

The concept of epistemology in knowledge organization

O conceito de epistemologia na organização do conhecimento

Paula Carina de Araújo (1), Joseph T. Tennis (2), José Augusto Chaves Guimarães (3)

(1) Universidade Estadual Paulista Júlio de Mesquita Filho; Universidade Federal do Paraná; Fulbright/CAPES Visiting Research at University of Washington, 900 NE Ravenna Blvd AP 10 B – Seattle, WA. E-mail: paula.carina.a@gmail.com. (2) Information School - University of Washington, 1851 NE Grant Ln - Mary Gates Hall 370G – Seattle, WA 98105. E-mail: jtennis@uw.edu. (3) Universidade Estadual Paulista Júlio de Mesquita Filho; Rua Iara Clube, n. 85 – Cascata – Marília, SP 17.515-330. E-mail: guima@marilia.unesp.br

Abstract

Epistemological studies in the knowledge organization domain seek to recognize how different epistemic stances influence the representation of knowledge, and to better understand the foundations, theories and methods that influence the research in the domain. This work presents and discuss the concept of epistemology in the journal Knowledge Organization. Ten papers that approach the concept of epistemology were analyzed seeking to identify the attributes of the concept presented by different authors. There is a consensus that epistemology is the study of the origin, nature and creation of knowledge. Besides considering the importance of epistemology to knowledge organization domain, there is the understanding that the combination of epistemology with ontology, theory, and methodology may bring good results to the studies in the domain. Different attributes of the concept of epistemology were identified and the most prominent are: assumptions about language, branch of philosophy, nature of knowledge, ontological assumptions, origins of knowledge, paradigms, theory of classification, theory of knowledge, understanding reality, usefulness of taxonomy.

Keywords: Epistemology; Epistemology – concept; Knowledge Organization; Epistemic Stance.

Resumo

Estudos epistemológicos em organização do conhecimento buscam reconhecer como diferentes posições epistemológicas influenciam a representação do conhecimento e melhor entender os fundamentos, teorias e métodos que impactam a pesquisa no domínio. Apresenta e discute o conceito de epistemologia no periódico Knowledge Organization. Dez artigos que abordam o conceito de epistemologia foram analisados buscando identificar os atributos do conceito apresentados por diferentes autores. Há um consenso de que epistemologia é o estudo da origem, natureza e criação do conhecimento. Além de considerar a importância da epistemologia para o domínio da organização do conhecimento, há o entendimento de que a combinação de epistemologia, ontologia, teoria e metodologia podem trazer bons resultados para os estudos no domínio. Diferentes atributos do conceito de epistemologia foram identificados e os mais significativos são: suposições sobre linguagem, ramo da filosofia, natureza do conhecimento, suposições ontológicas, origens do conhecimento, paradigmas, teoria da classificação, teoria do conhecimento, compreensão da realidade, utilidade da taxonomia.

Palavras-chave: Epistemologia; Epistemologia – conceito; Organização do conhecimento; Posição epistêmica.

1 Introduction

Epistemological studies in the knowledge organization (KO) domain are regarded to at least two purposes. First, to recognize how different epistemic stances influence the representation of knowledge. Second, to better understand the foundations, theories and methods that influence the research in the domain.

As Hjørland (2002b, p. 438), we believe that “all kinds or research (indeed all kinds of behavior) are governed by different kinds of assumptions, background knowledge, “theories”, etc”. In this context, epistemological studies serve to analyze the explicit and implicit assumptions behind research traditions. (HJØRLAND, 2002b).

We acknowledge that by knowing epistemological theories we may interpret large patterns of historical influence of different positions that have been learned

through the history of science. In KO, we are “more inclined to talk about knowledge, (pre)understanding, theories, paradigms, and epistemologies”, (HJØRLAND, 2002a, p. 261). And, the individual, most of time, is partly unconscious or neglected that it may be influenced by different theories, epistemologies, and paradigms, (HJØRLAND, 2002a).

Tennis (2008, p. 103) considers that the different “interpretations of epistemology, epistemic stances, and their ilk, make the defining and using of epistemology a difficult problem for the KO researcher”.

Since we discuss the epistemology in KO in this work it is important to understand the concept of KO and ontology.

Through ontological theories reality is described or explained and we can also understand how it is

structured. Ontological theories “imply assertions of what constitute the world and its objects”. (HJØRLAND; HARTEL, 2003, p. 239). We can consider that epistemology is how we know and ontology what is out there in the world (objects, properties, events, process, etc).

Tennis considers KO is the process of ordering and representing documents. (2008, p. 102).

KO as a field of study is concerned with the nature and quality of such knowledge organizing processes (KOP) as well as the knowledge organizing systems (KOS) used to organize documents, document representations, works and concepts. (HJØRLAND, 2008, p. 86)

The epistemological dimension of KO is one of the axes proposed by the 4th Brazilian Conference in Knowledge Organization and Representation. By Considering that, this work presents and discuss the concept of epistemology in the journal Knowledge Organization.

In the next section, we describe epistemology. Following this, we present and analyze the concept of epistemology in the journal Knowledge Organization.

2 Epistemology

Epistemology is considered by Hjørland (2002a, p. 268) “the most important field related to information science”; “the best general background it is possible to teach people within information science”, (HJØRLAND, 2013, p. 179) and; “any question in information science is in the end based on epistemological assumptions”, (HJØRLAND, 2002b, p. 439).

Epistemological and critical studies are one of the eleven approaches to domain analysis proposed by Hjørland (2002b). The author states that “epistemology is the philosophical study of knowledge and epistemologies are theories or approaches to knowledge”, (HJØRLAND, 2002b, p. 439). Furthermore, he considers that “theories of epistemology are the most fundamental theories of relevance, [...]”, (HJØRLAND, 2002b, p. 439).

Hjørland acknowledges that there is a wide range of epistemological theories. And, throughout the years he applies different epistemologies in his studies. However, in a recent publication, the author considers four theories as the basic epistemological theories: empiricism, rationalism, historicism, and pragmatism, (HJØRLAND, 2013).

Svenonius (2004, p. 571) also looks at the epistemological foundations of KO. She explores how epistemology has contributed to the design of knowledge representation embodied in retrieval language designed for organizing information. By

doing so, the author considers epistemology the branch of philosophy concerned with how and what we know (SVENONIUS, 2004).

Through language analysis and meaning it is possible to deal with what and how we know during the twentieth century, (SVENONIUS, 2004). Svenonius (1992, 2004) discusses operationalism, referential or pictures theory of meaning, instrumental theory of meaning, and systems theory as fundamental epistemologies to KO.

We agree with Tennis that epistemological thought has changed over time. “In some cases two or more stances have coexisted, while others have fallen out of favor, in their strictest sense”. (2008, p. 104).

We know that epistemic stances influence the organization of knowledge and it influences which knowledge is created. “A knowledge organization cannot be epistemological neutral”, (MAI, 1999, p. 547). We agree with Mai (1999, p. 547) that people “within the field of knowledge organization and representation must base their practical work and discussion in a epistemological tradition. The organization

3 The concept of epistemology in the journal Knowledge Organization

We acknowledge the role of epistemological studies in the KO domain. For this reason, we present ten papers, published in the journal Knowledge Organization that approach the concept of epistemology (Appendix A). We briefly describe the content of each paper and its relation to epistemology. Finally, we discuss the relation among the different approaches of the concept epistemology.

García Marco and Esteban Navarro (1993) review the implications that the new approaches from cognitive psychology and epistemology may have for information work and research, specially to the theory of classification. They also discuss the scientific relation among information science, Epistemology, and the cognitive sciences.

They acknowledge the importance of epistemology to information science in general. The authors consider epistemology is “that branch of philosophy devoted to the study of the processes of human knowledge, its logic, origins and basis”, (GARCIA MARCO; ESTEBAN NAVARRO, 1993, p. 128). Epistemology is also conceptualized as a branch of philosophy by Smiraglia (2001), Zins (2004), and Channon (2013).

García Marco and Estebán Navarro (1993) also state that epistemology is the study of the characteristics of scientific discourse and the evolution of scientific

paradigms. Furthermore, for them “epistemology is devoted specifically to scientific knowledge”.

Regarding to KO, the authors recognize that:

The study of epistemology is, therefore, essential for the design and implementation of better cognitive strategies for guiding the process of documentary analysis, particularly for indexing and abstracting scientific documents. The ordering and classifying of information contained in documents will be improved, thus allowing their effective retrieval only, if it is possible to discover the conceptual framework (terms, concepts, categories, propositions, hypotheses, theories, patterns, and paradigms) of their authors from the discursive elements of texts (words, sentences and paragraphs), (GARCIA MARCO; ESTEBAN NAVARRO, 1993, p. 129).

The definition of the work as an entity for information retrieval is examined by Smiraglia (2001). He presents a taxonomic definition and an epistemological perspective is approached to understand the components of the taxonomic definition.

Above we stated that Smiraglia (2001) also considers epistemology a branch of philosophy. He presents the concept by considering García Marco and Estebán Navarro (1993) arguments about epistemology and KO.

Furthermore, the author believes that epistemology is concerned with the theory of the nature of knowledge, as Abrahamsen (2003) and Zins (2004) also do.

Smiraglia (2001, p. 198) adds to his arguments the contrast between ontology and epistemology presented by Poli (1996). He considers that “epistemology (“knowing”) represents the subjective side” of reality [...] and epistemology also “[...] allows for the perception of the knowledge and its subjective role”.

In order to address the importance of epistemology in KO, Smiraglia (2001, p. 199) states that:

Whereas ontology may be relied upon to frame the organization of knowledge, epistemology provides us with key perceptual information about the objects of knowledge organization. Each perspective can contribute to understanding, collectively a balanced perspective can be achieved. To begin, empiricism can lead us to taxonomies of knowledge entities. Rationalism can demonstrate the cultural role of, and impact on, knowledge entities.

Smiraglia (2001, p. 199) considers the arguments of Hjørland (1998) and Hjørland and Albrechtsen (1995) that KO “must proceed from more finely developed epistemological positions”.

Zins (2004) explores the epistemological foundation of KO and discusses implications for classification research. He defines the concept of knowledge, distinguishes between subjective knowledge and objective knowledge, establishes the necessity of KO in the construction of knowledge.

By relating epistemology and KO, the author believes that:

[...] knowledge organization research will focus on exploring the epistemological foundations of knowledge organization, establishing scientific methodologies for designing scientific knowledge maps, and expanding the applicability of knowledge organization to other areas of human activity.

Epistemology is considered by Zins (2004) the branch of philosophy that is focused on the theory of knowledge as we indicated above.

The Project Cosmology is described by Channon (2013) and the author seeks the unification of concept representations, which is based on cosmological perspective that provides a one-to-one correspondence between major entity and aspect classifications.

Channon (2013) believes that the project may facilitate the development of “scientific epistemology” (science of science) a topic presented in a different sense from what he calls the traditional epistemology.

In a different meaning from what is affirmed by other authors analyzed in this work, Channon (2013) conceptualize epistemology as science. He also suggests that “scientific epistemology” would be concerned “with any and all attempts to account for regularities relating to what we might refer to as intelligence (data, information, message, and knowledge)”. (CHANNON, 2013, p. 98)

Channon (2013) refers to Zins (2007) to explain the relation between information science and epistemology, and the new concept, scientific epistemology.

Abrahamsen investigates genre as a basic criterion in subject indexing of music in libraries and bibliographical databases. He examines the concept of genre in relation to epistemology and to different values and views in both musicology and libraries. One of the aims is to identify how epistemological and paradigmatic assumptions influence the way musical genres are classified.

Besides describing epistemology as the theory of knowledge and the study of the nature and origins of knowledge, Abrahamsen (2003) cites Moser (1997), Hjørland and Hartel (2003) and Hjørland (2002a) in order to discuss the concept.

We can state that Abrahamsen approach on epistemology is regarded to the influence of epistemic stances in KO. We argue that considering that the author statement that:

Both the classification of recorded music, and the composition of the collection, express more implicit values that pay debts to different worldviews, ethical principles, paradigms, or epistemological considerations.

Furthermore, he agrees with Hjørland (2002b, p. 438) that epistemological studies “represent an analysis of the approaches or paradigms in research fields”. García Marco and Estebán Navarro (1993), and Smiraglia (2001) also trace this relation with paradigms. They consider epistemology “[...] the science centered on the study of the characteristics of scientific discourse and on the evolution of scientific paradigms”, (GARCIA MARCO; ESTEBAN NAVARRO, 1993, p. 128).

Hjørland and Hartel (2003) introduce three kinds of theories and concepts and they also address their implication for KO: ontological theories and concepts about the objects of human activity; epistemological theories and concepts about knowledge and the way to obtain knowledge; sociological concepts about the groups of people concerned with the objects.

Hjørland’s contribution to epistemology of KO is recognized in many papers that we analyzed (ABRAHAMSEN, 2003; GNOLI, 2008; HANSSON, 2013; KLEINEBERG, 2013; TENNIS, 2008; ZINS, 2004). The main attribute of the concept of epistemology in the paper written with Hartel is the study of how to obtain knowledge.

They consider that different epistemologies “have different views about the role of, for example, observation, theoretical analysis, language, traditions, sex, and values in the production of knowledge”. The main claim in this paper is that the studies of domain in KO should “consider the complex interaction of ontological, epistemological and sociological factors influencing the development of fields of knowledge”. (HARTEL; HJORLAND, 2003, p. 244).

Ten basic questions related to KO to be addressed in the 21st century are presented by Gnoli (2008). One of these basic questions is related to epistemology: “Can the two basic approaches, ontological and epistemological, be reconciled?”.

Gnoli (2008) also quotes Poli (1996), Hjørland and Hartel (2003) to explain the distinction between ontology and epistemology. By doing so, the author explains that epistemology “is about how humans know the world through their sense organs, and how they process knowledge according to categories both innate and culturally biased”.

By analyzing the concept of epistemology we state that Gnoli’s (2008) and García Marco and Estebán Navarro (1993) consider epistemology a study of the processes of human knowledge. There is another similar attribute between Gnoli (2008), Hjørland and Hartel (2003), the ontological assumption. Both authors understand that ontology and epistemology need to be integrated in KO.

A preliminary classification of KO research is proposed by Tennis (2008). The author divides KO

research among epistemology, theory, and methodology and suggests three spheres of research: design, study, and critique.

Tennis (2008, p. 103) states that “epistemology is how we know. In KO we make implicit epistemic statements about knowledge of concepts, acts (such representation), entities, and systems”. The author also considers that “In so doing we create knowledge, and our epistemic stance dictates what kind of knowledge that is”.

Epistemology is also considered by Tennis (2008, p. 104) “an important part of the knowledge organization armature because it reflects our assumptions about language, the primary material of KO systems”. This is also a García Marco and Estebán Navarro’s affirmation:

[...] epistemology is also the study of reflections made by philosophers and theorists of science in an abstract and conceptual network, traced between man (subject) and nature (object) in the process of research and knowledge, within the limits and possibilities of understanding reality and its linguistic expression, (1993, p. 129).

Epistemology “addresses the concrete question of how we know what to present in classification, indexing, or other KO systems”. (TENNIS, 2008, p. 104). By considering this, we observe the author’s concern about how different epistemic stances influence the representation of knowledge.

In another research, Kleinberg (2013) seeks to demonstrate that an implementation of perspectivism and contextualism in any phenomena-based Knowledge Organization System (KOS) requires a revision of the underlying concept of phenomenon as a triadic relation between the WHAT (ontology), the WHO (epistemology), and the HOW (methodology) of knowledge.

The concept of epistemology is presented as the “who of knowledge” by Kleinberg (2013). The author considers epistemology the study of knowledge and how it is acquired and influenced and the epistemological dimension as an integral part of reality.

In addition, Kleinberg (2013, p. 354) argues that the epistemic contexts are not limited to theory but also include the method applied to the knowing subjects.

Considering this statement, we identify a relation with the thoughts presented by Tennis (2008, p. 102) when the author says that “epistemic, theoretical and methodological concerns constitute the driving force behind argument and findings in much of the conceptual work of knowledge organization”.

Hansson (2013) discusses the relation between epistemology, social organization, and KO. He seeks an understanding of the character of the connection

between epistemology and social order in KO systems using the concept of materiality and the theoretical approach on the documentality of social objects by Mayrizio Ferraris.

Epistemology is defined by Hansson (2013, p. 385) as “a sort of key with which it is possible to unlock the ontological level of reality, whether natural, social, or spiritual”. The author also considers ontological assumptions related to epistemology, likewise Hjørland and Hartel (2003), Abrahamsen (2003) and Gnoli (2008).

Since we presented the ten papers analyzed in this work, we recognize the attributes of the concept epistemology in the journal *Knowledge Organization*. The attributes considered for two or more authors are: assumptions about language, branch of philosophy, nature of knowledge, ontological assumptions, origins of knowledge, paradigms, theory of classification, theory of knowledge, understanding reality, usefulness of taxonomy. The relation between attributes and the papers is presented in Appendix B. We use the software Atlas.ti as a tool for the qualitative analysis and the Appendix B is created based on the attributes (codes) created by the authors and represented through Atlas.ti.

4 Conclusion

There is a consensus that epistemology is the study of the origin, nature and creation of knowledge. This claim leads us to consider the definition of epistemology from Stanford Encyclopedia of Philosophy.

Epistemology may be defined narrowly as “the study of knowledge and justified belief”. And, “[...] more broadly, epistemology is about issues having to do with the creation and dissemination of knowledge in particular areas of inquiry”. (STEUP, 2016, p. 1).

Epistemology of KO is important to better understand the foundations of the domain and to recognize the influence of different epistemic stances in the representation of knowledge.

By analyzing the concepts presented in the papers, we identify different attributes of the concept of epistemology. The most prominent attributes of the concept of epistemology identified in this paper are: assumptions about language, branch of philosophy, nature of knowledge, ontological assumptions, origins of knowledge, paradigms, theory of classification, theory of knowledge, understanding reality, usefulness of taxonomy.

Different approaches regarded to the influence of epistemology in KO domain are also considered. One of the claims is for the approximation between

epistemology and ontology to better understand KO. (GNOLI, 2008; SMIRAGLIA, 2001).

Epistemology is also presented as part of the driving force behind the conceptual work of KO, with theory and methodology. (TENNIS, 2008). From another point of view, how epistemology and social order influence KO is also considered. (HANSSON, 2013).

As future work, we will identify which epistemologies influence the way author conceptualize epistemology in the KO domain. We also intend to dive in the analysis of the concept in KO domain through other information sources.

Notas

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Appendix A – Papers analyzed in this work

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