

# The Principle of Semantic Warrant and the Study of Language: Conceptual Reflections

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**Abstract:** This study analyzes conceptual aspects of the principle of semantic warrant in knowledge organization through the study of language. This analysis resorts to the perception of language as a phenomenon of social activity related to the views of Mikhail Bakhtin and Ludwig Wittgenstein. From the authors' pragmatic concept of language, it seeks to update the possibility of understanding the principle of semantic warrant to address the shortcomings of theoretical reflection on this topic, especially in the wake of the emergence of web information phenomena.

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## 1.0 Introduction

The study of language focusing on information science and, more accurately, the domain of knowledge organization (KO) corresponds to the aegis of the epistemological statute that underlies this discipline. Language, as a vehicle of thought (Wittgenstein 1975), is also the interface between man and knowledge. The concept of language as the medium through which knowledge is manifested established an inseparable relationship between these two concepts. Language, from this perspective, is how knowledge is mediated, as it is through knowledge representation using a system of signs, so that it is possible to organize it.

This essay, which aims to analyze conceptual aspects of the principle of semantic warrant in the field of KO, resorts to the domains of language, using the pragmatic perceptions of language shared by Mikhail Bakhtin and Ludwig Wittgenstein. These thinkers recognize language in use as the arena of meaning that provides access to reality. This work begins with a review of the concept of language warrant and its manifestations in KO. It then touches on the perspectives of semantic warrant proposed in the field. Following this, it seeks to set approximations between language, as a medium of meaning, and semantic warrant, as the principle that seeks to ensure useful meanings in the language of knowledge organization systems (KOSs).

## 2.0 The concept of semantic warrant in KO: manifestations

Every classification is a means to an end (Hulme 1911). This pragmatic approach designates the concept of classification schemes. Based on their objective and intended use, every KOS is a means to an end. In this sense, the core of these schemes dedicated to the representation of knowledge lies in the nature of their language and the principle on which the scope or domain covered by the language should be determined.

The need to validate documentary language, i.e., to confer upon it a measure of value, quality and utility due to its intended purpose, is known as semantic warrant. Although the legitimacy of the meaning of a documentary language is inherent to its creation, it is a difficult task to define the criteria or stipulate conditions for evaluating the representativeness of the language of a KOS. This challenge was introduced and explored by British librarian E. Wyndham Hulme (1859-1954) by asking questions regarding the need to establish methods and rules for defining the concepts of a knowledge domain. The author asked what could be accepted as a warrant for determining the set of terms that would reproduce the conceptual domain of knowledge fields.

Perhaps because he adopted a pragmatic, but not less grounded, approach to issues in the field, Hulme (1911, 445) claimed that warrant should be “based either a) upon considerations of the nature of the subject-matter to be divided or b) upon the physical fact of the aggregation of the subject-matter in books.” Hulme sought support from the latter option to propose the concept of literary warrant, recognized as the relationship of occurrences of concepts in the literature of a domain to justify and validate the terminology to be considered in a KOS. To Hulme, the admission of a term is justified only when its existence is identified in the literature and its semantic validity is the degree of accuracy and representativeness with which it fits into a domain.

Clare Beghtol, a researcher of the foundations of knowledge classification, is distinctive because her research is “outside the box.” She stands out (Williamson 2010, 101) because “she sees classification theory as interdisciplinary and multidisciplinary and, while her work has its roots in the narrower domain of library and information science, she reaches beyond the practical and beyond the narrow confines of this discipline” to lend her voice to the commitment to explore new approaches in KO. Beghtol has been viewed as a pioneer in her field of study due to her intellectual output in past decades that still has a potential for rediscovery today. Her works serve as sources and ideas for new studies (Howarth 2010, 97) “that were not recognized as seminal in their

own time.” Her studies and analyses led to a break from certain orthodox views in the field of KO and the development of modern KOSs.

The notion of warrant is a concept found in many of the works of Beghtol. When seeking to move away from the syntactic perspective of classification, she focused on the semantic perspective to provide the field with a referential framework of concepts that have been used ever since to project and, principally, to understand and evaluate KOSs and their usefulness.

One of the meanings given to the word warrant is that it is understood as the “act or word that assures an obligation, an intention, a sentiment, etc.; proof, security,” which is the act or effect of being held accountable for something, to state it as true, to assert, to certify (Ferreira 1999, 969). It comes from the French, *garantie*, which is analogous with certifying, approving, confirming, attesting and other meanings. However, the circumstance of meaning of the expression in the context of KO of the English word warrant is a variant of the Old French word *guarant*. In English, the word is associated with giving authority for an action or decision, returning to the notion of authorizing, sanctioning and justifying. According to Beghtol (1986, 111) warrant entails suppositions and decision, conscious or unconscious, regarding which types and which units of analysis are more adequate for incorporating and representing the meaning of classes or headings. “The semantic warrant of a system thus provides the principal authorization for supposing that some class or concept or notational device will be helpful and meaningful” for its ultimate purpose.

To Mai (2011), the basic idea behind warrant is that the semantic justification for the inclusion of terms and classes is based on parameters that lie outside the beliefs and knowledge of the professionals that develop, maintain and use KOSs. The professionals that represent and classify resources of information attribute and conceptually shape KOSs with reference to these parameters. Semantic warrant, therefore, is considered the principle applied to the construction, development, and evaluation of KOSs to justify and validate semantic decisions. It helps the developer to verify the need for inclusions, exclusions and any type of modeling of classes and concepts of the terminological structure of a KOS according to the meaning and use of these classes and concepts for a certain purpose or community of users.

## 3.0 Perspectives of semantic warrant

The acceptance and reliability of a KOS stems from the semantic alignment between the system and the audience in question. An instrument dedicated to representing knowledge through a structure of concepts is only effective

tive when its contingent of terms succeeds in portraying the contextual reality of those who use it. Kwaśnik (2010) claims that warrant is a way of capturing this context, as it represents the relationship between the classification and the world. To meet the needs of expressing useful meaning to an audience, the developers and maintainers of KOSs need to make insightful choices regarding which perspective they wish to prioritize in these systems. According to Howarth and Jansen (2014), a number of warrants can be identified among the development processes of classification systems and relationships with users.

There is a list of classic warrants, which, beginning with the literary warrant proposed by Hulme (1911) in the early twentieth century, have been used to guide the creation of classifications. With the progress of technology influencing the technical and social evolution of the production, use and reuse of information resources, it is convenient to project and develop KOSs regulated by other perspectives of these same warrants, in addition to other proposals, that could suit a wider range of contexts, users and specific needs. This scenario of need is closely linked to the emergence of semantic spaces on the Web and their potential to reveal particular visions and aspirations (or sets) of communities of users and producers of information in the universe of information content and resources in a digital context.

It could be said that the early perspectives of warrants are characterized by the tendency towards more decisions and semantic control by professionals and specialists who directly handle the development and use of systems. Meanwhile, the contemporary perspectives of warrants recognize the direct relationship between users, content and system, reflecting the perceptions and needs for information by the user community without interference or mediation from professionals.

According to Mai (2011), in many situations of warrants, the developers and information professionals resort to institutionalized cognitive authority (Wilson 1983, cited by Mai 2011) to justify the inclusion or exclusion of terms and the creation of new classes. Cognitive institutionalized authority is based on sources that guide the decisions of developers and professionals. These sources are the literature, the users, the use of items of information and the structure of the system.

On this point, it should be clarified that there is a choice to handle the particular aspects of warrants through perspective, avoiding their classification as types. A reference for this is the argument of Kwaśnik (2010), who opted for the term perspectives rather than types to refer to warrants, as they are not a mutually exclusive group. Indeed, the different aspects of a warrant can often be interpreted as the mapping of one to the other.

From this viewpoint, it is possible to understand that warrants are not cancelled and do not necessarily overlap and that the sources of institutionalized cognitive authority can be understood as being of the same nature in both cases (traditional warrants and contemporary warrants) in different socio-technical and historical contexts. What makes them different is the perspective, i.e., the focus, how they are viewed in light of the possibilities and complexities of each.

The list of warrants proposed for KO includes the most widespread and applied in the development of KOSs. These include literary warrants, user warrants and organizational warrants, identified by the American standard ANSI/NISO Z39.19-2005 (National Information Standards Organization 2005) and are used to construct and maintain controlled vocabularies. The list also includes other warrants that explore (Barité 2011, 4) “the possibilities of complementing one another to ensure methodological support that celebrates as a result a representative conceptual structure [...]” such as philosophical warrant and educational warrant (Beghtol 1986), structural warrant (Svenonius 2009), cultural warrant (Lee 1976) and phenomenological warrant (Ward 2000). Modern contemporary warrants can be viewed as needs in the search for explanations of phenomena resulting from the digital culture, more precisely the occupation of information platforms and spaces in the context of the World Wide Web, such as autopoietic warrant (Mai 2011). It is thus understood that the variety of viewpoints and proposals for the application of a rational criterion for organizing knowledge aids the complexity of conferring a meaning to a KOS in order to adapt it to the needs of expression and community of information.

#### 4.0 Implications of language studies for semantic warrant

In light of these considerations, it is notable that there is a strong correlation between the notions of meaning and use that underlie the semantic warrant principle. According to Beghtol (1986), this trait of semantic warrant can be justified using the philosophy of language. Beghtol cites the Austrian philosopher Ludwig Wittgenstein and recalls that, to him, language does not have a meaning *a priori*, but only achieves meaning through its use.

The sciences of language, and others associated with them, have been considered a productive field for addressing issues pertaining to KO, especially in the theoretical field. This is why the viewpoints of Wittgenstein are given priority, regarding his philosophical understanding of the nature of language and, as are those of the Russian philosopher Mikhail Bakhtin, with his sociological approach to language. These two scholars of language, in different

social and cultural contexts, voiced their own particular views of the understanding of language. The theoretical postulates of both provide a rich contextual framework that is used for experimenting and analysis in the domain of KO and the wide field of librarianship and information science.

Mikhail Bakhtin (1895-1975) is considered to be among the great thinkers of the twentieth century. His intellectual output in the domains of language broke away from the classical concepts of linguistics and introduced a philosophy of language founded on a pragmatic approach. The Russian thinker considers language as a social phenomenon whose existence is based on the need to communicate. To Bakhtin (Weedwood 2002, 151), language is a fundamentally social activity in which what is important is not the utterance but the uttering, the verbal process. He alters the values of language and speech, recognizing the latter as a dimension wherein lies meaning. For Bakhtin (2006, 125 emphasis original) the effective reality of language (speech) is not “an abstract system of linguistic forms ... but the social phenomenon of *verbal interaction* that takes place through utterance(s).” The only way in which words can acquire meaning is to be understood, and the situation in which they are understood is constituted by particular speakers in particular situations, breaking away from the view of generalized norms that are valid for language. Clark and Holquist (2008, 234) state that “language mastery consists rather in being able to apply such fixed features in fluid situations ... in knowing the usage of language.”

Therefore, it is understood that Bakhtin’s concern with language is due to the element of communication and interaction, the invariable linguistic form notwithstanding, but rather its function in a given context. Bakhtin’s concept of language enables the articulation of a close dialogue with Ludwig Wittgenstein (1889-1951), who also sought to study language from a pragmatic perspective.

The great challenge for Wittgenstein was to reveal the unlimited nature of meanings emanating from language so that the concept of language could be used more broadly in each circumstance created according to its use. To Wittgenstein (1994) language is delimited by the set of objects that are named by it. This frontier means that it is only possible for named things to be understood. In other words, the designation is what enables an object to be understood. He argued that language has rules of constitution, known as rules of grammar, which provide guidance on the appropriate meaning of the use of words, thus defining the relationship between language and subject. To Wittgenstein (1975), the meaning of a word is not an object that succeeds it but is designated by the rules that regulate its use, understanding that the meaning of words is shaped when we use them.

The pragmatic approach is a revealing point of agreement between the two authors. They believe that the meaning of language can only be effective when the language is in use. According to Santos and Nascimento (2010, 82) both “depart from ideal language to real language in concrete situations of use, i.e., language as the result of social interaction.” Both break with the understanding of language as a single abstract, logical and formal system, and approach language as a social manifestation, a form of life, in which the acceptance of words lies in the practical use of language. From these considerations, it is possible to correlate the pragmatic view of language pondered by Bakhtin and Wittgenstein and the assumptions that underlie the semantic warrant principle, which favor meaning in the use of language.

The pragmatic concept of semantic warrant since its inception is recognized, dating back to Edward Hulme (1911), who disagreed with the tendency to ground the choice of classes and terms for a bibliographic classification on a philosophical order of the sciences. In his view of the subdivisions of subject for a classification scheme, i.e., to formalize knowledge organization through a terminological structure, Hulme (445) claimed that “all distinctions framed, or framable, by the mind are not of equal philosophic value.” Hulme was understood to have opposed preconceived systems of ordering the sciences. He discerned that the meaning of language, including, naturally, language for the purpose of organizing knowledge, lay in the actions of use and appropriation by the subjects of the information (users, authors, producers and consumers) more or less stored in artifacts and discourse.

It is important to reflect on the fact that this understanding does not cancel the reorientations and complexities of the emerging technological context, especially the World Wide Web, that are the result of the digital culture. Gracioso and Saldanha (2010, 102) write that there is a need to “rethink theories that allow us to understand the conditions for validating information considering the elements that are involved in the process of using ... language.” From this viewpoint, the central idea of the semantic warrant principle among the constitutive elements of the theoretical dimension of KO can be understood. Thus, the examination of matters of meaning surrounding this principle require more careful, attentive and diversified critiques throughout the domains, conceptual frameworks and fields related to information science that enable knowledge to be verticalized and emphasize the versatility that characterizes semantic warrant.

## 5.0 Brief considerations

The fact that Bakhtin and Wittgenstein broke from conventional thinking regarding language serves as an inspira-

tion and sheds light on disruptive (or at least evolutionary) ideas in the field of KO. According to Lopez-Huertas (2008), research on KO has revealed a tendency to reformulate established issues in the field that predated the inescapable implication of the current interdisciplinary and technological context. In general, these are themes that focus on notions that value information (and the actions of information) that permeate current scenarios and systems.

Lopez-Huertas also recalls the semantic warrant principle, more precisely its perspective of cultural warrant, the concept of which can aid the complexities of KOS dedicated to multi-lingual and multi-cultural environments. This reality of entangled systems and classifications in multiple virtual panoramas of knowledge is a reflection of the strength and impact of technology in the information universe. This practical framework tends to require increasingly more reflections than a theoretical KO framework.

Therefore, the semantic warrant approach through the meaning of language is a valid and necessary assertion in the drive for theoretical and conceptual advances. If on the one hand the stimulus observed in the proposal of new dimensions of warrant, which include and legitimize meanings in digital contexts, boosts the semantic warrant principle, on the other hand it is also necessary to reflect on and analyze the epistemological foundation of this principle. In this sense, the theoretical and conceptual analysis of the semantic warrant principle and language studies as undertaken in this essay presumes possibilities for reflection for the improvement of the principle at its base and to progress to the information scenario in digital contexts.

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