Semantics, terminology, and the impact of history and culture on socioeconomic terms

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Abstract The paper discusses the main issues of terminological semantics from a general lexicological point of view. It will be argued that words are not fuzzy, as generally assumed, but clear-cut – in the sense that there must be cognitive effort to perceive word meanings and the objects referred to as clearly different from other words and objects. We assume that the basic principles of this idealistic concept of *meaning* also hold for terminology. Therefore it has important consequences for terminological efforts like naming, taxonomy and classification, as well as for methodological reflections about how to approach them. The argumentation will be supported by the analysis of the French socioeconomic words and terms *employé* and *cadre* which are used in both common speech and terminology. A tridimensional model of meaning is suggested in order to give account of lexical characteristics, context relevance and translation. In this perspective, the concept of *core meaning* turns out to be a rather complex phenomenon.

Keywords French, semantics, terminology, nomenclature, socioeconomic terms, language and culture, translation, core meaning, prototypicality, fuzziness of meaning, taxonomy

As pointed out by the French terminologist Depecker (2003: 18), the relationship between linguistics and terminology is still a matter of interest, especially because linguists rarely deal with terminology. The present contribution shall approach this topic from a linguistic point of view.

1 Fuzzyness of meaning?

Fuzziness of meaning is a general assumption of common opinion and numerous authors, especially since Prototype Semantics has based its theory on the refutation of feature semantics which postulates invariable semantic features (*cf.* Fillmore 1975), a tradition followed by Cognitive Semantics (*cf.* Hummel 2009). Nevertheless, this assumption can be falsified easily for linguistic approaches. As already pointed out by Coseriu (2000: 34) and Hummel (1993a, 1994), in the extralinguistic world we observe indeed gradation or fuzziness between "day" and "night" or "thick" and "thin", but each time a speaker uses the words *day* or *thin* to refer to extralinguistic reality, the gradience stops to exist, since *day* and *thin* clearly express the speaker's view. The same holds for *offside* in football: the situation on the field may be fuzzy, but the referee's decision will be clear-cut, even sometimes too clear-cut with regard to the extralinguistic reality. The obvious conclusion is that language is clearer than objective extralinguistic reality would allow it to be. This is again confirmed by morphological evidence. The evidence that language creates clearly separated words like *day* and *night* shows that words are a part of a mental effort to separate two categories despite the fact that the extralinguistic fuzziness would not allow us to do so. In this sense, semantic theory has to be idealistic in order to fulfill the speaker's idealistic presupposition of conceptual separateness. This does not imply a drift back to the check list of invariable features. But it obliges us to assume that there is a cognitive effort to make meanings clear-cut and separable. This cognitive effort necessarily leads to a

sort of core meaning which emerges from the complex networks of (extralinguistic) knowledge. The fact that words are not only deposits of knowledge, as emphasized by Cognitive Linguistics, but also instruments for communication, reinforces this tendency, since shared core meanings improve good and fast understanding. So the linguistic key word of *function* enters also in the nature of meaning (Hummel 2009).

Of course, our argumentation is lexicological in nature. It only concerns the fundamental relationship between single words and extralinguistic reality. In real communication, texts and discourse may try to describe the extralinguistic fuzziness as such or use hedges. The referee of a football game is obliged to decide clearly, but the spectators of the same match may consider the situation a borderline case and express their view with appropriate words. The referee's role matches to our lexicological perspective in the sense that his activity is restricted to the binary choice of 'saying' *offside* or not.

In the functional perspective, the first function of a word is to identify the thing meant, and only secondarily to activate huger parts of the cognitive networks surrounding its core meaning. Identification is realized by core features of meaning. This ensures also the fastness of communication. Therefore, the definition must concentrate on the referential power of meaning. This applies especially for terminology, since definitional economy (shortness) is not only a naturally inherent feature of language but also a voluntary requirement for special languages (Felber/Budin 1989: 62) which focuses terms isolated from syntax (Wüster 1991: 2). Both linguistic function and cognitive necessity contribute to what I call "cognitive sharpening" of concepts and, thus, core meaning (Hummel in print).

Note that the mental prototype is not the only cognitive response to extralinguistic fuzziness, nor family resemblance (Kleiber 1998), since the goodness of membership effect observed by Rosch (1977, 1978) also holds for abstract definitions. Try to apply clear logic definitions like those of *offside* in football or *polysemy* in linguistics to the relevant extralinguistic reality and you will observe the same effect of goodness of membership than for *fish, bird, apple,* etc., whose meaning seems to be largely prototypical (Hummel in print). Consequently, the range of possible elements for core meaning is rather large, including the possibility of invariable semantic features. Of course, a check list will not give an account of the complex relationships between features, as the exact relations are eliminated by simply listing the features. In this sense, definitions are better because they try to point out explicitly the exact relations of the features. This does not mean, of course, that definition is the best or unique way to describe meaning (*cf.* chapter 4).

2 Fuzziness and terminology

We have seen that clearly and logically defined terms like *offside* or *polysemy* follow the same general principles as common words. On the one hand they are categorically clear-cut, on the other hand, extralinguistic fuzziness causes the same effects of goodness of membership like common words with prototypical meaning. This is the reason why extralinguistic "clearcutness" cannot be a general criterion for terminology: A term is not a good term if it allows us to attribute objects to the term ('membership', 'name'), but if concept and morphology correspond best to its function, which has to be defined first. *Polysemy* and *monosemy* in linguistics, for instance, do not allow to separate all the phenomena concerned in two distinct classes, but they do permit us to discuss all the relevant problems. This means they are good terms. Of course, *polysemy* and *monosemy* are terms whose concepts are meant to discover and describe linguistic reality rather than to name or classify its phenomena.

In his analysis of 'linguistic' fuzziness, Labov (1978: 220) assumed wrongly that the main linguistic activity consists in "setting up rules for assigning memberships" to linguistic categories. In reality, speakers usually do not assign membership of objects to linguistic categories, since we do not divide definitively all persons in thin and thick ones, but rather call a person *thick*. In this case, the validity of the 'membership' in the linguistic category *thick* is limited to a single utterance and the subjective point of view of one speaker. In other words, we do not assign membership or classify, but *designate* in utterance. Designation is subjective. But note that subjectivity is not a matter of the linguistic category itself, since the category is intersubjective (social) in nature. The subjectivity of designation is due to the speaker's choice of the category. Choosing *thin* instead of *thick* causes the subjectivity of thin in a given utterance. We all know persons who like to declare themselves as *thick*, even if almost all the others perceive them as rather thin. Still, everybody understands the person saying *I am thick*. This is only possible because the meaning of *thick* is intersubjectively fixed. If the hearers' view of the extralinguistic reality would determine their interpretation of *thick*, they would have to interpret the meaning of *thick* as 'thin', which is not the case. The hearers need not share the speaker's opinion, but they understand what the speaker means, as well as they understand the referee's decision of off side, even if they do not agree with him. The only difference from common language is the fact that the referee classifies the game situation definitively as off side and thus assigns membership, like the judge in Aitchison's (1990: 58) example of *mad* and *bad*. This difference, however, is not linguistic in nature, since it is the social authority conferred to the referee or the judge which turns the designation into a definitive classification, which is a first point to keep in mind for the analysis of official terminologies.

When we say *terminology*, our prototypical representation of this concept makes us think rather of terms whose function it is to name things (Depecker 2003: 17, 20) than of theoretical concepts like *polysemy*, *structure*, *system*, etc., which are discovering concepts. If a term is meant to be a name, then of course the problem of assigning membership arises, like in the judge's or referee's decision. The notion of *name* implies the assumption that there are objects to be named (*cf.* Rey 1979: 21–22). But what is an object when there is fuzziness? The general fact of extralinguistic fuzziness strongly contradicts the terminological assumption that concepts contain the shared features of the members of an extralinguistic class of objects (*cf.* synopsis in Arntz/Picht/Mayer 2009: 43–46) and that concepts can be determined empirically by abstraction from classes of objects. De Bessé's (1997: 64) assumption that terminography is onomasiological in nature, whereas lexicography is semasiological, cannot be applied to descriptive terminology. In fact it is not possible to separate *concept* from *object* (*cf.* Felber/Budin 1989: 62–63). The very nature of concepts has to be intensional (idealistic). And even the extralinguistic objects we believe to exist and we refer to by words are mentally codetermined when they emerge from fuzziness, like *day* and *night*. It is true that terminology implies a stronger effort to delimitate objects and classes referentially related to terms, but it is also true that the undertaking is a mere effort of normalization which will never be completely successful, except perhaps for some very artificial classes of objects, since there also exist efforts of extralinguistic normalization, e.g. industrial norms. The exactness of terminology depends on the exactness of the special world a term refers to.

In theory, categorical fuzziness need not appear in artificial worlds, since we can create delimited classes of objects, e.g. in mathematics. Theoretically, the world of human inventions, machines and other things would thus offer the same possibility. However, even technical in-

ventions usually undergo diversification processes, especially in diachrony, since a radio today is not the same as a radio some hundred years ago. Hence the fuzziness problem will be almost the same in special language as in common language.

In the case of social sciences (*cf.* Wright 1997: 18–19), descriptive terminology has to deal with almost the same vagueness or diversity of concepts as common language. The French common words *ouvrier* 'blue collar worker', *employé* 'white collar worker' and *cadre* 'executive' are also used in national statistics in order to classify the complete population of France in socio-professional groups (*cf.* Table 1, taken from *Code* 1977). Like in the case of the referee's or judge's decision, the classification of each inhabitant of France is definitive and valid within the social authority concerned with national statistics, which means: It is not limited to utterance, but to a whole specialized domain (*cf.* Engberg 2008: 260–266). This is what we generally find or what terminology tries to establish for special languages. According to the general fuzziness assumption for extralinguistic reality, and despite of using clear official rules for the attribution of each profession to overall categories, the fuzziness appears in certain categories which, apparently, serve to classify "the rest". In the case of social statistics, some of these categories became quite famous because of their heterogeneity, e.g. category 99 "autres personnes non actives": "capitaliste, idiot, imbécile, propriétaire foncier, prostituée" (Desrosières 1976: 227, Hummel 1993a).

Table 1: Nomenclature of socio-professional categories

NOMENCLATURE DES CATÉGORIES SOCIOPROFESSIONNELLES
CORRESPONDANCE ENTRE LES NIVEAUX 8, 24 ET 42

Niveau agrégé (8 postes dont 6 pour les actifs occupés)	Niveau de publication courante (24 postes dont 19 pour les actifs)	Niveau détaillé (42 postes dont 32 pour les actifs)
1 Agriculteurs exploitants	10 Agriculteurs exploitants	11 Agriculteurs sur petite exploitation 12 Agriculteurs sur moyenne exploitation 13 Agriculteurs sur grande exploitation
2 Artisans, commerçants, et chefs d´entreprise	21 Artisans 22 Commerçants et assimilés 23 Chefs d´entreprise de 10 salariés ou plus	21 Artisans 22 Commerçants et assimilés 23 Chefs d´entreprise de 10 salariés ou plus
3 Cadres et professions intellectuelles superiéures	31 Professions libérales 32 Cadres de le Fonction publique, professions intellectuelles et artistiques 36 Cadres d´entreprise	31 Professions libérales 33 Cadres de la Fonction publique 34 Professeurs, professions scientifiques 35 Professions de l´information, des arts et des spectacles 37 Cadres administratifs et commerciaux d´entreprise 38 Ingénieurs et cadres techniques d´entreprise

4 Professions intermédiaires	41 Professions intermédiaires de l´enseignement, de la santé, de la Fonction publique et assimilés 46 Professions intermédiaires administratives et commerciales des entreprises 47 Techniciens 48 Contremaîtres, agents de maîtrise	42 Instituteurs et assimilés 43 Professions intermédiaires de la santé et du travail social 44 Clergé, religieux 45 Professions intermédiaires administratives de la Fonction publique 46 Professions intermédiaires administratives et commerciales des entreprises 47 Techniciens 48 Contremaîtres, agents de maîtrise
5 Employés	51 Employés de la Fonction publique 54 Employés administratifs d´entreprise 55 Employés de commerce 56 Personnels des services directs aux particuliers	52 Employés civils et agents de service de la Fonction publique 53 Policiers et militaires 54 Employés administratifs d´entreprise 55 Employés de commerce 56 Personnels des services directs aux particuliers
6 Ouvriers	61 Ouvriers qualifiés 66 Ouvriers non qualifiés 69 Ouvriers agricoles	62 Ouvriers qualifiés de type industriel 63 Ouvriers qualifiés de type artisanal 64 Chauffeurs 65 Ouvriers qualifiés de la manutention, du magasinage et du transport 67 Ouvriers non qualifiés de type industriel 68 Ouvrier non qualifiés de type artisanal 69 Ouvriers agricoles
7 Retraités	71 Anciens agriculteurs exploitants 72 Anciens artisans, commerçants, chefs d´entreprise 73 Anciens cadres et professions intermédiaires 76 Anciens employés et ouvriers	71 Anciens agriculteurs exploitants 72 Anciens artisans, commerçants, chefs d´entreprise 74 Anciens cadres 75 Anciennes professions intermédiaires 77 Anciens employés 78 Anciens ouvriers
8 Autres personnes sans activité professionnelle	81 Chômeurs n´ayant jamais travaillé 82 Inactifs divers (autres que retraités)	81 Chômeurs n´ayant jamais travaillé 83 Militaires du contingent 84 Etudiants, élèves de 15 ans et plus 85 Personnes diverses sans activité professionnelle de moins de 60 ans (sauf retraités) 86 Personnes diverses sans activité professionnelle de 60 ans et plus (sauf retraités)

3 Encyclopedic knowledge and linguistic meaning

In spite of the functional relevance of core meaning, knowledge of the world is necessary to understand a text. This is the reason why Cognitive Linguistics considers words as instruments to accede to 'powerful' networks of mentally related knowledge. And this is also the reason why there has been a turn in linguistics of special languages from word based *terminology* to text based analysis of specialized discourse. We only understand a specialized book on biology if we have a specialized knowledge. Similarly, translation only concerns the concrete use of signs in communication (text, discourse) (Albrecht 1989: 270, Gerzymisch-Arbogast 1996: 15–16). Translation requires knowledge of a whole special language, not only of isolated words (Albrecht 1989: 272). However, this point of view must not replace the terminological one, since the words of a text are previously fixed lexical units which are specifically adapted to a text. Schaeder (1994: 18) argues that the communicational or pragmatic turn in terminology focusing on specialized communication (texts) must not withdraw the attention from lexical terminology. Successful terminological effort facilitates the translation of terms by creating standardized norms and even translational equivalents (Arntz/Picht 1982: 140–142). In consequence, the text-based and the word-based perspectives are complementary. The main problem is not the irrelevance of the general lexicological or the corresponding special terminological point of view, but the tendency of general semantics to develop models which do not allow to describe exactly what happens when a word enters a text (*cf.* chapter 5 and 6, *cf.* Engberg 2008: 262). In the case of culturally specific terms like *cadre* or *employé*, a bilingual dictionary has to add explanatory encyclopedic knowledge in order to make the situation accessible to the translator, a process which is quite similar to the task of helping the translator to understand a scientific term, when the correct scientific definition cannot be understood without adaptation by non-scientists (Göpferich 1999: 87–88).

In Cognitive Linguistics, terms like *frame* and *script* related to a word are almost adequate linguistic ways to describe text-relevant knowledge of the world from a lexicological point of view. In special languages, the knowledge of the specific world seems to be even more important, since specialized dictionaries will be used to understand texts referring to things and worlds which differ considerably from commonly experienced worlds (Wiegand 1994, Bergenholtz 1994: 52–53, De Bessé 1997: 66). This is the reason why the definition of a specialized term goes hand in hand with specialized knowledge related to the thing meant (encyclopedic knowledge). The notions of *frame* and *script* are too rough for this purpose, since detailed knowledge of the structure and function of objects is required. Nevertheless, there is no fundamental difference in nature between common linguistic signs and terms, as wrongly claimed by Rey (1979: 18), since each time we learn a new common word we also need encyclopedic information. We cannot learn a word like *computer* without learning something about the object concerned. In this sense, specialized language differs only by the profundity of knowledge from common language.

Of course, no clear-cut distinction between core meaning and encyclopedic knowledge is possible. From a theoretical point of view, the structural tradition to separate intralinguistic meaning and extralinguistic encyclopedic information is misleading or misinterpreted. In fact, some linguists and terminologists tend to interpret this approach in a very material sense, as if linguistic features were something else in nature than encyclopedic features. Geckeler (1982: 216–217) and other structural semanticists, for instance, argued against Pottier's famous feature analysis of the lexical field of seats in French that semantic features like 'four legs' or 'back'

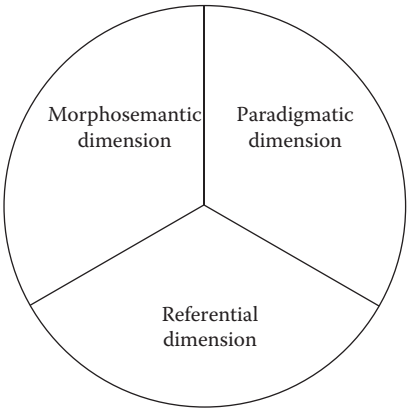
were extralinguistic in nature and could therefore not be accepted as semantic features of the linguistic system. This analysis is completely wrong. If this was true, no concrete object could be designated by a meaningful word. Actually, what language does when it creates meaning is to take into account selectively certain extralinguistic features. This process might be called in German *Versprachlichung,* 'languaging' (*cf.* Hummel 2009). In this sense, the structural assumption of intra-linguistic features is right. They do not differ in nature from other features of our knowledge, but only by their function in linguistic communication, for instance, if a word presupposes a feature for designation. In other words, when a meaning presupposes the feature 'four legs' in the referential process, then the extralinguistic feature "four legs" has been integrated cognitively as semantic feature in our mental concept. This way, the concept has a mental reality on its own right. Accordingly we can accept the Saussurian point of view that language (and of course meaning) is different from the extralinguistic world. This implies that, vice versa, linguistics cannot exclude the notion of *object* from its discourse (*cf.* Depecker 2003: 22–23). Of course, the integration of features in meaning is a gradual process. Some features may be obligatory, but others will be relevant in a statistical sense. Note that this cognitive effort of *Versprachlichung* is identical in nature with the effort of cognitive conceptual sharpening described in Section 1. In the social sciences, where artificially created new terms are often increasingly used in common language, and common language words are used for specialized purposes (Ihle-Schmidt 1983: 217), at least some of the core features will be shared by both, the term and the common word.

4 The three dimensions of lexical meaning

Semantic theories tend to reduce the complex reality of concepts to one aspect. I do not know a single theory which proceeds to a verification with a random sample of words. The common 'method' is to look for examples which illustrate the theory. From a methodological point of view, this technique is acceptable if one tries to formulate hypotheses, but inacceptable as a method of objective verification of the hypotheses. Furthermore, semantic theories usually are strongly opposed to each another, as if in other theories all was wrong. A good approach to a theoretical study like the present one seems to be to maintain what in each theory seems to hold against empirical data and serves to explain linguistic communication on both the lexical and the text level. It will be shown that this attitude is far from being eclectic but rather corresponds to linguistic reality. I assume that meanings in language are as diverse as the objects they refer to. This explains why each semantic theory finds words to which the theory applies. But how can we deal with diversity in a single coherent semantic theory? A multidimensional theory of meaning linked with the possibility of selective communicative relevance in texts appears to be a good solution.

A general theory of word meaning should display at least three main dimensions (*cf.* Schema 1): *Morphosemantic* information provided by word formation or polysemy; *paradigmatic* information on lexical oppositions to other elements of the frame a word belongs to, *referential* information in the sense of Gestalt-like mental representations of the thing meant. Every single word is characterized by a different weight of each dimension in its specific meaning. A word like *big* is characterized by a lack of morphosemantic information (besides perhaps polysemy), a predominant influence of paradigmatic information (opposition to *small*) and eventually a slight influence of prototype, which may occasionally play a role, without being predominant, since *big ant* and *small elephant* are possible collocations.

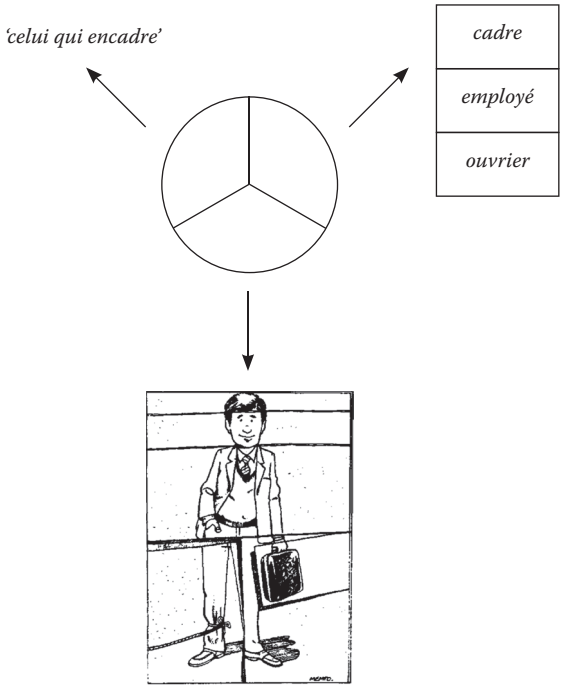
For a word like *tulip*, referential representation of the thing meant will be more important than its paradigmatic opposition to *rose*.



Schema 1: The three main dimensions of lexical meaning

5 The French common word and socio-economic term *cadre*

In the case of the French word *cadre*, used as a designation for the socio-professional group of executives, all three dimensions are important (*cf.* schema 2; empirical details in Hummel 1993a):



Schema 2: The three dimensions of "cadre"

The word *cadre* as a definition of a socio-professional group and its members is characterized by the morphosemantic information 'celui qui encadre' (= person who supervises and commands), clear and obligatory lexical oppositions to the words *employé* and *ouvrier*, and a stereotyped mental prototype. This prototype is not only a neutral mental representation of an object, but an important model of individual identification to a social group.

5.1 The morphosemantic dimension

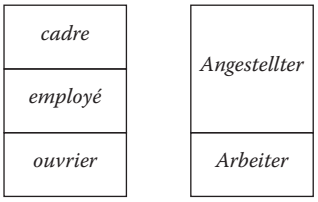
The morphological transparency of *cadre* is not very important for its use, but the semantic feature 'le cadre est celui qui encadre' may be given special contextual relevance, especially in case of problems and doubts. During the general social crisis concerning the definition of the *cadres* as a rising social group between 1930 and 1990, a series of caricatures based on morphosemantic relations appeared, and most definitions of the social group focus on this morphosemantic feature (Hummel 1993a: 35–38, 42–48).

The selective contextual relevance of morphosemantic information is more systematic in polysemous words like F.[1] *employé*, E.[1] *worker*, G. [1] *Angestellter*, and G. *Arbeiter*. All these words have a first, morphologically motivated meaning. F. *employé* refers to all persons who are employed, and there is a further, again morphosemantically marked opposition to *employeur* 'employer'. The same holds for E. *worker* or G. *Arbeiter* in cases like *a good worker, a hard worker*. I refer to this meaning as Meaning 1.

When we ask speakers for the meaning of G. *Arbeiter* or E. *worker*, they almost never mention Meaning 1. This gives us three important insights. In lexicalized words, morphosemantic features tend to be less conscious than paradigmatic and referential features. On the other hand, speakers are able to actualize them in case of need. Furthermore, the use of the words in the broad meaning delimited by morphology seems to be a rather spontaneous process.

5.2 The paradigmatic dimension

Cadre is clearly delimited by its paradigmatic opposition to *employé* and *ouvrier*, as well as by the generic term *salarié* which comprises all three of them. Both questioning of informants and empirical analysis of context coincide in this point. From the point of view of contrastive linguistics, this paradigmatic structure differs from the one in German (*cf.* schema 3; *cf.* Hjelmslev 1971):



Schema 3: Paradigmatic contrasts between French and German

In other words, there is no equivalence at the level of lexicon between F. *cadre, employé* and G. *Angestellter* that would allow a uniform translation independent from the context (for general aspects, *cf.* Hohnhold 1983a,b,c). In the case of *employé*, the paradigmatic oppositions

of *employé* to *cadre* and *ouvrier* gives rise to a second meaning (Meaning 2) that differs clearly from the morphologically determined one, 'person who is employed' (*cf.* 5.1), since this first meaning comprises also *ouvrier* and *cadre*. Thus, a different weight of the dimensions of meaning is here the basis for lexicalized polysemy. The same holds for G. *Angestellter* 'employed person' (Meaning 1), 'white collar' (Meaning 2), and also for E. *worker* 'person who works (well)' (Meaning 1), 'blue collar worker' (Meaning 2). Consequently, the different translations of these polysemous words may also be explained by contextual relevance of one semantic dimension instead of the other (*cf.* details in Hummel 1993a: 248–277).

5.3 Referential dimension and mental prototype

F. *cadre, employé*, and *ouvrier*, as well as E. *worker* are associated with prototypical mental representations. In the case of *employé* and *ouvrier*, only the more specific Meaning 2 is associated with a mental prototype, not the morphosemantic Meaning 1, which is notional in nature.

Of course, mental prototype is not the only way referential knowledge and experiences are condensed in word meaning. There may be further knowledge of single objects, especially when the word is considered as a designation for a class of objects, for instance the knowledge about the classification of borderline cases like "penguin" for the class of birds or "whale" for the class of fish.

5.4 Consequences

We have seen that our tridimensional view of meaning displays a rather complex insight into meaning which allows us to account for lexicological phenomena like polysemy, meaning restriction and context relevance. Furthermore, it follows that monodimensional semantic theories do not correspond to linguistic reality. Lexical field theory, for instance, considers only the paradigmatic dimension. On the other hand, prototype theory underestimates the power of morphosemantic and paradigmatic information. Both theories fail when we try to give a coherent linguistic explanation of the polysemy of words like F. *employé*, E. *worker*, G. *Angesteller* and *Arbeiter*, since their polysemy consists simply in giving a selective weight to another dimension of meaning at the level of lexicon. It is not surprising that the term *dimension* is used in recent terminological semantics (Depecker 2003: 86).

6 Contextual relevance of the three dimensions and translation

One of the main issues in semantics is invariability of meaning or, at least, invariability of core meaning. But how do we conceive *invariability* in a tridimensional model of meaning? Is there necessarily a contradiction between invariability and contextual flexibility? On the level of lexicon, all three dimensions contribute permanent features to what we call *meaning* or *concept*. At the level of utterance, however, the speaker has selective access to the dimensions of meaning when he speaks. This can be shown by context analysis and by effects on equivalence and translation. The contextual relevance of prototype appears in spontaneous synonymy of words like F. *fonctionnaire* 'civil servant' and *employé* 'white collar worker' (Hummel 1993a: 175–176). Another example are Sp.[1] *alimaña* '(small) predator' and *zorra* (Hummel 2008). In both cases, identity of prototype leads to spontaneous synonymy in spite of the clear differences in para-

digmatic delimitation and, thus, referential extension. In the second case, the basic level word *zorra* is considered to be synonymous with the generic word *alimaña*. The consequences of contextual relevance of the three dimensions on translation have been briefly discussed in Section 5.2. Another example is Baldinger's (1984: 37) semantic analysis of G. *Angestellter* and F. *employé*. Baldinger considered them equivalent. This only holds for the morphosemantic dimension and mental prototype, whereas the words are clearly different with respect to the paradigmatic relations, for G. *Angestellter* includes both *employé* and *cadre*, which means that the Meaning 2 of *employé* is smaller (Hummel 1993a: 251–252). As regards spontaneous synonymy, the speaker's feeling of equivalence may be distorted/biased by a selective introspective vision of meaning. This is one of the reasons why lexicological phenomena have to be observed in objective corpora in order to counterbalance introspective biases.

7 Core meaning: invariability and flexibility

The notion of *core meaning* does not necessarily imply a reductionist view on the phenomenon of meaning. In our semantic theory, the term refers to the stable elements of several dimensions. This turns core meaning into a rather complex thing. Furthermore, this does not necessarily imply that all the components of core meaning have to be relevant in the same way, neither at the level of lexicon, since the weight of each dimension is word-specific, nor in context, because not all core elements are relevant in each context. In a certain sense, the elements represented in each dimension of *cadre* are invariable, since we can empirically prove that they belong to shared knowledge necessary for communication. This, however, does not lead, in our theory, to a static understanding of what meaning is and how it functions in communication. This tridimensional and dynamic concept of core meaning does not exclude invariable features. Langacker's (1999: 28) *profiling* process, e.g. the fact that *hypotenuse* selects always (invariably) the same line in a contiguous structure called triangle, necessarily means that the meaning of the word *hypotenuse* contains an invariable feature which serves as a condition for designation. In consequence, the exclusion of invariable features from meaning (*cf.* Section 1) is also a reductionist approach.

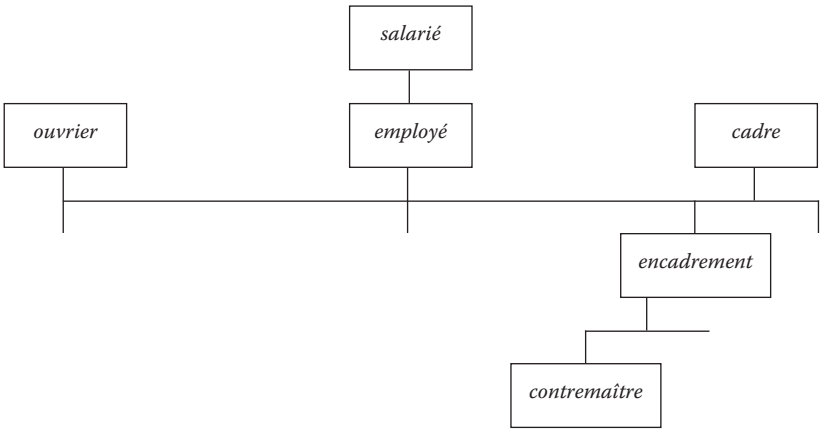
8 Lexicology and terminology

Let us consider now what happens when we change from common language lexicology to terminology. In general terms, terminology is characterized by artificial options executed with a high degree of consciousness. Terminology is more conscious, because the terminologist discusses openly the linking between word morphology, concept and object (*cf.* Felber/Budin 1989: 63, 69, Wüster 1991: 1–2).

The artificial options of terminology tend to reduce the complex tridimensional semantic configuration we may call *concept* to a *definition* (*cf.* Depecker 2003: 17) which contains basically paradigmatic and, occasionally, morphosemantic features, but exclude prototype. This option seems to be meaningful, if the term is to be used uniformly with a clear underlying notion working independently from context (identity of terminological and contextual meaning). This artificial intervention of terminology is displayed in the semiotic model of Suonuuti (1997: 9), where definition adds a fourth side to the semiotic triangle. However, in some cases an option for prototype might be useful as well, e.g. if F. *cadre* was to be used in social psychology in order to conceive the idealized mental prototype which motivates social behavior. The

drawings of objects in terminographic dictionaries are a very common way to combine abstract definition with concrete referential knowledge (Galinski/Picht 1997: 43–57). It follows that the semiotic effect of terminographic work is not limited to definition, as pointed out by Depecker (2003: 19), but may also affect the morphosemantic dimension and the referential representation included in a concept.

Depending on the function of the term, terminography tries to deepen the relevant dimensions of the concept and to establish coherence between the dimensions, avoiding misleading morphosemantic information, because morphosemantic transparency supports the understanding of newly coined terms. Schmitt (1977: 524–526) observed that all neologisms in the specialized discourse of economy in France are in fact motivated and transparent (*cf.* Depecker 2003: 9, 68). Some terminologies try to cover completely a whole field. Social statistics, for instance, aims at a coherent classification of a whole population in groups (Section 2). Paradigmatic oppositions will be prior to the other dimensions of meaning, e.g. the opposition of F. *cadre* to *employé* and *ouvrier*. At the same time, relational features will be more important than simple inherent features without distinctive force. On a more technical level, a detailed list of the objects included in and excluded from the extralinguistic class (social group), will be necessary, in order to handle the fuzziness of extralinguistic classes. This list suggests generally a hierarchy of groups, which may try to reflect as well as possible the one which predominates in the mind of the population itself (*cf.* Schema 4). However, common language does not contain a complete and coherent classification system of this type for professional groups. Empirical context analysis only allows to find out some important paradigmatic relations. By creating complete taxonomies, social terminology reinforces and deepens these paradigmatic relations (*cf.* Budin 1996, who insists on the organizational aspect of knowledge in specialized languages and its representation by linguistic signs).



Schema 4: The conceptual hierarchy of F. "salarié"

The intent to establish taxonomies is also artificial in another way. Cognitive Linguistics is right to postulate complex networks of knowledge which offer more types of relations than simple paradigmatic hierarchy. Taxonomies do not allow to reflect these networks of knowledge. But a good terminographic dictionary should be able to make cross-references in order to construct an adequate representation of a special language's knowledge network as a sort

of underlying macrostructure. From a methodological point of view, it should be possible to give a good empirical account of the items related to a term which occur in a context corpus, since electronic corpora permit their retrieval in the nearer context and a statistically valid description of their importance (Dubuc/Lauriston 1997: 84). The terminological frames and scripts obtained in this way might be a good base for cross references in the entries of a dictionary. Nevertheless, I do not believe that our mind contains complete, preexisting networks of knowledge, since the effective relations between concepts are individually established in concrete thought and speech (*cf.* Engberg 2008: 270–273). The problem seems to be basically the same as in lexical field theory: the words may be related, but it is hard to believe that they are definitively related in mind like in a lexical field or a cognitive network. The only real networks we have are texts and discourse, where linguistic items and knowledge are related in a creative way. All corpus-based lexicological or terminological abstractions are simple intents to approach something like the most common network relations in language and knowledge. This is of course an important and exciting terminographic task. But the result should not be as static as structuralism has come to be.

The turnover from simple paradigmatic relations of the lexical field type to the network concept of Cognitive Semantics (*frames, scripts*) is crucial for general semantic theory. My initial proposals in Hummel (1993a: 82–119) have to be revised accordingly. We could even be tempted to argue that there is no reason to treat the three dimensions of meaning separately, but to conflate them in one network. Especially, we could think that there is no separation between the referential representation and the paradigmatic networks because of the contiguity we observe in extralinguistic structures. This point of view is right, if we look at the extralinguistic situation disregarding linguistic reality, for instance, the extralinguistic fuzziness or contiguity between what is "thick" and what is "thin". But if it is true what we have pointed out in Section 1, then there must be a cognitive effort to *conceive* the meaning of the words *thick* and *thin* and the reality they refer to as being not only different, but clearly opposed. This forces us to assume that in linguistic meaning the mental representation of extralinguistic reality is thought to be different from the surrounding representations. Mental prototype is a good example for this cognitive effort. If this is true, we have to separate, from a linguistic point of view, the referential dimension from the paradigmatic one, since this is exactly the function of a linguistic sign. The simple fact that we tend to believe that words refer to objects different from other objects shows that this separation corresponds to our idealistic mental reality against extralinguistic contiguity. That is why I would like to maintain the term *paradigmatic dimension*. The morphosemantic dimension is clearly different in nature from the other dimensions because of its intralinguistic motivation. The functional effects of different weight in the lexicon and selective relevance in context pointed out in the preceding sections give important additional evidence of this point of view. I would thus like to maintain the division of meaning in three dimensions. Semantic networks, as discussed in Cognitive Semantics, would then be limited to the paradigmatic dimension which treats the relationships between word-associated concepts to other concepts.

Perhaps a pragmatic dimension should be added to the tridimensional model of meaning in order to give account of the communicational experience associated with a word or term, e.g. the specific connotation of F. *cadre* and G. *Kader* (*cf.* Section 9). However, for the specific purpose of this paper, the three dimensions seem to be adequate for a rather complex description and explanation of the main lexicological and terminological problems treated.

9 Terminology and history

Terminological theory and terminographic effort are selective also in the sense that they stick to synchrony because terms are meant to be instruments for actual specialized communication. On the other hand, the impact of history on the meaning of words and terms cannot be neglected in a more general perspective, since a digital, cabled radio is not the same as a first generation radio (Depecker 2003: 8). The impact of culture turns out to be a major issue for socioeconomic terms (for the following *cf.* Hummel 1993a, b). The French word *cadre* was borrowed from Italian in the 16th century, which reflects the international prestige of Italian Renaissance. It soon got its basic meaning 'frame'. Later on *cadre* passed to refer also to whole frameworks which support technical constructions and human organizations. This meaning of *cadre* follows historically the rise of big organizations. The first big organization of a modern type was Napoleon's army (first use of *cadre* attested in 1796), followed by public administration (1840), political parties (1880) and big industrial companies (1931). The *cadres* formed the supporting structure and, thus, the elite. The desire to pertain to the elite motivated the individual desire to belong to the *cadres*. This is the reason why *cadre* was used to refer to a single person also. This special meaning was the one which came to be associated with the actual mental prototype. Note that the prototype of a *cadre* is exactly the same we find associated in German with *Manager*. In both cases, the prototype stems from the prestige of the economic model represented by the Unites States after World War II. *Cadre* was strongly connotated with the (danger of) Americanization in France. Curiously, the etymologically related word *Kader* is used in German with a strong connotation of communism. The historical explanation can be traced back to Lenin who borrowed the word from French military terminology in order to use it for his elite model of socialist revolution. In summary, we see that the mental prototype of a word like *cadre* may be considered, from a historical point of view, as a crystallization of historical referential experience. In this sense, *cadre* has a 'cultural charge' (Galisson 1987) which allows us to consider it a cultural key word linked to an epoch (Matoré 1953). This implies at the same time that the word and the terms coined out of it will grow older in future in the sense that the mental prototype will be perceived as being a prototype of the past, which has already occurred for the prototype of F. *employé* associated with the first half of the 20th century. Possibly similar effects may account for new terms in other domains as well, when the mental prototype associated with a term connotates an old technological standard. It may be important to see that the notional element 'member of an elite' is less linked to a specific sociohistorical context than the prototype. The same holds for the morphosemantically based meaning of F. *employé*, G. *Angestellter*, and also E. *worker*. From a general semantic perspective, it may also be relevant to see that morphosemantic information forms a semantic box which will be filled with referential experience through individual biography and social history. If we take into account that even concepts of the notional type, like morphosemantic information, produce goodness of membership effects in reference, we may postulate that the crystallization of referential experience in mental prototypes or more specific knowledge of examples are natural consequences of meaning. The force of crystallization, however, depends essentially on the interest a word's use encounters in society.

The mental impact on concept and object pointed out in Section 2 is particularly evident when the perception of reality is culturally determined. The extralinguistic reality of industrial organization is very similar in France and Germany. Nevertheless, both languages have a different lexical structure to cover this reality, e.g. the distinction between *employé* and *cadre* where German uses only one word *Angestellter*.

Conclusion

I did not find fundamental differences between lexicology and terminology, or lexicography and terminography. The differences are mainly a matter of effort, normalization and consciousness. So terminology will sharpen and normalize the referential dimension in order to improve the technique of extensional delimitation of classes of objects. It will also sharpen and normalize paradigmatic relations in order to achieve maximal taxonomic coherence of terminological systems. It will furthermore prefer terms whose morphological structure (motivation) matches with the concept. Most differences between terminology and common language, as the act of linking a concept to its name in order to create a term or the separation of linguistic and encyclopedic features, are motivated by technical considerations of terminography. Of course, all these efforts imply a higher degree of consciousness as well, in comparison with the semiotic consciousness of speakers in common language. Finally, terminology prefers notional definition (general classification rules) at the disadvantage of prototype or other *Gestalt*-like representations, which instead will appear more concretely in the pictures and drawings of the encyclopedic knowledge.

From a methodological point of view, different methods may be used to approach meaning (introspection, translation, etc.), but in any case, context analysis of an adequate corpus has to be used for control of results. Speakers may not be able to define the meaning of an isolated word in an inter-subjectively valid way. In context, however, speakers know what the word means, since communication depends on it (*cf.* Dubuc/Lauriston 1997: 81–82). In most cases, the linguist himself is able to extract the meaning of a word in a sample of contexts in order to access core meanings, polysemy, etc. This may not be possible in all contexts, but is not really a problem, if most of the applications can be analyzed without any doubts. •

Notes

[1] F. = French; G. = German; E. = English; Sp. = Spanish

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