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THE ROLE OF COMPUTERS IN DEVELOPING STUDENTS' TRANSLATION COMPETENCE

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Introduction

Computers nowadays provide great help to linguists, especially if we are to think of text manipulation techniques: large storage, quick search and retrieval as well as networked communication. As a result, the styles and efficiency of text processing, language learning and translation can be greatly improved. Especially the existence of extensive electronic corpora offers examples and generalisations of language usages, which in turn will contribute to better language teaching and produce high-quality translation. Electronic tools such as dictionaries, concordancers, encyclopaedias and Web page search engines offer instant returns to inquiries about word or phrase usages. Secondly, upgraded machine translation technology has turned into a helpful tool, not only to business and industry, but also for translators and language learners. We can therefore say that the machine-aided translation technology also has beneficial effects both on translation and on language learning.

Different computer programs, combining the characteristics of human intelligence in providing guidance with the machine capacities to manage resources and solve tasks, have the potential to become good assistants for translators and language users and learners in the future. Nowadays educators' needs in language and translation teaching cannot be met without orienting the courses and the curricula in the same direction as the new computer era takes us in all other aspects of life. I will in the following make a short presentation of computers' benefits to translation and language learning, from the translator's workstation to the translation memory applications, the machine translation technology and computer assisted language learning. I will try to analyse the interrelatedness of concepts such as translating, language learning and the role the computer can play in this environment.

1. Translator workstation

The reality of modern times is such that a translator does not have to go to the library to find reference materials any more: a computer with Internet access can provide answers to the majority of questions arising in the translation process. Among the reference tools readily available on the Internet or on different specialised software mention should be made of: electronic dictionaries, terminology banks, encyclopaedias, concordancers, collocation finders, Web search engines, etc. All these tools contribute to the creation of a computerised working environment, which has been traditionally called the translator's workstation (Melby 1992, Hutchins 1997, Freigang 1998) or the translator's workbench (Trujillo 1999).

According to Melby (1992) there are three levels of functions for a translator workstation. Level one functions comprise word processing, terminology management and telecommunications. Level two functions consist of text analysis, automatic dictionary look-up, and synchronized bilingual text retrieval. Level three "provides an interface to machine translation systems" (218).

We have all encountered and are familiar with the use of electronic dictionaries, encyclopaedias and bilingual terminology files at the lower levels; therefore we will not spend too much time on this aspect. A less obvious tool, but similarly helpful for the beginner translator is the Web search engine. For example, in attempting to translate the expression *Bakugan battle brawlers* into Romanian, the Romanian equivalent may not be found in the dictionary or in a terminology bank. The translator may know what the word means, but it is another thing to translate it into Romanian, because an established translation could exist which the translator may not know.

(1) Bakugan Battle Brawlers are action-figure warriors, that are tucked into spheres that pop open when they're rolled onto a game card, where they gather points.

The definition we can find on *http://www.thefreedictionary.com* is ***brawl*** *intr. v.* brawled, brawling, brawls 1. To quarrel or fight noisily. 2. To flow noisily, as water; **brawler** *n.* a fighter (especially one who participates in brawls). It stands to reason that a warrior brawls in a battle.

In such cases it is useful to resort to a localised Web search engine like Google Romania, which can help retrieve relevant national Web pages with the accepted translations for the term we need.

(1) Luptătorii Bakugan sunt figurine ascunse în sfere care explodează atunci când sunt aruncate pe cărțile de joc, unde acumulează puncte.

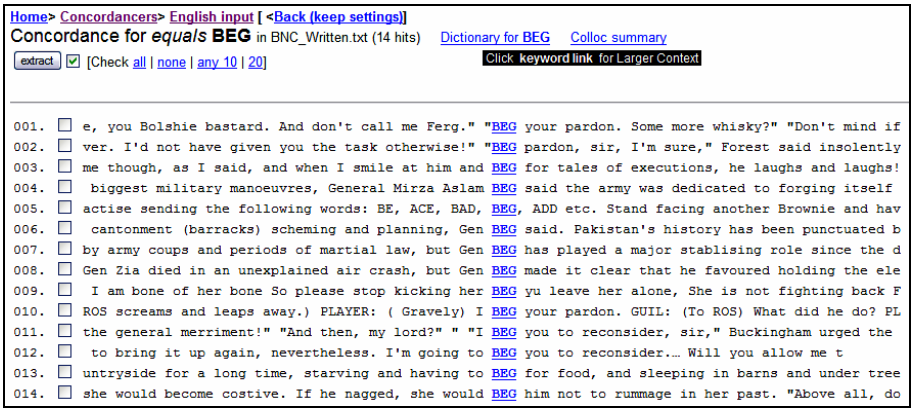
Level two functions include text analysis which includes mostly the tool of concordancers (Melby 1992). A concordancer is useful to the translator mainly in the target language domain, as it primarily assists the translator in the processes of rendering target texts (as opposed to understanding the source texts). The concordancer can search a large native-speaker corpus and find lines of texts containing the query word whose usage the translator, as a non-native speaker, is unsure about. The concordance lines provide the translator with a set of contexts that the target word is used in so that she can be more certain about how to integrate the word in her own sentence. For example, suppose our task is to translate the Romanian fragment (2).

(2) Dacă în străinătate cerşim de foame, acasă am ajuns să "negociem" cu marile companii din domeniul petrolului de frica frigului. Şi asta pentru că guvernanții s-au trezit în prag de iarnă surprinşi de avalanşa prețurilor la gazele naturale, care tinde să îngroape speranțele multora dintre români de a trece cu bine peste sezonul rece.

In what follows there is a 'literal' translation of the passage above, which doesn't seem to sound well, at least to a native speaker.

(2') If abroad we beg of hunger, at home we've come to "negotiate" with the big companies in the oil field for fear of cold. And this because governors woke up at the beginning of winter surprised by the avalanche of prices for natural gases which tends to bury the hopes of many Romanians to get well over the cold season.

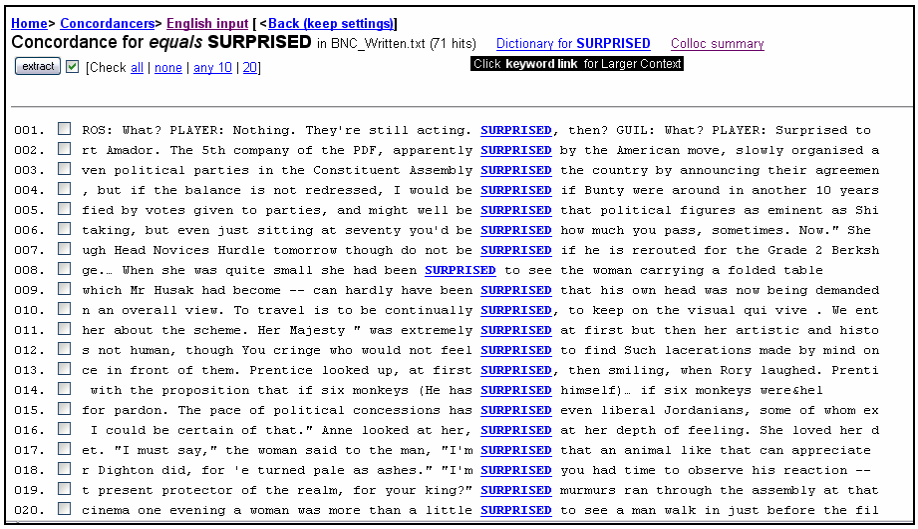
First of all, the literal translation of „cerşim de foame" - "we beg of hunger" may sound awkward, and the translator may want to check in a concordancer based on large corpus how the verb 'to beg' is used by native speakers. The following is a snapshot of the BNC output:


Home> Concordancers> English input [<Back (keep settings)]
Concordance for *equals* **BEG** in BNC_Written.txt (14 hits) Dictionary for BEG Colloc summary
extract [Check all | none | any 10 | 20] Click keyword link for Larger Context

001. e, you Bolshie bastard. And don't call me Ferg." "BEG your pardon. Some more whisky?" "Don't mind if
002. ver. I'd not have given you the task otherwise!" "BEG pardon, sir, I'm sure," Forest said insolently
003. me though, as I said, and when I smile at him and BEG for tales of executions, he laughs and laughs!
004. biggest military manoeuvres, General Mirza Aslam BEG said the army was dedicated to forging itself
005. actise sending the following words: BE, ACE, BAD, BEG, ADD etc. Stand facing another Brownie and hav
006. cantonment (barracks) scheming and planning, Gen BEG said. Pakistan's history has been punctuated b
007. by army coups and periods of martial law, but Gen BEG has played a major stablising role since the d
008. Gen Zia died in an unexplained air crash, but Gen BEG made it clear that he favoured holding the ele
009. I am bone of her bone So please stop kicking her BEG yu leave her alone, She is not fighting back F
010. ROS screams and leaps away.) PLAYER: (Gravely) I BEG your pardon. GUIL: (To ROS) What did he do? PL
011. the general merriment!" "And then, my lord?" " "I BEG you to reconsider, sir," Buckingham urged the
012. to bring it up again, nevertheless. I'm going to BEG you to reconsider.… Will you allow me t
013. untryside for a long time, starving and having to BEG for food, and sleeping in barns and under tree
014. she would become costive. If he nagged, she would BEG him not to rummage in her past. "Above all, do

Fig. 1. Snapshot of 'beg' concordances

As can be seen from the above selection, the phrase 'having to beg for food' is used in a similar context, referring to starvation and poverty. Conversely, the phrase 'governors woke up at the beginning of winter surprised by the avalanche of prices for natural gases' does not seem to sound too native-like. A simple search through the BNC corpus would return more natural associations: 'surprised to find/see'.


Home> Concordancers> English input [<Back (keep settings)]
Concordance for *equals* **SURPRISED** in BNC_Written.txt (71 hits) Dictionary for SURPRISED Colloc summary
extract [Check all | none | any 10 | 20] Click keyword link for Larger Context

001. ROS: What? PLAYER: Nothing. They're still acting. SURPRISED, then? GUIL: What? PLAYER: Surprised to
002. rt Amador. The 5th company of the PDF, apparently SURPRISED by the American move, slowly organised a
003. ven political parties in the Constituent Assembly SURPRISED the country by announcing their agreemen
004. , but if the balance is not redressed, I would be SURPRISED if Bunty were around in another 10 years
005. fied by votes given to parties, and might well be SURPRISED that political figures as eminent as Shi
006. taking, but even just sitting at seventy you'd be SURPRISED how much you pass, sometimes. Now." She
007. ugh Head Novices Hurdle tomorrow though do not be SURPRISED if he is rerouted for the Grade 2 Berksh
008. ge.… When she was quite small she had been SURPRISED to see the woman carrying a folded table
009. which Mr Husak had become -- can hardly have been SURPRISED that his own head was now being demanded
010. n an overall view. To travel is to be continually SURPRISED, to keep on the visual qui vive . We ent
011. her about the scheme. Her Majesty " was extremely SURPRISED at first but then her artistic and histo
012. s not human, though You cringe who would not feel SURPRISED to find Such lacerations made by mind on
013. ce in front of them. Prentice looked up, at first SURPRISED, then smiling, when Rory laughed. Prenti
014. with the proposition that if six monkeys (He has SURPRISED himself)… if six monkeys were&hel
015. for pardon. The pace of political concessions has SURPRISED even liberal Jordanians, some of whom ex
016. I could be certain of that." Anne looked at her, SURPRISED at her depth of feeling. She loved her d
017. et. "I must say," the woman said to the man, "I'm SURPRISED that an animal like that can appreciate
018. r Dighton did, for 'e turned pale as ashes." "I'm SURPRISED you had time to observe his reaction --
019. t present protector of the realm, for your king?" SURPRISED murmurs ran through the assembly at that
020. cinema one evening a woman was more than a little SURPRISED to see a man walk in just before the fil

Fig. 2 Snapshot of 'surprised' concordances

Moreover, the expression 'avalanche of prices' needs improvement too. Our search through a concordancer would return the collocation 'soaring prices', which would retain the meaning in Romanian, and would at the same time sound more appropriate.

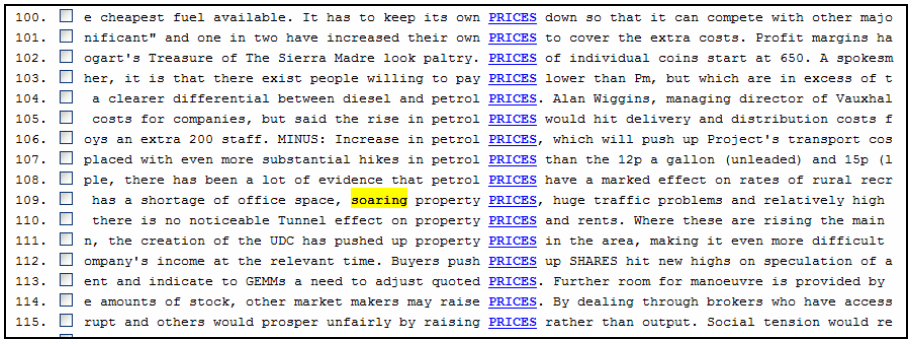


Fig. 3 Snapshot of 'prices' concordances

The same strategy may be applied for all the word associations which seem awkward-sounding. We have not included all snaphots of the concordancers we have used, but the final version of the translated text we revised reads like this:

> ***(2'') If abroad we beg for food, at home we've come to "negotiate" with the big companies in the oil field for fear of cold. And this is because at the beginning of winter our governors were surprised to see the soaring prices of natural gases, which tend to crush/kill off the hopes of many Romanians to successfully withstand the cold season.***

Another level-two function in Melby's frame of a translator workstation may be what he dubs the 'synchronized retrieval' of bilingual text files. A widely accepted contemporary term for this process is the 'translation memory', which is much more complicated than what we have covered before and therefore would deserve special attention in another context.

2. Translation memory

According to Hutchins (1997: 116), translation memory represents a facility which "enables the storage of and access to existing translations for later (partial) reuse or revision or as sources of example translations". In his opinion, "the sales of translator workstations incorporating translation memories are increasing rapidly, particularly in Europe". On the other hand, in Asia, some translation companies also advertise the use of translation memory software as a useful tool on their Web pages. The practical value of translation memory software to translators is proved by its world-wide use, especially by international enterprises, freelance translators and translation companies.

One example of modern translation memory software is the TRADOS Translator's Workbench, which usually has the following modules:

- translation memory
- terminology management
- sentence alignment

The translation memory module will record the user's translations sentence by sentence in a translation memory file. It also has a fuzzy-match algorithm which will search the memory to find any (partial) match for a new source sentence and retrieve the corresponding target sentence for the translator to analyse. In contrast, the terminology management module will keep a bilingual terminology bank and, upon the activation of a source sentence, will search and retrieve the target language parts of any terms that exist both in the source sentence and in the database. Finally, the sentence alignment module will enable the translator to import an existing piece of translation (from a source text file and a corresponding target text file) that has not been previously treated by the translation memory module, and align the source texts with the target text on a sentence-to-sentence

basis. The results of the alignment can then be exported to a translation memory file in order to enhance its contents.

The use of such software means that several translators working together can pool all their translation texts and terms together, including those from the present and the past, in the form of translation memory files and terminology database files. In this way, the tasks of translation and maintenance will be easier and more efficient, while the translation of terminology and recurring patterns will be more consistent across persons and organisations.

3. Machine translation

The history of machine translation (MT) has been rather contradictory since its origin in the 1940's (Hutchins 1995, Somers 1998b), from the following perspectives:

- the methodology it has used: from the direct translation method to the transfer method, the interlingua method, to the more recent corpus-based method (see Somers 1998b, Arnold et al. 1994, Trujillo 1999);
- the expectations of MT: from FAHQMT (fully automatic high-quality MT), to no prospect at all in the late 1960's, to the current limited and realistic goals and expectations (see Hutchins 1999);
- the platforms and users for MT: from the translation companies' desktops to the real-time Internet service for the general public (Yang & Lange 1998) to its possible roles in the fully-fledged "teletranslation industry" conceived by O'Hagan (1996).

Researchers in MT have underlined that the success of MT depends on the restrictions of the domain, the input, the readers and purposes, and the language pair used (Hutchins 1995, 1999, Somers 1998a, O'Hagan 1996: 26-35, Manning & Schütze 1999: 463).

Research into MT from Romanian into English and vice versa is still in its incipient stages. Free translation software is at the same time inefficient. Let us consider a part of the extract we analysed above:

> ***Dacă în străinătate cerşim de foame, acasă am ajuns să "negociem" cu marile companii din domeniul petrolului de frica frigului.***

The Google Translate facility (©2009 Google) will provide the following translation:

> ***If abroad begging hunger at home have come to "negotiate" with big oil companies in the field of cold fear.***

As can be seen, some problems are to be found at the grammatical level. First, in Romanian we don't usually express the subject when this is a pronoun, as it is implicit in the verb endings ('***cerşim de foame***' = **noi** ***cerşim de foame***; '***am ajuns***' = **noi** ***am ajuns*** – 1st person pl.). However, the translation in itself is a faulty one, and does not convey any meaning whatsoever. The combination '***in the field of cold fear***' is hilarious, to say the least. Interestingly enough, the idea of oil companies was rendered, although the works field was preserved and wrongly associated with the following semantic unit.

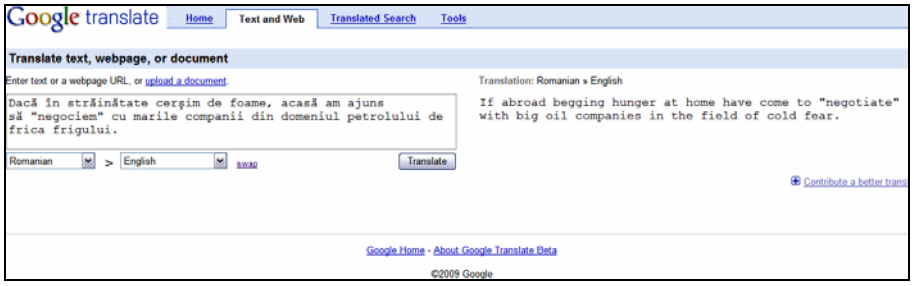


Fig. 4 Google Translate translation

Although in the future MT will play a more and more important role in linguistic services, it will definitely not replace human translators in the foreseeable future. According to specialists, automatic translation cannot, unaided, produce anything better than 'rough' (occasionally barely comprehensible) 'translations' (see above). In order to get higher (publishable) quality, the solution will remain with human translators, supported by all the computer aids that are appropriate (Hutchins 1998).

O'Hagan (1996: 35), shares the same view, considering that "users are recognising the potential benefits of MT and are beginning to make use of the technology within restricted environments".

This is to say that MT "must no longer be put forward as a 'solution' to people's translation needs, but it must be seen as no more than a 'useful aid'" (Hutchins 1999: 32). Increasingly, not only is MT used by the general public for dissemination (of information), communication, entertainment and language learning purposes (Yang & Lange 1998), it is also used by translation professionals. It doesn't come as a surprise that students also find that MT can help them do their foreign language homework. Moreover, even for a language teacher, MT can become a useful teaching aid too. One useful exercise would be for the teacher to use the faulty translation provided above and have the students correct it and find explanations for why the machine has generated such grammatically and semantically flawed text.

Conclusions

If we consider all the educational and translational technology aids mentioned above, it appears that we can find bridges between computers, translation and language learning. We have seen how translation can be combined with computers in the implementation of a translator's workstation. We have also seen how language learning can be integrated with a computer system in the CALL environment. What is more, the possible combination of translation (especially translating into L2) and language learning is also strongly implied from the general working environment language learners and trainee translators share (i.e. both benefit greatly from the use of computers), the tools and resources they use (e.g. concordancers and corpora) and their common goal of interaction (i.e. to produce high-quality written language, close to native speakers' proficiency).

Therefore, we would like to suggest that translating into L2 and L2 learning activities should be carried out in an integrated computerised environment and both will benefit doubly as a result of mutual reinforcement and other factors such as varied resources and increased interest.

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