Knowledge Representation Focusing Amazonian Culture

Abstract
In this paper, cultural identity is shown to elaborate a language of information that has as its thematic universe the Amazonian Paraense culture. To accomplish this study of knowledge representation, cultural terms of popular histories were collected from residents of eight municipal districts of the State of Pará: Abaetetuba, Belém, Santarém, Castanhal, Bragança, Altamira, Cametá and Marajó’s Island. After defining the terms, this study elaborated the structure of the classification, establishing the relationships among the concepts, forming classes starting from your common characteristics. The initial structure of the classification, its categories, represents the knowledge in an organized way so that the information in a more agile way can be recovered. As result we created a classification of the thematic universe with the terms in agreement with the certain categories and, like this, to represent the knowledge of the rich and fascinating Amazonian culture, full of secrets and mysteries, in which the individuals produce a unique cultural environment.

1. Introduction
The Amazon is an area of Brazil rich on the fauna and flora, there Amazonian man lives in deep harmony relationship with that nature that surrounds him, where the rivers and the forests become very important for that daily one. Amid that atmosphere of great wealth and narratives, the project RESNAPAP (the Symbolic Representation of the Popular Narratives of Paraense Amazon as Language of Information), of Librarianship College of the Federal University of Pará (UFPA), in Brazil, began in 1998. It began as a subproject of the IFNOPAP project (The Imaginary in the Popular Orals Narratives Forms of Paraense Amazon), of the Letters and Communication Institute of the University of Pará (UFPA). Starting from the narratives picked up by the IFNOPAP project. We have developed studies on cultural terminology through oral narratives, shared by residents of eight cities in the Paraense Amazon.

In those histories, through their languages, we can observe their way of living, the habits, and the feelings and thoughts of the Amazonian people. These histories were translated into terminological vocabularies for each municipal district studied, in dictionary form. In that study, we saw the term as the conceptual unit that will help us compose the classification structure under the point of view of the culture. So, that cultural term, as part of the language, is an instrument to communicate the physical and cultural reality of the people that use it. Thus, when that man uses the speech or the writing for transmission of his culture, the terms become bearers of information on the culture.

In conceiving that term, the work approaches a theoretical discussion about the representation of the knowledge starting from terms of the popular narratives, inserted in different contexts, where the term is mediator between the understanding of the narrative and the information system.

If the term is a bearer of information concerning the culture of who uses it, then this cultural term reveals to us important aspects in the way of life, of the habits, of the faiths, as well as in the way to see the things. The RESNAPAP project understands this term as the symbolic representation of the cultural universe in which an individual is inserted, and, under the shelter of the linguistics, it can be seen about the lexical unit of the Amazonian man’s natural language (Oliveira; Rodrigues; Moysés, 2003b). This way, the objective of the work is to show the cultural identity, starting from the study, to elaborate the language of information that has as thematic universe to the Amazonian culture.
2. The Knowledge Representation and the Amazon Culture

The concept of knowledge representation can be seen starting from several definitions as they observe Davis et al. (1992a) (a) mechanism used to think about the world, instead of acting directly on it; (b) to answer the question “In what have I should think about the world?”; (c) a fragmented theory of reasoning, does it specify that inferences are valid and, which are recommended; (d) a middle of computation pragmatically efficient; and (e) a way of expression, that is, a language in which one can say things about the world. Thus, a representation is the language, though which we communicate and it can be classified in different ways, in agreement with the adopted theory.

For the General Theory of Terminology, man accomplishes the mental construction of an object and, when observing the reality that surrounds him, noticing individual objects, parts of those objects, and that he is inserted. Those particularities can be the color, the size, an action etc., that constitute the characteristic of the concept (Campos, 2001). Besides, Dahlberg (1978) points out that the definition is a resource used to minimize doubts in the use of the term, and more than that, makes possible, besides the fixed meaning of the concept, positions it in a system of concepts. Therefore, the Theory of the Concept of Dahlberg does not see the definition as an afterthought, but as a resource to establish the borders of the intention of the concept. For that theory, the characteristics are to understand the nature and the inclusion of the concept, besides they are responsible for the formation of the systemic conceptual structure. In that sense, they supply, at the same time, the skeleton, the bones and the tendons to systematize the knowledge (Campos, 2001; Tristão et al. 2004; Dahlberg, 1978).

The delimitation of the subject universe is inherent to a language of information, a thesaurus, because it systematizes concepts “of a subject area”. Thus, the thesauri are artificial systems of signs normalized with the objective of recovering, manually or automatically, the information that the user requests. In the definition of Tristão, et al. (2004), it is a group of concepts organized systematically for indexing and retrieval ends.

However, an interesting factor standing out is that, with the elaboration of the classification structure and, later, of the thesaurus, forming the language of information, we will also be contributing to the preservation of the cultural memory of the Paraense Amazonian, pointing out the cyclical dimension of the organization and detaching the knowledge in action, that, when organized and registered, starts to generate new knowledge.

The objective of a classification structure, just as of a thesaurus, is to sort things out, to represent the knowledge in an organized way, so that information can be retrieved for the needs of the user. The term “to represent” invokes a feeling of abstraction, or better, an abstraction of reality. A term is a sign in which man tried to represent an object in the closest way possible, given what he observed in empirical reality. So, after the perception, it designates synthetically the concept with its characteristic group, and it is stipulated to be called a term. Davis et al. (1992), they point out that the knowledge representation is a “substitute for that which represents” and they detach two fundamental aspects: first with relationship to the semantics of the representation and with relationship to the perfect fidelity because, for them, the representation needs an object that is the object in itself. They comment that the complexity of the real world is overwhelming in relation to the representational power of the concept.

With relationship to the characteristics used as beginning for division and comparison of the classificatory elements, working toward structuring the system starting from the formation of the classes and, inside of these, the arrays and the chains. Langridge (1977,
p. 24) comments that the division “characteristics should produce at least two classes”. “Intensão” is related to the concept, differently of intention, that is related comfortable, desire. Array and chains they are terms given by Ranganathan to differentiate, in the formation of classes, horizontal series (arrays) — starting from a single characteristic of division — and vertical (chains) of concepts — in that each concept has more (descending) or the less (ascendancy) characteristics. Like this, Morin (2000, p. 24) affirms that all knowledge organization is accomplished in function of beginnings and rules and “it holds connection operations (conjunction, inclusion, implication) and of separation (differentiation, opposition, selection, exclusion)”, besides holding analysis and synthesis simultaneously.

For that, Ranganathan (1967), when outlining the steps of classification determines that the first step of the classificationist’s work in elaborating a classification structure is to map what he called Universe of Subjects. This activity has for function to define the level of extension of this universe. This map consists of deciding which subject areas that will be taken as base for the organization of the classificatory units and as this area it will be classified, which is a quite complex task for this author.

But, thinking about the dynamism of the universe of the knowledge, Ranganathan elaborates two canons as beginnings to think the formation of classes of concepts: the canon of exhaustivity and the canon of exclusiveness. In the canon exhaustivity, he establishes that the formed classes should be exhaustive, so that, if some new concept appears, it should be part of the structure, and this needs to have hospitality to contain it in an existent class. Already in the canon exclusiveness, Ranganathan establishes that the classes that form of the arrays should be mutually exclusive, in other words, no concept of the structure can belong it more than a class in the array. This way, the author does not accept polyhierarchy as a tool (Campos, 2001).

Amazon culture is communicated in an environment where oral transmission prevails. As he observes Loureiro (1995, p. 55), that culture “contemplates in a predominant way the man’s relationship with the nature and it comes immersed in an atmosphere in that the imaginary privileges the aesthetic sense of that cultural reality”. That culture is observed as original and creative, because it reveals, it interprets and it creates its reality. Then, is important the text, the culture, and the geographical space in the study of the languages as knowledge representation (Oliveira, 2002). In the space of the forest and of the river they are the characters that are part of the Amazon culture. For example: CURUPIRA, that is a mythical character and his habitat is the forest in the space of his actions. The BOTO is a mythical character that inhabits the river and the ground. As Amazon fauna inhabits the river and as seductive man it inhabits the ground.

Still in the Amazon, the culture of the Indian stays in the narratives and it is outstanding its presence in the myths, habits, cookery and, consequently, in the mixed speech. As an example, the term JIRAU, comes from the tupi language (yulra). It is a type of sink of rustic plenty wood usually placed in the window by the external part of the house. That architecture is used often by the riverside people that inhabit the stilts. As Oliveira observes (2003a, p. 247):

The oral narratives of the Amazonian, as a discursive process of memorization, contemplate and they portray the imaginary and the ideology, in an all complex one historical-partner-cultural of the Amazon people, together with the nature, the culture and the man between the river and the forest.

In that context, in the sense of preserving the cultural element, leaving of the man’s subjective vision, as part of that atmosphere and of its intrinsic relationship with the nature
that surrounds him. As Pombo observes (1988), the classifications of the beings, of the facts and of the events they constitute the stable points. They guide us in the world surrounds us and with that, establish habits, likeness and differences, help us recognize the places, the spaces and the events.

3. Methodology
The initial structure of the classification, for category, represents the knowledge in an organized way so that the information can be recovered by the user. In our methodology the delimitation of the subject universe is shown for the preservation of the memory and cultural identity of the Paraense Amazonian, because in this way it is registered and published, and as a subject universe it becomes information, restarting a continuous circle in the organization of the knowledge.

In the theory we studied the term, as a sign in which man tried to represent the most approximate characteristic of the object he observed in the reality that surrounds him. It is starting from this stage that we will know the characteristics of the concept, because they are the principal connection or separation elements, in the moment of formation of the classes. In that sense, they supply, at the same time, the skeleton, the bones and the tendons to systematize the knowledge. These characteristics are used as a beginning for division and comparison of the classificatory elements, working toward a structure of the system, starting from the formation of the classes and, inside of these, the arrays and the chains. Therefore, in this study we did not use a single method; but several, due to our technician-pragmatic character.

The content analysis prevailed with relationship to the analysis of the content of the concept, because there was the need to know it so that it was possible to insert its roots in the classification structure in agreement with its positioning adapted inside of the system. Therefore, so that it is possible to arrive at the elaboration of the classification structure for the representation of the knowledge, proposed in this study, some steps were indispensable and they preceded such activity. In the first step we read the picked up narratives and mapped in eight cities of the Paraense Amazon: Belém, Abaetetuba, Santarém, Castanhal, Bragança, Cametá, Altamira and Marajó’s Island. In the histories we identified the narrators as people that lived for a long time in those spaces. The purpose was to collect the cultural terms by the identification and analysis of these histories to register them for the terminological record.

The stage of the classification of the terms was only possible after the definition of the units that constitute the system, because starting from the definition of those units the characteristics of the same objects were elucidated. Later, it was necessary to identify the objects of same nature but related in the partitive and hierarchical relationships.

In what it concerns properly the classification, it was used to the categorical analysis, taxonomic method created “to satisfy the concerned collectors in introducing an order: according to certain criteria, in the apparent disorder” (Bardin, 1977, p. 37), as well as for refer association rules, of equivalence, or still of exclusion. Therefore, so that it roots possible to arrive to the elaboration of the classification structure proposed in the RESNAPAP project, some steps were indispensable and they preceded such activity.

The first accomplished step went to read the narratives popular orals, picked up in the eight municipal districts of the State of Pará. After identifying the classificatory unit, see as “cultural term” of the worked narratives, a significant step to structure the classification system, went to define the cultural terms. Soon after of the definition of the terms, they
took place with more precision the analysis and the selection of the cultural term, once, at this time, it was already obtained the domain of the extension of the concept. Finally, it took place the stage of the classification of those terms.

In the stage of the classification of the terms, initially, it grew up that Ranganathan (1967) is called Fundamental Categories. They were used by the author “to represent fundamental ideas”, in other words, including classes were created, that they could hold great number of subclasses and hierarchies, subordinated the larger classes. Created the Fundamental Categories, it felt beginning to the process of the ramifications and of the relationships of the concepts that would be inside the great classes.

It gave way, it happened the process of formation of the arrays and, later, the equivalence relationships were accomplished and of association. However, in some cases, that phenomenon became impracticable, because small number of concepts had connections or entails with different classes. In other words, a concept embraced more than one function in the Amazon culture as example, the term Miriti. It is so much an element of the flora as, raw material used in the Amazon craft.

4. Analysis and Result
In the analysis, starting from the reading of the narratives of eight municipal districts of the Paraense Amazonian they were identified 1500 cultural terms. The registrations in terminological record created the terminological vocabularies of the spaces of the studied cities, in order to contribute in the understanding of the term, in the context of the narrative, forming a collection of six books. In the first book they are the picked up terms of the counted histories in Belém, Abaetetuba and Santarém. In the second, they are the removed terms of the histories told in Castanhal, in the third they are the removed terms of the histories told in Bragança, in the fourth, the terms of the histories of Altamira; in the fifth book with the removed terms of the histories of Cametá and, in the sixth book with the removed terms of the histories told in the Marajó’s island. After the books with the cultural terms and the definition, the content of the term is explicit in the context of the histories and to leave of those cultural terms, it went being created a classification structure, with the conceptual units, tends the following organization.

| ART | CRAFT | BOTANICAL | BLOOMS |
| RAW MATERIAL | TREE | MIRITI | MIRITI (PALMS) |

As a result is had the classification of the thematic universe with the terms in agreement with the certain categories, knowing the rich and fascinating culture of the Amazon people, full of secrets and mysteries, in the which the individuals produce a unique cultural environment. And, in that way observe the cultural identity, it can be said that is one of the few cultural forms that possess own characteristic, fundamentally because it is born in your own salience and it half feeds of your own one. Therefore it is denominated to that atmosphere of “Amazonian culture”. Besides, the work shows a theoretical discussion for
the understanding of the classificatory structure, in order to best to know the construction of a language that facilitates the use and the recovery in the system, denominated of language of information that is part of the study of the knowledge representation.

5. Final Considerations
This study of the knowledge representation, developed through the RESNAPAP project took us to a deeper knowledge on the rich and fascinating Amazonian culture. It also provided us a better understanding about the linguistics, the terminology and the theory of the classification.

It is important to say that in some cases, that phenomenon was difficult of being accomplished, because small number of concepts had connections or entails with different classes. In other words, that concept embraced more than a function in the Amazonian culture.

However, this work becomes important, because, with the elaboration of the classification for categories in the study of the language of information, the tendency is to publish and to preserve that culture in that a glance is focalized for that area, by virtue of it rich natural spring, fundamental for the scientific development, economic, medicinal, technological, among other aspects as the cultural of the inhabitants’ life with its habits, cookery, transportation means, house and myths.

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