Chapter 6

Bilingual Language Control in Translation Tasks: A TAP Study into Mental Effort Management by Inexperienced Translators

BOGUSŁAWA WHYATT

Introduction

In the times when being bilingual is a desired rule and being monolingual becomes more of an exception, it is a shame to admit that we still do not know how the human mind copes with two language systems. The study of bilingualism has been a favorite subject of psycholinguistics in recent years, making effort to gain insight into the organization of mental lexicon in bilingual speakers. The study of bilingual lexicon has mainly focused on two layers, the lexical one and the layer of mental representations or concepts underlying the semantic level of language. One might say that it was focused on the ‘hardware’ that is the mental infrastructure the bilingual speakers have, whereas the question of ‘software’, that is the operating system has not been given much attention. Recently, with some advances in neurolinguistic fMRI studies, the issue of language control started to be researched and the results are matched against psycholinguistic models.

However, it turns out that the interest in bilingual language control has been very much focused on monolingual tasks, that is tasks where a bilingual person is utilizing only one of the language systems he/she has in their mental repertoire (see De Groot & Christoffels, 2006). This situation referred to by Grosjean (1997, 2001) as being positioned in a monolingual language mode is not able to fully account for the nature of bilingual language control. Therefore, it has to be complemented by research into language control
when a bilingual person is placed in a bilingual language mode with both language systems being simultaneously activated. This is precisely the case in interpreting and translation tasks. As admitted by De Groot and Christoffels in their recent publication (2006), research on translation and simultaneous interpreting has not been a part of ‘the mainstream psycholinguistic work on bilingual language control’ (De Groot & Christoffels, 2006: 189).

In this chapter I would like to attempt to shed some light on bilingual language control observed through Think Aloud Protocols (TAPs) (see Börsch, 1986 for details about the method) recorded while inexperienced translators performed a translation task. First, I would like to devote some attention to the notion of language control in bilinguals, then I want to present reasons why translation is a special case bilingual activity, next I shall introduce Gile’s (1995) model of translation as a set of efforts/components, following that I would like to present my study, discuss the results and draw some conclusions pointing toward further research and some possible implications for the use of translation tasks in the SL classroom.

### Language Control in Bilinguals

Probably the best source of information on the study of language control in bilingual speakers is a recent article by De Groot and Christoffels (2006). The working definition of language control which can be assumed from the article is that it is a control mechanism that is required for a bilingual to use one and not the other language. Language control can operate either globally in which case complete language systems are inhibited or activated, or locally where ‘control impacts on a restricted set of memory representations’ (De Groot & Christoffels, 2006: 189). As supported by neurolinguistic insights derived from research into bilingual aphasia (e.g. Fabbro, 1999; Green, 1986; Paradis et al., 1982; Paradis, 2004), a control process constitutes an essential part of language processing (Rodriguez-Fornells et al., 2006, also Bialystok et al., 2005). To quote De Groot,

> non-pathological language use not only requires intact language (sub) systems and intact connections between them but also the means to activate and inhibit these systems and to inhibit inappropriate outputs of the systems. (De Groot & Christoffels, 2006: 190)

The fluent operation of the control mechanism will require resources in the form of energy which, as stressed by Green (1986: 211), is in a limited supply and therefore needs to be constantly replenished. Lack of necessary
resources to activate or inhibit the (sub)systems may lead to performance failure and errors. This may also happen if the essential energy has to compete with some ‘external circumstances’ such as stress, anxiety, noise or fatigue and tiredness.

Models of Language Control in Bilinguals

Most proposed models of language control in bilinguals are based on the same principle of suppression (inhibitory control) and/or activation of the whole language system (global control) or (sub)systems (local control). They also explicitly or implicitly assume that the bilingual’s two languages are stored as two separate linguistic systems although the degree of separation and the nature of direct/indirect links between the lexical and conceptual levels of the two languages is open to debate (see Cieślicka, 2004: 165; De Groot, 2002; Kroll & Sholl, 1992; Kroll, 1993). For example, Green (1998) in his Inhibitory Control Model (ICM) [which itself is based on the Supervisory Attentional System (SAS) model of Norman and Shallice (1986)] assumed that a bilingual language system consists of two word input systems (for L1 and L2) and two word output systems (for L1 and L2), one shared conceptual system, one system for phonological assembly, one specifier to control the system and select the language for a particular task and a resource generator which is assumed to supply the required energy to operate the whole system (cf. De Groot & Christoffels, 2006: 190). In psycholinguistic terms, Green’s ICM favors language selective lexical access. A different view comes from La Heij (2005) who explained the problem of language control in terms of local control. He assumed the so-called ‘complex access, simple selection process’ claiming that in the ‘preverbal message’ of a bilingual speaker there is detailed information on the speaker’s intention in the form of a ‘language cue’ which determines which language, whether ‘slang, formal language, irony or euphemism should be used’ (De Groot & Christoffels, 2006: 195). This explains that although the human mind tends to overprepare itself by making more options available (Aitchison, 1996), only very few items (lemmas) will be selected as matching the specifications in the language cue. The difference between the two models reflects the global or local approach to language control. La Heij’s explanation, however, does not involve the energy cost of the language control mechanism in operation.

The essential question to ask in this chapter is what kind of validity these results have for the study of control mechanisms in the actual process of translation.
**Bilingual Language Control and Translation**

It is no coincidence that an important contribution into the study of language control also reported on the bilingual’s ability to translate. Insights from Green (1986), Price et al. (1999), Paradis (1982) and Fabbro (1999) suggest that translation should be viewed as a cognitive task totally disassociate from understanding and speaking a bilingual’s two languages. In a similar vein, Beatens Beardsmore (1982) reports on the case of a writer, Julien Green ‘who can be considered ambilingual as he can read, write, understand and speak equally well in French and in English, yet, his attempt to translate one of his own books led to a failure’ (Beatens Beardsmore, 1982: 8). This points to the fact that translation is a special kind of bilingual activity or rather an interlingual activity (see Toury, 1995).

**Translation as a Special Case Bilingual Activity**

It goes without saying that the majority of people who learn a foreign language do not intend to use it for the purpose of translating texts from one language into the other. Their educational aims are rather monolingual in nature, that is they want to be able to speak and communicate in their second language with ease. Yet, it is a common misconception that anybody who has a bilingual knowledge is able to translate a text (see Harris & Sherwood, 1978; Hejwowski, 2004). As put by Holmes (1988: 103), ‘the translator is in this simplistic common-sense view, a kind of cross-linguistic transcriber or copyist, a slightly glorified typist’. This kind of commonly shared expectation comes from monolingual clients seeking translation services and from bilinguals themselves until they sit down with a text and try to perform the activity. The first translational experience in students of, for example, English as a foreign language at university level has often a painfully disappointing effect usually accompanied by the feeling of their own inadequacy which combined with failure of finding help in bilingual dictionaries performs an eye-opening function to what really is involved in translation (Whyatt, 2003, 2006). So, is it possible to say what it takes to translate a text? At present there are many valuable contributions in the quest to gain insight into the process of translation. The results so far show that the mental reality of translation is counterintuitive to common expectations about its ease and required bilingual knowledge. Translation as put by Wilss (1996) is a knowledge-based activity where the linguistic knowledge of two language systems is a necessary but not sufficient prerequisite. To use a stronger claim voiced by Newmark (1969: 85) and quoted by Bell (1991: 34), ‘any old fool can learn a language (…) but it takes an intelligent person to become a translator’.
What then are the essential components of the translator’s intelligence? Bell (1991) devoted his whole book entitled ‘Translation and translating. Theory and practice’ to investigate what this ‘intelligence’ might consist of but even he himself did not escape the traditional attitude of tentatively equating translator’s intelligence with his/her competence. Perhaps then it might be more plausible to view the translator’s intelligence in terms of control over his/her knowledge structures. This perception is intrinsically based on the competence–performance dichotomy. Intelligence then would be the ability to use one’s knowledge base to act and in the translator’s case to perform a task of translating. However, to keep using the word intelligence in times when this quality is ascribed even to washing powder in advertising jargon seems academically inappropriate and the term cognitive control is more appealing. It is also usefully similar to a kin term of language control.

Although the concept of control mechanism in the process of translation/interpreting has not been researched, its presence has been voiced by some translation scholars. For example, Toury (1995) talking about his concept of ‘a native translator’ says that through normative environmental feedback as a response to the translator’s final product, ‘the translator starts to consider the “potential responses” and eventually ‘an internal control mechanism develops inside the translator’ (Toury, 1995: 248).

Thus, it can be assumed that translation requires intense control with constant global/or local suppression/activation of the two (sub)systems required in the task of translating. This in turn will result in a high energy cost. Relying on this assumption, Daniel Gile (1995) put forward an interesting model of the translation process, which I’m going to discuss next as I believe that it well reflects the mental reality of translation.

**Gile’s Effort Model of the Translation Process**

The model is an expression of Gile’s experience as a translator involved in translator training and its original ideas go back to the 1970s. It was originally suggested for interpreter training but it can be also used to analyze translation in general. The model as a whole is constructed around the notion of processing capacity, requirements and limitations. Translating is perceived as ‘an intellectual information-processing exercise’ (Gile, 1995: 152) in which the application of knowledge both linguistic and extralinguistic becomes essential. The model divides the process of translation into four components or efforts:

1. Comprehension;
2. Production;
(3) Memory effort;  
(4) Coordination effort.

It is a useful simplification of the translation process which as agreed by Translation Studies (TS) scholars is not linear with clear consecutive stages but more of a cascaded interactive process (see Bell, 1991: 60). According to Gile the translator in the process of translating will have to distribute his/her mental resources between the four components in order to achieve the intended purpose in the form of the Target Language (TL) text. Since, however, our mental resources such as our ability to concentrate, divide attention, spot and solve problems, make decisions as well as monitor our decisions are in limited supply, Gile suggests that if, for example, interpretation/comprehension takes up a lot or ‘almost all’ mental energy, the performance will deteriorate.

What I like about Gile’s model is its simplicity, what I do not like about it is the lack of in-depth explanation of the four components and especially the last two components. Gile seems to devote the most attention to the comprehension component which he calls ‘an exercise in inferencing’ (Gile, 1995: 152), production is left as self-evident, memory effort is limited to short-term memory and coordination effort is described as the effort needed to coordinate the three other components. This lack of precise descriptions of the four components leaves it open to interpretation and is then more of a virtue than a vice. As pointed out by De Groot and Christoffels (2006: 198), it acknowledges that control processes constitute an essential part of language processing and Gile’s coordination component can be taken as functionally similar to the language control mechanism. Translation then is viewed as a divided attention task with control needed to supervise the division of attention and to ensure progression toward completion of the task.

In my study I decided to use Gile’s model to observe the distribution of mental resources between the four components with special attention paid to the coordination/control effort.

**The Study: Description, Method, Participants, the Text, Procedure**

In order to gain access to the translator’s on-line processing, I decided to use the method of thinking aloud which originated in introspective psychology (see Börsch, 1986) and has been used to study the process of translation by scholars with their background in psycholinguistics such as Lörscher (1986, 1991), Kiraly, (1991), Krings (1986), Kussmaul (1995). Ten third-year students of English as a foreign language whose competence
is at CAE level or higher were asked to translate a text and at the same time verbalize all the problems, doubts, comments that came to their attention while performing the task. The recordings of these verbalizations formed the so-called TAPs which constituted the raw data on information processing. The students were also asked to write down the translation after they first translated it orally so that further process/product analysis could be possible. The text used in the study was a brief section from a book by Lipniacka (1994) ‘The Xenophobe’s guide to the Poles’ chosen on purpose so that all the background knowledge needed to comprehend it is available to the participants by the virtue of being native speakers of Polish and an informed beneficiaries of the Polish cultural heritage.

The text:

Wealth and success

Few Poles have that hunger for power which drives those who become millionaires. The ambitious become chairmen of social committees rather than chairmen of their own companies.

Not much value is put on money or possessions, the transience of worldly goods being too well known from past history. Moreover, in recent years no fortune could be legally or even morally acquired. Making a profit was ‘profiteering’ and for 50 years was considered a crime. It is still considered a suspect activity.

Thus Poles do not strive to acquire money, and if some chances their way, it stays but briefly. One of the reasons for this is the stylish Polish gesture: from the shopkeeper who grandly waves aside small change, to the hotel owner who gave all his guests three meals a day, because he felt it too petty to sort out the half from the full boards. (150 words)

All the participants translated and recorded their TAPs in the privacy of their own homes; totally undisturbed by the presence of the experimenter, they all could use any dictionaries that they normally use, they were not set any time limitations and they could have breaks if they wanted.

Data analysis

All the TAPs provide a wealth of information about processing which is usually a silent phenomenon performed in the translator’s mind. My interest in their analysis is to focus on two aspects:

(1) The distribution of mental effort between the four components:
   • Comprehension;
   • Production;
Memory;
• Coordination.

(2) The manifestation of coordination effort in the protocols.

The results

As the purpose of the study is not to provide any statistical validity and is aimed at generating hypotheses rather than testing them, the results are to be taken as an average approximation rather than as precise values.

Effort components

In terms of the distribution of effort into the four components, it is fairly straightforward that the majority of time and energy is spent in the memory and coordination component. For example in TAP1, the subject reported on four comprehension problems and six production problems, whereas the number of problems in the memory component and coordination component oscillates around 20. The number of processing within the coordination component can be much higher if the recorded changes to the first oral draft translation are also included.

This disproportion between the mental effort reported in the four components is probably due to the fact that both comprehension and production are in a way relying on the memory component, whereas the coordination effort in a way supervises the problem-solving process once the problem is brought to the conscious attention of the translator. If there are problems with lexical access and retrieval is inhibited, production cannot proceed and coordination effort has to be made to tackle the problem in order to complete the task. For example, let us look at processing while translating the title, ‘wealth and success’.

TAP1:

Wealth and success, mhm …, bogactwo i sukces, nie nie bogactwo, mhm … coś innego, na przykład jakiś bliskoznaczny … do bogactwa, mhm … zamożność, zamożność i sukces???

Effort components:
Comprehension: 0
Production: 1
Memory: 1
Coordination: 1

There are no problems with understanding the phrase, production proceeds but its results are questioned by the coordination effort, memory
search begins for a more desirable solution, coordination effort feeds information on where to look and memory search follows the advice. Still due to lack of acceptance from the coordination component, the final solution is postponed and a decision is made when writing the translation. Accepted title ‘Bogactwo i sukces’.

**TAP2:**

Not much value is put on money or other possessions, ....

Nie przykłada się dużej wagi do pieniędzy, ... yyy, do pieniędzy lub innych, yyy, Nie wiem jak to ‘possessions’, ... sprawdzę w słowniku, ... pos, possessions, majątek osobisty, dobytek, posiadłości, nie, nie, yy ojej, niewielką wagę przywiązuje się, yy do pieniędzy lub ..yy.. majątku

Effort components:

Comprehension: 0
Production: 1
Memory: 1
Coordination: 1

Comprehension seems problem free, smooth transfer proceeds until a production problem pops up, obviously the translator understands the lexical item in question but feels that there is a memory problem in finding the right equivalent, internal memory search is abandoned and the coordination effort decides to go for an external memory source, a dictionary, a list of possible equivalents is quoted, but the coordination effort is not satisfied with the options, pressing for a decision, the translated part of the SL sentence is refreshed in the working memory and a solution is decided upon. Later changed to ‘i innych dóbr materialnych’.

One more example:

The last but one sentence of the text caused serious comprehension problems for all the participants: ‘Thus Poles do not strive to acquire money, and if some chances their way, it stays but briefly’.

Effort components:

Comprehension: 1
Production: 1
Memory: 1
Coordination: 1

Processing the sentence took a lot of time (on average 4–6 min) and effort including intensive dictionary searching, numerous re-readings of
the problem phrase, questions about syntactic relations and the meaning of the phrase ‘chances their way’ as well as time spent on voicing sighs of helplessness and despair, including holly names and swearwords. Both the time spent on the sentence and effort to coordinate memory search in most cases used up a lot of the participants’ mental energy and fatigue or exhaustion started to compete for the remaining resources. In most cases the performance deteriorated in processing the last sentence, dictionaries were used instead of internal memory; partial solutions were quickly accepted although their lack of perfection was signaled by the coordination effort. Focus of the coordination component was on task completion rather than on quality.

To sum up, the process of translation divided into four components follows a general pattern of action, similar to other actions that we perform, which as suggested by Donald (2006) consists of three stages: plan – execute – rehearse. In this respect, the memory and coordination effort is present at all the stages. Yet, as pointed out by Wilss (1996), memory research ‘has not, surprisingly, been registered at all in translation studies’ (with the exception of Wilss, 1992). As for the coordination effort it is the focus of the following section.

The coordination effort

Bell (1991: 57) described a psycholinguistic model of the translation process, where he used then available insights from cognitive studies on the bilingual memory architecture. In his model he used the term ‘idea organizer’ or ‘Central Executive’, which in Gile’s approach accepted here functions as the ‘coordination component’. When listing its functions in the translation process, Bell (1991: 57) says that they include:

1. integrating the process;
2. monitoring the accumulating information;
3. revising.

Looking at the TAP data, it is possible to find verbalizations fitting into the three functions.

For example, when translating the sentence, ‘Not many Poles have that hunger for power which drives those who become millionaires’.

TAP3:

Niewielu Polaków, ma, nie... posiada, ... też nie może być, nie ‘kieruje’ się będzie w dalszej części zdania, ... niewielu Polaków, jakoś tak, mhm ..., niewielu Polaków cechuje ... głód władzy, który kieruje tymi, ... którzy yy ... stają się milionerami ... trochę za dużo tych no ‘which’, dobra na razie może być.
- no dobra, ‘zysk’ co się robi z zyskiem? ‘przynosić zysk’, nie ‘przynosić zysk, nie ‘robić zysk, tylko co? Nie wiem ‘osiągać zysk’? (…) jak to było z tym zyskiem? … Już nie pamiętam, co to było, co powiedziałam, przynoszenie dochodów, nie pamiętam, musiałabym się cofnąć

Having analyzed the data from TAPs, it is possible to extend this list offered by Bell (1991: 57) by adding the function of:

(1) quality control, as in comments like:
   - nie, nie podoba mi się
   - dobytek to mi trochę brzmi ‘obsolete’ w tym kontekście
   - nieladnie to stylistycznie brzmi, fatalnie

(2) mental effort management, as in comments like:
   - nie wiem, co z tym zrobić
   - no dobra, ‘zysku’, zostawię, bo nie wiem, co z tym zrobić
   - ‘profitiering’, co to było? Muszę sprawdzić w słowniku, bo nie wiem
   - nie wiem, muszę sobie zrobić przerwę

or in stress relieving verbalizations:
   - kurde
   - trudny ten tekst
   - cholera
   - ojej

To sum up, the coordination component is focused on ensuring progress toward the intended goal, which is translating the text. It supervises the process, integrates all the consecutive decisions, monitors processed information, revises options, controls the quality of the output and decides on where to direct the remaining available mental resources, and makes the ultimate decision whether the energy suffices to continue the process or whether its resources have to be replenished. In other words, it controls more than what is assumed for the language control mechanism and therefore the term cognitive control seems more appropriate. The concept of a control mechanism in the process of translation is also signaled in other notions that were put forward by translation studies scholars. Concepts such as Holmes’s map-theory (see Hönig, 1991), Lörscher’s (1986) expectation structure or Hönig’s (1991) macrostructure point to a governing internal mechanism that is somehow present in the translator’s mind.
Conclusion

There is no doubt among practicing translators that translating as a special kind bilingual activity is a high energy consumer. Thus talking about mental effort management in the process of translation makes sense although it has not received much, if any, attention from TS scholars. Recent functional magnetic resonance imaging (fMRI) findings about language control in bilinguals have also stimulated interest in language control during translation. These efforts in finding the locus of language control in the brain point to the fact that the control center is not exclusive to language but underlines other cognitive skills (Gopher, 1992). The modest study reported in this chapter confirms these assumptions pointing to the fact that translation as a complex skill requires more than bilingual language control. Undoubtedly, in translation as an interactive process, we deal with coordination requirements that apart from languages include other knowledge domains. The results of the present study also point to the essential role played by memory in the operating capacity of the human translator. Problems with lexical retrieval, memory blocks and time-consuming dictionary searches put high mental demands on the operating system and use a lot of the available resources. The control mechanism will allocate all the time and attention needed to find a desired solution and when the system runs down on energy it will temporarily shut it down. Looking at the TAPs recorded for this study, the question arises, ‘Is all the energy wisely used?’ No, it is not. Translation as an interactive cognitive process requires what Newmark (quoted earlier in this chapter) called intelligence which as put by Wilss (1996) is the ability to use all the available knowledge in order to adapt to the requirements of the task and fulfill the task. The subjects in this study over rely on their linguistic knowledge; there are few references made to their metalinguistic knowledge and practically no connections are made to other knowledge domains which they undoubtedly have in their memory accumulated either through learning or experience. As put by Wilss (1996: 102), ‘as experience with translation increases, the demand of cognitive expenditure decreases’. The question arises, ‘Is it possible to teach better mental effort management and how it can be achieved?’ More research is needed to offer some practical implications, beyond doubt it is worth the effort.

References

Bilingual Language Control in Translation Tasks


