A Proposal for a Framework to Evaluate Feature Relevance for Terminographic Definitions

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Abstract

In this paper, a terminological framework, both theoretical and methodological, backed by empirical data, is proposed in order to highlight the particular questions to which attention should be paid when conceiving an evaluation scheme for definition extraction (DE) in terminology. The premise is that not just any information is relevant to defining a given concept in a given expert domain. Therefore, evaluation guidelines applicable to DE should integrate some understanding of what is relevant for terminographic definitions and in which cases. This, in turn, requires some understanding of the mechanisms of feature selection. An explanatory hypothesis of feature relevance is then put forward and one of its aspects examined, to see to what extent the example considered may serve as a relevance referential. To conclude, a few methodological proposals for automating the application of relevance tests are discussed. The overall objective is to explore ways of empirically testing broader theoretical hypotheses and principles that should orient the conception of general guidelines to evaluate DE for terminographic purposes.

Keywords

Terminology, terminographic definitions, evaluation guidelines, terminological theory, terminographic methodology, concepts, feature relevance

1 Introduction

Definition extraction (DE) evaluation in terminology may be seen as a task aimed at enhancing precision and reducing the noise generated, for example, by limited extraction algorithms, i.e. as a task consisting in separating information on a concept from other information (for example, on another concept). Thus considered, the task of evaluation would consist in assessing whether all the information about a concept (i.e. all the conceptual contexts in which it occurs) has been retrieved, and whether no extraneous or spurious information has been retrieved. Assuming that this conceptual context retrieval issue is settled and that we already have all the textual contexts relating to a concept we want to define, there is still another aspect to be evaluated: is it the case that all the information extracted on a given concept in a given specialized corpus is relevant to the definition of that concept in that expert domain. One could argue that since the corpus from which the information is extracted is a specialized one, all the extracted information on a concept is at least potentially defining. However, as we shall see, this is not always the case. How may it be possible, then, to decide what is (or may be) relevant to the definition of a concept and what is not? What is addressed here is, therefore, a more fundamental kind of evaluation concerning the relevance of the extracted information for terminographic definition writing.

In that perspective, we shall first show that what is extracted is not necessarily a definition, basing our argument on terminological and terminographic frameworks as well as on an empirical study.

This background implies several questions which ought to be considered when designing an evaluation scheme applicable to extracted information and its use for terminographic definitions. Some hypotheses concerning the elements against which the extracted information may be evaluated are proposed and examined, as are methodological approaches to answering the questions thus raised, therefore providing empirical grounds for an evaluation. The main focus of this paper is therefore highlighting various factors that should be considered in evaluating the relevance of extracted information.

2 Background

2.1 Theoretical background

2.1.1 Relation between concepts and definitions

Facts and objects have innumerable properties, some of which are expressed in conceptual features, which are considered as more or less extended units of information. Not all of the features are of interest for experts when they form a concept encompassing a particular extension (facts or objects) in their expert domain; only *salient features* (F_S), as opposed to *latent features* (F_L), are. The latter are features associated to an extension but generally not expressed as such in human dictionaries. Latent features are often implied by and inherited through other features, such as the kind of entity and the high level properties associated with those entities. The latent features might never-

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theless be important in natural language processing lexicons or ontologies, for example for use in applications capable of drawing inferences. However, they are not expressed in terminological dictionaries, therefore they are not considered salient in that case. Latent features may also be features relating to the extension that are possessed by individuals as part of their background knowledge, but are not of interest to the domain under consideration. For instance, the fact that a *container* is *used to promote a brand* is something one may know about that object, but which is totally irrelevant in the domain of *waste management*, where what matters are the main functions of the object in that domain, such as *conditioning, transportation and storage of goods*, or the fact that *they are a large part of waste* and that *they have to be valorized by industrials themselves*. These latter features are thus considered salient.

Furthermore, not just any salient feature forming a specialized concept is of interest in defining that concept; only *relevant features* (F_R) are. In the previous example, only the main functions of a *container* and the information relative to its *valorization* are relevant in that particular domain. Thus, a definition is a set of relevant features which correspond to a subset of salient ones, or in fact often, as will be shown, to a set of potentially relevant ones (F_{PR}), i.e. a set of features that could each be perfectly relevant to a definition of the concept, but that are not necessarily selected to play a part in the definition.

2.1.2 Concepts and definitions in terminological dictionaries

This theoretical background should adequately account for the way in which conceptual information is conveyed in terminological dictionaries or databases, which gather specialized knowledge (*concepts*) by means of dictionary entries (*terminological records*). These are, indeed, composed of different fields corresponding to different kinds of information relating to the concept[1] —mainly term(s), definition, field code(s), encyclopedic note(s) and illustration(s). Each field expresses at least some salient feature(s) of the concept through linguistic or other means (symbols, schemas, illustrations, films, etc.). The definition expresses the relevant features of the concept.

The logical conclusion of the theoretical framework is that not just any feature (piece of information) is relevant to define a given concept in a given expert domain.

2.2 Methodological background

This conclusion has an impact on terminological methodology which shows in the terminographic practice of definition writing: to write a definition, one extracts from a specialized corpus all the salient information on the concept to be defined. After identification of the potentially relevant features among the extracted data, a further selection may be done. The resulting relevant features are then compiled in a single definition so as to express them in a single informative sentence.

2.3 Implications of the background

The present theoretical and methodological framework implies that definitions express only features of a concept that are relevant in a given context[2]. This, in turn, implies that a distinction must be made between theories of concepts and theories of definitions.

A further implication of this background is that the information extracted from corpora is not necessarily defining, let alone making up a full definition, although it may sometimes be the case (only 11 cases out of 56 analyzed concepts); the information extracted mostly corresponds to some feature of the concept (wether potentially relevant, salient or even latent) —out of 380 identified non redundant features, 242 were F_{PR}, 125 F_S and 13 F_L—, which in some rare cases correspond to elements of its extension (13/380 features).

3 Questions to be considered for DE evaluation

The last paragraph raises several questions pertinent to the design of schemes for the evaluation of information extraction for definitions in a terminological context.

3.1 First question: What kind of relevant information?

What kind of information is relevant and relative to what? Is there a general (universal) relevance rule that would be applicable to all possible cases, whatever the concept or the domain? Terminological concepts are often considered to be functional concepts, therefore defined in terms of a specific function. However, empirical studies show that this is not always the case (see for example [15]). Given the results of empirical findings, it appears that there is no such general relevance rule and that, in order to be able to evaluate the relevance of the extracted conceptual information in terms of their conceptual content, one ought to have an idea of what is relevant in particular cases.

The hypothesis proposed to address this question is that feature relevance depends on:

- the conceptual category of the defined entity (`ABSTRACT`, `INANIMATE`, `ANIMATE`, `EVENT`, etc.) and
- the type of expert domain to which the concept belongs [2, 9, 10, 11, 12].

These hypotheses build on the findings of two domains: On the one hand, findings in lexical semantics show that different types of entities imply different types of argument structures; on the other hand, research

[1] Terminological dictionary entries also contain linguistic information, i.e. on linguistic properties and behaviour of terms (spelling variants, phraseology, etc.), but these are not of interest here.

[2] It also follows that the term "concept" in terminology does not refer exactly to the same "concept" as in other domains, where it often refers to a wider concept, for instance one which would encompass all the possible features associated with a given extension by a given individual. The terminological "concept" nevertheless stays in line with the latter.

in cognitive science has shown that feature salience depends on the kind of entity considered and/or the type of theory.

This first question may therefore be answered empirically —in a manner proposed by [15], following [3, 13, 14]— by studying the internal structure of definitions in terms of the conceptual relations (such as `FUNCTION`, `PART`, `CAUSE`, `CONSEQUENCE`, etc.) that are conveyed by the features expressed in definitions[3]. Thus, an evaluation scheme should use the observed results (annotated genus-specific or extension patterns) to assess the relevance of the extracted information relative to the kind of entity defined and the kind of domain type it belongs to.

However, answering this first question is not sufficient to obtain a complete evaluation scheme: the method only describes what is deemed relevant in the cases studied (even though the results are generalized through proper statistical methods); it does not provide any understanding of why those results are observed. The results do not say anything about which other salient or potentially relevant features were discarded as non relevant or, if deemed potentially relevant, why they were excluded. They do not tell anything about relevance conditions. To put this differently: the definitions studied could have contained a larger number of features deemed to be relevant. For one reason or another, some potentially relevant features were excluded. We need to understand the reasons for the exclusion in order to be able to understand feature selection in definitions. Only then can we hope to evaluate the relevance of the extracted conceptual information for definition writing in terminology.

3.2 Second question: What relevance conditions?

Obviously, this raises another question: what are the relevance conditions? This question, in fact, implies two interrelated subquestions: what are the principles guiding the selection of relevant features:

> (2a) How to decide if a feature may be relevant, i.e. among salient features, how to distinguish between a defining information element and a non defining one, and
>
> (2b) what are the principles guiding the selection of relevant features to be introduced in the definition from amongst a larger set of potentially relevant features?

These sub-questions are interrelated in the sense that possible answers to one could well apply to both, as will be shown later. It is important, however, to make a distinction between these two questions, and to try to answer them separately. As to how to proceed to resolve them within this framework, an explanatory proposal can be put forward (4.2), which should be tested to determine which of its particular hypotheses may prove useful in answering the questions and, thus, to serve as a basis for feature evaluation. That is what will be illustrated in the following sections, by focusing on possible ways to answer question 2b.

[3] This question won't be addressed here.

3.3 Summary of the issues

To conclude this preliminary part, a visual summary (Fig. 1) of the set of questions relating to feature selection for definitions and which ought to be considered in elaborating an evaluation scheme for DE in terminology is proposed.

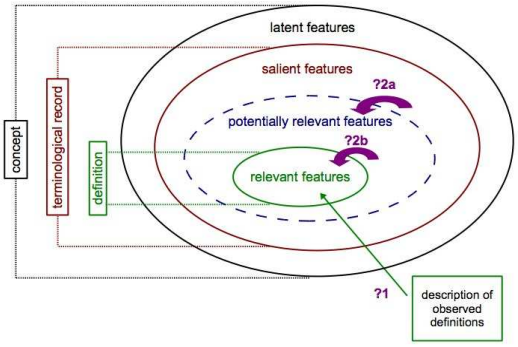


Fig. 1: *Questions related to feature selection*

This figure shows the nested sets of features, where the smallest set represents the relevant features actually expressed in a definition and which can be empirically studied in order to answer question 1. The arrow going from the set of salient features (expressed in a terminological record) to the possible set of potentially relevant features represents question 2a, and that going from the latter to the set of relevant features, question 2b. Again, 2a is a matter of distinguishing what is defining and what is not —for example, between a relevant feature and a so called encyclopedic information element—, and 2b a matter of feature selection amongst potentially defining features.

4 Proposals to answer question 2b

From here on, the focus will mainly be on some proposals concerning answers to question 2b, i.e. what are the relevance conditions or referentials, or what makes a feature relevant. We will first present a method that can be used to empirically select a feature as relevant (4.1). We will then focus on a more theoretical explanation (4.2).

4.1 Empirical method

On a purely empirical level, one may select relevant features (among a larger set of merely salient or potentially relevant features) by identifying repetitions in the retrieved information. Data analysis indeed shows that repetitions of a feature in the extracted contexts mostly correspond to relevant features (64 % of repeated features appeared in a definition). However, this method has some drawbacks: (1) It often requires that multiple contexts are retrieved for a given concept (73 % of the repeated features appeared in multiple contexts), and preferably from multiple sources. Yet, the analyzed data shows that multiple contexts were

found only for 50 % of the concepts. When relevant features are expressed within the same context, the repetition generally appears in the form of anaphoras or titles of paragraphs followed by the same information within the paragraph. (2) Automating the identification of redundant information may also prove difficult because of some divergences in the phrasing of the information. To be reliably used, this method should be further tested on large corpora. Another limitation of this method is that the solution proposed to the problem of deciding whether a feature is relevant is purely pragmatic (albeit probably very efficient); it lacks explanatory power. In the next section, therefore, we introduce some proposals which enjoy a more solid theoretical grounding.

4.2 An explanatory proposal

The following proposal to explain feature relevance combines well known factors that are generally thought to influence concept formation, and thereby feature selection: the kind of extension defined, the kind of theoretical context and individual background in which the concept is considered, and the communicative setting involved. At a more specific level, the proposal also takes into account feature characteristics, which are considered relative to the different dimensions, so as to individuate different hypotheses. Each hypothesis should be examined and tested in order to see to what extent the combination of a dimension with a given feature characteristic may serve as a particular relevance referential, for example with regard to automatic evaluation methods.

4.2.1 Constraining dimensions

One may consider (at least) three dimensions which should interact as relevance referentials in constraining feature selection for a definition: an *extensional dimension* where the objects of the extension are considered as such, independently of any context or domain, a *contextual dimension* encompassing *conceptual systems* and *individual backgrounds*, and a *communicative dimension*. These *dimensions* are taken to be higher order or more general referentials, and may be characterized by a set of attributes (such as the *type of object set* for the *extensional* dimension) having different values (for example, for *type of object set*, attributes distinguishing a *single object set* from a *multiple object set*). The attribute-value pairs may in turn be related to different types of feature characteristics. As presented in more detail below, the latter may also be described in terms of attributes (such as *feature coverage*) and values (like *universal feature* or *stereotypical feature* for *feature coverage*)[4].

4.2.2 Feature characteristics

Features may be characterized in several ways, also specified by means of attributes and values.

As far as content is concerned, a feature expresses some information, which may correspond to a *gradable* or an *non gradable property* (i.e. being more or less something) of the object(s) of the extension, and which may be described in terms of *conceptual category* (i.e. type of entity, for example `ABSTRACT`, `INANIMATE`, `ANIMATE` or `EVENT`) and *relation* (such as `FUNCTION`, `PART`, `CAUSE` or `CONSEQUENCE`). The expressed information may also contain part of the *extension of the concept*. Relative to the definition, it may correspond to the *genus* or to a *specific*, having either a *descriptive* or a *distinctive* function, and a *necessary* or *sufficient* status.

Relative to the object(s) of the extension, a feature may be characterized in terms of *feature coverage* as referring directly to a particular instance of the object(s) of the extension, in which case it may be called a *singular* or *individual feature*, or as a generalization covering either a certain percentage of the objects (*stereotypical feature*) or all of them (*universal feature*). Among the universal features, a further distinction may be drawn between those that belong to the extension alone (and are therefore *typical* or *distinctive*) and those that are shared with some other extension (and are therefore *non typical* or *non distinctive*[5]) [7]. The latter distinction (typical vs non typical) may also prove useful in determining wether a feature constitutes a distinguishing feature, setting a concept apart from other other concepts in the domain. A feature may also be described, again relative to the object(s) of the extension, as *intrinsic* or *extrinsic*, *essential* or *accidental*, and *necessary* or *non necessary*.

Finally, a feature may be described in terms of mental representations of three kinds: *theoretical* (T), *prototypical* (P) or *exemplar* (E) [4, 6], respectively a representation consisting in a causal or nomological understanding of a property (T), one associated with statistically typical features of a property (P), and one consisting in individual exemplars of a property as already encountered by a person (E).

5 Extensional constraints on feature selection

In the subsequent exploration of an answer to question 2b, concerning the selection of relevant features among potentially relevant ones, a method will be presented to illustrate how each of these feature characteristics may be examined and tested to see if it could be used as a relevance referential. In concrete terms, the method involves examining one single aspect or attribute of the extensional dimension, the type of object set, in relation to one single feature characteristic, feature coverage. i.e. *feature coverage*. It is an attempt to see (i) what this particular characteristic of features (4.2.2) can tell about feature selection relative to extensional constraints (5), if anything; and, (ii) what pragmatic factors (5.3) should be considered as further constraining feature selection, for example, how the other dimensions may enter into the selection process. It is not intended to give definitive answers; the focus is on exploring possible paths towards an answer given the proposed explanatory hypotheses, and on trying to identify possible methodologies for testing the adequacy of any proposed solution. This could

[4] From lack of space, this hypothesis will not be further elaborated on here.

[5] The term *typical* will be used to avoid confusion with a feature having a distinctive role within a conceptual system.

eventually lead to appropriate evaluation methods for extracted information. The overall objective is thus to have an understanding of where to search for solutions to the questions, which might help orienting evaluation methodologies (for example, automatic vs. human expert) for the feature selection aspect of definition extraction.

The particular focus on the coverage characteristic of features (*feature coverage*) and its relation to the type of extension, i.e. the *type of object set* defined (5.1), shows that their combination yields and licences different definition structures: *classical* or *by necessary and sufficient conditions* (where the sum of the features covers all the objects of the extension), *prototypical* (where the sum of the features does not cover all the objects of the extension) or *(semi-)encyclopedic* (where the sum of the features covers only the one object of the extension). The aim is to explore the relationship between this particular characteristic of features and definition structure.

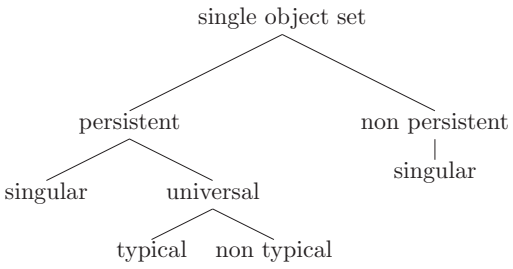
5.1 Types of object sets

An extension, considered as such, independently of any context or domain, can be described as corresponding to two different *types of object set* (one of the extensional dimension's attributes): a *single object set* and a *multiple object set*, which latter may contain a *homogenous* or a *heterogenous* set of objects. A *multiple object set* may also be described as a *closed set* in which the objects may be listed or an *open set* where it is not possible to list all the objects[6]. Single object extensions may consist in *persistent objects* (e.g. the sun, the earth) or in *non persistent objects* or *contingent objects* occurring at some particular location at a particular time (e.g. historical concepts, the swiss *Conseil fédéral*).

5.2 Correlations between feature coverage and definition structure

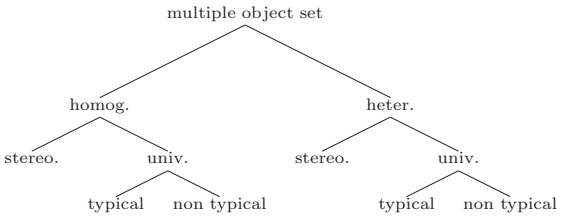
These different types of object sets or extensions may tend to correlate with different types of feature coverage in the following way.

For extensions composed of a single object:



[6] The distinction between open and closed set may prove useful as far as extensional definitions are concerned, but should not present any difference for the later argument here.

For extensions composed of multiple objects:



What definition structures are possible in what cases can now be deduced from the correlations between types of object sets and feature coverage, coupled with the knowledge that classical definitions may only use universal distinctive features whilst encyclopedic definitions may only use singular features. From these correlations, the constraint of the extensional dimension on feature coverage and the resulting definition structure may be expressed in the form of the following conditional rule:

```
<DEFINITION STRUCTURE>
licensed if
<TYPE OF EXTENSION and
FEATURE COVERAGE>
```

The extension and feature conditions for each definition structure may now be listed as follows:

```
CLASSICAL
if
<SINGLE PERSISTENT OBJECT and
UNIVERSAL TYPICAL FEATURE>
or
<HOMOGENOUS SET and
UNIVERSAL TYPICAL FEATURE>
or
<HETEROGENOUS SET and
UNIVERSAL TYPICAL FEATURE>

PROTOTYPICAL
if
<SINGLE PERSISTENT OBJECT and
UNIVERSAL NON TYPICAL FEATURE>
or
<HOMOGENOUS SET and
STEREOTYPICAL FEATURE>
or
<HOMOGENOUS SET and
UNIVERSAL NON TYPICAL FEATURE>
or
<HETEROGENOUS SET and
STEREOTYPICAL FEATURE>
or
<HETEROGENOUS SET and
UNIVERSAL NON TYPICAL FEATURE>

ENCYCLOPEDIC
if
<SINGLE PERSISTENT OBJECT and
SINGULAR FEATURE>
or
<SINGLE NON PERSISTENT OBJECT and
SINGULAR FEATURE>
```

According to this proposal —and provided it is tenable—, the nature of the extension should be considered as one of the relevance conditions or referentials for relevant feature selection. It shows, for example, that multiple object sets do not licence encyclopedic definitions, and also that they licence both prototypical and classical structures. It shows, furthermore, that *single features*, which are in principle banned from terminographic definitions, are in some

circumstances perfectly relevant to constructing a definition of a concept[7]. A fact that is not accounted for either by the classical theory of definitions or by the prototypical theory.

These conclusions entail that only in some cases does the feature-extension combination correspond to a single definition structure, and thus, that the corresponding potentially relevant features will (or should) be selected as actually relevant. In the other cases, further constraints are necessary to decide which definition structure applies. There are, for example, cases where heterogenous sets of objects considered in a given context or domain are defined by means of a classical definition, implying the use of some universal feature. That would be the case for a set of heterogenous objects which have the same function in a given domain: the `FUNCTION` feature applies to all of the objects of the extension and is thus a universal feature, licensing a classical definition [5, 190]. Therefore, the extension alone, considered independently of any context, is not a sufficient relevance referential. Further pragmatic constraints may enter in the relevant feature selection decision.

5.3 Further pragmatic constraints on relevant feature selection

In a second step, some pragmatic factors that may further explain relevant feature selection are put forward. These factors are partly related to the other dimensions postulated as broader feature relevance referentials, that is the *contextual* and *communicative dimensions*.

5.3.1 Contextual and communicative constraints

The nature of the vocabulary used to express the features in a terminological record (for instance, in the term(s) referring to the concept) is partly dependent on the target audience and its background knowledge. This is because definitions do not function in isolation; they are always considered in conjunction with the other information expressed in the terminological record. Therefore, if the other fields express an item of information in an explicit manner (for instance, if the terms are deemed "transparent"), then —according to the concision principle— the definition may be relieved of those features that are already expressed elsewhere.

5.3.2 Methodological constraints

The type of terminographic work carried out may also determine which features should be expressed in another field instead of in the definition. For instance, in systematic terminography[8], some features that are potentially relevant may be expressed in the field codes for the sake of concision and to ease indexing and concept retrieval. In those cases, the feature which is considered as defining, and which could therefore be relevant, may only appear in the field code and is thus only indirectly inherited.

Some potentially relevant features may also be included in the genus' comprehension and are thus implicitly inherited [16, 31]. Those potentially relevant features may therefore be omitted from the definition.

6 Methodological proposals for DE evaluation

Now that a tentative (and partial) solution to the problem of selecting relevant features amongst a set of potentially relevant features has been examined, some equally tentative methods for automating the evaluation of information extracted from a corpus for use in constructing terminological definitions may be considered. The methodologies proposed should be tested in order to see whether they can in fact be automated or if the evaluation process needs to be carried out by a human expert. In any case, it should be noted that this empirical endeavor is a task whose accomplishment relies on linguistic factors. Therefore, to be applicable, each method should be associated with a set of linguistic features specifically devised for each language.

Considering that the relevance referentials examined are the coverage of a feature and the nature of the extension's object set, two methodological questions should be addressed:

1. How to account for feature coverage automatically, i.e. the number of objects in the extension?
2. How to account for the extension's nature automatically, i.e. the homogeneity or heterogeneity of the set of objects?

As far as *feature coverage* is concerned, we suggest identifying and testing linguistic patterns that could be matched with the three types of feature coverage. Thus, *universal features* might be searched out by looking for nomological expressions like "all N[...]" or "always found in[...]"; *stereotypical features* might be identified by looking for generalizing expressions like "generally[...]" as suggested by Pearson [8, 142–143] (where more patterns are proposed that may serve to determine the one or the other type of feature coverage or another), or expressions like "measuring between [...] and [...]", which express features that allow for some variation in the properties of the extension's objects[9]; and, finally, *singular features* might be found by identifying referential expressions, such as proper names.

[7] In this case, one could say that this proposition also answers question 2a in that it specifies particular cases where encyclopedic information is actually defining. However, wether just any single feature is defining (as opposed to non defining) is a different question. As an example, consider the difference between two features specifying the swiss political entity *Conseil fédéral*: *is swiss* is (or, at least, may be considered as) defining, but *was founded in the year [...]* is not.

[8] That is, terminographic work carried out systematically on all the terms of a domain or a subdomain, as opposed to punctual terminography, where the work is done on a term by term basis.

[9] This kind of expression is also a sign of gradability, which may not be incompatible with universal features. It could therefore be ambiguous.

In order to identify *multiple object sets*, one could look, following Carlson [1], for expressions like "are widespread", which only apply to kind predicates, thus exclude single object extensions. With respect to identifying the nature of the *multiple object extension*, an expression identified as a genus by way of a linguistic marker, for example, and followed by a disjunction would be a sign of a *heterogenous set*. However, this kind of judgement may prove difficult to automate. Expressions like "for example" followed by an enumeration may also indicate the heterogeneity of the extension. Indeed, in some cases, it is difficult even for a human annotator to determine whether the set is homogenous or heterogenous.

These methodological questions should be further examined in order to determine to what extent this particular hypothesis may be used as a reliable feature relevance referential, and to see if its evaluation is easily automated or if evaluation needs to be performed by a human judge, who may apply a wider range of tests to asses the relevance of a feature —of extracted information— with respect to the extension, while considering the exemplified attributes and values. She might not only rely on linguistic markers, but also use linguistic tests that require making more complex inferences, not to mention make use of tests that are based on her understanding and interpretation of the information in the extracted text, or on her background knowledge of the world.

7 Conclusion

On the grounds that not just any extracted information element is relevant to the definition of a given concept in a given expert domain, it was claimed that evaluation guidelines applicable to DE should integrate some understanding of what is relevant for terminographic definitions and in which cases. This, in turn, requires some understanding of the mechanisms of feature selection. The main purpose of this paper was, therefore, to narrow down questions and possible answers in order to determine where adequate solutions to the problem of relevant feature selection can be sought. Once identified, the solutions could prove useful in elaborating evaluation schemes of extracted information in terminographic definition writing.

A theoretical and a methodological framework, backed by empirical data, was presented. This background enabled us to identify two precise questions that should be addressed when designing evaluation schemes for extracted information in the context of terminographic definition writing. (1) The first question was: *What kind of information is relevant and why?* Two hypotheses were put forward, but not examined here: (i) the type of entity defined and (ii) the type of expert domain to which the concept belongs. (2) The second question (*What are the relevance conditions?*) was subdivided into two subquestions: (2a) *How to distinguish between salient (non defining) and potentially relevant (defining) features?* and (2b) *How to select relevant features among potentially relevant ones?* Only the second, (2b), was considered in more detail.

An explanatory proposal concerning feature relevance (question 2b) was put forward, of which one aspect (the extensional dimension) was examined in more detail as an exemplification of the procedure that should be followed to assess the validity and usefulness of the hypothesis for feature evaluation in DE. It was shown that by considering the types of object sets and correlating them with feature coverage, one could, for example, account for different definition structures. Finally, some methodological considerations were discussed to see how proper tests may be devised at a more linguistic level, and thus potentially used to automate the assessment of a feature's relevance.

Applying the techniques used in the example examined here to each attribute-value couple of each dimension and of each feature characteristic, it should be possible to identify the most fruitful hypotheses for relevance determination. Once all the suggested constraints have been examined for their significance in deciding on a feature's relevance, weighting each relevance referential according to what is defined, in which domain, by whom, for whom, in what context and with what purpose could also be considered.

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