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Practical aspects of the description of terms: contexts, actantial structure and lexical relationships

Geneviève Camirand

As a translation student, my contribution to Marie-Claude Demers's directed study on the enrichment of a general dictionary's wordlist with the relevant contents of a specialized dictionary gave me the opportunity to investigate hidden aspects of some of the resources I will likely use extensively in a professional setting. My role has been to participate, as a research assistant, in developing terminological dictionary entries related to the computer field and contained in a terminological dictionary, the English version of the *DiCoInfo* developed at the Observatoire de linguistique Sens-Texte (OLST), that had been selected with the aim of supplying a general dictionary, the *Random House Kernerman Webster's College Dictionary* (RHKWCD), with new entries and meanings. And indeed, specialized and general resources being some of the main tools for translators, I took a particular interest in the various aspects

of the project. The specific challenge of this project was to write entries that could be added to RHKWCD while respecting the guidelines usually applied in *DiCoInfo*. My role was to add data categories compatible with *DiCoInfo* (contexts, actantial structure, lexical relationships). Once added, these data categories could be used to write a definition and select examples that could be incorporated into RHKWCD.

The criteria for the selection of the terms to be included in the project were basically the following: among the terms whose meaning relative to the computer field was not already described in RHKWCD, only those that were not too specialized to be part of the general language were accepted. It is worth mentioning here that, since *DiCoInfo* is in constant evolution, as is the computer field, the list of terms established the first time is open to new additions.

Figure 1 is a screenshot of part of the list

with which I worked; as can be seen, each lexical unit represents a unique meaning. *Alias*, for example, can refer either to: 1) a kind of pseudonym, 2) a shortcut for a command, or 3) to create a shortcut for a command. Initially, *analyst*₁ was not part of the list; it was added since it was considered that one of its meanings definitely belongs to the computer field, and serves as an actant for other terms (e.g. *analysis*₁), and it is not too specialized to be listed in a general dictionary. *DDR*₁ (double data rate), on the contrary, was removed from the list because it was decided it was not common enough in everyday language.

The contexts, the actantial structure, and the lexical links are the three most important data categories of the *DiCoInfo*'s structure on which I was brought to work. Since the *DiCoInfo* is based on a lexico-semantic perspective, which puts forward a semasiological method, contexts extracted from corpora are the basis of the description. In effect, all other data categories are developed according to the data found there, which means that the quality of the descriptions depends mostly on the quality of the chosen contexts. The search and selection of relevant contexts is thus a core step, which must be given much attention.

Since the computer corpus used for searching lexical items does not contain all the terms that were identified for description,

nor, in some cases, a sufficient number of occurrences for specific terms, it had to be "enriched" with new texts, all of them found on the Internet. I had to develop some skills allowing me to choose, among abundant sources, the ones that would be useful, and to be careful to select recent texts (more likely to present up-to-date information) pertaining to a variety of specialization levels. Between 15 and 20 contexts had to be chosen for each meaning; they were then organized according to the quantity and nature of the information they presented. My main goal was to allow dictionary users to access additional information, so various elements were considered: the presence of actants, of synonyms and antonyms, aspects of definition, etc.

Below, I present contexts that were found for *microcontroller*₁:

A microcontroller is a complete system, consisting of the CPU (computing unit/microprocessor), the programming memory (FLASH or EPROM), working memory (RAM) and in/output on a chip. (Source: MEMORY_CHIPS)

Also inside the mouse are a switch for each button, and a microcontroller which interpret the signals from the sensors and the switches, using its firmware program to translate them into packets of data which are sent to the PC. (Source: INPUTDEVICE)



Geneviève Camirand is currently undertaking a bachelor's degree in Translation at Université de Montréal, where she participated in the enrichment of the English version of *DiCoInfo*, developed at the Observatoire de linguistique Sens-Texte (OLST). She has a background in Modern Languages, which she studied at Universidad Autónoma de Querétaro, in Mexico.
geneviamirand@gmail.com

Term	Part of Speech	Count	Contexts	Notes
<u>administrator</u> 2	n	2		
<u>agenda</u> 1	n	2		<ul style="list-style-type: none"> calendar program electronic agenda electronic calendar agenda software scheduling program scheduling software digital agenda agenda application
<u>algorithmic</u> 1	adj	2		
<u>alias</u> 1	n	2		<ul style="list-style-type: none"> alias name user alias pseudonym
<u>alias</u> 2	n	2		
<u>alias</u> 3	vt	2		
<u>analyst</u> 1	n	2		<ul style="list-style-type: none"> systems analyst
<u>analyzer</u> 1	n	2		<ul style="list-style-type: none"> analyser
<u>analyzer</u> 2	n	2		<ul style="list-style-type: none"> analyser network analyzer network protocol analyzer packet analyzer protocol analyzer

Figure 1: A screenshot of a portion of the list of terms.

The 8051, being a communications-oriented microcontroller, gives the user the ability to access a number of bit variables. (Source: TYPMEM)

Interesting information can be found in the above contexts: the components of a microcontroller, an example of hardware it can be installed in (*mouse*), a related meaning (*chip*), and so on. Attention must be given to the diversity of the sources and the complementary nature of the information contained in the contexts.

During this first step of the descriptive work, I had to deal with two main difficulties. The first was the fact that some terms that unquestionably pertain to the computer field seldom appear in specialized texts. For example, *computerization*, which refers to a rather abstract reality, appears more often in governmental or journalistic texts referring to the computerization of an organization than in an academic article or a user's guide... The second had to do with an opposite problem: the profusion of texts on the Internet, which complicated the identification of serious and relevant sources.

As regards the actantial structure, it allows one to identify which participants of a given term are necessary in order to understand its meaning, and how they interact with it, i.e. which actantial roles they fill. The actantial structure has multiple functions: to identify new terms among the actants, to help construct a definition of the term, to draw the line between different meanings of a lexical unit, to contribute to the explanation of how given terminological units behave within language, and many others. I established actantial structures by analyzing contexts and observing already existing structures in the dictionary. I will illustrate the process with the actantial structure of the verb *bounce*:

bounce: { email1 } ~ from { address3 }
to { sender }

It was decided, for this term, that three actants are necessary in order to understand its meaning: the patient (what bounces), the source (where it bounces from), and the destination (where it bounces to). Each actantial role is replaced on the online *DiCoInfo* by a typical term, i.e. the lexical unit that is most likely to play that role in context, or the generic that better represents all the possible realisations of those units. Choosing the most adequate typical term is often a difficult task.

Finally, the analysis of the contexts allowed me to become more familiar with the lexical relationships section and enrich it. This part of the entry contributes to the

establishment of a network between terms, thus determining the position of the term within a semantic network. It provides paradigmatic relations (hypernyms and hyponyms, antonyms, derivatives), as well as syntagmatic ones (collocates that participate in the description of a term's behaviour within language). Finding new lexical relationships also resulted in introducing new terms to the *DiCoInfo*'s wordlist, and thus additional candidates for the list provided to RHKWCD, since according to the lexico-semantic perspective behind the *DiCoInfo*, most lexical units surrounding a term are also likely to be terms, as are derivatives, synonyms and antonyms. For example, *case insensitivity*₁ was added because *case sensitivity*₁, its antonym, was already part of the wordlist; also, the verb *crack*₁ led to the inclusion of the noun *crack*₂, which designates the same notion, and the noun *cracker*₂, whose function is to crack something.

In brief, my participation in the description of terms allowed me to become more familiar with many steps of terminological work, from supplying a corpus to the establishment of a semantic network. And since, from a translation point of view, I consider general and specialized tools as complementary, I believe that the collaboration between the *DiCoInfo* and RHKWCD is a rich source of investigation themes aiming to demonstrate the inexhaustible bonds between lexicography and terminology.

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