Knowledge Organization in the Philosophical Domain: Dealing with Polysemy in Thesaurus Building

Fulvio Mazzocchi* and Melissa Tiberi **

*Institute for Atmospheric Pollution of CNR, Via Salaria km 29,
300 Monterotondo staz., 00015 (RM), Italy <mazzocchi@iia.cnr.it>
**Central National Library of Florence, Piazza dei Cavalleggeri, 1,
I-50122 Florence, Italy <tiberim77@yahoo.it>

Fulvio Mazzocchi works as a researcher at the Institute for Atmospheric Pollution of the Italian National Research Council in Monterotondo (RM). He has studied biologic sciences and philosophy at 'La Sapienza' University in Rome. He has participated in a number of projects concerned with the design and the implementation of thesauri for the environmental domain, such as EARTh and GEMET. Among his current research interests there are epistemological foundations of and semantics in relation to knowledge organization.

Melissa Tiberi has obtained a degree in philosophy at 'La Sapienza' University in Rome. At present, she is working as an external consultant for the National Central Library in Florence, where she is taking part in the development of the Thesaurus of the *Nuovo Soggettario*. In the past, by making research on the different kinds of semantic relationships and by implementing them in the thesaurus, she has collaborated to the development of EARTh, too.

ABSTRACT: This paper focuses on polysemy, the phenomenon by which a word has a network of multiple but related senses, as a characterizing feature of the philosophical lexicon. Many philosophical terms, in fact, are typified by a considerable stratification of meaning, which originates from the history of their semantics, where meanings accumulate over time and past knowledge is continually reintroduced and re-elaborated into new forms of theorizations. Developing a domain-specific knowledge organization system (KOS), like a thesaurus, would be largely affected by this feature. The demand for semantic disambiguation is, in fact, amplified. Furthermore, together with their frequent polysemy, the level of abstraction of the philosophical terms and the conceptual complexity of this domain make the thesaural semantic arrangement, especially the hierarchical structures, rather difficult to be set up. On the basis of a Wittgensteinian conception of meaning and its implication for information retrieval issues, some preliminary ideas on how to proceed on this topic are presented.

1. Introduction

Polysemy is the phenomenon by which a word has a network of multiple but related senses. It differs from homonymy, where different meanings are asso-

ciated to the same word but have no relation. Polysemy—that in the XXI century has been studied in philosophy, linguistics and psychology—ensures richness and flexibility to a system of signs. As stressed by Ricoeur (1975), it is a fundamental fea-

104

Knowl. Org. 36(2009)No.2/No.3
F. Mazzocchi and M. Tiberi. Knowledge Organization in the Philosophical Domain

ture of language, given that a language lacking polysemy would be forced to an indefinite extension of its vocabulary. In order to be used to communicate and express the variety of human experiences, a lexical system need, in fact, be developed according to the principles of economy, adaptableness and sensitivity to the context.

Polysemy, however, is also a factor of lexical ambiguity to be solved, as far as, in the process of creating a knowledge organization system (KOS), a natural language has to be converted into a subject language. Thesauri are KOSs designed to support the retrieval of information. They aim, in fact, at improving precision and recall and for such a purpose they make use of methods for treating homonymy and polysemy, and include a relational semantics by which meaning relationships among terms are established and the synonymy issue is dealt with. In this way the vocabulary is normalized and terms are rendered basically monosemous (Svenonius 2000).

Thesauri can also be regarded as semantic and terminological representations of given knowledge fields: they are functional maps of these fields. In developing them, it is, therefore, important to consider how they should deal with the particular features of the domain to which they are devoted, in order to support their intended use. A thesaurus of philosophy, for example, would be required to cope with the complexity and the level of abstraction of the philosophical conceptual structures and, as for the lexicon of this domain, with the fact that different philosophical concepts can be connected to the same term according to different theoretical backgrounds.

Considering the last point, many philosophical terms are, in fact, characterized by a considerable stratification of meaning. Such a stratification originates from the history of their semantics, where meanings accumulate over time and past knowledge is continually reintroduced and re-elaborated into new forms of conceptualizations (Natoli 2004). As a direct consequence of this, they are polysemic. Of course, not all the philosophical terms are highly polysemic. A number of them are part of single philosophical systems or used in restricted theoretical contexts. Examples of them are Übermensch, translated as superman, superhuman, or overman, (concept of Nietzsche's philosophy), unmoved mover or prime mover (firstly introduced by Aristotle and then resumed by the Scholastic philosophers), signifier (introduced by De Saussure, part of the structural linguistics, and pertaining to philosophy of language).

This paper focuses on polysemy as a key feature of many philosophical terms and considers its implication for knowledge organization issues. Section 1 is devoted to the analysis of terminological aspects, taking advantage of Adorno's ideas about the philosophical lexicon as expressed in his *Philosophische Terminologie* (1973), and focusing above all on the reasons for and characteristics of its polysemy.

In section 2, the semantics of the philosophical terms is interpreted in the light of Wittgenstein's conception of meaning. Section 3 discusses how the development of a philosophical thesaurus is affected by the conceptual complexity of the domain and by the high level of polysemy of its lexicon, and presents, from a Wittgensteinian perspective, some preliminary ideas on how to proceed on this topic.

2. The philosophical lexicon: remarks on its features and polysemy

2.1 Relationship with ordinary language

First, it is important to note that philosophy relies largely on common language. The primary limitation placed upon philosophical terminology is, indeed, the standard use of ordinary discourse. As stated by Dye (1967): "the vast majority of philosophical terms are selected from among those having general currency. Of course, philosophers do occasionally coin neologisms, but this has never been so extensive as to result in a technical vocabulary for philosophy in the same sense that there are technical vocabularies for physics or mathematics."

This fact is mostly due to the nature of the cultural role played by philosophy that, lacking a sectorial character, does not confine itself, as do for example the natural sciences, to some particular body of data, aiming to embrace and appraise all aspects of reality and of human experience. As Dye further adds: "Ordinary language, albeit with an understandable emphasis upon the practical, also embodies the entire breadth of human experience. Since philosophy aspires to a critical reconstruction of human experience, and since technical terms adapted to rather narrow specialties are not routinely capable of the requisite degree of generalization, philosophy tends to rely rather heavily upon the more comprehensive, although less precise, expressions of ordinary speech" (Dye 1967).

Nonetheless, words taken from common language are not used in the same way, since (new) special meanings are assigned to them (Adorno 1973). In a

sense, they become 'foreign' (although philologically they are not). Even though not in isolation from the social and cultural environment where they live, philosophers tend, in fact, to intellectually reconstruct the experience of reality and create their own conceptual universe. The cause of the semantic transformation resides, therefore, in the fact that words are used as part of these new (and conceptually thick) universes of discourse. As a consequence, in opposition to the more fluid meaning that words have when considered in common language, the meaning of philosophical terms crystallizes in stable and refined forms.

2.2 Form and content of the philosophical terms throughout history

The meaning underlying philosophical terms cannot, hence, be grasped by regarding these in isolation from the theoretical background in which they are embedded. A philosophical term should rather be understood referring to it within the entire web of concepts that forms its particular universe of discourse and bearing in mind the role it plays in this universe (Adorno 1973).

In addition, the historical dimension of this should also be considered. Philosophy, being strongly typified by both its self-critical character and its temporality, necessarily is, in fact, involved in the interpretation and assessment of its own historical development (Dye 1967), which is characterized by a continuous elaboration of concepts and by a constant reassembling of the conceptual structures according to different philosophical viewpoints.

In philosophy there is no univocal (nor final) solution to problems, but rather a continuous work in which any topic is regarded from different perspectives, can be related to new emerging issues, yet always maintaining a strong connection to the former tradition.

This is somehow reflected also in the fact that, as explained by Adorno (1973), although their conceptual content undergoes changes, in philosophy there is the tendency to preserve the terms. Philosophical terms function, in effect, as 'signs' of philosophical issues that have emerged and settled throughout history.

Two contrasting processes seem, therefore, to coexist. On the one hand, the identity throughout history (of a philosophical issue) is ensured by the fact that terms, referring to similar problems, tend to maintain the same form; on the other hand, the

process of change is reflected in the new use of these terms, as they are re-contextualized in different philosophical systems. As a result, in many cases the same expression is used to denote different (but related) concepts. Thus, polysemy abounds in the philosophical lexicon.

2.3 Polysemy in the philosophical lexicon

Philosophical terms express highly complex and abstract concepts. As already said, if on the one hand the form of many of them has been preserved throughout history, on the other their meaning changes. The same term can be used, in fact, in different conceptual frameworks and be defined differently. However, most of the different meanings that have been produced in the course of the historical development of philosophy do not disappear. Terms acquire new meanings not (necessarily) replacing the old ones. The conceptual thickness of philosophical terms results, among other factors, from a (theoretically-based) process of continuous readjustment of their semantics and of integration of new meanings, which tend to coexist with the previous. Meanings, thus, accumulate, generating polysemy. The semantics of many philosophical terms is characterized by a considerable stratification and by the presence of a non-reducible multiplicity of senses, which are linked as part of the same cluster, but at the same time maintain their distinction.

The semantics of the philosophical terms, therefore, incorporates the history of these latters. Past conceptualizations are still alive—at least partially—in them. This is different, for example, from what occurs with scientific terms. Similarly to the philosophical terms, scientific terms acquire meaning within certain theoretical frameworks. Kuhn (1962) affirmed, indeed, that the change of meaning of scientific terms is one of the tangible signs of a paradigm shift or, according to his latest theories, the consequence of a change in a lexical taxonomy (Kuhn 2000). Scientific revolutions result, in fact, in taxonomic changes having a number of effects at the semantic level: in many cases, even if the original terminology is conserved, it is still subject to modification of meaning. However, differently from philosophy, the old meaning of a scientific term is no more of interest for the community of scientists and dies out. It becomes material for history of science, while the only meaning in use is the one justified by the accepted paradigm.

106

Knowl. Org. 36(2009)No.2/No.3
F. Mazzocchi and M. Tiberi. Knowledge Organization in the Philosophical Domain

3. The semantics of the philosophical terms from a Wittgensteinian perspective

The semantics of many philosophical terms can be represented, in most of the cases, in terms of family resemblance as introduced by the late Wittgenstein. In order to explain the multiplicity of practices that occur in language, Wittgenstein (1953) put forth the language games theory. According to this theory, any single model of explanation is not capable to grasp the real complexity of language, which does not consist of a single unified system, but can rather be viewed as a collection of multiple and indefinite games. For Wittgenstein, meaning is use and should be understood in the forms of social living. To know the meaning of a word means to know how to use it as part of an activity, within the framework of a particular language game and following its rules.

As a consequence, the semantics of a word, with the exception of a restricted number of cases, is not defined by the existence of a stable nucleus of meaning. Considering the several possible and different language games, the instances of the use of a word do not, in fact, (necessarily) share a common denominator (i.e., some necessary and sufficient conditions as a common essence or a referent). They are, instead, linked through family resemblances, being similar but each in a different manner, like members of a family: some of them could have the same form of mouth or chin, others the same eyes but without a single feature common to all members:

> "What a concept-word indicates is certainly a kinship between objects, but this kinship need not be the sharing of a common property or a constituent. It may connect the objects like the links of a chain, so that one is linked to another by intermediary links. Two neighbouring members may have common features and be similar to each other, while distant ones belong to the same family without any longer having anything in common. Indeed even if a feature is common to all members of the family it need not be that feature that defines the concept.

The relations between the members of a concept may be set up by the sharing of features which show up in the family of the concept, crossing and overlapping in very complicated ways.

Thus there is probably no simple characteristic which is common to all the things we call games. But it can't be said either that "game" just has several in-

dependent meanings (rather like the word "bank"). What we call "games" are procedures interrelated in various ways with many different transitions between one and another" (Wittgenstein 1974, §35:75).

Wittgenstein, therefore, deconstructs the possibility to establish (natural) boundaries to meaning: words have multiple meanings which are connected through an open network. As Givon's (1986, 78) scheme seems to suggest, family resemblance functions by means of peripheral, partial connections, often established by analogy. Core properties common to all the members of the same family do not (necessarily) exist. For some authors, however, the idea of family resemblance as such does not impose that resemblances have to occur only at a local and peripheral level. A 'traditional' concept could originate, in fact, from a particular kind of similarity in which all its members share the same properties (Violi 1996).
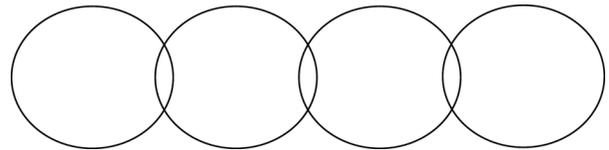

Figure 1. Givon's scheme for the representation of family resemblance

Wittgenstein believed that family resemblance plays a major role in the philosophical lexicon, as far as it expresses the polysemic character of most of its terms (Pelczar 2000). An example could clarify this point. The idea of *category* has developed throughout the different stages of Western (and not only Western) philosophy. How many (special) meanings could be assigned to the term 'category' or are somehow incorporated in its formulation? A philosophical encyclopaedia or dictionary would include different definitions according to the theories of different philosophers or philosophical schools. For example:

3.1. Aristotle

For Aristotle, the categories (*Katēgoriai*) should be regarded at the ontological level, as the ultimate determinations of the sensible reality, at the logical level, as the most general concepts, and have also a linguistic-grammatical significance.

Substance	*Ousia*
Quantity	*Poson*
Quality	*Poíon*
Relation	*Pros ti*
Place	*Pou*
Time	*Pote*
Position	*Keisthai*
State	*Ekhein*
Action	*Poiein*
Affection	*Paskhein*

Table 1. Aristotle's categories

3.2. Kant

Kant made a shift to a conceptualist approach in the conception of categories, that are conceived as *a priori* forms of the human intellect, which are necessary for any possible cognition of objects.

Quantity (*Quantität*)	Unity (*Einheit*) Plurality (*Vielheit*) Totality (*Allheit*)
Quality (*Qualität*)	Reality (*Realität*) Negation (*Negation*) Limitation (*Limitation*)
Relation (*Relation*)	Inherence and Subsistence <substance and accidents> (*Inhärenz und Subsistenz <Substanz und Accidens>*) Causality and Dependence <cause and effect> (*Kausalität und Dependenz <Ursache und Wirkung>*) Community <reciprocity> (*Gemeinschaft <Wechselwirkung>*)
Modality (*Modalität*)	Possibility – Impossibility (*Möglichkeit – Unmöglichkeit*) Existence – Non Existence (*Dasein – Nichtsein*) Necessity – Casuality (*Notwendigkeit – Zufälligkeit*)

Table 2. Kant's table of categories

3.3. Hegel

Hegel's categorial approach appears to reflect Kant's own triadic manner of articulating the categories—where the third term in the triad integrates somehow the others. Nonetheless, the categories lose their purely subjective character and are conceived as determinations of the *Idea* (or absolute reality) in the progressive dialectical unfolding. The fundamental categories are:

Being (*Sein*)
Essence (*Wesen*)
Concept (*Begriff*)

3.4. Russell

In Russell's view, the categories are the *logical types*.

The case of 'category' illustrates how polysemy occurs in the philosophical lexicon, and possibly denotes its extent. Being part of the same process of historical development—started with Plato's and Aristotle's philosophies and typified by a continuous comparison with past formulations—all the listed meanings, although pertaining to different theorizations, are somehow related and form a complex network, describable in terms of family resemblance.

Many other philosophical terms function in the same way, deriving their polysemy from an analogous process of stratification of meanings.

It is important to note that some authors (Blank 2003; Frath 2001) distinguish contextual variation from a true semantic polysemy, even if both can be represented by the notion of family resemblance. The former occurs in those situations in which the different meanings of a word are all linked to a same object, that can be regarded from multiple viewpoints (as occurs with the word piano that can be viewed as a music instrument or as a piece of furniture). The latter is, instead, related to those cases in which a word refers to different classes of (material or immaterial) objects (Blank 2003, 275):

> "It is important to make a clear distinction between the referential or extensional level and the level of semantic description: from a referential point of view, 'vagueness' can only mean that a given referent is classified as a peripheral instance of a category, but still as a member of this category.... If, on the other hand, two referents have to be considered as instances of two different extensional classes, we are beyond the limits of referential vagueness ... we are dealing with polysemy.

It should be noted that a certain degree of contextual variation (that is more frequent) and of polysemy concerns scientific terms, too. Kuhn (2000), for example, has questioned the idea that science is formed by a universal conceptual structure and that words used in scientific discourses have one and the same meaning in all fields. Each scientific discipline or community of practitioners holds a given set of con-

108

Knowl. Org. 36(2009)No.2/No.3
F. Mazzocchi and M. Tiberi. Knowledge Organization in the Philosophical Domain

ceptualizations, which crystallizes in a specific lexical taxonomy, in the frame of which terms assume particular meanings.

Which of the two phenomena exhibit the philosophical terms? Perhaps both. However, in cases on a par with 'category', in which the same term is used in different paradigmatic contexts and refers to different philosophical ideas or concepts (e.g. to different abstract objects), it is semantic polysemy that seems to be involved. Above all, these cases require to be specifically treated in a KOS, like a thesaurus.

4. Thesauri as semantic tools

Thesauri are semantic tools designed for the purpose of improving information retrieval. They are based on a natural language that is transformed, however, by means of certain semantic treatments, into an 'artificial' and normalized language where terms are rendered basically monosemous and relations among them are made explicit.

In order to achieve this goal, methods to solve cases of lexical ambiguity and delimit the meanings (and referents) of terms are employed. Precision in IR is, in fact, enhanced, when, by means for example of parenthetical qualifiers, homonyms and polysemes are disambiguated.

Furthermore, the relational semantics of a thesaurus is concerned with methods to connect terms with related meanings and constituted by a set of basic relationships (hierarchical, associative and equivalence relationships). Through the relational semantics, a thesaurus provides a more defined account of the meaning of each term—it is, above all, the allocation of the terms within the thesaural hierarchical trees that specifies their semantics—and a structured representation of the general understanding of a knowledge domain—a kind of "semantic road map for searchers and indexers and anybody else interested in an orderly grasp of a subject field" (Soergel 1995, 369).

The relational network is, thus, useful to navigate through a given bibliographic universe as an embodiment of a corresponding universe of knowledge. By means of it, the information recall performance is improved and, suggesting more specific terms that can refine the search and help to eliminate unwanted information, also precision could be enhanced (Svenonius 2000).

The question discussed in this paper is how all of this should be carried out in the domain of philosophy: in which way should the special features of this field be dealt with and somehow represented in a domain-specific thesaurus, in order to ensure the practical effectiveness of this latter?

4.1. Information retrieval in the domain of philosophy: insights from the language game theory

As affirmed in section 2, the meaning of words, including those that are part of philosophical and scientific vocabularies, could be understood in terms of the rules of the language games they belong to.

The language games theory has practical implications also for information retrieval issues (and consequently for the way in which thesauri should be designed). Words used in documents, in fact, pertain to particular language games. However, the cognitive authority that stipulates the basic rules for the use of any term in a given knowledge field, and thus its meaning, does not reside in the documents as such, but rather in the accepted paradigms (here intended in the broadest sense) of the field, on the basis of which the documents themselves are produced. Documents have, therefore, to be regarded as reflecting the conceptual structure of a given domain and appointed to the proper domain-specific language games (Andersen & Christensen 1999): "The meaning and purpose of a document is not a property inherent to it. Rather its linguistics and conceptual meaning is determined by external factors, within the framework of the language game …. A document cannot define itself."

Since databases (to be indexed and searched) include documents which are part of domain-specific language games and since information searchers look for concepts (contained in documents) as defined in specific subject fields, as affirmed by Brier (2006) "each subject area with interest in the documents of a database should have these documents indexed according to their own language game in order to make precise searches possible." Thus, in developing a controlled vocabulary, which aims to provide through its semantic arrangement a functional representation of the meaning of the terms, the way in which their use is ruled in the respective language games should be seriously taken into consideration (Mazzocchi et al. 2007). In particular, it should be pondered whether and how to give account of all the different meanings that can be associated to an expression (as occurring in different language games), and that could be potentially useful to the users (Hjørland 1998).

All of this is particularly relevant in the domain of philosophy. What happens, in fact, when this idea of

the semantics of a word, as being differentiated according to its use in diverse language games, is applied to the philosophical field?

The domain of philosophy could be analyzed at multiple levels and according to different dimensions, which contribute in forming its complexity and delimit specific frameworks in which philosophical terms can assume special meanings:

> Periods (further dividable into sub-periods):
> > Ancient (or Greco-Roman) philosophy;
> > Medieval philosophy;
> > Modern philosophy;
> > Contemporary philosophy.
> Philosophical disciplines (branches of the domain),
> > that include, for example, Metaphysics (the study of existence), Epistemology (the study of knowledge), Ethics (the study of action), and Aesthetics (the study of Art).
> Philosophical schools (that overlap with philosophical doctrines),
> > like Neoplatonism, Scholastics, Contemporary hermeneutics, etc.
> Philosophers.

This list (partially) corresponds also to what can be expected to be contained in a domain-specific thesaurus. For example, in the thesaurus derived from the *LCSH in Philosophy* the following categories (of headings) are included: name of philosophers, classes of philosophers (e.g. Aestheticians or Confucianists), philosophical disciplines, methodological approaches (e.g. Logical positivism or Phenomenology), philosophical concepts, and other philosophy-related headings.

Another aspect that should be considered is that philosophical theories, concepts and texts could be interpreted differently. For example, various versions and translations of a philosophical text are not isolated instances, but occur quite frequently, as in the case of the Greek philosophers. Theoretical controversies, which can occur at different levels, are an integral part of philosophy. Hence, the reconstruction of philosophical systems and theories is always filtered by a certain degree of interpretation. As a result of all of this (as well as of other factors not mentioned here), the structuring of the universe of philosophical knowledge into different language games could result in a highly complex endeavour.

In any case, even though the design of a thesaurus requires a simplified framework in order to correspond to actual operational needs, in representing the meaning of philosophical terms within a domain-specific KOS many of the discussed theoretical issues cannot be ignored.

Also for this reason, the inclusion of philosophers, as those who possess a conceptual competence of the field, in the process of compiling the thesaurus appears as necessary.

4.2 Which kind of domain-specific thesaurus?

Two issues directly concern the development of the thesaural semantic arrangement. Both of them are connected to the multiplicity and the level of entanglement of the language games that typify the domain of philosophy. First, the high level of polysemy of the philosophical terminology. This issue can only to some extent be solved by using parenthetical qualifiers. It could be necessary to perform disambiguation differently, for example, through a hierarchical or disciplinary contextualization of the terms (Tiberi & Mazzocchi 2007). (A limit of the argumentations presented in this paper is that they have not been derived from the process of design and implementation of a special thesaurus for philosophy.) Disambiguation could be carried out at different stages, thus not necessarily when terms are positioned within the thesaurus, but also postcoordinately, when a search is formulated, by proximity or AND operators. Precision in retrieval would likely be ensured. In order to rightly choose at which stage disambiguation should be performed, it is necessary to define which level of specificity the thesaural semantic structure should have in order to fulfil its function.

Second, the difficulty in classifying and even more in hierarchizing the philosophical terms, due to their frequent polysemy, to the fact that they refer to highly abstract ideas, and to the complexity and multiplicity of the conceptual structures to take into account, and of which these terms are part. In this case, what has to be assessed is, above all, which level of granularity the thesaurus semantic structure should have in order to correspond to its intended function.

Thesauri could be designed to represent the whole philosophical domain or part of it. According to the change in the degree of coverage also their characteristics could change, since the level of conceptual complexity and of polysemy of the considered terminology could differ significantly. A (partial) example of a 'general' (e.g. encompassing the whole domain) philosophical thesaurus is the one that has been compiled selecting from the *Library Congress*

110

Knowl. Org. 36(2009)No.2/No.3

F. Mazzocchi and M. Tiberi. Knowledge Organization in the Philosophical Domain

Subject Headings (Berman 2001) a series of headings related to philosophy, subsequently organized in a thesaurus format. This thesaurus does not, therefore, derive from the planning of a domain specific system. And this becomes clear by looking at its (scarce) conceptual and terminological coverage or at the way in which terms, like *Categories*, are displayed (many of the used parenthetical qualifiers make sense, for example, only in the wider domain covered by the entire *LCSH*).

Categories (Philosophy)	
	x Predicaments (Categories)
Nodes:	LOGIC
	METAPHYSICS
Broader terms:	Logic, Ancient
	Predicate (Logic)
Narrower terms:	Dialectical Materialism, Categories of
	Modality (Logic)
	Place (Philosophy)
	Quality (Philosophy)
	Quantity (Philosophy)
	Relation (Philosophy)
	Situation (Philosophy)
	Substance (Philosophy)
	Time
Related term:	Tattvas (Sankhya)

In the alphabetical list of the thesaurus, each term is presented with its semantic relationships and with the indication of *Nodes*, for the most part corresponding to the traditional subdivision of the domain by disciplines. On this basis, a systematic arrangement of terms is provided.

However, the way in which the thesaurus is displayed is not always clear, nor are the admitted semantic connections always understandable. For example, the way in which NTs are associated to the terms in the alphabetical list can be confusing, since a same NT term, when considered from the perspective of different Nodes, could correspond to different (even though related) concepts. This occurs, for instance, in the case of Quality and Quantity, both subordinates of Categories under two distinct Nodes. Their allocation in the Metaphysics Nodes seems basically to follow an interpretation of them as Aristotelian categories, whereas in the Logics Nodes they are treated as if they were regarded in a Kantian sense (cfr. with the description of 'category' in section 3).

Conversely, if for example Relation under the Logics Node has to be intended in the same Kantian manner (being a subordinate of Categories at the same level of Quality and Quantity), including among its NTs terms like Equivalence relations (Set theory) or Relational algebras, seems quite arguable. And if it should not be intended in this way, what could possibly mean the choice to display four terms as subordinates of Categories in this Node, equal in name and number to the first level of Kant's categories?

If the thesaural semantic organization has to ensure the navigation objective and to increase recall (and precision) in IR, its representation of meanings should be based on suitable structures, above all as

METAPHYSICS	LOGICS
Categories (Philosophy)	Categories (Philosophy)
Place (Philosophy)	Modality (Logic)
Quality (Philosophy)	Contingency (Philosophy)
Quantity (Philosophy)	Necessity (Philosophy)
Relation (Philosophy)	Possibility
<NTs omitted>	Quality (Philosophy)
Situation (Philosophy)	Extension (Logic)
Substance (Philosophy)	Limit (Logic)
<NTs omitted>	Negation (Logic)
Time	Quantity (Philosophy)
	Whole and parts (Philosophy)
	Relation (Philosophy)
	Causation
	Equivalence relations (Set theory)
	Identity (Philosophical concept)
	Implication (Logic)
	Interaction (Philosophy)
	Relation algebras

Figure 2. The term Categories as it appears in the thesaurus arrangement by Nodes

Knowl. Org. 36(2009)No.2/No.3
F. Mazzocchi and M. Tiberi. Knowledge Organization in the Philosophical Domain

111

far as the hierarchical arrangement is concerned. For the development of these structures, that in the case of the philosophical domain might require a higher level of detail if compared to the above shown, the way in which the semantics of terms is ruled by their respective (domain-specific) language games needs to be taken into account, in order to provide a reasonable and functional representation of it.

For example, generic (and polysemic) terms, like Categories, might be retained in the thesaurus to describe meaning in a general sense and be associated to History Notes illustrating the change of their semantics over time. In order to better reflect the existence of different special senses of terms like this, being they part of different language games, a cluster of more 'specific' or disambiguated terms could be derived from them and admitted in the controlled vocabulary, the meaning of these latter terms being further specified by their position within the relational structure. Moreover, additional forms of systematic display could be developed, for example structuring by period, or by a combination of period and discipline.

In any case, as already mentioned, the main question to evaluate is the level of granularity of the thesaural semantic structures with respect to their actual function in IR. The risk to create abstractly valid but too complicated and poorly usable structures still exists.

Things could be eased reducing the extent of the domain coverage (and, consequently, the multiplicity of entangled language games to be reflected) addressed by the thesaurus.

This occurs, for example, when thesauri are devoted to specific periods of the history of philosophy. Depending on their intended function, thesauri like these could be the final expected outcome or also a step in the development of a general philosophical thesaurus. The idea of creating a number of period-specific thesauri, to merge at a second stage, in order to obtain the complete thesaurus is, indeed, rather interesting. What should, however, be further investigated is, above all, if the hypothetically huge amount of intellectual work required to make the resulting vocabulary structurally consistent would be justified by the obtainment of substantial benefits for IR.

Of course, from the point of view of the semantic representation, the ideal situation is when a thesaurus is devoted to a single philosopher or to a specific philosophical school. In this case, dealing with a single (or restricted) conceptual universe on which the meaning of the terms depends, the conceptual complexity and the polysemy to be considered would be drastically reduced (and consequently the need to employ disambiguation methods). Provided that this is useful for the intended purpose of the thesaurus, developing more granular semantic structures should become easier.

5. Conclusion

Polysemy is abundant in the philosophical lexicon and represents a typical feature of many philosophical terms, originating from the history of their semantics. In this paper the origin of this phenomenon as well as its relevance for knowledge organization issues have been analysed. The development of a domain-specific KOS, like a thesaurus would be, in fact, largely affected by this feature. The demand for semantic disambiguation is considerably augmented. In addition, other factors, such as the high level of abstraction and the conceptual complexity typifying this domain, also contribute in rendering the thesaural semantic organization, especially the hierarchical structures, not easy to be established. It has been stressed how, from this point of view, things could be made easier if the extent of the domain coverage was reduced. A general philosophical thesaurus, in fact, would tend to be, planned differently from a thesaurus devoted to a specific historical period or to a single philosophical school, since the amount of polysemy and of entangled conceptual structures to be dealt with would be substantially different.

Wittgenstein's approach to meaning has furnished a theoretical basis for analyzing the semantics of philosophical terms and, with the idea of language game, a guiding principle with interesting implications for IR issues and for the design of KOSs, too, especially in the domain of philosophy. As already mentioned, many of the discussed ideas at this stage have been only outlined. They require, in fact, to be deepened and perhaps better evaluated also in terms of their technological feasibility. Above all, they should be experienced in the actual process of designing, implementing and using a special thesaurus for philosophy.

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112

Knowl. Org. 36(2009)No.2/No.3
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