On Quid Iuris of the Theoretical Status of the Study of Terminology; and A Sketch of A Possible Framework for the Theoretical Study of Term Formation and Terminological Growth (or When Quality Meets Quantity)

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1 Introduction

In this paper I will first address the quid iuris concerning the theoretical status of the study of terminology\(^1\), i.e. on what conditions a study of ‘terminology’ can obtain, in its own right, an independent status as ‘the (theoretical) study of terminology’. In other words, the problem is concerned with how the study of terminology with its own independent status by right becomes possible as distinct from studies of relevant but general linguistic phenomena that happen to use terms as data. It cannot be emphasised too much that the problem here is concerned with the quid iuris of the study of terminology and not with the quid facti. As far as I know, little work has addressed this aspect, despite the fact that much important progress has recently been made in relation to the quid facti of terminological phenomena\(^2\).

The quid iuris of the study of terminology is crucially related to the epistemological conditions under which the concept ‘terminology’ is consolidated. What is essential in order for the study of terminology to obtain an independent theoretical status in its own right, therefore, is to anchor the overall structure of a theory to the epistemological conditions under which the very concept ‘terminology’ is consolidated. So from the point of view of concrete studies of terminology, the quid iuris is not concerned with an individual choice of possible theoretical, descriptive or analytical means but with the overall form and structure of description.

Once the basic requirements related to the quid iuris of terminology are clarified, it is necessary to outline the corresponding theoretical framework within which the quid facti of terminology can be addressed. This is the second topic of this paper. To address this with respect to the study of terminology in general is beyond my ability, so I take up the study of term formation and terminological growth\(^3\) as a concrete field of study.

2 What Are We Asking by “What is Terminology?”?

2.1 Quid Iuris vs. Quid Facti

Let me first elaborate on the difference between the question “what are terms/terminology?” interpreted as quid facti and the same question interpreted as quid iuris. When the question is

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\(^1\) Throughout the paper, ‘term’ is used to refer to a technical term of a domain (de Bessé, Nkwenti-Azech & Sager, 1997). The term ‘terminology’ should be understood in the same manner.

\(^2\) Incidentally, with respect to factual observations concerning terms, it seems to me that most of the conceivable aspects are pointed out or at least suggested in Sager, Dungworth & McDonald (1980)

\(^3\) The reason why ‘term formation’ and ‘terminological growth’ are combined here will become clear through the paper.
concerned with the former aspect, investigations to answer the question start after terms are recognised as empirically observable objects, although the aspects of terms that are examined differ from study to study (e.g. Condamines, 1995; Desmet & Boutayeb, 1994; Felber, 1984; Miyajima, 1981; Picht & Draskau, 1985; Riggs, 1989; Sager, 1990; Shelov, 1982). In other words, it is implicitly or explicitly presupposed in this type of work that the concept ‘terminology’ is already consolidated.

Of course, it is logically required that the concept ‘terminology’ be already consolidated before we start talking about the question of “what is terminology”. Therefore, when the question “what is terminology” is addressed as quid iuris, it is also necessary to begin with the same starting point, i.e. where the concept ‘terminology’ is already consolidated. In this case, however, what should be done is to examine and clarify the conditions for the possibility of talking about ‘terminology’, starting from the everyday definition of the concept of ‘terminology’. So the quid iuris of terminology is concerned with the conditions for the existence of the very concept ‘terminology’, while the quid facti is concerned with terms as empirical objects.

The examination of terminology from the point of view of quid iuris is therefore not an internal part of the study of terminology in its ordinary sense, as it is more closely related to the logical, epistemological, and/or social conditions and backgrounds within which the very concept ‘terminology’ is consolidated. Nevertheless it is crucially important for the study of terminology to reflect in some way the conditions required by this aspect, if the study of ‘terminology’ is to achieve an independent status as ‘the study of terminology’ de jure.

2.2 Conditions for the Possibility of ‘Terminology’

By conditions for the possibility of terminology, I mean logical conditions, not empirical (historical or social) conditions, although in many cases they correspond to each other as a matter of fact. Here the basic conditions for the possibility of terminology are naively and forcibly listed, assuming the basic definition of the word ‘term’ which is thought to be shared by the majority of researchers of terminology as well as ordinary people.

Firstly, from the very definition of ‘term’, the existence of the concept ‘domain’ is logically required before the concept ‘terminology’ can be consolidated. As the concept ‘domain’ is something extra-linguistic (even though one of the central evidences of the existence of a domain is some coherent and concrete linguistic products), the very existence of the concept ‘terminology’ is understood to be supported by some extra-linguistic factors. If the distinction of langue and parole is adopted, therefore, it is understood that the concept ‘terminology’ is consolidated at the level of parole. Thus a proper theory of terminology, if it is to obtain an independent status de jure, has to be linked up with the concept ‘domain’ or (some of) its representations.

This also implies that the concept ‘terminology’ precedes the concept ‘term’, because it is terminology, not individual terms, that corresponds more closely to the concept ‘domain’. For a lexical unit to be recognised as a term, a terminological space in which the term is located should exist in advance. So we have to admit clearly that, when treating terms as empirical objects, we always presuppose the existence of the concept ‘terminology’. Now, however, as it was argued that terminology belongs to the sphere of parole, which by definition implies an actual and concrete linguistic existence, the concept ‘terminology’ should have its corresponding
empirical materialisations, i.e. terminology as a set of concrete terms. At the empirical level, the precedence of the concept ‘terminology’ corresponds to the fact that the recognition of terms always goes with the recognition of terminology. So even when there is only one term, it is already recognised as a terminology, i.e. a terminology consisting only of one term.

Thirdly and from a different point of view, by talking of ‘terminology’ it is understood that there is a terminological sphere, which may be linguistically a sub-part of the lexical sphere, as distinct from the textual sphere. Without this viewpoint, different tokens or occurrences of (the same or different) lexical items in texts cannot be consolidated into a genus category ‘terminology’. This requirement is introduced here as a logical consequence, but recent psycholinguistic studies show some interesting phenomena which strongly support the psychological reality of the lexical sphere (Baayen, Lieber, & Schreuder, 1997; Schreuder & Baayen, 1997).

Having said this, let me now turn to a more technical discussion of the possibility of the study of term formation and terminological growth with an independent status de jure.

3 From Term Formation to Terminological Growth

Let me try to outline here the relation between the conditions required by the *quid iuris* of terminology to the study of terminology as *quid facti*. Let me assume here, for the sake of discussion, that it is the conceptual level that most clearly characterises the nature of terms⁴. A typical description of the formation patterns of complex terms, at the level of concepts, is as follows⁵:

1. Introduces conceptual categories, which can be attributed to constituent elements of terms as well as to terms.
2. Introduces classes of intra-term relations which can be used to describe the relationships that constituent elements take within complex terms.
3. Describes the restrictions or tendencies of the combinability of constituent elements in terms of conceptual categories and classes of intra-term relations, and possibly describes patterns that derive conceptual categories of terms from the categories of their constituent elements and intra-term relations.

What is essentially wrong in this framework is that, from this type of description, it is not clear how the overall description of term formation patterns is anchored to something that guarantees the resultant description as the description of term formation in its own right, and not as the description of formation patterns of some complex lexical elements that happen to be based on the analysis of technical terms as data.

Take the worst exemplar case, in which only the conceptual restrictions of formation patterns are described, i.e. the resultant description consists of a list of such statements as: constituent

⁴Note that ‘the nature of terms’ is concerned with *quid facti*.

⁵Here I adopt the traditional view concerning terms and concepts, i.e. terms are systematic with respect to concepts they represent and they are formed systematically. As a matter of fact, this is not totally true (Temmerman, 1997; Zawada & Swanepeol, 1994). However, what I am concerned with here is *quid iuris*, which is not concerned with the empirical aspects but with the theoretical right of the study of ‘terminology’ to be ‘the study of terminology’. This is relevant to any terminological study irrespective of the ‘theoretical’ position concerning the individual descriptive or analytical means used.
elements that represent such and such type of concept may be combined as a nucleus with
elements representing such and such type of concept as a determinant. Even if the description is
obtained as a result of the analysis of a set of terms of a domain, in no way can it be essentially
claimed that the study is about terms of that domain in itself; it is logically impossible to claim
that this study is about term formation and not about general word formation that happens to
be based on terms as data.

Of course, if some clearly domain-dependent phenomena are observed in the description,
it can be noticed that to some extent the description reflects the nature of term formation as
distinct from the nature of word formation in general. However, this is related to quid facti and
not to quid iuris, and does not guarantee the independent status of the study of terminology.
Quite the contrary, this implies that, in this case, terminology specific phenomena can only be
manifested through a comparison with more general phenomena, which means that this sort of
study makes sense as a part of general linguistic studies concerning terms as linguistic
elements.⁴

A better descriptive framework is to explicitly introduce the quantitative tendencies of forma-
tion patterns, on the basis of some (preferably) representative sample or corpus of terminology
(e.g. Pugh, 1984; Kageura, 1993)⁷. In this case, quantitative tendencies within a domain reflect,
to a certain extent logically, the nature of terms in themselves. However, the status of this
type of study crucially depends on the types of conceptual categories and intra-term relations
introduced in the study. If they are introduced on the fly, then the basic categories of obser-
vation with respect to which quantitative tendencies are counted, i.e. concepts and intra-term
relations, are not guaranteed to be inherently relevant to the terminology of a domain. Note
incidentally that, by introducing the quantitative aspects, the description of term formation now
is interpreted within the totality of terminology to which individual formation patterns belong,
i.e. terminological growth.

The problem of this case is that individual conceptual categories are not guaranteed to be
linked to a domain, because the better representation of a domain within the conceptual sphere
is a conceptual system in its totality and not individual categories nor a set of disconnected
conceptual categories; a domain has a structure. So what is necessary is to anchor individual
conceptual categories to an integrated conceptual system that in turn reflects the conceptual
structure of a domain the terminology of which is being investigated (Kageura, 1994). This
even more strongly implies a shift from the individualised observation of term formation to the
overall investigation of terminological growth of a given domain. Note that making individual
conceptual categories finer and more strongly domain-dependent does not help to solve the
quid iuris concerning the theoretical status of the study, though it may well help improve the
granularity of description as a matter of fact.

Individual conceptual categories on the fly are essentially applicable to any domain, while
the overall conceptual system defined as a reflection of a domain cannot be logically used with

⁴I do not intend to claim that carrying out the study of terms within a broader framework of lexicology is not
sufficient. Many interesting studies of terminology have in fact been carried out within a broader linguistic point
of view, e.g. Miyajima (1981) and Sager, Dungworth & McDonald (1980). In this sense, the whole discussion
here is deliberately self-restrictive.

⁷The word 'representative' here is used in a technical sense of statistics, and does not imply anything
prescriptive.
different domains, except when the domain is embedded in other domains. This is related to *quid iuris*, so it constitutes a minimum requirement for a study of terminology to be an independent study of terminology in itself. However, this does not guarantee a rigid characterisation of terminological phenomena as *quid facti*. In this sense, if one fails to introduce a proper conceptual system, it can be easily misused and interpreted as the conceptual system of other (unrelated) domains. Because of this, it is necessary to supplement the discussion concerning *quid iuris* so far with a further discussion concerning *quid facti*.

Summing up the discussion so far, I have argued that it is the overall structure of the theoretical framework which should be examined with respect to a *quid iuris* of terminology, while the individual choice of the theoretical or descriptive devices are more concerned with the *quid facti*. It was argued that, with respect to term formation, the study naturally and logically becomes the study of terminological growth if an independent status is to be given to the study of term formation. What has been argued to be necessary here are the minimum requirements in order for the study of ‘term formation’ to be, *de jure*, a ‘study of term formation’.

4 A Sketch of a Descriptive Asymptote

That a theoretical framework satisfies the minimum requirements does not mean that the actual descriptions within the framework are good from the point of view of *quid facti*. In this section, therefore, I shift the topic from *quid iuris* to *quid facti*, and would like to outline a possible descriptive asymptote of term formation and terminological growth which, satisfying the minimum conditions required from the point of view of *quid iuris*, is expected to be useful for actually describing the characteristics of the terminological phenomenon with high granularity. Here again, I focus on complex term formation, assuming that complex term formation is systematic.

4.1 Qualitative Description of Term Formation

Assuming that it is the conceptual structure of a domain that explains the regularity of the formation of terms of the domain, term formation patterns of a terminology of a domain can be described, as a first approximation, by means of a three-step framework, i.e.:

1. Introduce a *conceptual system* and conceptual categories, which can be attributed to constituent elements of terms as well as to terms.
2. Introduce classes of intra-term relations.
3. Describe the combinability of constituent elements in terms of conceptual categories and intra-term relations, and patterns that derive conceptual categories of terms from the combinations of constituent elements, within the conceptual system introduced in (1).

If the conceptual categories are introduced in such a way that all the categories are properly related and located within the overall conceptual structure that is assumed to represent the

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*I claimed above that this is not totally correct, but here I would like to emphasise that this is not totally wrong either. What I am concerned with is to what extent I can describe the characteristics of term formation/terminological growth under these assumptions.*
domain, the description at least satisfies the minimum requirements concerning the *quid iuris* of terminology.

As a matter of fact, however, the description of formation patterns of terms on the basis of conceptual categories has an essential dilemma. On the one hand, if a general description of term formation is intended and room for the expectability of new terms is to be maintained, then conceptual categories should be kept general to some extent. In that case, the resultant description may very well expect many non-term constructions as acceptable\(^9\).

On the other hand, if we try to establish a description which gives rigid necessary and sufficient conditions to characterise formation of terms and only of terms, then the logical consequence is that the description goes back to a mere listing of existing terms, because the highest granularity of description can be obtained by regarding each concept represented by each term and each constituent element as separate (which of course is true), and individual instances of intra-term relations as separate. In other words, in order to give necessary and sufficient conditions for describing the term formation patterns of a domain, no generalisation from “individual linguistic items as direct representations of separate concepts” should be applied. This makes the study of terms a natural history rather than a scientific investigation. For the study of term formation, this is trivial\(^10\).

Because the study of term formation should almost by definition have the ability to expect future ‘would be’ terms, the level of description should be to some extent general, even though the description then becomes too coarse. As a scientific study, the technical question that arises now is: is there any techno-theoretical means that can be used to restrict the range of ‘would be’ terms further? I would like to answer this question positively. It is here that the quantitative approach in its technical sense helps.

### 4.2 Quantitative Description of Terminological Growth

The basic idea of applying a quantitative approach to complement the qualitative description of term formation is as follows:

1. **Regard individual constituent elements as representations of corresponding individual concepts**\(^11\). If we indicate concepts with \(<>\), and lexical representations with italics, then we can define two types of basically one-to-one functions, i.e. \(<\text{information}> = c(\text{information})\) and \(\text{information} = r(<\text{information}>)\), where \(c\) maps a lexical representation to a concept and \(r\) maps a concept to a lexical representation.

2. **Observing distributional patterns of individual concepts represented by individual lexical items (constituent elements) within broader conceptual categories** introduced in the qualitative description of term formation, it becomes technically possible to estimate the

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\(^9\) At this point the problem in fact goes back to *quid iuris* again, because it is related to the very definition of the concept ‘terminology’ which, linguistically speaking, implies that terms are elements of *parole*. I will not pursue this topic here as, at least for now, this seems to be an ultimate *logical* limitation of the study of terminology which cannot be overcome by any means.

\(^10\) This does not mean that lexicographic or terminographic practice is trivial.

\(^11\) Polysemy causes a problem with this assumption, but this can be technically solved by careful linguistic preparation.
probability that existing constituent elements (and thus corresponding concepts) will be repeated and that new constituent elements will appear\textsuperscript{12}.

The soundness of this approach as a part of a theoretical study of term formation and terminological growth is guaranteed only when the following three conditions are satisfied, i.e. (i) mapping between individual lexical items and individual concepts is properly made, (ii) analysis of distributions of individual concepts as represented by individual lexical items is carried out within theoretically sound conceptual categories which are in turn anchored to the overall conceptual system of a domain, and (iii) the underlying assumptions of the mathematical model do not violate the actual terminological phenomena at stake (Kageura (1998b) has in fact shown that this is maintained in the case of terminology). On condition that these requirements are satisfied, a quantitative approach can be properly situated in the theoretical study of term formation and terminological growth.

5 Conclusions

In this paper, I first discussed the \textit{quid iuris} concerning the study of terminology, and then, focusing on the study of term formation and terminological growth, outlined a possible descriptive framework which could satisfy the minimum conditions required for the study of terminology to be essentially independent, while at the same time achieving a due granularity of descriptions.

Finally, I would like to emphasise once again that the epistemological framework within which the very concept ‘terminology’ is consolidated should be examined if one wishes to establish an independent domain of the study of terminology, which is related to the \textit{quid iuris} concerning terminology, and that this aspect should be clearly distinguished from the examination of the theoretical devices concerning the \textit{quid facti} of terminology. The former inevitably influences the overall framework of the study that addresses the latter, which is the main subject of the scientific study of terminology, but the individual choice of the theoretical devices used in tackling the \textit{quid facti} are not relevant to the former.

I have already published some preliminary results of the work that has been carried out within the framework outlined in section 4. I am planning to carry on further work on term formation and terminological growth within this framework, the results of which will hopefully be published in due course.

Bibliography


\textsuperscript{12}For technical mathematical details see Good & Toulmin (1957) and Chitashvili & Baayen (1993), and for preliminary application of the framework see Kageura (1998a) and Kageura, Santana-R, & Yemilet-S (1999)
54–135.