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# Term Formation – Is There a State of the Art?

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## ABSTRACT

The article discusses theoretical problems of term formation with respect to the tradition as well as to recent developments of terminology theory. Terminology theory has been challenged, discussed and revised during the last three decades. It is asked whether the subfield of term formation has experienced the same sort of theoretical challenging as have other subfields of terminology and whether a clear state of the art of term formation can be identified. Existing models of term formation are discussed and the main positions of some modern approaches are outlined and discussed with respect to the consequences these approaches might have for theoretical and practical terminology work.

The article argues that any attempt at developing a theory of term formation must take into account primary as well as secondary term formation. Functional aspects of terms are interesting to practitioners and hence, relevant to theory. The article agrees that the question of a specific theory of term formation perhaps still is open, but suggests that a more modest approach to ‘theorising’ term formation in all its aspects should be encouraged.

**KEYWORDS:** term formation, neology, terminology theory, language planning, term motivation

## ANOTACIJA

Straipsnyje aptariamos teorinės terminų darybos problemos atsižvelgiant į tradiciją ir naujausią terminologijos teorijos raidą. Per paskutiniuosius tris dešimtmečius terminologijos teorija buvo ne kartą ginčijama, aptariama ir peržiūrima. Straipsnyje klausiama, ar terminų darybos sritis tapo tokių pačių teorinių diskusijų objektu, kaip ir kitos terminologijos mokslo sritys, ir ar galima nustatyti aiškią pažangą terminų darybos srityje. Aptariami esami terminų darybos modeliai, išdėstomi ir aptariami pagrindiniai šiuolaikinių teorinių prieigų principai atsižvelgiant į pasekmes, kurias šios prieigos gali turėti teoriniam ir praktiniam terminologiniam darbui.

Straipsnyje teigiama, kad bet koks bandymas sukurti terminų darybos teoriją turi atsižvelgti į pirminę ir antrinę terminų darybą. Praktikus domina funkciniai terminų aspektai, taigi jie yra svarbūs ir teorijai. Straipsnyje pritariama nuomonei, kad galbūt konkrečios terminų darybos teorijos klausimas yra vis dar atviras ir siūloma skatinti kuklesnį požiūrį į terminų darybos „teorizavimą“ visais jos aspektais.

**ESMINIAI ŽODŽIAI:** terminų daryba, neologija, terminologijos teorija, kalbos planavimas, terminų motyvacija

## 1. INTRODUCTION

Terminology is at the core of any language development. The question of its theoretical underpinning has been dealt with within language planning as well as in terminology. The concept of the “term” is covered by any major textbook and manual of terminology. In their well-known textbook, Heribert Picht and Jennifer Draskau (Picht, Draskau 1985: 35) pointed to the issue of term formation as one of the important subfields of terminology that was still in need of studying. Apparently, however, the status of term formation has not attracted the same degree of attention from theory-minded terminologists during the last decades as concept theory and other major subfields of terminology.

When modern terminology started to flourish in the 1970s and 80s a number of scientific inspirations, theories and methodologies were brought into co-existence to form a new multidisciplinary field of research whose main purpose was to enhance specialist communication across linguistic barriers. There is no doubt that the theoretical principles established by Eugen Wüster have been universally recognised as the basic tenets of terminology, encompassing concept theory, definitions and term formation, at the same time as drawing a clear line of demarcation between terminology and lexicography. This multi-disciplinary field is often referred to as the “General Theory of Terminology” or simply GTT.

In their well-known article from 1993 Christer Laurén and H. Picht (Laurén, Picht 1993) pointed to the coexistence of different “schools” within terminology. In the important Canadian (Quebec) approach the concept of terminological neology was introduced by Guy Rondeau (“néonymie”, cf. Rondeau 1984). The analysis provided by Ch. Laurén and H. Picht (Laurén, Picht 1993: 527) concluded that although the principles of the GTT were accepted, the terminology in Quebec placed a larger emphasis on linguistics.

This tendency can be generalised: There have been, according to John Humbley, two main approaches to terminology development and studies:

On peut diviser les approches théoriques en deux grandes tendances: une première qui place la réflexion terminologique dans l'interdisciplinarité, et une seconde qui réclame un ancrage exclusif dans la linguistique [One can group the theoretical approaches in two broad tendencies: one that situates the terminological reflexion in interdisciplinarity, and a second demanding an exclusive anchoring in linguistics] (Humbley 2018a: 46f.)

From the 1990s the Wüsterian tenets have been challenged, modified or even replaced by a number of alternative approaches. Structuralist concept theory has been replaced by cognitive approaches and the Wüsterian demarcation of 'term' vs 'concept' has been questioned. A major line of discussion has been terminology's relationship to linguistics – is it a linguistic discipline or not? – as well as that of "prescriptivism": it has been argued that the main purpose of terminology should be empirical, not normative, and that the prescriptive 'bias' should be overcome.

The two main approaches outlined above agree that terms are the main type of concept representation. Terms are linguistic entities, and, consequently, any approach to the subfield of term formation must deal with linguistic aspects in one way or another. Terminology is, consequently, linguistic in nature irrespective of its main inspiration. This fact leads further to the question of whether the subfield of term formation has experienced the same sort of theoretical challenge and whether a clear state of the art of term formation can be identified after the last two decades of theoretical discussion. This is the point of departure of this article.

## 2. THE PROBLEM OF STATE OF THE ART

The question of state of the art has most recently been discussed by John Humbley in a major monography and a shorter article (Humbley 2018a, Humbley 2018b). After reviewing a vast range of studies as well as term formation models, he asks:

<...> the number of terms created rises exponentially each year, creating a practical problem of incorporating these new forms in terminological repertoires, term banks in particular. *The problem can also be placed on the theoretical level: how can all these new terms be accounted for?* (Humbley 2018b: 437f., *emph. JM*)

And he continues:

There are <...> a number of very basic questions concerning specialised neology <...> which are inherent to any reflection on the nature of terminology: are new terms formed consciously or not, or rather which categories of terms are formed consciously and which are not; are the methods of term formation transferable from one subject field to another, or from one language to another, are terms formed any differently from ordinary lexical items. i.e. *is a specific theory of term formation needed with its own particular criteria, rather than one of simply word formation?* (Humbley 2018b: 437f., *emph. JM*)

It is perhaps a trivial and undisputed fact that term formation differs across domains, languages and traditions and that terms are created both consciously and spontaneously. Precise descriptions of patterns and differences across domains must be described and explained by linguistic as well as by contextual factors.

Further, we might ask to which extent theoretical clarifications on the issue of term formation is really a necessary condition for the sound performance of terminology work. The majority of elaborated languages have received extensive descriptions of their morphology and lexical inventory as well as more or less official guidelines for what may count as ‘good’ or ‘well-formed’ new words. Some sort of applied practice is always possible without too much theorising, and this is one explanation given by J. Humbley (Humbley 2018b: 437) of the lack of theoretical work on term formation. To this it could be replied that any field of applied practice needs a principled discussion of its tenets and methods, and hence, should be subject to theoretical reflection.

The above cited statements from J. Humbley’s smaller article (Humbley 2018b) must be completed by also referring to his major survey of terminological neology (Humbley 2018a) which provides a vast empirical evidence from French as well as other languages and evaluating the achievements of a variety of theoretical approaches within terminology. The present article is largely indebted to this work.

### 3. DEFINING ‘TERM FORMATION’

The concept of “term formation” deserves some comments because it conveys slightly different meanings:

- TF1: Term formation may be defined as the process of producing new LSP lexemes (or rather: designations) by lexicological mecha-

nisms; this definition corresponds to the concept of “neology” as it is normally understood;

- TF2: Term formation may also be conceived of as a subfield of terminology, preoccupied with both the creative aspect (term formation in the strict sense) and the normative and functional aspects that ensures the efficiency of specialised communication (cf. Laurén, Myking, Picht 1998: 212).

Evidently, the “linguistic” approaches as outlined above are closely linked to TF1 whereas TF2 obviously entails a multidisciplinary approach. By allowing for two different definitions we increase the difficulty of finding coherent criteria of analysis. The concept of ‘term formation’ in the sense of TF2 is no longer identical to that of “neology”, whereas TF1 is precisely a definition of neology in the sense of lexical growth within special domains. The advantage of dealing with two definitions lies, however, in the possibility of a comprehensive and meaningful discourse about term formation in its entirety, including descriptive as well as normative aspects, primary as well as secondary term formation, deliberate term creation, etc.

#### 4. THE ENTITY OF TERM IN TERMINOLOGY VS LEXICOGRAPHY

One particular problem caused by the definition of TF1 above is the status of the binary approach to the linguistic sign as we find in the writings of Ferdinand de Saussure as well as in the Wüsterian approach. The concept of “term” is dealt with slightly differently in lexicography / lexicology and in the Wüsterian approach to terminology: in lexicography the association of expression and content is seen as arbitrary, yet solidary, and lexicography deals, consequently, with lexemes. Broadly expressed, lexicography is semasiological whereas terminology is onomasiological. The aim of lexicography is the description of language and, consequently, any analysis departs from the expression level, the “words” as they appear in spoken or written language.

Terminology, on the other hand, is concerned with the relationship between the three main elements *object*, *concept* and *representation*, as expressed by ISO 704:

This International Standard <...> describes the links between *objects*, *concepts*, and their *terminological representations*. (ISO 704 2002: vi emph. JM)

The objects are categorised into classes corresponding to units of knowledge called concepts, to which linguistic representations are assigned. The approach to the Saussurean arbitrariness of the linguistic sign is in the typical Wüsterian approach more radical than in lexicography, because terms and concepts are assumed to have some sort of existence independent of each other, cf. e.g.:

Die Wiener Schule tritt für eine klare Trennung zwischen Begriff und Benennung ein; sie spricht vom “Reich der Begriffe” und dem “Reich der Benennungen”. [The Vienna school advocates a clear division between concept and term; it speaks of “the realm of concepts” and the “realm of terms”.] (Laurén, Picht 1993: 530).

This position has been much discussed within the ranks of terminology; it is not without nuances and has been strongly refuted by recent cognitivist and sociolinguistic approaches (cf. section 6, below). For the purpose of this discussion the definition of TF1 has been made sufficiently “lexicographical” to include lexicography as well as different approaches to terminology. The element of “term” may be seen as a simple label within a binary sign, or as a lexeme transferred from general language to serve as the designation of a scientific concept. In both cases the concept representations are linguistic elements formed by the repertoire of mechanisms provided by the natural language. Hence: We speak of term formation whether the outcome be lexemes or mere linguistic labels.

Furthermore, terms (designations) are viewed in terminology as the verbal representations of scientific concepts in contrast to other types of designations such as proper names or symbols; they are made of words, and term formations can be divided in two, according to the number of lexical roots:

*A term is a designation consisting of one or more words representing a general concept in a special language in a specific subject field. A simple term contains only one root, while a term containing two or more roots is called a complex term (ISO 704 2002: 34)*

The notion of complexity also creates several problems:

- Single-root metaphors: are they really “simple”? The relationship between literal and transferred sense may be analysed as some sort of complexity;
- Complex terms, especially compounds vs phrases: are such differences arbitrary or typology-dependent, where do we draw the line of demarcation between words vs phraseology?

Such problems are to be dealt with not least in corpus-based terminology, but also as part of a coherent theory of term formation. Due to their linguistic nature, terms also draw the attention from lexicography, lexicology and word-formation theory in addition to terminology. In terminology as well as in lexicography the entities in question are said to belong to a special subject field (domain), and both disciplines take an interest in the procedures by which the units / representations are formed. Irrespective of major approach, the study of terms constitutes a shared area of interest between terminology and lexicology.

To sum up this discussion, it may be pointed out that corpus-based terminology has for a long time considered the relationship of terms vs words as a matter of gradience, expressed by categories such as “termness” or “termhood”, but we have to leave out this discussion here.

## 5. APPROACHES TO TERM FORMATION

The number of comprehensive works on term formation in the major European languages is considerable. Describing the inventory and principles of term formation was important to E. Wüster in his major works (Wüster 1966, 1985). Drozd & Seibicke (1973) described principles of term formation with an emphasis on German. Their work comprised theory as well as normative aspects, also emphasising theoretical aspects. The term formation of English was described in Sager & al. (1980) and later by Sager (1990). The first theoretical model of terminological neology was introduced by G. Rondeau (Rondeau 1984) and later, Rostislav Kocourek provided a major contribution in his description of French special language (Kocourek 1991). As regards the theoretical foundations, broadly speaking, Drozd & Seibicke as well as R. Kocourek worked within the Prague-structuralist approach, dealing with major theoretical topics such as motivation. In the works of Sager there is a pragmatic inspiration and also an introduction of important theoretical dichotomies such as primary vs secondary term formation. The most recent among the comprehensive works on term formation is Humbley’s work on French terminological neology (Humbley 2018a). This work is remarkable in its analytical survey of results as well as theoretical discussions within terminology during the last decades. By taking into account new domains of terminology as well as findings from Non-European languages this book must be considered the most updated work on term formation, and it has provided the point of departure for much of the discussion that follows.

Based on the mentioned works, within the broad field of LSP as it might be described until the turn of the Millennium, several models and types of models of term formation were proposed, based on various traditions of linguistics. Broadly speaking it is possible to outline the following typology of term formation models:

- a) Models of neology: primary vs secondary term formation (Rondeau 1984, Sager 1990);
- b) Incremental models: terms are made by (structural) lexical formation applied to special purposes (classical works such as Drozd & Seibicke 1973, Sager 1990, Kocourek 1991; Kageura 2002, cf. Humbley 2018a, Humbley 2018b);
- c) Motivation-based integrative models (Kocourek 1991; incremental + borrowing + semantic + non-motivation);
- d) Functionalist (discourse-based) models: terms are made in discourse by grammatical metaphor (Halliday's systemic functional linguistics, cf. Humbley 2018a, Humbley 2018b);
- e) Cognitive models, i.e. metaphor: term formation is not just naming, but an act of understanding (Temmerman 2000).

According to the two major approaches to terminology the groups *a–c* are well known within the multidisciplinary approach (GTT, Wüster), whereas *d* and *e* are clearly associated to modern linguistic theories – the systemic functional or Halliday tradition has only recently been introduced to terminology by the cited works of J. Humbley (Humbley 2018a, Humbley 2018b). Grouping K. Kageura (Kageura 2002) together with “classical” works requires a broad conception of the category of “incremental”, as will be explained below.

The five categories represent broad tendencies although the borders are not always clear-cut. The G. Rondeau inspiration of incorporating borrowing and semantic transfer seems to have been generally accepted, although most often expressed by J. C. Sager's dichotomy (in English) of “primary” vs “secondary” term formation. The latter takes place when a term for a given concept is replaced either by revision within the same language or by transfer to another language, whereas primary term formation takes place when a given concept is named for the first time (originally Sager 1990; referred by Humbley, e.g. 2018 a: 91f., Humbley 2018b: 442f.).

Incremental aspects are integrated in any analysis of term formation, even in semantic procedures and transfer by borrowing. Analysing the



morpho-semantic structure of terms is essential to exploring the term-forming potential of a given language. In this way, description helps to provide an answer to the question of “how” term formation operates, although more is required to answer the neglected question of “why particular forms are chosen rather than others. The question “how” receives an answer, but not the question “why” Humbley 2018b: 442).

However, incremental properties do not always constitute the main *raison d’être* of a given term. To arrive at an answer to the question of “why” a given procedure has been applied, it is fruitful to consider the different motivations underlying a term: which motivation comes first, which is subordinated, etc. A metaphor as well as a borrowed term may have a morphological structure, although this structure may not be the salient feature of the term. Such insights are part and parcel of the classical studies of term formation (Drozd & Seibicke, Kocourek), but they need to be kept in mind not least within normative activities of secondary term formation, as well as when working within the new approaches.

As already argued, the distinction of primary and secondary term formation seems to have gained general acceptance as the relevant model of accounting for new terms (cf. also ISO 704 2002: “neoterms”) on the highest level of generalisation, but there is no agreement in terminology of what should be emphasised as a foundation for building theory – primary or secondary term formation or both. The priority is partly decided by the researcher’s own theoretical position.

It is further an important question to which extent and in what respect the distinction of primary vs secondary is dependent on and converges with the dichotomy of descriptive vs prescriptive. That secondary term formation takes place in standardising committees (within or across languages) and in terminological language planning activities is a trivial fact, hence the conclusion is made that secondary term formation to a great extent is deliberate and conscious and connects to prescriptive activities. The question of conscious term creation within primary term formation is slightly more complex and will not be discussed in detail (cf. Humbley 2018a: 96f. for discussion).

There are a lot of sets of prescriptive and quite often contradicting principles for deliberate term creation within language planning, standardisation and terminology (mainly, but not restricted to, secondary). Detailed discussions of these sets must be let aside here. The basic questions to be answered in term creation may in fact be reduced to three:

How do we use the linguistic material to make terms?  
How do we make terms meaningful?  
How do we make them manageable?

The first question clearly addresses term formation in the strict sense (TF1), but also TF2. The two following questions are crucial to TF2, but they may also be important to TF1: Whereas the first question concerns description, the two second questions touch upon explanations – “terms X and Y have been created due to their meaningfulness and manageability”. The second question relates to the question of motivation within term formation. The third to the awkward consequences of motivation, how to reduce the amount of linguistic material to the functional equilibrium. This very soon leads to the question of how to integrate pragmatic and contextual aspects to a theory of term formation. There is a long tradition of normative guidelines developed to tackle the practical considerations derived from these three principles (e.g. ISO 704 2002).

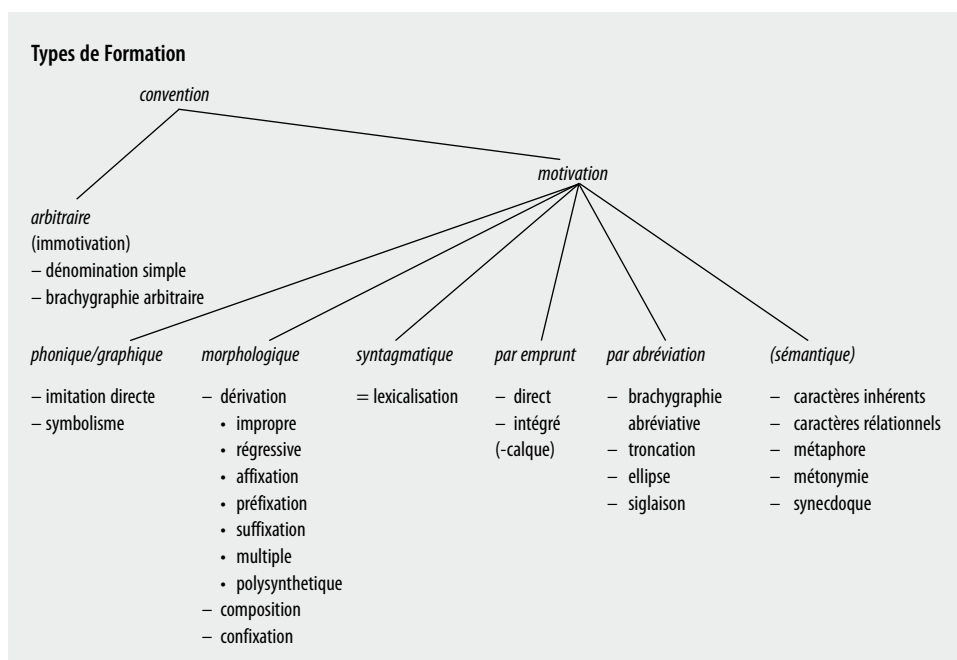
The concept of motivation is in fact central to the issue of term formation in a number of ways (cf. discussion in Myking 2009), notably:

- 1) Motivation as opposed to arbitrariness – a key semiotic parameter distinguishing traditional vs socio-cognitive terminology (Temmermann, cf. below). Metaphors are motivated structures whereas traditional terminology considers the concept and the term as arbitrarily linked entities;
- 2) Motivation as the strongest and most frequent basis for term formation, directly subordinated to convention; cf. R. Kocourek, below;
- 3) Motivation in the sense of “transparency”, the capability of the term to convey meaning; the classical view.

Motivation in sense 3 is closely linked to secondary term formation, although not exclusively. Motivation in sense 1 is not exclusively linked to primary term formation although it is certainly an important driving force. Motivation in senses 1 and 2 is compatible to the Saussurean concept of ‘relative motivation’ and as such, it may include K. Kageura’s view of term formation, as he himself explicitly states (cf. below). And motivation in sense 3 is a gradual phenomenon whose merits can only be fully assessed by accepting a conceptual view of terminology – in other words, the transparency of a given term can only be analysed with respect to the concept it is representing. Arbitrariness, on the other hand, proves its relevance by the fact that a given term may always be replaced by one or several other representations, as in the case of secondary term formation.

The concept of “motivation” in recent cognitive theory is considered a basic tenet of primary term formation. In the ‘classical’ terminology, on the other hand, “arbitrariness” in the semiotic sense is seen as a basic tenet which provides the independent and separate analysis of concept and term. In R. Kocourek’s well-known motivation-based model of term formation, motivation as well as arbitrariness is directly subordinated to convention, indicating formal (or lack of) properties of terms:

Fig. 1. Term formation according to R. Kocourek (cf. Kocourek 1991: 175)



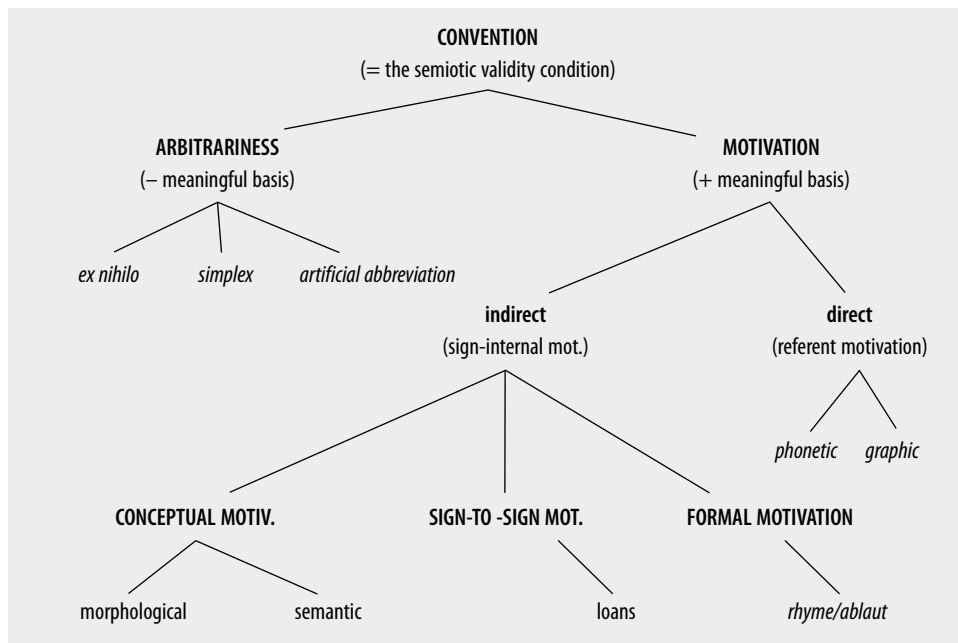
So, “motivated terms” in this model still have an arbitrary relationship to the concepts they represent, following F. de Saussure. The usage of these meta-dichotomies certainly often has caused some degree of confusion.

No model is able to give the entire truth. It is, nevertheless, my opinion that R. Kocourek’s classical model (Kocourek 1991: 175) remains among the models most able to grasp the multi-faceted reality by integrating the semiotic and taxonomic dimensions in a model based on motivation and that may be applied to primary as well as secondary term formation.

One significant merit of R. Kocourek’s model is that it provides an answer to the question “why”: motivation is subordinated to the principle

of *convention*, but from there, motivation is the main driving force in making terms meaningful. This could be further illustrated by adding the criterion of ‘semiotic validity’ (cf. Myking 2008: 344) and sub-dividing into primary motivation types:

Fig. 2. Primary motivation types (Myking 2008: 344)



- Conceptual motivation: subsuming morphological and semantic types into classical “transparency” (within signs);
- “Sign-to-sign” or interlinguistic motivation: loans of various types (across languages);
- Formal motivation: interplay of linguistic elements in their own right (between expressions).

Just one famous example of deliberate term creation illustrates the interaction of these motivations: Norwegian *kvark* and Lithuanian *kvarkas* are interlinguistically motivated by the source term *quark*, which in its turn may be analysed as a primary formation by either arbitrariness / ex nihilo or indirect / semantic vs direct / phonic motivation, depending on whether one analyses “*quark*” as a literary borrowing or even – possibly, depending on interpretation – an animal’s sound:

Quark, any member of a group of elementary subatomic particles that interact by means of the strong force and are believed to be among the fundamental constituents of matter. <<https://www.britannica.com/science/quark>> (Norwegian: *kvark*, Lithuanian: *kvarkas*)

Such analyses very easily run the risk of being reduced to terminological folk linguistics, but they illustrate the psychological dimension of motivation. The “packaging” of motivations and the lack of morphosemantic structure, but still, the presence of semantic structure, certainly must have played a part in ensuring the success of a term.

The motivational model as elaborated by R. Kocourek is integrative by recognising the fact that the aim of meaningfulness can be obtained by other mechanisms than just structural / incremental. The iconicity of the model indicates that there is a statistic dominance of motivation vs arbitrariness; in doing so, the model establishes a link to other strands of theory (cf. below). And the model allows for comparisons between primary and secondary term formation, e.g. metaphors or loans in the former replaced by compounds in the latter.

## 6. TERM FORMATION WITHIN REVISION AND NEW APPROACHES

As pointed out by many scholars, the period 1990 and 2010 witnessed a vivid interest in the revision of Terminology Theory. The classical Wüsterian principles were questioned and criticised and new theoretical approaches were introduced. To a great extent these new approaches were inspired by developments within general linguistics – notably the replacement of structuralism by cognitivism, while terminology became more semasiological (cf. assessment in Cabré 2003). Notably the following approaches could be listed:

- F. Gaudin 1993: socioterminology; empirical study of terms in their social contexts;
- R. Temmerman 2000: the socio-cognitive approach; metaphor is an act of understanding; terminology departs from terms, not concepts;
- K. Kageura 2002: term formation dynamics: terms are empirical objects and functional variants of words; existence on the parole level;
- M. T. Cabré 2003: the door model, different approaches according to research intentions and analytical needs.

Without adding too much nuances the common features of these new approaches include:

Against onomasiology:

- Contesting the precedence of concepts over terms;
- Terms, not concepts, form the point of departure of terminological analysis;
- Term compilation should be corpus-based.

Against arbitrariness:

- Terms are motivated structures (metaphor, morphology);
- Terms and concepts do not exist independently of each other.

Against the monosemy principle:

- Variation, polysemy, diachronic change and synonymy are to be recognised as facts of language and worth studying.

Against prescriptivism:

- Terminology should be considered a part of linguistics, and consequently,
- the aim and scope of terminology should be empirical and descriptive.

Of these approaches R. Temmerman (Temmerman 2000) and K. Kageura (Kageura 2002) have the largest implications for the topic we are discussing. The “anti-standardisation” attitude is first and foremost expressed by R. Temmerman:

- The outcome [of motivating terminology by language planning, JM] is that the scientific study of terminology is confounded with the pragmatic activity of standardisation. (Temmerman 2000: 19)

R. Temmerman is followed by K. Kageura, who seems to draw a sharp line of demarcation between “a theory of terms” and the broader field of terminology – which in its turn also may include some sort of theory:

- Standardisation is of little relevance to the theoretical study of terminology. The standardisation of terms is by its very nature prescriptive and cannot be part of what we currently understand by “theory”. The process of standardising terms can theoretically be studied as a(n external) factor to terminological phenomena, probably as a kind of terminological socio-politics, but *there is no room in any theory of terms to incorporate this sort of study*. (Kageura 2002: 19, emphasis JM)

R. Temmerman and K. Kageura are outlining two quite distinct and not overlapping approaches to term formation. Some essential points and differences serving my line of argumentation can be summarised in the following way:

TEMMERMAN 2000	KAGEURA 2002
Term formation is a cognitive process	Terms are functional variants of words
Primary term formation has been neglected	Terms are made of previous terms by combining elements; most terms are complex
Metaphor should be emphasised on the basis of primary term formation	Term formation should be studied on the basis of a complete domain

In practical work there is ample evidence of corpus-based approaches in the service of language planning purposes (e.g. Kristiansen, Gjesdal 2018). It seems, nevertheless, that the essential problem caused by the new approaches is precisely that prescription in the form of language planning or standardisation has no place in a theory of terms. This attitude is deeply troubling, as so much of terminology’s “raison d’être” is linked to such activities. In particular, the functional aspects of term formation should be part and parcel of a complete and all-embracing theory of term formation, and it is difficult to talk about the functional aspects without touching upon the prescriptive aspects. Departing from the functional aspects of terms, there is but short distance to implementation studies and socioterminology.

It is important to bear in mind that these new approaches to terminology theory do not exclusively address term formation, but are intended as “work programs” and reconceptualisations of terminology theory and research in a broader sense. The status of terms is, however, essential to these new approaches. It is therefore necessary to take into account their consequences for research in term formation – which phenomena are considered worthy of attention or not.

The works of R. Temmerman and K. Kageura emphasise that terms are motivated structures, although R. Temmerman emphasises metaphor whereas K. Kageura describes terms as products of morphosemantic motivation, i.e. primarily of compounding. The semiotic status of motivation has been a cause of confusion within terminology, as it can be interpreted in (at least) two ways: as the relationship between sign and concept within the binary sign models of F. de Saussure as well as E. Wüster, or

as a means of conveying conceptual content by means of manipulating elements of expression. These two dimensions are not incompatible (cf. Laurén, Myking, Picht, Sigurður 2008: 186f.). By emphasising motivation there is a large degree of continuity with previous work, cf. e.g. R. Kocourek's typology of motivations, above.

In short: It does not seem productive to exclude questions of prescription and standardisation from the theoretical study of term formation if the aim of this study is to provide an answer to the question of “why” (Humbley 2018b, above). Forms of terms do not choose themselves, and term choices are to a large extent connected to users (term creators and receivers) working within prescriptive settings. The same applies to motivation, which is not only a term-internal (sign-internal) property: Forms of motivation must also be assessed with respect to users and needs.

## 7. THE “NO FIXED BOUNDARIES” APPROACH

The theoretical questions discussed above raised some interest in the years following 2000, amongst others at the IITF colloquium in 2001, “Terminology at the crossroads” (TSR 2002) and in a book written by Ch. Laurén, H. Picht, Johan Myking and Jónsson (Laurén, Myking, Picht, Jónsson 2008), introducing the “No Fixed Boundaries” approach. Two of the theses from the latter publication read as follows (Laurén, Myking, Picht, Jónsson 2008: 45ff., 68ff.):

- There are no fixed boundaries between specialised communication and other forms of communication.
- There are, consequently, no fixed boundaries between terms and vocabulary and phraseology in general.

And, further, pleading that language management is a legitimate activity:

- Both language usage and language system are subject to management (op. cit., 140ff.)

To these theses we might add a fourth:

- There are no fixed boundaries between descriptive and prescriptive implications of one and the same principle.

Prescriptive measures mirror to some extent empirical facts, and vs. The principle of motivation is one striking example: used as a basic principle of term formation, cf. R. Kocourek 1991 (above), it is intended as a descriptive and explanatory principle. It does not map, however, the



prescriptive principle of motivation in the sense of “transparency”, in German: “Durchsichtigkeit”. It is probably correct that morphosemantic motivation is the most frequent and most salient way of forming transparent terms, but terms motivated otherwise also deserve to be assigned importance within terminology, cf. the example *quark*, above.

One striking example of this “mirroring” is the “analogue principle” in secondary term formation, as formulated by K. Valeontis and E. Mantzari:

According to the analogue rule, “when forming a term in a target language in order to name a new concept that has been **primarily** named in the source language, the **namer’s first choice** should be to apply a term-formation mechanism analogous to the term-formation mechanism used for the **source language** term”. (Valeontis, Mantzari 2006)

Interestingly, ISO 704 also indicates a “counter-analogy” principle:

Even though borrowing from other languages is an accepted form of term formation, native-language expressions should be given preference over direct loans. (ISO 704 2002: 41)

Conflicting prescriptive goals are no news in language management. More important is, however, the fact that the analogue principle has a descriptive counterpart in the spontaneous formation of loan translations or other types of analogously motivated terms.

The formation, dominance or failure of terms can probably to a large extent be explained by cognitive mechanisms, also in those cases where neither a metaphor nor a complex term prevails. Accounting for such mechanisms is surely a legitimate task for term formation in the TF2 conception of term formation.

One particular instance of secondary term formation could illustrate this point. There is a lot of textbook and anecdotal evidence that secondary term formation in languages such as German, Scandinavian or Icelandic results in morphologically transparent and, as such, “normalized” and non-analogous target terms. In the Norwegian case of oil terminology such principles have been elaborated. Much of the discussion on language quality and “good” term formation centred around some few doublets and triplets of words (Andersen, Myking 2018: 542):

<i>kelly</i>	<i>drivoror</i> “drive + pipe”	<i>kelly</i>
<i>rathole</i>	<i>drivororshylse</i> “drive + pipe + case”	<i>rottehull</i>
<i>mousehole</i>	<i>rorkoplingshylse</i> “pipe + coupling + case”	<i>musehull</i>

The right column illustrates a minimal Norwegian adaptation formally or semantically (mixed motivations) i.e. subtypes of interlinguistic motivation, whereas the mid column contains “official” terms, i.e. terms that are in harmony with the quality criteria based on morphological transparency in the form of compounds. Further evidence can be found in other languages, such as the Icelandic equivalents for Danish *biograf* “cinema”:

*biograf*                      *kvikmyndahús* (“fast + picture + house”)  
    *bíó*

Based on these examples the following probable outcomes of secondary term formation may be formulated, and they have also to some extent been validated by analysis of larger corpora (cf. Myking 2008: 13ff.):

- Normalisation: terms adapt to the frequent and unmarked general patterns of the target language;
- De-metaphorisation (as a consequence of normalisation): at least with English as the source language and language of primary term formation vs some sort of synthetic target language and language of secondary term formation.

Target terms then group into two clusters, the features of which are:

Cluster 1: metaphorical, analogous, descriptive (*kelly*, *musehull*, *rottehull*; *bíó*)

Cluster 2: morphological, native, prescriptive (*driavor*, *-shylse*, *rørkoplingshylse*; *kvikmyndahús*)

If the target terminology is in fact really characterised by a higher degree of morphological motivation followed by excessive length – a popular yet still not fully corroborated hypothesis – this might be explained by a cognitive unbalance due to an asymmetrical communication situation. Then we could establish

Symmetrical communication (sender–receiver) > analogy principle > short/opaque terms

Asymmetrical communication (sender–receiver) > native principle > longish/transparent terms

In this way we arrive at explaining functional properties of terms by pragmatic factors. This type of insight was present in the work of Valter Tauli (Tauli 1968). Among V. Tauli’s principles the following two are particularly relevant:

E2 The expression must be the shortest possible;

E3 The more frequent the expression the shorter it must be.

This is the same type of insight that was expressed by Zipf's law in 1935 and is today well integrated in pragmatic theory (Grice's 'cooperative principle' (Grice 1991) as well as in usage-based linguistics (cf. Tomasello 2003, for further elaboration, Myking 2008: 248). Although V. Tauli's theoretical approach to language planning was soon forgotten, it conveys insights supported by modern theories that should not be neglected. Although the outcome of language management can never be guaranteed, language management is still a legitimate activity (Laurén, Myking, Picht, Jónsson 2008: 139ff., 197).

Applied on a 'complete domain' (cf. Kageura 2002), we could hope to demonstrate patterns of secondary term formation explained by pragmatics, i.e. the assumptions or background knowledge of the user group(s). It must be said, however, that when applied on the 'complete domain' of oil terminology, K. Kageura's criticism towards anecdotal textbook examples seems reasonable. The tendencies outlined above have been substantiated to some extent (cf. Myking 2008), although more research is needed.

Admittedly all of these principles, including ISO 704, could of course be rejected as pure common sense or reinterpretations of linguistic purism. Being a linguistics-based discipline, terminology also has to deal with elements of "folk linguistics", perhaps notably in (deliberate) secondary term formation, dealing with "good" and "bad" properties of terms. Such alleged properties of terms are often explained by purely idiosyncratic attitudes.

Nevertheless, although they should not be interpreted as an extensive list, the elements of theory presented above represent insights about terminological growth; hence, they represent theory about term formation which is relevant to, but not identical to, standardisation and language planning measures. These types of elements deserve a place in the scientific discourse about term formation precisely because they are relevant to theorists as well as to practitioners.

## 8. TERMINOLOGY: "LINGUISTICS" OR "ACTIVISM"?

When theorising terminology, it is important to take into account its multi-faceted nature. One type of theory, hypothesis or research question does not necessarily contradict other types. According to the "No fixed boundaries" approach terminology must be regarded as linguistics, al-

though in a “liberal” sense, terminology is a scientific activity dealing with language (Laurén, Myking, Picht 1998: 353). If J. Humbley (Humbley 2018b: 437) is right in claiming that term formation has been pushed aside as an issue of theoretical debate for lack of practical application value, then the question arises on how to (re-)include it into the theoretical development of terminology.

Primary vs secondary term formation crosses the distinction of spontaneous vs deliberate term formation. While some new approaches insist that primary term formation should be given priority and studied on a descriptive linguistic basis, the position expressed in this article is still that “deliberate” secondary term formation is part and parcel of any terminological development within a given society and therefore cannot be excluded from a theory of term formation, despite the difficulties of developing a consistent theory.

Building theory and formulating hypotheses of the type outlined in section 7 is directly relevant to the terminological practitioner because, amongst others, such activities allow for assessing his or her practical results and may prevent false conclusions about individual shortcomings. One may, again, recall V. Tauli, whose principles are a useful and theory-based frame of reference to language planning although they do not allow for strict predictions.

This means pleading for the inclusion of prescriptive as well as descriptive approaches within the scope of terminology. A theoretical discourse of term formation will have to satisfy a wide set of prerequisites:

- Recognise that theorising term formation must include primary as well as secondary term formation as already stated; neither is less important;
- Be able to account for crosslinguistic patterns, differences and similarities;
- Account for problems of variation and diachrony;
- Recognise that cognitive analyses (e.g. analysis of metaphorical patterns, cf. Temmerman 2000) are feasible and also apply to secondary term formation, and, conversely, that
- Term dynamics based on morphological complexity have proven feasible on secondary term formation (cf. Kageura 2002) but may also be extended to primary;

- Recognise that there are no fixed boundaries between cognitive and pragmatic explanations of term-formation patterns and, hence, that pragmatics is relevant to terminology theory;
- And hence, recognise that there are no fixed boundaries between theorising terms as such and theorising terms within some sort of normative setting.

In response to J. Humbley’s question cited in the introduction of this paper, “Is a specific theory of *term* formation needed with its own particular criteria, rather than one of simply word formation?” there are several positive answers.

In response to TF1, a theory of term formation will have to account for theoretical questions that are not always accounted for within theories of “word formation” in a strict sense, such as e.g. phrasal terms in contrast to compounds. It is, further, a matter of definition and delimitation whether loans and metaphor be included or not. These are all phenomena that are easily explained by linguistic theory, so in that respect the question is trivial. If “word formation” is defined as “formation of designations” all such phenomena become relevant, as is signalled by the shift of terminology from “word” to “designation”. Term formation cannot be restricted to incremental and discursive procedures.

From the perspective of T2 the answer is also affirmative, although it is not evident that the outcome will be a coherent theory. In this article it has been argued that the question of functional properties of terms is non-trivial and important, especially in the framework of secondary term formation, which, in its turn, is the core of all sorts of normative terminology activities.

## 9. CONCLUSIONS

The title of this article has two inspirations: a long-lasting interest in problems of term formation in the context of language planning and terminology theory, and a specific input from reading the recent works of J. Humbley (Humbley 2018a, Humbley 2018b), as indicated in the introduction in section 1, above. The main arguments have been based on a set of firm beliefs:

- 1) Most terminologists with a linguistic background appreciate theoretical efforts and prefer to have as solid theoretical foundations for

their performance as possible. Assessing practical work by means of patterns, hypotheses or theories of how things come into being is useful and necessary.

- 2) No terminology activity can avoid the emphasis on secondary term formation, at least not outside of the English-speaking communities. This is simply what constitutes the very *raison-d'être* of present-day work. Theorising about secondary term formation must, consequently, be considered as a legitimate task on equal terms with primary term formation.
- 3) On the general level it should be kept in mind that some sort of common frame of reference in fact really is a condition for consolidating a terminological “discourse community” across linguistic, cultural, organisational and scientific borders. If terminology as a discipline is international, a common discourse is necessary to ensure its cohesion. Instead of drawing a line of demarcation between application and scientific terminology, the question should be raised of how to develop a theory that might be helpful to application as well as providing new insights to science. Such attempts at integration have in fact been a hallmark of terminology for decades and should also be taken into account in the subfield of term formation.

In section 6 it was argued that the new approaches to terminology were “research programs” affecting all aspects of terminology, also including that of term formation. It seems fair to conclude that this discussion has very little actual relevance and does not attract much interest. The debate itself has not left any deep footprints, but terminology seems to have moved into some sort of Kuhnian “normal science”, as expressed by a recent publication:

Whereas the Wüsterian tradition had been strictly onomasiological, the alternative approach was semasiological and thus more like traditional lexicography in this respect. As evidenced in proceedings of most LSP proceedings after the millennium shift, semasiological terminology increasingly rely on electronic corpora, using statistics and token frequency. (Simonnæs, Andersen, Schubert 2019: 10)

If it is true that this normal state of affairs comprises empirical and corpus-based studies and an increased semasiological emphasis, it also

seems fair to conclude that the emergence of the alternative approaches discussed in section 6 must have been among the driving forces behind this change.

In future surveys there is a possibility that this “change” may be seen as an expansion of the scope of terminology instead of the replacement of one approach with another. The use of corpora does not make (prescriptive) terminology development redundant, but simply offers an expansion of terminology’s toolkit. Terminology performed as empirical linguistic research helps to increase the awareness of terminology and does not as such make onomasiological measures redundant. It is still too early to assess whether or not terminology has moved towards a state of co-existing approaches and methods instead of one dominating paradigm.

Where does this leave the question of term formation – is there a state of the art or not? J. Humbley’s answer to his own question, as cited in section 1, reads: “the question of a specific theory for term formation rather than word formation remains open” (Humbley 2018b: 448). Instead of offering an allegedly new approach to term formation, J. Humbley has himself made a major contribution by assessing all existing methodologies and models based on empirical research into French terminological neology, so in one respect, J. Humbley’s two works 2018 a and b in fact constitute the present state of the art. His solution, that the question is still open, becomes even more evident if “term formation” is understood as a subfield TF2 and not restricted to neology in the sense of TF1.

The present article does not contribute to a solution to this problem, and the conclusions may appear unsatisfactory. The subject is too large to be covered by just one article. Still, it must be maintained that theory development helps to promote a common discourse community, that theory is helpful to practitioners and, consequently, that any answer must take into account that terminology consists of two main aspects: it is a field of research and yet it never escapes the function of practice. Contributions from different angles and approaches make a useful mix; no single theory gives all the answers; not all approaches are incompatible. Perhaps the modest ambition of “theorising” instead of “theory building” could provide a meaningful common ground for anybody interested in term formation.

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### Santrauka

Straipsnyje klausiama, ar per pastaruosius metus terminų darybos srityje įvyko tokie patys teoriniai pokyčiai, kaip ir kitose terminologijos mokslo srityse, ir ar galima nustatyti aiškią pažangą terminų daryboje. Straipsnio išeities taškas yra du svarbūs klausimai, kuriuos uždavė John Humbley (Humbley 2018a, b): „Problema galima iškelti ir teoriniame lygmenyje: kaip būtų galima paaiškinti visus šiuos naujus terminus?“. Jis toliau klausia: „Ar reikia konkrečios terminų darybos teorijos su konkrečiais kriterijais ar užtekty ir vienos, kuri būtų tiesiog žodžių darybos teorija?“

Straipsnyje apibrėžiamos dvi „terminų darybos“ koncepcijos: pirma, naujų pavadinimų (angl. *designations*) kūrimo procesas naudojant leksikologinius mechanizmus (TF1); antra, terminologijos mokslo sritis, dėmesį kreipianti į kūrybinį aspektą ir į norminius ir funkcinus terminų aspektus (TF2). Aptariami esami terminų darybos modeliai (TF1), ypatingą dėmesį kreipiant į R. Kocourek'o (1991) motyvacinę tipologiją ir skirtingas motyvacijos sąvokos implikacijas.

Apibrėžiamos ir aptiriamos kai kurios pastarojo meto teorinės prieigos, susijusios su terminų daryba. K. Kageura (2002) ir R. Temmerman (2000) nusipelno ypatingo dėmesio ir yra laikomi svarbiomis „tyrimo programomis“; pabrėžiančiomis pirminės terminų darybos tyrimų svarbą ir pasisakančiomis už terminologiją kaip deskriptyvinę, empirinę ir lingvistinę discipliną. Straipsnyje paneigiamas šiuose darbuose išreikštas požiūris, kad preskriptyvinių aspektų teoriniuose svarstymuose apie terminologiją neturėtų likti.

Požiūris „Jokių griežtų ribų“ (Laurén et al. 2008) pabrėžia, kad tarp terminų ir bendrinių žodžių nėra jokių aiškių ribų, taigi nėra ir griežtų ribų tarp deskriptyvinių ir preskriptyvinių teorinių principų aspektų. Antrinės terminų darybos tyrimas kaip svarbi terminologijos dalis turi būti tęsiamas. Funkciniai terminų aspektai (TF2) yra įdomūs praktikams ir todėl yra svarbūs teorijai.

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