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and

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# Contents

Foreword, <i>Amparo Alcina, Marie-Claude L’Homme</i>	1
Term-spotting with TransCheck: A Capital Idea, <i>Elliott Macklovitch, Guy Lapalme, Nelida Chan</i>	3
Linguists to engineers: Explaining the meaning of SERVICE, <i>Heli Tissari, Tuula Chezek</i>	13
Intégration d’informations syntaxico-sémantiques dans les bases de données terminologiques : méthodologie d’annotation et perspectives d’automatisation, <i>Fadila Hadouche, Marie-Claude L’Homme, Guy Lapalme, Annaïch Le Serrec</i>	22
La traduction des adjectifs relationnels du domaine médical : étude du suffixe ionnel., <i>François Maniez</i>	32
Towards an integrated analysis of aligned texts in terminology: The CREATerminal approach, <i>Elizabeth Marshman, Patricia Van Bolderen</i>	42
Explanatory Combinatorial Lexicology and NLP Applications in Specialized Discourse, <i>Leo Wanner</i>	54
Classes de vocabulaire et indexation automatique : le cas des index de livres, <i>Lyne Da Sylva</i>	67
The equivalence of terms from the Internet in Spanish and French, <i>Esperanza Valero, Verónica Pastor, Amparo Alcina</i>	77
The Framing of Surgical Procedure Terms, <i>Maria-Cornelia Wermuth</i>	87
Index of authors	99

# The equivalence of Internet terms in Spanish and French

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## Abstract

The aim of the DiCoInfo-ES Project is to elaborate a dictionary of computing terms using Explanatory and Combinatorial Lexicology (ECL), taking the French version of the DiCoInfo as a reference. The DiCoInfo is a dictionary of Computing and the Internet that includes the lexico-semantic properties of terms, such as their semantic distinctions and their syntactic and combinatorial functioning. As a first step toward the final objective of the DiCoInfo-Es Project, in this study our intention is to identify the differences between some Spanish and French Internet terms, as far as their form and meaning is concerned. We assume that perfect equivalences between terms in different languages do not always exist. Through this analysis we anticipate the possible problems that could arise when linking the Spanish terms in the DiCoInfo-ES with their French equivalents in the DiCoInfo dictionary.

## 1 Introduction

In recent years, the number and level of development of specialized fields have grown hand in hand with the progress made in science and technology. However, the number of terminological dictionaries available has not increased proportionally or at the same rate (Alcina, forthcoming).

In addition to traditional dictionaries, translators also use other resources such as huge databases, corpora or translation memories. Nevertheless, we have noted a need for dictionaries which can provide the translator with information quickly and effectively.

The DiCoInfo is a French dictionary, developed by the OLST group from the Université de Montréal, about Computing and the Internet, which takes into account the polysemy of terms, their actantial structures, and semantically related terms. The DiCoInfo is not concept-based, but relies instead on lexical semantics (L'Homme, 2008). This dictionary assumes the principles of ECL, which is the lexicological component of the Meaning-Text Theory. According to the ECL the lexical unit is an entity which has three constituents: a sense, a form and a set of combinatory properties (Mel'čuk et al. 1995: 16). Each sense of a term corresponds to a lexical unit and therefore each sense has a different entry in the DiCoInfo.

In the TecnoLeTTra research group we have started the DiCoInfo-ES Project. In this project we intend to elaborate a Spanish dictionary of Computing and the Internet in which the Spanish terms are linked with the French terms from the DiCoInfo.

In order to design a valid structure which allows us to link the French entries of the dictionary with the Spanish ones, taking into account that there are not always exact equivalences between languages, in this article we compare some Internet terms in Spanish and French, analyzing differences in form, semantic distinctions and the actantial structure of terms.

## 2 New dictionaries for translators

Among the terminological needs of translators, Cabré (1999: 30) mentions the knowledge of term alternatives and their use in texts, as well as the typical combinatory properties of terms. In addition, Bowker (1998: 648) concludes from a study that corpora are more useful than other traditional resources, such as dictionaries, because terms in corpora are found in the thematic context in which they are normally used. Hence, translators using corpora as terminological resources are less likely to choose a wrong equivalent which cannot be used in the context of the translation.

Moreover, the meaning of a term is determined by the concept it refers to, but also by the context where it is used (Kusmaul, 1995: 89; Robinson, 2003: 113). This is the reason why translators are concerned about looking for terms within their context.

However, dictionaries, even electronic ones, do not have enough contextual information to satisfy the needs of translators. Traditional specialized dictionaries concentrate on answering questions related to the understanding of concepts (L'Homme, 2008) (monolingual dictionaries) or on providing term equivalents without taking into account the context (bilingual dictionaries). Cabré (2004: 105) points out the absence of appropriate dictionaries when searching for an equivalent term in another language. According to this author, the lack of contexts in bilingual dictionaries makes it impossible to choose the most suitable equivalent for each text, especially when the dictionary offers several possibilities.

This lack of contexts in dictionaries is one of the main reasons that some authors (Montero & Faber, 2008: 162) have put forward to explain why some translators, in recent years, have replaced dictionaries with other resources, such as corpora or the Internet. These resources offer large contexts that are easy to access by means of different search techniques that dictionaries have not yet incorporated. Some studies on electronic dictionaries have even integrated corpora into their search systems. A good example is the work by Castagnoli (2008) on the 'EOHS Term' project (<http://eohsterm.org>). This is a database in which the field *context* is deleted from the entries and terms are linked directly to a reference corpus showing the contexts.

However, if translators have to undertake terminological tasks, for instance searching in a corpus or on the Internet, this will mean wasted time and poorer efficacy in their translations (Alcina, forthcoming). Consequently, there is still a need to create more complete dictionaries which offer quicker access to terminological data and show efficacy in their results. These dictionaries should include, in a systematic way, the contextual information provided by corpora (collocations, arguments, semantic relationships, etc.) and also provide the equivalents in the target language.

## 3 The equivalence of Internet terms in Spanish and French

In order to meet the challenge of elaborating multilingual dictionaries with contextual information for translators, in the DiCoInfo-ES Project our intention is to design a Spanish dictionary with equivalents connected with the French articles in the DiCoInfo.

The concept of equivalence has been widely discussed in the literature. L'Homme (2004a: 115) argues that terms often represent different realities from one language to another. Rondeau (1984: 32-34) divides the correspondences and differences between terms in different languages into three categories: in the first case, there is an exact correspondence between terms in  $L_1$  and  $L_2$ ; in the second case, a term in  $L_1$  does not correspond exactly to a term in  $L_2$ ; and, in the third case, the notion that a term represents in  $L_1$  is not expressed in  $L_2$  because it is an unknown notion or it has not yet received a name. In addition, Dubuc (1992: 55-56) makes a distinction between differences in meaning and differences in use when two terms are not equivalent in two languages.

Differences in equivalence cause difficulties, for example, in the automatic extraction of equivalents from parallel corpora, as shown in the studies conducted by L'Homme (2004a: 208) and Le Serrec (2008: 110), and also in the process of creating multilingual dictionaries. Bae and L'Homme (forthcoming) discuss the adaptations that are necessary in order to convert a monolingual French dictionary into a bilingual French-Korean dictionary with a common methodology designed primarily for French. When assign-

ing the equivalents, three main difficulties arose, namely: differences in the number of constituents in terms, differences in semantic distinctions, and differences in lexical systems. The first difficulty occurs when a single-word term in a language corresponds to a multi-word term or to a phrase in the other language, and vice versa. The second difficulty arises when two equivalent terms in two languages have a different number of senses. For example, a Korean term has two different senses and each sense corresponds to a different French equivalent. The third difficulty is caused by the differences between the lexical systems, for example, syntactical or morphological differences. In order to overcome these differences, they designed an intermediate table which allowed users to observe exact equivalents and at the same time access articles in each database.

**Fig. 1. Intermediate table (Bae & L’Homme, forthcoming)**

Korean	I-Korean	I-French	French
클릭 1 ‘click’	클릭할 수 있는 ‘possible to click’	cliquable 1	cliquable 1 ‘clickable’

For the inclusion of a Spanish module in the DiCoInFo, as with Korean, a number of problems could arise. These may affect the structure of the dictionary, that is, in the way equivalent articles in Spanish and French will be linked:

- The absence of a term in  $L_2$  which expresses the same meaning as a term in  $L_1$ . For example, in French there is a term which describes a set of programs: Mult (logiciel) = logithèque, whereas in Spanish there is no equivalent term for *logithèque*.
- A term in  $L_1$  corresponds to a phrase that cannot be considered a term in  $L_2$ . As L’Homme (2008) states, the French term *cliquer* (to click) corresponds preferentially to the Spanish expression *hacer clic* (literally to do click).
- A term in  $L_1$  expresses more senses than its equivalent term in  $L_2$ .

Thus, the aim of this article is to perform a comparative analysis of Spanish and French Internet terms, taking into account ECL. We will compare semantic distinctions, differences in form, and the actantial structures of Spanish and French terms. The actantial structure describes the essential participants which describe the sense of a term. For example, the actantial structure of the verb *to configure* has two actants: somebody ~ something (L’Homme, 2008). The semantic distinctions refer to the senses that a term can have in a specialized domain. For example, as L’Homme (2004b) states, the term *program* can have three different meanings: “1) a set of instructions written by a programmer in a given programming language in order to solve a problem (this meaning is also conveyed by computer program); 2) a set of programs (in sense 1) a user installs and runs on his computer to perform a number of tasks (this meaning being also conveyed by software program); and 3) a small set of instructions designed to run a specific piece of hardware”.

This is a pilot study to anticipate problems that we will come across when building the Spanish version of the DiCoInfo.

### 3.1 Methodology

The methodology of this analysis can be divided into five stages: selection of French terms, search for Spanish equivalents, selection of Spanish contexts, linguistic description of Spanish terms, and comparison of Spanish terms with the French version of the DiCoInfo. These different stages are detailed below.

**Selection of French terms:** We chose the subfield ‘Internet’ within the field of ‘Computing’ in order to limit the number of terms to be analyzed. We analyzed terms related to entities and activities that occur on the Internet, such as *anti-logiciel espion* (antispypware), *portail web* (Web portal) or *fureter* (to surf), but we discarded other terms closer to the software or hardware areas, such as *barre espace* (space bar) or *décompresser* (to unzip).

We extracted the list of terms for this subfield by comparing the terms included in the DiCoInfo and the terms included in the *Vocabulaire d'Internet*<sup>2</sup> of the Banque de terminologie du Québec elaborated by the Office québécois de la langue française. In doing so, we obtained all the terms from the DiCoInfo that were also included in this specific glossary about the Internet. The result was a list of 231 terms in French. Some synonyms and morphological variations that we found in the DicoInfo during the analysis were added to this list, which finally gave us total of 242 terms.

**Search for Spanish equivalents:** We obtained the equivalent Spanish terms by searching in different bilingual dictionaries and glossaries, and also by using our intuition and experience as Internet users. The equivalents found were confirmed by searching in Spanish corpora about Computing.

**Selection of Spanish contexts:** We obtained contexts for these equivalents in three different corpora.

- A Computing corpus in Spanish, elaborated by the OLST group from the Université de Montréal and containing about 500 000 words.
- Online Corpus Bwananet, elaborated by IULA from the Universitat Pompeu Fabra (Spain), containing more than one million words about computing.
- Corpus de Referencia del Español Actual, an online corpus elaborated by the Real Academia de la Lengua Española, in which we selected the area of Computer science.

We would like to clarify that, since our objective is to create a dictionary for translators, we have only considered corpora which include mostly normative language, whereas the French terms of the DiCoInfo were extracted from a varied corpus. This implies some constraints regarding the selection of Spanish terms to be included in the DiCoInfo, and it has an influence on this analysis as well.

**Linguistic description of Spanish terms:** In this stage we described the Spanish terms that we found, in terms of their formal and semantic aspects and their linguistic use in contexts.

- Description of the term form: On the one hand, we indicate whether it is a single-word term and, if this is the case, whether it contains a prefix or a suffix. On the other hand, we also indicate whether the term is made up of a number of words (multi-word term) and, if so, we describe the morphological characteristics of its components. For instance, the Spanish term *programa gratuito* (freeware) consists of a noun plus an adjective. There are some cases in which a French term does not have a direct equivalent term in Spanish and instead a phrase is used which cannot be considered a term. For example, the French term *spammer* (to spam) could be in Spanish *enviar spam* (to send spam).
- Description of semantic distinctions: By looking at the Spanish concordances of terms we established whether a lexical form in French corresponds to one lexical unit, whereas its Spanish equivalent corresponds to two or more lexical units. For instance, in Spanish *diálogo* can refer to the dialog between two programs or computers, to the dialog between a user and a computer or to the box that appears on a display screen.
- Actantial structure description: We determined the actantial structure for each lexical unit. For example, the term *diálogo* needs two actants: an agent (user) and an addressee (computer, program).

**Comparison of Spanish terms with the French version of the DiCoInfo:** Once we had collected the linguistic data about the Spanish terms, we compared them with the information provided by the Di-

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<sup>2</sup> This dictionary can be accessed at <http://www.oqlf.gouv.qc.ca/ressources/bibliotheque/dictionnaires/Internet/Index/index.html>

CoInfo about the French terms. In this stage we looked for differences relating to semantic distinctions, number of synonyms, formal structure and number of actants of a lexical unit.

### 3.2 Results

This section contains the results of our comparative analysis of Spanish and French terms. Before going on, we would like to clarify that this analysis was carried out from the information found in the DiCoInfo of French terms and the concordances of Spanish terms from the corpora that we mentioned in this article. In this regard, meanings and uses other than the ones we show here may also be possible, both in Spanish and French.

Of the 242 terms which were analyzed, 201 were nouns, 36 were verbs and 5 were adjectives.

There are many cases in which we did not find interlinguistic variation and no differences were found in the actantial structure of Spanish and French terms. For example, *binette* in French and *emoción* in Spanish have the following actantial structure: an agent, i.e. a user, and a destination, i.e. a message. As regards semantic distinctions, we did not observe any differences in verbs and adjectives, and only a few differences in nouns. In the rest of the phenomena analyzed there were no differences among the five adjectives.

In the following sections, we will focus on the interlinguistic variations found in the analysis. We only include some examples that illustrate these differences: the rest of the data can be found in Appendix A.

**A. Differences in semantic distinctions:** Most of the French nouns have parallel senses in Spanish, i.e. *accès à Internet* and *acceso a Internet* (Internet access), *adresse de courriel* and *dirección de correo* (e-mail address), *nom d'utilisateur* and *nombre de usuario* (user name), etc. However, we did find 5 French terms with different semantic distinctions in Spanish, that is, one language has more semantic distinctions than the other. For instance, *annuaire* in French is a directory of websites, whereas its Spanish equivalent *directorio* is a directory of websites, but also a group of files. Another example is the French term *journal* which only has the meaning of log, whereas its Spanish equivalent *registro* means a log, the action of introducing data, a database entry, and the process of creating an account on a website (to sign up).

**B. Use of synonyms:** The number of synonyms and quasi-synonyms of a term also varies from one language to the other. In French we found many cases of synonymy. For example, whereas in Spanish there is only the term *chat* to designate a virtual room where a chat session takes place, in French there are many synonyms: *bavardoir*, *bavardoir électronique*, *clavardoir*, *espace de bavardage*, *salon de bavardage*, *salon de clavardage* or *salon de cyberbavardage*.

As in nouns, synonymy is more frequent in the French verbs: *chater*, *clavarder*, *cyberbavarder*, *bavarder* (to chat); whereas in Spanish only *chatear* (to chat) or *conversar en un chat* (to talk in a chat room) are used.

**C. Use of phrases which cannot be considered terms:** We found some French terms which are equivalent to a phrase in Spanish. For instance, the French noun *blogage* (blogging) can be translated in Spanish as *participación en un blog* (taking part in a blog), *interacción en un blog* (interacting in a blog), etc.; *blogueur* (blogger) can be translated as *usuario que dispone de un blog* (user of a blog) or a similar expression. Other examples are *polluposteur* and *spammeur* (spammer), in Spanish *emisor de spam* (spam sender), or *spammage* and *pollupostage* (spamming), in Spanish *envío de spam*, *envío de correo basura* (sending of spam).

As regards verbs, we found six verbs in French that are single-word terms while in Spanish they correspond to phrases which cannot be considered terms:

- *Sauvegarder* (to back up) corresponds to *hacer una copia de seguridad* (to make a backup).
- *Bloguer* (to blog) does not have an equivalent term in Spanish. We use some expressions such as *participar en un blog*, *interactuar en un blog*, (to participate or to interact in a blog).
- *Polluposter* or *spammer* (to spam) correspond in Spanish to the expression *enviar spam* (to send spam).

**D. Differences in form:** We classified the differences in form into morphological variants and differences in the formal structure.

- **Morphological variants:** According to the analysis in French there are many morphological variants of the same term, whereas this is not the case in Spanish. For instance, in order to designate the creator or user of a blog in French you can use *webblogueur*, *webloger*, *weblogger*, *weblogueur*, *weblogueur*, *bloger*, *bloger*, *blogger*, *blogueur*, *blogueur*.

- **Formal structure of nouns:** Some nouns are made up of a single component in one language whereas in the other language their equivalents are multi-word terms. For example, *sauvegarde* (backup) is a single-word term equivalent to the multi-word term *copia de seguridad* in Spanish.

## 4 Discussion

From this analysis we identified many similarities between the Spanish and French terms in the field of the Internet, such as the actantial structure, which shows no variation in the terms that were analyzed. However, this analysis also shows many differences between the terms in the two languages. Some of these differences can be due to the nature of the corpora used in the analysis. The language of the Spanish corpora seems to be more restricted than the French. For example, we found numerous morphological variants in French (i.e. *webloger*, *weblogger*, *weblogueur*), which shows that the texts included in the French corpus are more diverse. In addition, the high frequency of use of phrases which cannot be considered a term in Spanish may be due to the fact that the Spanish corpora include mostly the Spanish of Spain and formal language. For instance, the term *bloguear* (to blog) is not found in the corpora, although it is frequently used in some forums on the Internet. This means we will have to be very careful when deciding on the criteria we will take into account when compiling the Spanish corpus for the DiCoInfo. Yet the following differences are worth taking into account when elaborating the Spanish version of the DiCoInfo:

- a French term has only one sense and its equivalent in Spanish has more senses or vice versa, i.e. in the DiCoInfo only one meaning was considered relevant for the term *journal* (log) in French, whereas in Spanish the equivalent *registro* has different meanings in this domain.
- in French, the DiCoInfo includes a wide range of synonyms for some terms that in Spanish have no synonyms or only a few, i.e. *clavarder*, *bavarder*, *cyberbavarder*, *chater* (to chat) correspond to *chatear* in Spanish.
- a French term corresponds to a phrase which cannot be considered a term in Spanish, i.e. the French verb *spammer* (to spam) in Spanish would be *enviar spam* (to send spam).
- a single-word term in French has a multi-word equivalent in Spanish, i.e. *sauvegarde* (backup) is equivalent to *copia de seguridad*.

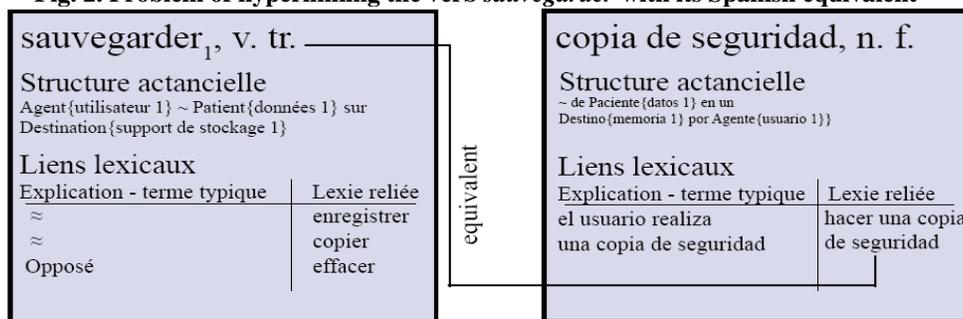
These differences will entail three main problems when building the Spanish version of the DiCoInfo: the extraction of the candidate terms, the selection of headwords, and the hyperlinking between the Spanish and the French entries in the DiCoInfo.

Regarding the extraction, some phrases which cannot be considered a term in Spanish are composed of a general verb and a specific noun. When applying the DiCoInfo methodology, in which only single-word terms are extracted, the general component of the phrases will not be recorded high on the list of candidates or it will not even be extracted. For example, the equivalent of the French *sauvegarder* (to back up) in Spanish is *hacer una copia de seguridad*. The problem is that the verb *hacer* in Spanish has a general meaning and it will not be proposed as a candidate term in the specialized fields.

As far as selection of headwords is concerned *sauvegarder* is a headword in the DiCoInfo whereas the equivalent phrases will not be headwords in the Spanish version.

As regards hyperlinking, the verb *sauvegarder* (to back up) would be linked to the noun *copia de seguridad* (backup) instead of its equivalent verb.

**Fig. 2. Problem of hyperlinking the verb *sauvegarder* with its Spanish equivalent**



This analysis shows that there are no difficulties that cannot be overcome when building the Spanish dictionary, and indeed there are many similarities between French and Spanish terms which will allow the methodology of the DiCoInfo to be applied in elaborating the Spanish version. However, the problems and the linguistic phenomena described above will require some adaptations to the Spanish module of the DiCoInfo before it can be connected with the French module.

## 5 Conclusion

The comparison of equivalent terms from the field of the Internet in French and Spanish shows many similarities, but also a wide range of differences relating to semantic distinctions, differences in form and equivalence of French terms with Spanish phrases which cannot be considered terms. Therefore, when connecting the Spanish module of the DiCoInfo with the French module, it is not enough just to link a Spanish term with its equivalent term in French. This will require the design of a complex system capable of representing and relating the links between the Spanish and the French articles.

For this reason, some future work is planned. As well as reflecting on the criteria to be used in compiling the Spanish corpus and writing the articles of the Spanish terms following the methodology of the DiCoInfo, we also plan to develop strategies in order to overcome the difficulties that have arisen from this study. To do so, we will take into account the solutions adopted in the creation of the Korean module of the DiCoInfo (Bae & L'Homme, 2008), such as the design of an intermediate equivalence structure to act as a bridge between the Korean and the French entries. We will reflect on how to apply this strategy between Spanish and French, as well as other possible solutions.

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## Appendix A. Differences of the analysis

Table 1. Differences in the semantic distinctions of nouns

French term	French semantic distinctions	Spanish term	Spanish semantic distinctions
annuaire	1. website directory	directorio	1. website directory 2. an organizational unit, or container, used to organize folders and files
courriel	1. an electronic message 2. group of e-mails (mass noun) 3. e-mail technology	e-mail correo	1. an electronic message 2. group of e-mails (mass noun) 3. e-mail technology. 4. e-mail address.
dialogue	1. dialog between two programs or computers 2. dialog between a user and a computer	diálogo	1. dialog between two programs or computers 2. dialog between a user and a computer 3. a box that appears on a display screen
journal fichier journal	1. a log	registro	1. a log 2. action of introducing data 3. database entry 4. the process of creating an account on a website (sign up)
port	1. physical port	puerto	1. an interface on a computer to which you can connect a device 2. an endpoint to a logical connection

Table 2. Use of synonyms in nouns

French synonyms	Spanish synonyms
a commercial arobas/arrobas	arroba
antiespiogiciel antispyware anti-logiciel espion	antispyware

<b>French synonyms</b>	<b>Spanish synonyms</b>
bavardoir bavadoir électronique clavardoir espace de bavardage salon de bavardage salon de clavardage salon de cyberbavardage	chat
binette émoticône frimousse	emotición emoticono
bloc-notes weblog blog/blogue joub carnet web	blog bitácora diario web cuaderno de bitácora
weblogueur/weblogger/weblogger weblogueur/weblogueur blogger/blogueur/blogger/blogueur//blogueur	usuario de un blog
pare-feu coupe-feu	cortafuegos
furetage surf navigation	navegación
graticiel/gratuiciel freeware logiciel gratuit logiciel freeware	software libre freeware software de libre distribución
pollupostage spammage spamming	envío de spam
spam pourriel pollurriel	spam correo basura

Table 3. Use of synonyms in verbs

<b>French synonyms</b>	<b>Spanish synonyms</b>
chatter/chater clavarder cyberbavarder bavarder	chatear conversar en un chat
polluposter spammer	enviar un spam
télécharger	descargar bajar

Table 4. Use of noun phrases

<b>French term</b>	<b>Spanish phrases</b>
blogage	conversación en un blog
blogueur	persona que utiliza un blog
clavardage bavardage cyberbavardage	conversación en un chat
graticiel gratuiciel	programa de libre distribución software libre programa gratuito
polluposteur spammeur	generador de spam emisor de spam
pollupostage spammage	envío de spam
webmestre	administrador del sitio

Table 5. Use of verb phrases

<b>French term</b>	<b>Spanish verb phrases</b>
sauvegarder	hacer una copia de seguridad
clavarder bavarder	conversar en un chat hablar en un chat or internet
polluposter spammer	enviar un spam
bloguer	interactuar en un blog participar en un blog

Table 6. Differences in form for nouns. Morphological variations

<b>French terms</b>	<b>Spanish terms</b>
arobas arrobas	arroba
weblog blog blogue	blog
weblogueur webloger weblogger webloggateur weblogueur blogger blogueur blogger blogueur bloggateur	usuario de un blog
graticiel gratuiciel	software libre

Table 7. Differences in form for verbs. Morphological variations

<b>French terms</b>	<b>Spanish terms</b>
chatter chater	chatear

Table 8. Differences in form for nouns. Number of constituents

<b>Spanish single-word term</b>	<b>French multi-word term</b>
cortafuegos	coupe-feu
adjunto	pièce jointe
contraseña	mot de passe
encabezado	en-tête

<b>French single-word term</b>	<b>Spanish multi-word term</b>
pourriel, pollurriel	correo basura
sauvegarde	copia de seguridad
webmestre	administrador web, administrador del sitio