Representation and Misrepresentation in Knowledge Organization
The Cases of Bias

Abstract:
The concepts of representation and misrepresentation are recognized and used within Knowledge Organization. Although it is easier to find works related to the term representation in the literature, there are not many works that address the term misrepresentation from a conceptual perspective. Misrepresentation, as opposed to representation, has a negative connotation and it is considered a problem in Knowledge Organization. Despite the fact that misrepresentation could appear in any kind of knowledge organization systems, or that some systems have historically been criticized for the lack of representation of certain sectors of users, the term as such, has gained strength in recent years after the appearance of some theories that support more local systems instead of universal systems. In this work the concepts of representation and misrepresentation will be approached from a conceptual perspective and will be related to other terms within Knowledge Organization, such as bias. The relationship between positive bias or slant and representation, and negative bias as a form of misrepresentation. These relationships will be approached from the perspective of warrants, especially cultural warrant.

1.0 Introduction
The purpose of this paper is to provide an overview of the relationship between the terms representation and misrepresentation and their relationship with the term bias, specifically the terms positive bias and negative bias.

Although these terms are recognized and used within Knowledge Organization literature, it is not easy to find an approach from a conceptual perspective and precise terms’ definitions. Dubuc (1999, 33) claims that “the situation in which the terms are found condition the concept at the communication field to such an extent that [even] the same concept may receive different names or labels depending on the specialty in which it is used”. This also occurs the other way around, the same denomination may have more than one concept.

“[A] concept exists within personal knowledge structures, in one or more minds. The concept can be represented by a symbol, such as a word or string of words, that may be uttered or recorded (e.g. written). The symbol thus indirectly represents the referent. The same referent may give rise to varied concepts in different minds. The same concept may be represented by different symbols.” (Vickery 1986, 146)

As Gutiérrez Rodilla (2005, 10) states “Language is, […], a constitutive part of science. Therefore, it is impossible to learn science without knowing the language in which that science is expressed and without knowing how to correctly interpret its speech.” Therefore, it is necessary to use the exact terms in a specific field to assure a clear and coherent communication, avoiding ambiguities and misinterpretations.

The structure of this paper is as follows. In the following section the concepts of representation and misrepresentation will be developed from a conceptual approach.

In the section titled ‘Word vs. term’ a terminological perspective of the terms will be provided. Pointing out the main variation between word and term will be beneficial to have a better understanding of the differences between the conceptual approaches.
Principally, the difference between the word ‘misrepresentation’ and the term ‘misrepresen-tation’.

In the section after this, the terms representation and misrepresentation will be presented from the term bias point of view. In particular, according to negative bias and positive bias.

After that, the relationship among the above-mentioned terms will be discussed in relation to warrants and hospitality, more precisely cultural warrant and cultural hospitality.

2.0 The concept of representation and misrepresentation

The way in which the terms representation and misrepresentation appear in the professional literature about Knowledge Organization is very singular.

The term representation is commonly used in syntagmatic forms such as subject representation (Milani, Guimarães, and Olson 2014; Olson 2002), knowledge representation (Milani and Guimarães, 2011), among others.

In the case of subject representation, the meaning refers to topic representation in catalogues through indexing and classification. In other words, how the work’s content is represented through topics or descriptors from indexing and class numbers or notations from classification. According to Olson (2002, 3) they are “the key to subject access”.

In the book *The Power to Name* (Olson 2002) the author develops the representation concept through the action of assigning names to topics. She chooses the expression ‘naming’ because this action reflects a conscious will at the moment of representing concepts. She says “I choose the word naming because it connotes the power of controlling subject representation and, therefore, access.” (Olson 2002, 4)

By preferring a name (terms or words) to represent a concept, an identity to that concept is being established. This identity is biased, it has a way of recognizing and observing that reality.

Knowledge Representation could refer to either the name of an autonomous discipline from Knowledge Organization (Giunchiglia, Dutta, and Maltese. 2014) or a subordinate part of Knowledge Organization (Barité et al. 2015; Dahlberg 1993).

Giunchiglia et al. (2014, 47) say that through ontologies, Knowledge Representation “provides a more expressive representation and query language, able to codify and automatically query such knowledge”. On the other hand, in Barité et al. (2015, 136) the meaning of Knowledge Representation is described as:

“the group of processes of notational or conceptual symbolization of human knowledge in the field of any discipline. Knowledge Representation includes Classification, Indexing and the group of computer and linguistic aspects related to the symbolic translation of knowledge.”

All the cases mentioned above share the semantic background of the concept representation. Representation can be understood as “the description or portrayal of someone or something in a particular way.” (Representation 2019). Its meaning implies presenting again or presenting in a different way, for instance a concept.

In all the cases, the use of the term representation in Knowledge Organization has a positive connotation, i.e., a determined concept or phenomenon is correctly represented.

On the contrary, the term misrepresentation appears in an isolated way and not in a syntagmatic way. It usually accompanies the term representation in any of its forms
(syntagmatic or isolated). It is used as an antonym to reinforce the idea of representation. It always appears as a representation problem (Milani and Guimarães, 2010).

The use of the term misrepresentation is so linked to the use of representation that even its origin seems to be a consequence of the first. For a better understanding of this, it is necessary to explain the differences between word and term.

3.0 Word vs. term

Although at first word and term seem to be the same, they present some differences between them as far as their concepts and uses are concerned.

“A word is a unit described by a set of systemic linguistic characteristics and endowed with the property of referring to an element of reality.” (Cabré 1999, 25, in translation). While a term is “a unit of similar linguistic characteristics, used in a speciality domain. From this point of view, a word that is part of a specialized field would be a term.” (Cabré 1999, 25)

Thus, the principal difference between words and terms is their use field. Speakers are the ones who establish the label ‘word’ or ‘term’ based on different contexts and through their use. Pearson claims:

“While we accept that there are indeed differences between words and terms, we find that, without human intervention, it is not possible to use any of the proposed definitions of term as a means of distinguishing between terms and words. This is because terms very often look the same as words and frequently not only look the same as words but can also function as words, albeit in different circumstances.” (Pearson 1998, 8)

There are different definitions and ways of differentiating the concepts of words and terms. Cabré (1999), for example, mentions 4 situations in which words can be differentiated from terms:

a) by its users: words are used by any speaker of that language, while terms are used by the specialists or experts in a certain knowledge.

b) by the situation in which there are used: words are used in any form of communication, while terms are presented in more formal channels of communication.

c) by the topic they represent: terms usually refer to concepts within a specific field, while words are used to refer to wider variety of meanings.

d) by the kind of speech in which they usually appear: words are used in any type of speech, while terms usually appear in specialised speeches through their diffusion channels.

In this way, the expressions which belong to a specific field and which are used to refer to a particular concept within a particular domain are considered terms.

There are different ways to create terms and word. One of them is when a word or term moves to the other’s category. In other words, words turn into terms or terms become words. These processes are called terminologization (Gutiérrez Rodilla 2005) and de-terminologization (Meyer and Mackintosh 2000).

As Gutiérrez Rodilla states:

“the terms enjoy great mobility, both horizontally - that is to say, they move from one area of knowledge to another, with the same or different meaning - and vertically - even the most highly specialized can become words used daily by all speakers.” (Gutiérrez Rodilla 2005, 29)

It seems natural to consider this process as the way in which representation has been coined in the Knowledge Organization terminology. As it was explained in the section
before, the word and term ‘representation’ keep the same semantic background. However, this does not happen with misrepresentation.

The definition of the word misrepresentation is the following: “the act of deliberately giving false information to someone, especially in order to persuade them to enter into a contract, or a statement giving false information.” (Misrepresentation 2019)

Despite the fact that both term and word have negative connotations, the definition of the word ‘misrepresentation’ implies a willing and conscious action. Misrepresentation is being created to persuade somebody or pursue something deliberately.

Nonetheless, this not always the case in Knowledge Organization. A knowledge organization system could be misrepresented even if the author did not have the intention of doing it. The reason of this could be the lack of knowledge of other realities or ways of presenting concepts, the way in which this author perceives reality or the predominant way for this author, and finally just because it is representative for a community but not for another.

Another hint could be that, as it was mentioned before, the term misrepresentation usually appears together with the term representation. If the prefix ‘mis-’ in English is analysed, it has 3 different senses: “1 bad or badly; 2 wrong or wrongly; 3 used to refer to an opposite or the lack of something” (Mis- 2019).

The term misrepresentation covers the 3 aspects in Knowledge Organization. A knowledge organization system can present misrepresentation through bad representation, a wrong representation or a lack of representation.

Taking all this into consideration, misrepresentation as a term does not seem to come from a terminologization process as it happens with the term representation. It could be inferred that misrepresentation is created in contrast to the term representation.

4.0 Bias as a form of representation and misrepresentation

There are several authors who recognize the existence of bias in knowledge organization systems (Higgins 2012; Mai 2010). Despite this, there are few of them who identify the different aspects of the term and connect it with the representation and misrepresentation concepts. As Broughton says:

“bias is said to exist when a controlled vocabulary contains an unduly large number of terms reflecting the ideas, interests or positions of a particular sector or field, or when terms relevant to another sector or field fail to appear. This may occur because the language of a particular group is preferred.”

(Broughton 2012, 256)

From the concept of bias two situations can be established. One of these situations indicates when a way of representing reality is relevant and beneficial for a certain community. This bias is called positive bias (Colombo 2015; Colombo and Barité 2015) or slant (Guimarães 2017).

The other situation happens when a bias does not represent the ideological, cultural peculiarities and fails to represent the concepts, in some cases reaching prejudice. This aspect is called negative bias (Colombo 2015; Colombo and Barité 2015).

Using Virtual Reality domain as an example of the use the concept of bias in relation to representation, Brey (1999, 12) says “when a VR application favours certain values or interests over others due to its choices in representation, it may be said that the model makes use of biased representations.”
Consequently, a knowledge organization system with a certain representation or representing a specific group or way of thinking, is a biased system from that point of view or form. On the other hand, a system that has misrepresentation as a result of a void in the representation or due to the fact that the concepts are not represented in a proper way, it has a negative bias.

Following the example of Virtual Reality:

“When a VR application fails to uphold accepted standards of accuracy by representing features as real that by such standards cannot justifiably be held to be present in reality or by failing to represent features that ought to be present in the application, we may say that the application misrepresents reality” (p. 11) (Brey 1999)

Whereas Brey identifies both cases, ‘bias representation’ and ‘misrepresentation’ as “two types of representational failures or shortcomings” (Brey 1999, 12), this does not happen in Knowledge Organization.

In the last years, Knowledge Organization has focused more on local systems instead of pursuing universality. Hence and according to this, it may be helpful to have knowledge organization systems positively biased. In Mai words “while modern classification aims at representing the universe of knowledge, postmodern classification aims at providing a pragmatic tool for specific domains.” (Mai 2004, 39)

The issue is to decide for which community sector the bias is representative and for which it is not and how to detect these particular characteristics. “Verifiable misrepresentation requires that there are unambiguous, shared standards of accuracy in place according to which judgments of misrepresentation can be made.” (Brey 1999, 11)

One of the ways to determine the cultural aspects of a sector is through the cultural warrant.

5.0 Cultural warrant and cultural hospitality in relation to representation

A form of representation of a certain group in a knowledge organization system can be determined from the warrants. Depending on the approach of what needs to be represented or the bias that is sought to be obtained, it could be literary warrant, academic warrant, cultural warrant, among others.

Literary warrant is based on the documents while academic warrant is based on the opinion of experts and cultural warrant, in particular,

“means that any kind of knowledge representation and/or organization system can be maximally appropriate and useful for the individuals in some culture only if it is based on the assumption, values, and predisposition of that same culture. Conversely, if a system is not based on those assumptions, it will be appropriate and useful to some lesser extent for the individuals in the culture” (Beghtol 2002, 511)

It is important to bear in mind that these warrants can be combined and are not exclusive to each other. To read more about warrants see (Barité 2018).

In relation to the concept of ‘cultural warrant’ is the concept of ‘cultural hospitality’. The term ‘cultural hospitality’ is a deviation of the term ‘hospitality’.

The concept of hospitality implies that a knowledge organization system is capable of introducing a new concept or term into its structure. The system must provide tools not only for the inclusion of an element, but also for establishing relationships between them, generating more permeable and not so rigid systems. Cultural hospitality in particular “means that a knowledge representation and organization system can ideally accommodate the various warrants of different cultures and reflect appropriately the assumption of any individual, group, or community.” (Beghtol 2005, 905)
In any case, the system has to provide a clear mention about not only how to introduce new concepts, but also for whom the system is set, or in other words, for which user community is more representative.

6.0 Conclusion

All things considered, it can be observed that the terms ‘representation’ and ‘misrepresentation’ have a close relationship with the terms ‘positive bias’ and ‘negative bias’. In this context, bias is considered as a form of representation. What is more, it is not possible to think about representation without thinking about cultural warrant as a means to ensure a correct and better representation for each situation.

References


