reservations to this text. This book emphasizes the difference between terminology and linguistics on several fronts.

- a. **regarding language**
 - the priority of the concept;
 - the precision of concepts (monosemy);
 - the univocity of the term (absence of synonymy);
 - the semiotic conception of designations;
 - the exclusive interest in the lexicon, leaving aside all other linguistics levels;
 - the synchronic treatment of terms;
 - the priority of written registers;
- b. **regarding assumptions about its evolution**
 - the conscious control of evolution (planning, unifying, standardising);
 - the priority given to international forms of designations;
 - the concern with the written language only;
- c. **regarding working methods**
 - the exclusive use of the onomasiological approach (in contrast with the semasiological approach of lexicography) and hence a preference for systematic ordering.

If we take Wüster's posthumous book as point of reference, it is obvious that it represents an attempt to sharpen the distinction between terminology and linguistics in order to arrive at an autonomous discipline the object of which are no longer terms considered as units of natural language, but concepts considered as clusters of internationally unified features which are expressed by means of equivalent signs of different linguistic and non-linguistic systems.

The key to this position lies, it appears, in the supposition that a concept is universal, independent of cultural differences and that consequently the only variation possible is that given by the diversity of languages. For Wüster the scientists and technicians of a particular language characterised — or rather, should characterise — a subject field in the same way so that the only differences that might arise would be the result of their different languages or their use of alternative designations for the same object. Both divergences could disrupt professional communication and hence Wüster was a staunch advocate of a single language for scientific and technical communication. Once he had abandoned the idea that Esperanto could be used to this end, he saw the only solution to the problem of inter- and intralingual synonymy of designations in standardisation.

Wüster developed his conception of terminology firstly on the basis of his experience as an engineer involved in national and international terminology standardisation required for the effective introduction of the standardisation of physical objects, procedures and measurements in various branches of engineering. He gained additional experience from the compilation of his plurilingual dictionary of standardised technical terms. His theoretical inferences were based on observation of this limited section of technical languages — standardised technical terms with consensually agreed equivalents about a previously unified concept. This experience of a limited sector of terminology seems to explain his approach to terminology and the essence of his theoretical position. For this reason, I have, on one occasion, written that Wüster developed a theory about what terminology should be in order to ensure unambiguous plurilingual communication, and not about what terminology actually is in its great variety and plurality.

Faced with this critique, the followers of Wüster's model maintain, however, that the General Theory of Terminology, as they now choose to call it, has developed substantially as a result of later contributions, which, they argue, obviate the critiques made of the model. These contributions modulate and complement Wüster's ideas, as can be seen from the following points:

- The objective of international standardisation is extended by suggestions of terminology development as part of language planning.

- Controlled synonymy is admitted. Wüster's posthumous work already concedes this point.
- A certain degree of synonymy is accepted though its avoidance is recommended in terminology intended to be standardised.
- Phraseology is added to the study of terminological units.
- The meaning of spoken forms is recognised in contexts of language planning.
- The model is made dynamic by introducing the description of the process of formation of new terms.
- The representation of non-hierarchically-ordered conceptual structures is introduced.

On the other hand, what is not modified are:

- The priority of the concept over the designation, and consequently its autonomy.
- The precision of the concept (monosemy), even though dimensions such as parameters of classification are admitted.
- The semiotic conception of designations.

From these assumptions about its evolution we note the recognition that applied terminology is not necessarily prescriptive, but, nevertheless, what is maintained are:

- The need of prescription in applications intended for standardisation and language planning.
- The deliberate control of evolution (planning, unification, standardisation) even though it is conceded that this is a voluntary activity.
- The priority of international forms of designation.
- The limitation to written forms even for terminology destined for language planning.

By maintaining the priority of the concept, the working methodology continues to be restricted to the onomasiological approach.¹

2. Why has so much time passed before innovative theoretical contributions were made to the study of terminology?

I believe that until now terminology has not benefited from the natural development of most other disciplines. Science progresses by confrontation and interaction, by contrasting hypotheses with empirical objects, by suggesting

models and alternative theories, and finally by evaluating the plausibility of these theories. In this sense, terminology has not had a regular development which, in my opinion, can be explained by several reasons of which the following are especially worth noting.

The first reason is that it is a young discipline. Establishing terminology as a discipline is the merit of Wüster and a few other thinkers of his time. Apart from the initial impact of Wüster's doctoral thesis in the 1930s, we have to place this process in the 1950s. The genesis of any discipline is frequently marked by a detailed discussion of the body of constituent basic ideas in order to consolidate these ideas into a discipline.

The second and more important reason is that until now there has not been a serious discussion of these basic ideas. Over the last fifty years we have not seen a sufficient number of substantive and widely disseminated discussion papers which might have enriched the theoretical premises by solidly argued alternative positions.

The third reason which may explain the anomalous evolution of terminology is the fact that two decades ago the discussion of theory became reduced to simple conjecture without accepting that a theory is valid only to the extent to which it permits the description of its object and consequently the description of the data by which this object manifests itself.

The fourth reason is the absence of any real confrontation of opinions. For many years the only forum for theoretical discussions on terminology was managed by a single centre so that there was an implicit or explicit control over any dissent. Besides, this centre presented the established principles as inviolable *a priori* points of departure.

The fifth reason, which may explain the continued homogeneity of the established principles, is the lack of interest in terminology by specialists of other branches of science, for example linguistics, psychology, philosophy and history of science and even communication and discourse studies. For many years terminology saw itself as a simple practice for satisfying specific needs or as a field of knowledge whose signs had nothing to do with the signs of language. Except for the work of Slodzian (1993, 1995), the philosophy of science has also kept its distance from this controversy.

A sixth equally important reason, arising from the previous one, has been the absence of strong theorists in the field. While there have been many occasions when terminology was discussed, the vast majority of those interested in terminology have been practitioners of other subjects whose objective was to resolve specific problems in their own fields of activity: translation, specialised

discourse, teaching or information retrieval, to mention just some of them. Few of those interested in terminology have analysed it as a field of knowledge. Even worse, in many cases theoretical reflections have been condemned as being useless for the practical applications being pursued.

A seventh reason is the way in which any critique of the traditional position has been received, namely as an intent to sabotage the established theory of terminology. As a result until recently there has been an absolute lockout of any dissident ideas originating from outside the accepted groups and, consciously or unconsciously (I have no opinion on this question) people and ideas which did not conform to the “official” terminology were ignored.²

And it is evident that terminological practice outside the contexts of standardisation revealed incongruities between the real data and some of the principles of the theory. Even in the context of minority languages terminological practice based on sociolinguistic evidence had moved away from the principles of the theory. But, nevertheless, either because of a simple lack of awareness of the contradictions between theory and practice or because of indifference to the theoretical premises, terminology continued along an apparently homogeneous and well-established path.³

We can try to motivate this defensive attitude in three ways:

- a. It may have been felt necessary to concentrate all efforts on the unification and legitimation of a new discipline, initiated by Wüster and continued by the organisations he founded.⁴
- b. It may have been felt necessary to maintain a centralised control over the theory of terminology in order to avoid dissenting voices which might jeopardise its recognition as a discipline.⁵
- c. In order to safeguard the methodological homogeneity, which Wüster had established and applied to plurilingual international standardisation, it may have been felt necessary to sideline any intent which would require a substantial change of established methodology. This position manifested itself in the scant interest in developing new working methods unless they were required by practical needs.⁶

3. Why, all of a sudden, have so many critical voices been raised, both from inside traditional viewpoints and outside?

It is a law of nature that a time of containment and concentration is followed by one of expansion and development. This seems to have been the case of the

recent history of terminology: the containment of the 1960s, 70s and 80s, has given way to the diversified manifestation of new ideas in the 1990s and the first few years of this century.

To the extent that they contribute to the consolidation of terminology as a scientific discipline, I believe all these new contributions to be perfectly valid. Some of the critical statements will undoubtedly be rejected because of their scientific weakness, others will be discarded as irrelevant; but many will surely contribute to the progress and consolidation of terminology as a field of knowledge. Now, even though critique is necessary for the scientific development of a discipline, it appears that the critique of terminology, if we are to believe Budin, does not appear to have been the right one:

Contrary to ethical standards in science, as practised in all disciplines, including the humanities and social sciences, some⁷ simply ignored more recently published articles or monographs that are accessible in English and in other languages that do contribute to a more scientific and up-to-date account of terminology (Budin 2001: 18).

The critique of traditional terminology comes from three sides: from cognitive science, from the language sciences and from the communication sciences.

Cognitive psychology and philosophy have stressed the difficulty of drawing a clear separation between general and specialised knowledge and have shown how general knowledge contributes to the acquisition of specialised knowledge. They have also pointed out the important part interlocutors play in the construction of knowledge through discourse and the omnipresence of culture (even scientific culture) in the perception of reality.

The language sciences, especially linguistics and sociolinguistics, have questioned the rigid division of general and specialised language and thoroughly examined the social bases of special languages and they have formulated generalised hypotheses which may lead to models in which the general and the specialised can be integrated. In this type of language science semantics and pragmatics play an important role. Beside the formal aspect of language, linguistic models suitable for terminology must account for the cognitive and functional aspects. Text linguistics and corpus linguistics provide a grammatical framework which extends beyond the sentence limits of structural linguistics and the standard generative models.

The communication sciences have developed diversified situational scenarios of communication and have proposed models in the form of frames in which specialised communication is integrated as a set of options inside a

single schema, rather than treating it as a different type of communication. Discourse analysis is increasingly interested in specialised discourse and its social representation and distribution.

Finally, during the last two decades numerous associations and national, regional, transnational and transregional networks of terminology have sprung up in Europe, Latin America, Africa and Asia and with them the number of meetings, training opportunities and publications have multiplied.⁸ The leadership of these many groups frequently ignore each other's existence, thus following the pattern of behaviour customary among the self-styled international organisations.

4. How have these new ideas been received?

The reaction of the centres traditionally dominant in the dissemination of ideas on terminology has been swift. The following words of Myking indicate a new concern for the dominant terminology:

One potential danger that has to be prevented, apparently, is that of different epistemological and paradigmatic positions blocking practical cooperation, leading to separate networks and lack of contact between different terminological discourse communities. To prevent such problems, we have, at least, to read each others contributions (Myking 2001: 63).⁹

In the first instance the critiques were seen as intents of rejection without proper argument and a reason for the dissident voice of certain groups was sought on their own home ground: for example, the unsuitability of the terminological policies of the critic's country.¹⁰

It is somewhat strange to note the Viennese group's lack of self-criticism when faced with these external comments. Their first reaction is to consider dissent from the doctrine as an attack arising from ignorance of the original tenets (a lack of study of Wüster's works, at least in their original language) and of later contributions.

I actually believe that it has not been understood that the concentration of the theoretical development and the dissemination of theoretical premises by a single group as well as the inbreeding practised in the organisation of activities are accountable for at least part of these reactions. After the initial bewilderment the defence has been organised along three lines:

- a. The negative line which was initially the strongest but now rather residual which amounted to an unfounded rejection and ignoring the existence of the opponent.
- b. The constructive line which, I believe, has two versions: i) one, which is positively engaged in revising the theory itself and evaluating dissident opinions; ii) the other, which has tried to refine the interpretation of Wüster's original work in order to silence its critics.
- c. The probabilistic line which manifests itself in the revision of the original and some alien postulates with the purpose of calling attention to the need for cooperation in the construction of a wider and integrated theory which might then account for the entire complexity of terminology.

This last line of reaction seems to be the one preferred by Budin when he states:

Although many of the criticisms about Wüster's theory are correct, a more constructive and coordinative approach to evaluating and comparing theories and individual assumptions and hypotheses would be much more productive in order to further develop terminology theory from a more holistic and integrative point of view. Fortunately, several doctoral dissertations have been prepared in recent years that take critical positions on established principles, while at the same time present (sic) their own theoretical model that indeed contribute to a higher level of terminology theory (Budin 2001: 18).¹¹

In an intelligent article Myking (2001) seems to take the same line. He discusses the contribution socioterminology has made to Wüster's original concept and establishes three types of critical positions:

- a. Moderate and "loyal": e.g. Laurén, Myking and Picht (1998)
- b. Radical and "subversive": socioterminology, socio-cognitive terminology
- c. Radical and "loyal": Bertha Toft (e.g. 1998, 2001).

According to Myking, the first type tries to move closer and even to integrate terminology with linguistics without abandoning the established theoretical and methodological foundations, especially the onomasiological connection with conceptology. This position requires a very wide and liberal understanding of linguistics, open to semantic description and hence distant from structuralism and generativism, while at the same time claiming to reduce the polarity between terminology and linguistics of the earlier phases of traditional terminology.

The authors included in the second group, so Myking believes, completely reject traditional terminology. One result of their position is sharpening the separation between traditional terminology and linguistics.

The third group stresses the need to study Wüster in order to *complement and adapt* him to the achievements in cognitive and functional linguistics. It is important to note that for Myking the only difference between the first and the third group is that the latter specifies its theoretical point of departure as cognitivism, while the former states that it is working eclectically.

In Myking's view the differences that have arisen between the more or less critical followers of Wüster and his detractors can be traced back to their working in either a monolingual or a plurilingual environment.

Budin adds that these positions are essentially too heavily conditioned by their practical orientation and caught up in their respective cultural and linguistic environments.

In addition to the fragmentation along the lines of division between professionals, fields of activity and scientific research areas, there is another fragmentation along the lines of barriers among different cultures and different linguistic communities. 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.

All attempts that have been made so far to establish theories in this field of terminology can be characterised by a strong orientation towards practical problem solving and to establish methods with scientific justification in order to make these problem solving efforts more efficient (Budin 2001: 14–15).

For this reason, Budin thinks, there should be a basic approach which would permit solving all terminological problems of professional communication independent of geography and languages.¹²

Myking finds different reasons for the divergencies he has identified in the three types of critical positions:

To some extent this corresponds to a difference of practical motivations, which is (unilingual) language planning in the case of (b) in contrast to a stronger interest in aspects of translation and even problems of standardisation in cases (a) and (c). These features deserve some investigation, because they offer partial explanations to the apparent hostility towards traditional terminology. The paradigm shift in linguistics towards cognitivism is directly relevant to this discussion (Myking 2001: 56).

I believe that Myking's explanation is not sufficiently substantiated and probably results from the fact that traditionally the different positions in terminology tended to be presented as dichotomies, which has simplified the issue too much:

- a. the orientation of terminology: language planning vs. special communication;
- b. the type of terminography: topic-specific/punctual vs. systematic;
- c. the methodological orientation: semasiological vs. onomasiological.

But it is equally true, and herein lies the importance of the dissident voices, that beyond practical concerns there exist different conceptions, different points of departure, different bases for the different theoretical approaches.

In 1993, Laurén and Picht made a first attempt of comparing theories. Using the cooperative method, they based their comparisons on the similarity or divergence of each group's conception of the concept, the term, the relation between them, their position regarding planning and standardisation, the place allocated to terminology among the sciences, etc. In Budin's words they came to the conclusion:

... that the theories and schools compared (the so-called Vienna School with Wüster and Felber as the main representatives, the so-called Soviet School and the so-called Prague School and several other research traditions such as Canada, Germany, Scandinavia and some more recent efforts in terminology and knowledge engineering) have much more in common than commonly assumed, that these "terminology schools" never really existed as sharply separated and isolated traditions but rather as closely connected and interactive research traditions that share a major set of theoretical assumptions, and that the differences lie in different priorities and research interests. The conclusion was that we should rather talk about a single terminology theory that all researchers are sharing and contributing to in different ways (and in different languages)¹³ (Budin 2001: 17).¹⁴

The theory developed after Wüster by his "loyal" followers exhibits features which permit us to speak of a new or enlarged vision. To avoid confusions with Wüster's theory I will call the traditional theory of terminology as developed further by Wüster's followers, the *Extended general theory*.

The main features of this *Extended general theory* are summarised by Myking by the following captions:

- a theoretical platform characterised by ECLECTICISM;
- a set of epistemological tenets: INDEPENDENT CONCEPTS;
- an operational method: ONOMASIOLOGY;
- a defined set of problems: STANDARDISATION (Myking 2001: 61).

Myking's synthesis may be considered the backbone of the extended traditional theory and allows us to formulate the following questions:

- Does this assembly of premises permit the construction of a sufficiently broad in which different approaches can be accommodated?
- Is it broad enough to accommodate the different applications oriented towards a wide range of different terminological needs?

I believe that Myking's description of the extended traditional theory justifies moving a step forward towards the construction of a terminological theory which accounts for the empirical data produced in a great variety of circumstances, and, at the same time, offers a suitable location for the different points of view and the determination of priorities for responding to different needs. In my opinion, it is, therefore, not a question of defending positions but of analysing whether the ideas developed so far are sufficiently broad and representative of terminological data and their overall functions to permit us to speak already of a unified theory of terminology. In this discussion, the extended traditional theory would obviously play a very important role because of its internal coherence, but it would not be suitable for forming the initial nucleus on the basis of which the theory is enriched with elements originating from other conceptions and needs. For me, it is a matter of common sense to build a broad foundation rather than starting from a limited theory and extending it. Within a broad theoretical scheme different conceptions can be accommodated as long as there is no internal contradiction and as long as the data can be described and possibly explained.

On this point I agree with Budin when he says:

..... we can expect that a single, but collective, yet very multifaceted and multidimensional theory of terminology is currently emerging, on the basis of pioneering achievements of the first generation of terminology researchers, and now with a whole new generation of young researchers bringing many aspects into the discussion..... (Budin 2001: 20)

5. What kind of theory would be required to account for all terminology?

To start, I refer yet again to the questions, so clearly stated by Myking for the analysis of the different theoretical approaches to terminology, which he answers from his theoretical position in the extended traditional theory:

- Identifying traditional terminology with 'prescriptivism': is it justified? (Myking 2000: 63).

Not for the loyalists, says Myking, even though there may be reasons which can justify it.

- Do prescriptive objectives constitute an obstacle to a sound terminology? (Myking 2000: 63).

Myking's answer is again no, even though he recognises that in certain planning contexts (he is referring to French) the sociolinguistic dimension of terminology is undervalued and the unifying tendency is strengthened.

- Has traditional terminology been cut off from society? (Myking 2000: 63).

From a "loyalist" position the answer is no, even though he recognizes that this relation is not always adequately explained nor has it been integrated satisfactorily in the theory of terminology. As a result it has given rise to the image of terminology as simply a "technical tool".

5.1 The data being examined

Myking's observations permit me to explain my views concerning the construction of a theory and, more specifically, the relevance of prescription in this development.

I hold the view that a theory can never be prescriptive because a theory is a unit of coherently integrated axioms or essentials which permit the description of an object, its properties, its relations and operations within a specific framework. The theory developed by Wüster is not prescriptive but rather descriptive, even though the data he described were not representative of the full range of terminology and hence the theory he inferred from these data was biased.

Now that we have established our position regarding this first set of questions, we face a second set, also formulated by Myking, which helps to confront the problem of constructing a theory of terminology.

- Do "correctionist" directions aim at solving the same problems as does traditional terminology?
- Is "describing terminology" a legitimate aim in itself, and is 'describing' really incompatible with 'improving'?
- Do unilingual and language planning-oriented problems in, for instance, the Francophone, Catalan and Icelandic language areas require a (more or less) different theory that traditional terminology could offer?

- What, then, about multilingual terminology at the supranational level, such as EU?
- How could a cognitivist view on motivation be combined with plurilingual problem-solving, be it standardisation or the production of specialised dictionaries? (Myking (2001:62)).

I believe that most of these questions have already been answered by what has been stated. The final objective of any theory must be to describe real data; it must be internally consistent and have the potential of being predictive. Every theory has an applied side from which applications can be generated to solve problems. The theory of terminology is no exception.

If there have been critiques of the traditional theory it was because the terminological object was delimited differently and studied from different positions and viewpoints (which does not imply different practical objectives). True, if the observed and described data are the content of a dictionary, and especially if this dictionary is standardised, the conclusion to be reached will be that the terminology is unambiguous and systematic, that the terms in different languages are completely equivalent, that the concept is always semantically precise (or, in other words, the concepts are neatly distinguished from each other inside a discipline), that they are universal in the particular discipline and that the designations tend to be formally similar, thus moving towards the status of an international terminology.

But if we observe terminological data in their natural environment in discourse, with variations according to the different functional registers of specialised communication, the data are less systematic, less unambiguous, less universal than the others. The reason for this is obvious: in written and spoken specialised discourse terms are a means of expression and communication and according to these two variables the discourse will be marked by redundancy, conceptual and synonymic variation and, in addition, permit the observation that there is not always a perfect equivalence between languages. This difference in the focus of observation of data is responsible for one of the most important disagreements.

In this sense I fully share Antia's views, repeated approvingly by Myking (2001: 62):

An epistemological position for a terminological object theory must transcend the naive realism inherent in Neo-Positivism and the solipsism epitomised by Radical Constructivism.... A number of intermediary positions are deemed to be more appropriate for terminology.... To give salience to these intermediary positions, or to adopt a broad epistemological outlook, is to subscribe to ontological pluralism rather than to ontological unity (Antia 2000: 89).

The second disagreement concerns the objectives of terminology and, even though it might appear to be different, in its essence it arises from the same cause: the limited scope of the data under observation and its consequences.

If for Wüster the main object of terminology was to avoid ambiguity in international intra-professional communication, it is obvious that the scope of terminology was limited to the standardisation of concepts (this in turn gave rise to the idea that the concept is independent and prior to its designation) and the standardisation of its designation in different languages. But, working with terms can occur in other environments of representation and communication which then require a broader view of terminology. I shall only give one example: translation. The texts which a specialised translator has to handle do not all belong to the same register of communication, even though all share the same level of formality essential for professional communication, nor does their variety of functions require the same level of specialisation; besides, in many subjects there is no unified conception of the field.¹⁵

This “vertical” variation of texts is reflected in the quantity and type of terminology they contain. A text of a lesser degree of specialisation and didactic function is conceptually more redundant and consequently will contain more variation of designation than a highly specialised text intended for conveying scientific innovations to colleagues at the same level.

In relation to its original, it is said that a translation — and technical translations are no exception — must be literal regarding its content, appropriate regarding its expression, adequate regarding the register and precise regarding the rhetoric of the receptor community so that a translated text is fully comparable to a text originally written in the target language. In order to achieve this objective it is evident that a translator must use the appropriate terminology (that of the specialists of the target community), the same range of variation of expression (unless the text is destined for a different receptor function) and a selection of designative structures most appropriate to the text type.

5.2 The notion of theory

One of the key questions which one has to ask oneself in order to construct a theory of terminology is what a theory is and what it means to build a theory of terminology.

Within the positivist approach to knowledge, a theory¹⁶ is a system of propositions deduced from a small number of principles whose objective is to represent in as simple, complete and precise form as possible a set of experimental laws. The

conditions of simplicity, completeness and precision open the door to logic-formal analysis, the ultimate goal of the logical positivism prevailing in science during the 20th century. In this perspective, a theory is understood as a set of hypotheses which, once established, it must be possible to confirm or refute.

In their formal aspects, canonical theories have their own alphabet or set of signs which, together with their corresponding formation rules, define a formal language in which the set of axioms is expressed; and on the basis of these and by means of such rules of formation theorems are generated which constitute the theory. This formal network relates to the empirical level through correspondence rules which permit the projection of one level on top of the other. The radical differentiation between data and theory characteristic of positivism does not appear in analytical philosophy.

A theory may have several degrees of adequacy. A theory is observationally adequate if it permits the description of the observed data. It is descriptively adequate if, besides permitting the description of the observed data, it permits the description of the non-observed ones which might arise. That makes it predictive. A theory is explanatorily adequate if, besides being observationally and descriptively adequate, it explains how and why these data are produced and how they are obtained. Nevertheless, the construction of a theory is not simple. Firstly it is rarely the idea of an individual but rather the result of a broad, diversified and collective effort (through cooperation or controversy), usually evolving over an extended period of time.

During this time of development of a theory many different activities and processes occur. Sometimes a theory can start with an intuition and a speculative process leading to hypotheses which must then be refuted or confirmed by the empirical analyses. At other times a theory is developed on the basis of the refutation of another theory which is descriptively unsatisfactory. At times the scientific change is evolutionary, i.e. the basic tenets of a theory are not questioned and only aspects and relations not previously described are complemented; at other times a given theory can follow and replace a previous one. In this case we speak of a theoretical change and if the change is so significant that the new theory represents a different conception of a phenomenon, even though it may be the same single phenomenon or group of phenomena, we are dealing with what Kuhn (1962) calls *a new paradigm*.

In order to disentangle the significance of the critical positions towards the traditional theory, which their authors consider alternatives, Budin carried out a comparative analysis of these ideas in 2001. His evaluation is concerned with three sets of ideas.

- a. Socioterminology, in which group he also includes the positions of the Rouen group, the socially oriented terminology in Scandinavia, the so-called cognitive socioterminology of Temmerman (2000) and some individual contributions like those of Boulanger (1995), Cabré (1999b) and Antia (2000).
- b. Computational terminology which uses textual corpora and incorporates the applied research in terminological engineering, modelling of data and metadata for processing terminological information and terminology analysis and its relation from the position of formal linguistics: Ahmad (1998), Heid (1999), Bourigault, Jacquemin and L'Homme (1998) and Pearson (1998).
- c. The independent paradigm of Riggs (1984), limited to the social sciences.

After this evaluation he reaches the conclusion that by the criteria of philosophy of science, all these theories (including the traditional one) have a very low theoretical content. Many of these positions, says Budin, start from an eclectic selection of theoretical elements of different fields with a very low level of integration and few original elements, even though they introduce strong axiomatic assumptions and some partial descriptions of terminological facts. He concludes that, although they call themselves theories, they are no more than “explananda”, giving methods of description but “hardly ever of real explanations of certain phenomena” (Budin 2001: 19).

As a result of this research he expresses himself in favour of the collective development of a genuine theory of terminology even though he does not state what type of theory he has in mind; nor does he offer any more hard details about such a joint venture.

On the other hand, when we follow the argumentation of a more strict philosophy of science and the opinion of a number of terminology researchers (e.g. Cabré) we have to come to the conclusion that we only start now to collectively build a real terminology theory. In this case we are still far away from this goal, as the most basic underlying assumptions and axioms will have to be discussed in much more detail and on a much broader basis (Budin 2001: 19).

6. Proposals for an integrated theory

If something has gone amiss in the development of terminology as a discipline it is the fact that the theory has not progressed by means of the normal scientific

procedures, viz. the formulation of hypotheses, their confirmation or refutation, empirical analysis, the search for the most generalisable proposals or suggestions, discussion and evaluation of proposals according to criteria such as simplicity, descriptive capability or psychological adjustment.

I believe that terminology will only advance as a scientific field of study if those of us interested in terminology can explain our ideas and discuss them on a basis of hard data. If we cannot do this, we shall continue putting forward principles which do not correspond to the observable data and trying to impose one viewpoint rather than another instead of choosing from among all opinions the elements and models most suitable for explaining and describing the terminological data which constitute the centre of our discipline: their characteristics and properties, their operation in specialised discourse and how they are acquired. In order to contribute effectively to the construction and development of a theory of terminology, I have, since 1996, been working on a sufficiently broad theoretical conception which may embrace different ideas about terms. To this end I initially used one of the possible acceptations of “theory”; namely theory as an organised assembly of internally coherent statements and principles or conditions which permit the description (or description and explanation) of a set of phenomena and their relations and which is organised around an object of knowledge which constitutes its nucleus. I believe that any proposals of a new theory must first of all explain its starting point and then the viewpoint from which it proposes to analyse the data.

6.1 The assumptions

We start from two main assumptions. The first assumption is that terminology is simultaneously: a set of needs, a set of practises to resolve these needs, and a unified field of knowledge.¹⁷ The second assumption is that the elements of terminology are the terminological units. Let us discuss these assumptions.

Firstly, terminology presupposes a need for all the activities related to the representation and transfer of specialised knowledge such as technical translation, the teaching of languages for specific purposes, technical writing, the teaching of special subjects, documentation, special language engineering, language planning, technical standardisation, etc. We note that all professions dealing with special knowledge need terminology. This is obvious: terms, in their widest sense, are the units which most efficiently manipulate the knowledge of a particular subject.

Secondly, terminology is a set of applications in as far as it allows the development of products specifically intended to satisfy needs. The most

important characteristic of such products is their appropriateness. A terminological application must be oriented towards the solution of specific needs and therefore it must take into account its recipients and the activities they plan to carry out by means of such a specific application.

This leads us to think that, despite of what is usually said about standardised terminological glossaries, it is the circumstances of each situation which determine the type of application (glossary, lexicon, dictionary, software, text, poster, standard, etc. in one or several languages), the information they must contain (terminology, phraseology, definitions, variants, contexts, phonetic or phonological representation, foreign language equivalents, illustrations, etc.), their representation and even their means of dissemination.

Thirdly, terminology is a discipline and as such it is an organised set of basic essentials about an object of knowledge. And a theory of terminology must describe this object and provide a sufficiently broad methodological framework which includes the practises intended for the satisfaction of diverse needs. If we accept the assumption that terminology is a field of knowledge about an object, the next question is what is the central object of terminology.

The second assumption from which we started is that the central object of terminology are terminological units. We then have to ask what are terminological units, where are they found, and how do we recognise them.

The multifaceted terminological units are at one and the same time units of knowledge, units of language and units of communication. Based on this approach, the description of a terminological unit must necessarily cover these three components: a cognitive component, a linguistic component and a socio-communicative component.

But, this triple composition of terminological units does not show them to be different from other units of language such as words or lexical units in general usage. Hence, in order to legitimise terminological units as specific objects of terminology we shall have to show that they are specific and explain this specificity. It is therefore necessary to establish restrictive conditions which differentiate them, on the one hand, from language units of the same structural level, i.e. words, and, on the other hand, from other units which also express specialised knowledge, i.e. specialised morphological, phraseological or sentence units.

The specificity of terminological units in contrast to other units of the same structural level (words) and the same mode of meaning resides in the fact that they fulfil restricted conditions in each of their cognitive, grammatical and pragmatic constituent components.

Following this line of thought, we consider terminological units as sets of conditions which distinguish them from other similar but different units. These conditions derive from three areas:

From the perspective of their cognitive component, they fulfil, among others, the following conditions:

- a. they depend on a thematic context;
- b. they occupy a precise place in a conceptual structure;
- c. their specific meaning is determined by their place in this structure;
- d. this meaning is explicitly fixed;
- e. this meaning is considered as a property of the unit;
- f. they are fixed, recognised and disseminated with the help of the expert community.

From the perspective of their linguistic component, they fulfil, among others, the following conditions:

- a. they are lexical units, either through their lexical origin or a process of lexicalisation;
- b. they can have lexical and syntactic structure;
- c. as lexical structures they exploit all the devices of word formation and the processes of acquiring new units;
- d. formally, they may coincide with units belonging to general discourse;
- e. regarding word class, they occur as nouns, verbs, adjectives or adverbs or nominal, verbal, adjectival or adverbial structures;
- f. they belong to one of the broad semantic categories: entities, events, properties or relations; these categories with their own subcategories do not necessarily exclude each other and should therefore be rather considered as semantic values;
- g. their meaning is discreet within a special subject;
- h. their meaning is extracted from the set of information of a lexical unit;
- i. their syntactic combinability is restricted on the basis of the combinatory principles of all lexical items of a language.

From the perspective of their communicative component, they fulfil, among others, the following conditions:

- a. they occur in specialised discourse;
- b. formally, they adapt to this type of discourse according to their thematic and functional characteristics;

- c. they share specialised discourse with units belonging to other iconic or symbolic systems;
- d. they are acquired through a learning process and hence are handled by specialists in their field;
- e. they are basically denotative (which does not exclude connotations).

6.2 The questions

Once I had explained the basic assumptions and identified the object of our field of knowledge, I formulated a number of questions on this object, from among which, for this paper, I have selected the following:

- What is the central object of knowledge of terminology as a field of study, or, as some want to see it, as a discipline?
- What is the nature of this object?
- Where does this object occur and how do we observe it?
- What aspects of the object do we observe?
- What methods do we use for this observation?
- What is the purpose of our observation?

I shall answer these questions in detail in Section 7. Nevertheless, I shall now deal with two aspects of terminological units: the diversity of conceptions about them and how to deal with them.

6.3 Approaching and accessing to the object

Since the units of terminology are multidimensional, a theory for their description must also have multiple dimensions. The following extract by Kocourek sums up this idea:

Terminology, being a complex phenomenon, it can be approached from various angles and by means of different methods: logical, philosophical, sociological, psychological, statistical, and others, not to speak of specially established ways of treating terminology in individual subject fields. But since terminology is a component of language, an important place among these various approaches is, or could be, occupied by linguistics. In consequence terminological research has been included among the domains of applied linguistics (Kocourek 1981: 217).

But now we can also ask: how can we reconcile the multidimensionality of the object and the subject field with the condition of unity of a field of knowledge of terminology?

In order to answer this question, we dissolve it into two separate ones:

1. Are there different conceptions of the object of knowledge of terminology?
2. If this should be the case, how can we address the object of terminology as a unit while respecting the different conceptions?

6.3.1 *Conceptions of terminology as an object*

The first question must be answered affirmatively. We only have to reexamine the objectives of the traditional theory of terminology in order to note that the central object are not the terminological units, as we maintain, but the concepts and their relations and only then the designations and other signs which express them. To account for this difference of opinion, one speaks of different approaches to terminology and more specifically of two: a semiotic and a linguistic approach. In the semiotic approach the concept is independent and precedes its designation; and, besides, the designation is not necessarily realised by linguistic means.

This position can be justified in two ways. First, because a previously constructed object has been observed, i.e. constructed for its subsequent observation. In this case a unified version of a concept has been “constructed” on the basis of a preestablished consensus resulting from the observation of an object, an entity in real life or a pictorial or linguistic representation (a definition or explanation). Second, because reference is made to the cognitive and pre-linguistic activity. In our case the more likely explanation is the first.

By contrast, for a linguistic conception the object of knowledge are the terminological units conceived as indivisible combinations of form and content. Thus, the content is associated to the form and therefore the units not only designate but they also mean with all the cognitive consequences of their meaning. These units, defined as combinations of linguistic, viz. structural, categorial, semantic and syntactic conditions appear in specialised discourse.

6.3.2 *About the approach to terminological units*

Can these two conceptions of the terminological object be reconciled? Or, expressed differently, how can we formulate a theory in which the different strands of terminology are combined?

My contribution to this question consists of the formulation of a model which I have called *the theory of doors*.¹⁸ This model attempts to represent the plural, but not simultaneous, access to the object; and in such a way that, whether starting from the concept or the term or the situations, the central object, the terminological unit, is directly addressed.

At the core of the knowledge field of terminology we, therefore, find the terminological unit seen as a polyhedron with three viewpoints: the cognitive (the concept), the linguistic (the term) and the communicative (the situation). The basis for this proposal is its starting point, namely to put the most complex element of the terminological field, the terminological unit, at the heart of the question. Why do I consider it the most complex element? Because it exhibits the same multidimensionality as the discipline of terminology itself: each one is a conceptual and formal set used under certain conditions. So, if we accept the multidimensional nature of terminological units, we speak of three dimensions which have to be kept permanently before our eyes as the point of departure. Each one of the three dimensions, while being inseparable in the terminological unit, permits a direct access to the object.

The conceptual strand of a unit (the concept and its relations) may be the door to the description and explanation of terminological units, without thereby rejecting their multidimensionality. Equally, its linguistic strand is another door to description. Logically, keeping in mind that, even though we analyse them as linguistic units, they do not lose their cognitive and social nature. Finally, if we approach terminology via the door of communication we are faced with different communicative situations in which linguistic units share the expressive space with those of other systems of communication.

What conditions must be respected when it comes to selecting one or another door of entry to describe and explain terminological units? They are essentially two: for the description of data, we must adopt a theory suitable for its door of entry, and we must ensure that this theory does not deny the multidimensionality of the object.¹⁹

Faced with the discovery that, despite its internal consistency, the traditional theory was unsatisfactory for the description of the real data in all their complexity, I have, over the past few years, thought about how a multidimensional theory of terminology could be made broad enough to encompass all the different existing theoretical positions. And so, from my background in linguistics, I was determined to delineate this broad theoretical framework and within it to develop an approach to the description of terminology on the basis of a theory of natural language which describes and explains terminological units.

7. The formulation of the propositions

Considering the assumptions and conditions concerning the units we have just

presented, I shall now answer the questions formulated at the end of Section 6.2 in order to explain the foundation of a linguistically-based theory of terminology which can describe and explain terminological units against the broad theoretical background I have outlined.

Preliminary question: What is the entry point to this theoretical approach?

As already explained, we start from a broad and integrating theoretical basis from which we can deal with the terminological units from different positions and conceptions as long as the multidimensionality of the units is respected. To be specific we approach the units through the door of language and thus we intend to account for them from the viewpoint of a theory of natural language.

First question: Inside which framework do we have to study terminological units, the object of the theory of terminology?

Terminological units have to be studied in the framework of specialised communication, which is characterised by such external conditions as sender, recipient and medium of communication, by conditions of information treatment, such as a precise categorisation determined externally by the conceptual structure, fixation and validated by the expert community, by specific and contextualised treatment of the topic, and, finally, by conditions which restrict the function and objectives of this communication.

Under these conditions, specialised discourse — besides its preference for certain text types and a heavily controlled knowledge structure — is distinguished by a systematic presentation of information and by two types of linguistic features. Firstly lexical ones, namely, the use of units exclusive to the topic or units which, despite their wider occurrence, have a limited meaning in this context; and secondly, textual ones which consist of texts having a precise content and a more concise and systematic expression than general texts because of their structure of knowledge which is heavily controlled by the meaning of its concepts. The textual features are achieved by an appropriate selection of grammatical devices.²⁰

This broad communicative framework harbours a number of communicative scenarios with the sole condition that they transfer specialised knowledge. They cover, for instance, communication among specialists, between specialists and semi-specialists or technicians, between specialists and learners, as well as popularisation of science and technology.²¹

Second question: Where do we observe the terminological units?

If we place terminology in the environment of specialised communication and know that this communication is realised in different modalities, the observation of units can only occur in discourse produced in such situations. Oral or written discourse by specialists addressed directly, or through some form of mediation, to specific groups of recipients constitutes the material in which we can observe terminological units. Such a diversified corpus will be a representative sample of specialised discourse in all its forms.

Third question: How do we recognise terminological units?

We begin with the assumption that specialised discourse presents an organised structure of knowledge. This structure could be represented as a conceptual map formed by nodes of knowledge, which can be represented by different types of units of expression, and by relations between these nodes.

The units expressing specialised knowledge can be of different types with respect to their morphological and syntactic structure, their word class, and their semantics; representing knowledge nodes of a structure, they have a special meaning in this structure.²² Among all these units we identify the terminological units²³ because of their correspondence to lexical units which occupy a node in the conceptual structure of a subject field and because semantically they are the minimal autonomous units of this structure. Beside the lexical units there are other types of units of specialised knowledge, namely specialised morphological, phraseological and sentence units.

To sum up, we recognise the terminological units from their meaning in a subject field, their internal structure and their lexical meaning.

Fourth question: How do we perceive these units inside a linguistic theory?

In a theory of natural language the terminological units are not perceived as separate from the words which constitute a speaker's lexical space but as special meanings of the lexical units at a speaker's command. In fact, if we analyse the phonological, morphological and syntactic characteristics of the terminological units, we do not find properties which might distinguish them from other lexical units; we know, however, that they are different with respect to their semantic and pragmatic dimensions. Hence we postulate that a lexical unit is by itself neither terminological nor general but that it is general by default and

acquires special or terminological meaning when this is activated by the pragmatic characteristics of the discourse. This meaning is not a predefined and ready-made bundle of information, but a specific selection of semantic features according to the conditions of every speech act. This selection would justify that inside a theory of language we would refer to terminological units as “units of special meaning”. Any lexical unit would thus have the potential of being a terminological unit.

We can summarize these ideas by saying that the condition of ‘terminological unit’ applied to a lexical unit does not exist prior to its usage in a specific communicative context. This viewpoint would permit us to account for the semantic intersection between different acceptations of the same lexical unit according to its usage. It would also explain how lexical units circulate between general and specialised discourse and how terminological units circulate between different domains.

Fifth question: What theory of language do we need in order to respect the second precondition, namely the multidimensionality of the object?

The conception of language of this linguistic theory must consider both competence and performance and besides, keep in mind the multidimensionality of all languages, separate from their political or social status. This multidimensionality presupposes accepting that languages cannot be reduced to grammars, i.e. to structured systems which are at the basis of every linguistics manifestation. Besides being grammatical, languages are systems of identity, social organization and markers of political and economic situations.

Thus, only a cognitive and functional linguistic theory, i.e. a theory which, besides grammar, includes both semantics and pragmatics, is capable of describing the specificity of terminological units and, at the same time, their common elements with general lexical units. Besides, pragmatics is essential for explaining the activation of the terminological meaning of lexical units.

Sixth question: What is the purpose of our observations?

We start from the assumption that a theory is an attempt to describe and explain a phenomenon and, consequently, that it is not directed toward any practical application. We therefore do not share the idea expressed by Budin (2001:15, cited above) that alternative theories to the traditional one are explained solely by their different practical orientation. Nevertheless, every

discipline or field of study, any area of knowledge centred on one object, endeavours to describe and explain this object. This means that the theoretical aspect of such a study is purely concerned with the advancement of knowledge. The applied aspect of such a discipline, on the other hand, develops according to a methodology, based on the principles of the theory, which permits the projection of these principles in practical activities aimed at solving problems and developing resources for the needs of representing and communicating this special knowledge.

Seventh question: How are these units acquired?

The natural acquisition of the terminological units of a subject field by a learner always occurs in a situation of knowledge transmission about the subject. Discourse is therefore the natural environment of terminological units and it is through discourse that special knowledge and its units of expression are acquired.

If we accept this premise we also have to accept that the acquisition of special knowledge differs from the acquisition of general linguistic knowledge, which linguistic theory postulates as being an innate property. But this difference is only apparent. By postulating that terminological units are units of language because they are explained as meanings of lexical units, we only claim that these special meanings are acquired through systematic learning in a professional environment. Only this knowledge which a learner acquires, not as a general language user, but as learner in a particular environment seems to stay outside the conditions for acquiring general language.

This hypothesis, that terminological units are only special meanings of lexical units, does not presuppose that in some cases both the expression and the content of a unit has not to be learnt completely, but it opens the door for a more generalising explanation of the acquisition of terminological units as it takes as a starting point general and special knowledge of lexical units already acquired. Therefore, it also presupposes that the acquisition of terminological units always relies on a knowledge of the principles, conditions and restrictions governing the general lexicon, and that, only in some of the cases it relies on previous knowledge of a lexical unit already present in the lexicon. Acquiring a terminological unit would therefore always be a dynamic reuse of the information already present in the learner's lexicon, and in some cases the partial selection of existing information, the widening of this information or its reorganization for the active and dynamic construction of what would constitute the meaning of the terminological unit.²⁴

How can we reconcile a theory of innate language ability with a theory of acquisition? We can do this by assuming that terminological units are lexical units and that the acquisition of lexical units occurs from innate principles present in the neuronal system of mankind and that these principles configure the common basis of knowledge of all speakers, independent of the language they speak. We have to assume further that this information is materialised grammatically differently in each language in accordance with stimuli arising from the context.

The information particularly associated with lexical units builds up in the mind of the speaker in the form of principles valid for all lexical units. When required by a professional learning situation, the speaker re-uses the already acquired information to learn new information. With all this baggage he then “constructs” the meaning of the new units or of the already existing units in his lexicon which acquire new meanings in subject-specific context.

I believe this hypothesis to be sufficiently generalisable to explain a learner’s acquisition of new contents associated to existing forms as well as the incorporation of totally new units which, after all, share the general properties of the lexicon. This hypothesis is also compatible with the hypothesis expressed in discourse analysis about the construction of meaning.

Finally, a theory of language which would describe and explain terminological units should clarify how new special knowledge is produced and is synthesised in a terminological unit. But this is a subject dealt with by discourse analysis in which specialised discourse is defined as a set of negotiated interactions, which can be recognised by means of markers consisting of lexical or morphological units, graphic elements and/or the placing of information. These interactions lead to the fixation of meaning in the full awareness of the linguistic, thematic and situational context of each designation. This fixation of special meanings, as we have seen above, is one of the conditions of special knowledge. It is consolidated through the compilation of glossaries which fix the meaning of a unit by means of a definition, an explanation or picture, or, alternatively, through discursive methods in the form of metalinguistic discourse, reformulations etc.

Conclusions

The construction of a theory which adequately describes and explains terminology presupposes that terminology in general, and hence its units, is multidimensional and that accounting for it requires respecting this multi-

dimensionality. But since it is impossible to approach the many facets of a multidimensional unit all at once, my approach has been one of developing separate means of accessing this unit.

The selection of one access point presupposes a theory specific to this “door” or entry which is sufficiently broad to respect the multidimensionality of the object. In this approach terminology becomes the centre of a multidimensional space with various access points.

The only condition for joining this approach is to declare the access point explicitly and coherently and to document in detail the descriptive or explanatory process to be pursued in order to reach the centre of this space. And, it seems self-evident that, if besides describing an object we want to explain it, we need a theory about terminological units.

In an interview about his theory of minimalism, given to Adriana Belletti and Luigi Rizzi in 2002, Noam Chomsky is asked the following question:

...let us take the Pisa lectures as a point of departure [of the minimalist theory]. You have often characterised the approach that emerged from your Pisa seminars, 20 years ago, as a major change of direction in the history of our field. How would you characterise this shift today?

And he answers:

Well, I don't think it was clear at once, but in retrospect there was a period, of maybe 20 years preceding that, in which there had been an attempt to come to terms with a kind of paradox that emerged as soon as the first efforts were made to study the structure of language very seriously, with more or less rigorous rules..... Already in the nineteen fifties it was clear that there was a problem and there were many efforts to deal with it;.... What happened in Pisa is that somehow all this work came together for the first time in the seminars, and a method arose for sort of cutting the Gordian knot completely: namely eliminate rules and eliminate constructions altogether. (Chomsky 2000: 1)

And a little later, speaking about the achievements of this period, he adds:

Note that it is not really a theory, it's an approach, a framework that accelerated the search for redundancies that should be eliminated and provided a sort of a new platform from which to proceed, with much greater success, in fact. (Chomsky 2000: 3).

Chomsky's words stress that the development of a global theory is a cooperative endeavour over a period of time during which discussions and scientific encounters take place on the basis of an initially agreed line of argument. In

order to arrive at a satisfactory theory — which will always be provisional until a new and more satisfactory one emerges — during this time there will necessarily be progress and failures, positive formulations and rejections on the basis of the formulation of hypotheses and the confrontation of hypotheses with data. Within this framework of a theory a partial model of representations may be offered of particular processes or phenomena. But in all this movement it is essential that there should be agreement about the delimitation of the central core of the theory. The roads to the description of this object may vary and for each descriptive path different partial theories may be offered, as long as they are aimed at an improved characterisation and explanation of the same object.

I am aware that in terminology we are still in the collective stage of theory construction. Within the general framework of specialised communication this theory must integrate basic justifications, principles and conditions which adequately describe terminological units, their characteristics and properties, the relations between their intrinsic components, their functions, the relations they establish among themselves and with other units of specialised knowledge and the processes they follow. There is no doubt that from the contributions to this cooperative effort a more appropriate theoretical model will emerge.

Notes

1. Myking (2001) is particularly relevant in this respect.
2. To prove this point one has only to look at the names of those regularly invited to participate as main speakers or lecturers to the events organised by Infoterm, or note the absence of the names of specialists from outside the official circle in the publications of the central group.
3. My book of 1992, translated into Spanish in 1993, and published in English in 1999, is an example of this contradiction between social practice and a-social principles.
4. For Wüster the consolidation of a discipline seems to have been manifested through the specific publications on the subject and by the events, programmes and courses organised around it; this policy is still evident in the publications of the successor groups.
5. This control was carried out from Vienna through “international” organisations who currently constitute the Global Group (<http://linux.infoterm.org>) like Infoterm, IITE, TermNet and TKE, events like the IITF and Infoterm summer schools, the congresses of TKE, TAMA, etc. and publications like *Terminology Science & Research* and the series of Infoterm.
6. The result of this position is that for many years it appeared that innovations in terminology could only come about in applications and the related technologies. The impact of the

terminological explosion in Quebec on the international scene led to methodologies suitable for language planning. Incidentally, Quebec was never recognised by Vienna as a “School”. The needs for terminological methods oriented towards language planning were, however, recognised eventually in the case of the Scandinavian countries and more recently the Baltic countries. Note particularly the volume published in 1992 in the IITF series, which assembles the papers read at the *International Conference on Terminology Science and Terminology Planning* (Riga 1992) edited by Kewley-Draskau and Picht.

7. G. Budin does not mention names.

8. At present, the countries of the Romance languages seem particularly active in this direction.

9. It is interesting to note that 2001 was the first year in which the traditional centres analysed the views of outsiders. The concern with other voices starts the moment their strength and diversity threatens the traditionally dominant position.

10. I refer here to the “Socioterminology” of the Rouen group whose criticism of the Vienna group Myking attributes to their dissatisfaction with the rigid linguistic policy in France.

11. It is regrettable that Budin does not specify the concrete contributions that Wüster’s followers, even critical ones, have made to the original paradigm.

12. We note that the issue has shifted to the identification and explanation of the common needs of professionals.

13. We might possibly agree with Laurén and Picht’s (1993) conclusions if the analysed positions are those traditionally cited. I do not believe that the same conclusion could be reached when more recent critical positions were to be analysed.

14. Unfortunately I cannot read the original of this article, written in German. I therefore rely on Budin’s summary of 2001. Because of its importance for the evolution of terminological theories it would be useful to have an English translation of this article.

15. In the case of translations on topics whose conception differs in the respective cultures, the translation must previously specify its purpose: it is a question of either bringing the reality of the original to the new reader or to transplant the reality of the original into a new culture; what represents terminological equivalence differs between these two scenarios.

16. The term *theoria* comes from the Greek *theoreo* meaning “to look” and its derivative *theoreos*, a name given to the ambassadors sent by the cities to observe an event without participating in it. Hence “theory”, the ambassadors’ activity of observing, takes its meaning from contemplating both in the physical and mental sense.

17. I do not consider the expressions *field of knowledge* and *discipline* as synonymous, even though here they will be used as equivalents. A field of knowledge is a discipline to the extent that it is institutionally and socially acknowledged through a university degree qualification or a branch of research or kind of activities carried out in a research centre. A field of knowledge is a semantically much wider term: it is an intellectual endeavour concerned with an object of study or research.

18. This theory is suitably represented by the image of a house; let us assume a house with several entrance doors. We can enter any one of its rooms through a different door, but the

choice of the door conditions the way to the inside of the house. The internal arrangement of rooms is not altered, what does change is the way one chooses to get there.

19. I have been studying this problem over the last 15 years. In 1989, I noted inconsistencies between the principles of the only theory of terminology existing at that time and the reality of the empirical data; these observations were expressed in a number of articles which indicated the need for a new theory. In 1996, I formulated for the first time some of the principles of such a new theory which I outlined in 2 articles, one of a basic nature, the first version of which was published in Buenos Aires; the second, dealing with the methodological implications, was presented at the 7th Ibero-American Symposium of Terminology, which, beside appearing in the proceedings of this event, was also published in *Revista Argentina de Lingüística*. The various articles which represent the steps in the direction of a new theory are assembled in Cabré (1999b).

20. For more information about the features of precision, concision and systematicity in specialised texts see Cabré (1998, 2002a)

21. Dissemination of scientific or technical information requires previous detailed knowledge in the sense that the sender controls the precise meaning of terms.

22. For more information see Cabré (2002b).

23. Recognition in the context of a theory should not be confused with recognition of the units in their traditional or computational terminological applications.

24. The analysis and assumptions about acquisition cannot be dealt with here.

References

- Ahmad, K. 1998. "Special Texts and their Quirks". In *TAMA Proceedings*. 141–157. Vienna: TermNet.
- Antia, B. E. 2000. *Terminology and Language Planning. An Alternative framework of practice and discourse*. Amsterdam/Philadelphia: John Benjamins.
- Antia, B. E. 2001. "Metadiscourse in Terminology: thesis, antithesis, synthesis". *IITF Journal* 12(1–2): 65–84.
- Béjoint, H. and Ph. Thoiron (eds.). 2000. *Le sens en terminologie*. Travaux du CRTT, Lyon : Presses universitaires de Lyon.
- Boulanger, J.-C. 1995. "Présentation: Images et parcours de la socioterminologie". *Meta* 40(2): 194–205.
- Bourigault, D., Jacquemin, C. and M.-C. L'Homme (eds.). 1998. *Computerm 98. First Workshop on Computational Terminology. Proceedings*. Université de Montréal: Montréal.
- Budin, G. 2001. "A critical evaluation of the state-of-the-art of terminology theory". *IITF Journal* 12 (1–2): 7–23.
- Cabré, M. T. 1992. *La terminologia. La teoria, els mètodes, les aplicacions*. Barcelona : Ed. Empúries.

- Cabré, M.T. 1998. "El discurs especialitzat o la variació funcional determinada per la temàtica". *Caplletra. Revista Internacional de Filologia* 25: 173–194.
- Cabré, M.T. 1999a. *Terminology. Theory, Methods and Applications*. (edited by Juan C. Sager and translated by Anne DeCesaris). Amsterdam/Philadelphia: John Benjamins
- Cabré, M.T. 1999b. *La terminología: representación y comunicación. Elementos para una teoría de base comunicativa y otros artículos*. Barcelona : Institut Universitari de Lingüística Aplicada.
- Cabré, M.T. (ed.). 1999c *Terminología y modelos culturales*, Barcelona: Institut Universitari de Lingüística Aplicada.
- Cabré, M.T. 2002a. "Textos especializados y unidades de conocimiento", In García Palacios, J. and M.T. Fuentes (eds). *Texto, terminología y traducción*. 15–36. Salamanca: Ediciones Almar.
- Cabré, M.T. 2002b. "Análisis textual y terminología, factores de activación de la competencia cognitiva en la traducción", In Alcina Caudet, A. and S. Gamero Pérez (eds.). *La traducción científico-técnica y la terminología en la sociedad de la información*, 87–107, Castelló de la Plana: Universitat Jaume I.
- Cabré, M.T. and J. Felíu (eds.). 2001a. *Terminología y cognición: II Simposio Internacional de Verano de Terminología (13–16 de julio 1999)*. Barcelona: Institut Universitari de Lingüística Aplicada.
- Cabré, M.T. and J. Felíu (eds.). 2001b. *La terminología científico-técnica: reconocimiento, análisis y extracción de información formal y semántica*. Barcelona: Institut Universitari de Lingüística Aplicada.
- Cahiers de Linguistique Sociale* 18. 1991. Rouen : Les Presses de l'Université de Rouen.
- Chomsky, N. 2000. *An Interview on Minimalism* (Noam Chomsky interviewed by A. Belletti and L. Rizzi, Nov. 8–9, 1999), Siena: University of Siena.
- Gaudin, F. 1993. *Pour une socioterminologie: Des problèmes pratiques aux pratiques institutionnelles*. Rouen : Publications de l'Université de Rouen.
- Felber, H. (ed.). 1979. *Theory of Terminology and Terminological Lexicography*. Vienna/New York: Springer.
- Heid, U. 1999. "Extracting terminologically relevant collocations from German technical texts". In *Terminology and Knowledge Engineering Proceedings*. 242–255. Innsbruck, Austria.
- Kageura, K. 1995. "Toward the theoretical study of terms — A sketch from the linguistic viewpoint". *Terminology* 2(2): 239–258.
- Kageura, K. 1998/1999. "Theories 'of' terminology: A quest for a framework for the study of term formation". *Terminology* 5(1): 21–40.
- Kageura, K. 2002. *The Dynamics of Terminology: A descriptive theory of term formation and terminological growth*. Amsterdam/Philadelphia: John Benjamins.
- Kewley-Draskau, J. and H. Picht (eds.). 1992. *International Conference on Terminology Science and Terminology Planning*. Riga.
- Kocourek, R. 1981. "Prerequisites for an applicable linguistic theory of terminology". In *Actes du 5e Congrès de l'Association internationale de linguistique appliquée*. 216–228. Québec: Presses de l'Université Laval.
- Kuhn, T.S. 1962. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.
- Lara, F. 1998/1999. "'Concepts' and term hierarchy". *Terminology* 5(1): 59–76.

- Lara, F. 1999. "Término y cultura : hacia una teoría del término". In Cabré. T. (ed.). *Terminología y modelos culturales*. 39–60. Barcelona: Institut Universitari de Lingüística Aplicada.
- Laurén, C., J. Myking and H. Picht. 1998. *Terminologie unter der Lupe*. Vienna: TermNet.
- Laurén, C. and H. Picht. 1993. "Vergleich der terminologischen Schulen". In Laurén, C. and H. Picht (eds.). *Ausgewählte Texte zur Terminologie*. 493–539. Vienna: TermNet.
- Myking, J. 2001. "Against Precriptivism? The 'Sociocritical' Challenge to Terminology". *IITF Journal* 12(1–2): 49–64.
- Pearson, J. 1998. *Terms in Context*. Amsterdam/Philadelphia: John Benjamins.
- Popper, K. R. 1973. *La miséria del historicismo*, Madrid: Alianza.
- Rey, A. 1979. *La terminologie: noms et notions*. Paris: Presses universitaires de France.
- Rey, A. 1995. *Essays in Terminology* (translated by Juan C. Sager). Amsterdam/Philadelphia: John Benjamins.
- Rey, A. 1998/1999. "Terminology between the experience of reality and the command of signs". *Terminology* 5(1): 121–134.
- Riggs, F. 1984. *The CONTA Conference Proceedings of the Conference on Conceptual and Terminological Analysis in the Social Sciences*. Frankfurt: Indeks Verlag.
- Sager, J. C. 1990. *A Practical Course in Terminology Processing*. Amsterdam/Philadelphia: John Benjamins.
- Sager, J. C., D. Dungworth and P. F. McDonald. 1980. *English Special Languages. Principles and practice in science and technology*, Wiesbaden: Oscar Brandstetter.
- Slodzian, M. 1993. "La V. G. T. T. et la conception scientifique du monde". *Le langage et l'homme* XXVIII(4): 223–232.
- Slodzian, M. 1995. "Comment revisiter la doctrine terminologique aujourd'hui?". *La banque des mots* 7: 11–18.
- Temmerman, R. 1998/1999. "Why traditional terminology impedes a realistic description of categories and terms in the life sciences". *Terminology* 5(1): 77–92.
- Temmerman, R. 2000. *Towards New Ways of Terminological Description. The Sociocognitive approach*, Amsterdam/Philadelphia: John Benjamins.
- Terminologie et Intelligence Artificielle (TIA) Actes* (1995). Villetaneuse, France.
- Terminologie et Intelligence Artificielle (TIA) Actes* (1997). Toulouse, France.
- Terminologie et Intelligence Artificielle (TIA) Actes* (1999). Nantes, France.
- Terminologie et Intelligence Artificielle (TIA) Actes* (2001). Nancy, France.
- Terminologies nouvelles* (2000). "Terminologie et diversité culturelle" 21.
- Terminology*. 1998/1999. *International Journal of Theoretical and Applied Issues in Specialized Communication*, 5(1).
- Terminology Science and Research*. 2001. 12–13(1–2).
- Toft, B. 1998. "Terminologi og leksikografi: nye synsvinkler på fagene". *LexicoNordica* 5: 91–105.
- Toft, B. 2001. "Review of 'Towards New Ways of Terminology Description; the sociocognitive approach' by Rita Temmerman 2000". *Terminology* 7(1): 125–128.
- Toulmin, S. E. 1953. *The Philosophy of Science*. London: Hutchinson.
- Wüster, E. 1968. *The Machine Tool. An interlingual dictionary of basic concepts*, London: Technical Press.

- Wüster, E. 1974. "Die allgemeine Terminologielehre — Ein Grenzgebiet zwischen Sprachwissenschaft, Logik, Ontologie, Informatik und den Sachwissenschaften". *Linguistics* 119: 61–106.
- Wüster, E. 1979. *Einführung in die allgemeine Terminologielehre und terminologische Lexikographie*. Vienna/New York: Springer.
- Zawada, B.E. and P. Swanepoel. 1994. "On the empirical inadequacy of terminological concept theories: A case for prototype theory". *Terminology* 1(2): 253–275.

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