ABSTRACT

The researcher undertook a study of the process of translating scientific texts from English to Malay in Malaysia. Her objective was to find out the processes involved in the translation process and therefore, what instructors should know when teaching translation students who wish to practice translating in the real world. The methodology comprised both quantitative and qualitative methods i.e. a questionnaire, interviews and think-aloud protocols. This study only looked into the process of translating and not the product. Her participants comprised fifty part-time translators who took part in a questionnaire and five part-time translators of scientific texts who took part in the interviews and think-aloud protocols. Based on the results of this study, the researcher believes that in training translators, an instructor should teach the basic theories of translation, processes, steps, approaches, and strategies involved while translating, and how to go about managing terminology. This paper presents the findings from this study and also discusses the researcher’s proposed translation model which can be used as a guide for training translators.

INTRODUCTION

To be effective translators, they need training. In training translators, instructors should give an overall view of what translation is i.e. the definition of translation, the process of translation via the various translation theories and models proposed by the various translation authorities such as Bell (1991), Sager (1994), Darwish (2003), the steps in the translation process etc. Instructors should also teach the various strategies and approaches which translators can apply while translating to
ensure speedier and more accurate translation products. Furthermore, terminology must also be taught. Instructors should advice their student translators to work hard to improve themselves in the pair of languages they wish to use while translating and also to improve on their subject matter in case they choose to translate academic texts such as science, technology, history etc. to ensure that the content is not distorted or made ambiguous during the translation process. Various translation authorities such as Bell (1991), Sager (1994), and Darwish (2003) etc. have given their own definitions of translation. The translation process is best captured by Darwish (2003:63) who regards translation as:

a dichotomous, cumulative and iterative process that musters a host of cognitive activities relating to language, rhetoric, linguistics, communication and culture. It is dichotomous because it deals with two languages that have different linguistic and cultural norms and patterns and different communication codes. It is cumulative because knowledge gained in translating one piece of discourse is applied to translating another piece of discourse. And it is iterative because it undergoes a repetition of a sequence of events yielding results successively closer to the finished text.

Based on the above definition, it is important that future translators be taught on all that is required of them to function well as translators of texts of any genres. This paper which is based on a study done by the researcher will look at the concepts, steps, processes, strategies and approaches that should be inserted and taught in a translation training programme.

AIM OF STUDY

The researcher undertook a study of the process of translating scientific texts from English to Malay in Malaysia. Her objective was to find out the processes involved in the translation process and therefore, what instructors should disseminate when teaching translation students who wish to practice translating in the real world.

METHODOLOGY

The methodology comprised both quantitative and qualitative methods i.e. a questionnaire, interviews and think-aloud protocols. Five experienced part-time translators of scientific texts from the University of Malaya participated in the think-aloud protocols. Here they were asked to verbalise all their thought processes while translating a scientific text from English to Malay. They were interviewed after the think-aloud protocols. The questionnaire was used to find the steps, processes, and problems faced by translators of scientific texts from English to Malay. It comprised both open-ended and closed-ended questions.
SCOPE

This study only looked into the process of translating and not the product. It only studied the scientific text genre and not the other genres. Also, the two languages involved were English and Malay only.

PARTICIPANTS

The participants for this study comprised fifty part-time translators as shown in Table 1 and five part-time translators of scientific texts from the University of Malaya who took part in the interviews and think-aloud protocols.

TABLE 1 Participants of the Study

<table>
<thead>
<tr>
<th>No.</th>
<th>Organisation</th>
<th>No. of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ITNMB (Malaysian National Institute of Translation)</td>
<td>18</td>
</tr>
<tr>
<td>2.</td>
<td>University of Malaya</td>
<td>9</td>
</tr>
<tr>
<td>3.</td>
<td>Universiti Sains Malaysia</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>Language Institute, Lembah Pantai</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>Universiti Telekom Malaysia</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>Broadcasting Station – TV3</td>
<td>2</td>
</tr>
<tr>
<td>7.</td>
<td>Universiti Kebangsaan Malaysia</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>Law Firm</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>50</td>
</tr>
</tbody>
</table>

DISCUSSION OF FINDINGS

Based on the results of the study on the process of translating scientific texts from English to Malay, the researcher feels that the following aspects should be emphasised during the training given by the instructors.

The findings from this study via the questionnaire and interviews reveal that the translation process comprises the following steps and these steps should be taught to the trainees. The steps are:

1. English language scientific text (or any other text) is chosen by the authorities at the publishing house (generally by the Institute of Language and Literature – Dewan Bahasa dan Pustaka – DBP – the commissioners) to be translated to the Malay language. It is handed to a chosen, experienced, part-time translator who is a subject specialist, to be translated to the Malay language. A contract is signed between the two parties.

2. The translation process is initiated by the translator in the following steps:
a. translation tools such as a bilingual dictionary, thesaurus, terminology lists etc are made readily available beside the translator

b. if working in a team, the division of chapters in a book to be translated is done and translating is started to complete the given translation task in order to meet the deadline set by the publishing house

3. Comprehension of source text in English language (or any other language) – the content is studied, the context of situation, terminology, culture, syntax, semantics and style of writing in the English language text is scrutinised. The source text in English language is read at least once or twice so that the whole gist of the message is understood by the translator.

4. Translation – analysing and comprehending of the content in the English language scientific text (or any other genre) is done while translating sentence by sentence, or if the sentence is too long, clause by clause to the target language (TL) which is the Malay language, using the translator’s own intuitiveness for the TL to reproduce an equivalent version of the text in the TL. Here, the translator also looks up the equivalent meanings of words from a bilingual dictionary, terminology lists or consults his friends or rings DBP if a particular term cannot be found in the terminology lists. A few also surf the internet for information to clarify their doubts. The syntax, semantic (dealing with meaning) and pragmatic (pragmatics according to Jack C. Richards et al (1992) is the study of the use of language in communication, particularly the relationships between sentences and the contexts and situation in which they are used. It includes the study of how the interpretation and use of utterances depends on knowledge of the real world and how speakers use and understand speech acts, and also how the structure of sentences is influenced by the relationship between the speaker and the hearer) processing levels put forward by Bell (1991:60), the textual, referential, cohesive and natural levels put forward by Newmark (1988:19) and the cognitive, linguistic, communicative and pragmatic approaches put forward by Sager (1994:135) are used by the translators while translating. It is ensured that the translated TL version suits the proficiency level of the target readers. The skopos or purpose of the translation and its function is kept in mind by the translators while translating. To solve their problems while translating scientific texts from English to Malay, the translators use their own intuitiveness for the target language which is the mother tongue of a majority of the part-time translators in this study.

5. Reading, checking and editing of the translated version against the original version. It is ensured that the content is accurately translated and that the terminology is kept consistent.

6. Reviewing of the translated version by colleagues in the same field of specialisation is done to ensure that the translated version is translated accurately and that it can be understood by the target readers.

7. Submitting of translated version to the publishing company that commissioned the translation.
8. Proofreading and editing by editors at the publishing house. Sometimes, upon the request of the translator, the edited version is shown to the translator before publication to ensure that the information edited has not made the scientific content ambiguous or wrong.


The above findings from this study of the steps in the translation process generally support what is also described by Rose (1981:2-4), Sager (1994:166) and Darwish (2003:98) and these steps can be taught to translators in Malaysia.

The Internal Translation Process

The findings from the think-aloud protocols (TAPs) of the internal translation process revealed that while translating the scientific texts from English to Malay, the participants used all the principal direct and indirect language learning strategies put forward by Oxford (1989). See Appendix A for the full direct and indirect strategies given by Oxford (1989). Besides these language strategies, they also used some additional strategies, which the researcher claims to be the real translation strategies as they were not found in Oxford’s (1989) SILL (Strategy Inventory for Language Learning) model. These additional translation strategies, which are the new findings from this study, comprise one metacognitive and two cognitive strategies.

The metacognitive strategy involves the use of the participants’ own beliefs on how to translate based on past experience in translating and from training, and implementing these beliefs in their translation process. In other words, they have a mindset or schemata of their own on how to produce a good translation product which they closely follow.

The two cognitive strategies are as follows:

j. the first cognitive strategy involves finding their own solutions to the problem of very long, complex sentences in the source language scientific text. All the participants decided to divide the complex language sentences into two or three shorter sentences while translating to the target language, each carrying only one idea. This solves the problem of conveying the meaning accurately. It also makes translating easier and more manageable.

k. the second cognitive strategy involves the use of the discrimination strategy to choose the closest, matching equivalent term in the target language from two or three alternatives identified which best suits the context of situation of the text and the culture of the target readers.

For a translation task to be efficient, the researcher strongly feels that it is important for instructors to teach all future translators all the main direct and indirect language learning strategies proposed by Oxford (1989) as shown in Appendix A together with the additional strategies stated above while translating. All these strategies have been compiled into the Translation Strategies Taxonomy by the researcher.
The findings from this study indicate that the steps in the internal process of translating comprise seven iterative steps which can be taught to translator trainees. These steps are:

1. planning and organising – making decisions and implementing them
2. reading and comprehension of the source language text
3. attending to only one sentence at a time
4. analysing, reasoning and understanding the information in the source language text
5. translating to the target language sentence by sentence, that is translating the difficult keywords and expressions in the sentence first, and then translating the whole sentence
6. checking and revising of completed translated sentences constantly using structured reviewing and production monitoring before proceeding to next sentence
7. evaluating one’s performance of the completed translated version in the target language

The steps followed by the participants in this study while translating are generally the same as put forward by Rose (1981), Newmark (1988), Bell (1991), Sager (1994) and Darwish (2003) although they express them differently. For example, Rose (1981) refers to the steps as prehramal analysis, exhaustive style and content analysis, acclimatisation of the text, reformulation of the text, analysis of the translation and finally review and comparison.

From the analysis of the transcriptions of the recorded TAPs, it was discovered that while translating the participants unconsciously used all the four approaches that is, the cognitive, linguistic, communicative and pragmatic as advocated by Bell (1991), Sager (1994) and Darwish (2003) in their translation models. The part-time translators who were the participants in this study questioned in their mind the original author’s meaning as presented in the source language text. Then, they tried to communicate the meaning as accurately and clearly as possible using the target language in a grammatically, smooth-flowing and native-like manner and at a level which could be understood by the target readers, whom they always kept in mind. The participants also made sure that the terms used in the translation were accurate and consistent, the spelling was right and the flow of the language used was not absurd. To realise these approaches, the translation strategies were used as tools. The equivalent terms chosen in the target language suited the context of the situation and the culture of the target readers. The participants also fulfilled the _skopos_ or purpose of the translation. They made sure that their translated version suited the language proficiency level and intelligence of the target readers. In other words, the principles put forward in the _skopos_ theory by Reiss and Vermeer (1984) in Baker (2000), even though unknown to some of the participants of the study, were intuitively applied correctly by them while translating the scientific texts from English to Malay.
RECOMMENDATIONS

Based on the findings in this study, the researcher came up with a few recommendations to be taught in a translation training programme. These are:

a. the proposal of the Translation Strategies Taxonomy which is derived from the Language Learning Strategies Taxonomy by Oxford (1989)

b. the need to make translators become aware of using the four approaches -cognitive, linguistic, communicative and pragmatic while translating to ensure a good translation product

c. the proposal of the researcher's own translation model

THE NEED FOR STRATEGY TRAINING FOR TRANSLATORS

The implication from this study reveals that the use of language strategies is very important to produce a good translation. Strategy training is highly recommended for all translators and should be taught to all translators and student-translators as the use of strategies during the translation process plays a very important role in enhancing and facilitating the execution of the translation task. This fact is supported by Oxford (1989:1) who suggests that language strategies are important because they are "tools" for active, self-directed involvement, which is essential for developing communicative competence”. According to Darwish (2003:21) and Houbert (1998:1), translation is “a communication process”. To communicate the message accurately from the source language to the target language, the use of appropriate language strategies result in improved proficiency and greater self-confidence. The researcher thinks that communicative competence is very essential for translators as they deal with interlingual and intercultural communication. One of the participants in this study actually expressed her belief by stating that she translated as though she was explaining the content to someone. The work of translators is to convey the message from the source language text to the target language text. To do this, they need language strategies which are oriented towards the broad goal of communicative competence. According to Oxford (1989:13):

language learning strategies are flexible; that is, they are not always found in predictable sequences or in precise patterns. There is a great deal of individuality in the way learners choose, combine and sequence strategies. Many factors affect the choice of strategies: degree of awareness, stage of learning, task requirements, teacher expectations, age, sex, nationality/ethnicity, general learning style, personality traits, motivation level, and purpose for learning the language.

The language learning strategies are divided into two major classes: direct and indirect. These two classes are subdivided into a total of six groups - memory, cognitive and compensation under the direct class; metacognitive, affective and social under the indirect class. Direct strategies and indirect strategies support each other, and each strategy group is capable of connecting with and assisting every other strategy group.
Instructors should train would-be translators in using the language and translation strategies as these are important translation tools in the translation process. These strategies help to solve the problems translators face while translating such as making and implementing decisions, finding the closest natural equivalent terms in the target language, dealing with long, complex source language sentences etc. Once these strategies are practised by the translator trainees, there will come a time when they can use them unconsciously, that is, the usage becomes automatic or subliminal. The researcher feels that strategy assessment via think-aloud protocols, interviews, observation, note-taking, diaries and surveys, and strategy training by instructors are necessary to help learner translators become more aware of the strategies they are using and to evaluate the utility of those strategies. Strategy training helps guide translators to become more conscious of strategy use and more adept at employing appropriate strategies.

According to Oxford (1990: 12):

strategy training is most effective when students learn why and when specific strategies are important, how to use these strategies, and how to transfer them to new situations. Strategy training must also take into account learners’ and teachers’ attitudes toward learner self-direction, language learning, and the particular language and culture in question. As a strategy trainer, the instructor helps each student gain self-awareness of how he or she learns, as well as develops the means to maximise all learning experiences, both inside and outside the language area.

THE FOUR APPROACHES TO TRANSLATION

The translation approaches advocated by Bell (1991), Sager (1994) and Darwish (2003) in their translation models, although explained differently by them, are in essence the cognitive, i.e. making and implementing decisions such as reading aloud, analysing etc, linguistic, i.e. processing the source and target texts at the syntactic, semantic and pragmatic levels, communicative, i.e. conveying the source text information in an accurate, precise and clear manner and pragmatic, i.e. ensuring that the purpose of the translation task is fulfilled and that it suits the intelligence level and the language proficiency level of the target readers. These approaches are important to ensure an accurate and good translation product and therefore must be taught to translation students. A translator must be able to convey the original message in the source language text accurately by using the target language in a simple and natural form. The equivalent terms used in the target language must suit the context of the situation and the culture of the target readers of the translated text. The translators must be encouraged to use all the four approaches put forward by Sager (1994:135), which are the:

1. cognitive (comprehension-reconstruction)
2. linguistic (deverbalaization-reverbalisation)
3. communicative (decoding-encoding)
4. pragmatic (decomposition-recomposition)
in their translation, which is, as Darwish (2003) says bi-directional, between the SL text and the TL text. A translator also has to be made aware of the four levels put forward by Newmark (1988:19) which are the textual, referential, cohesive and natural while translating so that his or her translation will have an accurate, clear and natural flow in the target language. Practice must be given in the training programme to ensure that all would-be-translators know how to use these four approaches while translating.

**RESEARCHER'S PROPOSED TRANSLATION MODEL**

Besides the translation strategies, would-be translators should be introduced to the researcher’s proposed translation model which encompasses the approaches, steps, strategies and the whole translation process, which is shown in Appendix B. It is divided into three phases: before, during and after the translation process, and is derived from the findings from this study. It is open to further research by future researchers in the field of translation who can experiment it with other kinds of texts or text-types and with other pairs of languages in the world.

**CHARACTERISTICS OF A GOOD TRANSLATOR**

From the findings of this study, it was discovered that for a translator to translate scientific texts from English to Malay, he or she must first of all be a subject specialist so that the content of the original text is communicated accurately and clearly while translating.

Secondly, a translator must be very proficient in both the source and target languages. The source language must be mastered very thoroughly so that the meaning conveyed by the source text author is very clearly and accurately understood by the translator and it must never be misconstrued. Every aspect of it must be clearly interpreted by the translator. The target language must be mastered even more thoroughly because the translation is delivered in the target language. A translated text can be deemed weak if it is delivered in the target language very badly as the translator is not aware of the grammar and nuances of the language. Thus, it is best if the target language is the best known language of the translator, usually the translator’s native language because only such highly proficient language users will have the intuitiveness for the language and will thus be able to deliver a better translation.

Thirdly, a translator must have a knowledge of all the basic principles of the theories and practice in translation. He/She can get help from terminology lists and a bi-lingual dictionary but he or she must be able to deliver the translation according to the rules, style and grammar of the target language so that the translation does not sound awkward and unnatural. The translated version must be delivered in a manner that sounds natural and smooth-flowing and is meaningful to the target readers.

Fourthly, a translator must have feelings of empathy for his target readers. He or she must ensure that the translated product must be suitable to the intelligence
and language proficiency levels of the target readers. A text translated for primary school students must cater to their intelligence and language proficiency level, and a text translated for university students must be suited to their level of comprehension. Once the translated text in the target language fulfills these criteria, the target readers will find it easy to follow the concepts, processes and other ideas explained in the translated text and these kind of student-friendly translated books might be bought by the students. In other words, all translators must know the skopos or purpose of their translation task.

Finally, the researcher feels that a translator must be committed and disciplined. The translation task commissioned to him or her must be completed by the deadline given. The researcher strongly recommends that the characteristics of a good translator be included in the translation syllabus.

OVERCOMING TERMINOLOGY PROBLEMS IN TRANSLATION

The researcher suggests that translators should be taught not to be afraid of terminology. They should be brave to solve the terminology problems by either paraphrasing, using techniques of overcoming the problem and also be daring enough to create their own terminology if it cannot be found in the terminology lists prepared by DBP. They have to make decisions on what translation techniques to use to solve their problems while translating. These translation techniques might include concretisation or differentiation (for example the word “sibling” can be translated as adik-beradik in the Malay language), logical derivation (using cause and effect principles), antonymic translation (using opposites to clarify a concept) and compensation, which is used when something in the source language in not translatable (Shveitser, 1973:2-28 cited in Fawcett, 1997:28-31). They may also use other translation techniques such as borrowing (the source language form is taken into the target language, usually because the latter has a gap in its lexicon, for example, “generation” is translated as generasi), calque (is a literal translation at the level of the phrase), transposition (used in dealing with grammatical changes in translation), modulation (a variation in the message, obtained by changing point of view, lighting), equivalence (an equivalent translation of an idiom based on the culture of the target language) and adaptation (this kind of substitution is supposed to take place when the receiving culture has little or nothing in its experience that would allow it to understand a close translation for example Nida’s example of the absurdity of translating white as snow for a culture which has no knowledge of the substance) (Vinay and Darbelnet, 1958 in Fawcett, 1997:34-39). The translators can use these techniques in solving terminology problems faced in producing their translation in the target language.

Asmah Haji Omar (2000) has completed translating Hornby’s (1989) Advanced English-Malay Dictionary of 2221 pages and the researcher feels that it will be of great help to all the translators in Malaysia. The problem of affixes, words in a series, numerical classifiers, expressing scientific ideas in the Malay language, idiomatic language, proverbs, translating cultural elements, creating new terminology and opposite concepts are all dealt with by Ainon Muhammad
According to Robinson (1997:146):

one of the most important aspects of the translator’s job is the management of terminology: being exposed to it, evaluating its correctness or appropriateness in specific contexts, storing and retrieving it. The focal nature of terminology for translation has made terminology studies one of the key subdisciplines within the broader field of translation studies; learning specialised terminology is one of the main emphasis in any course on legal, medical, commercial, or other technical translation.

Classes in specialised terminology, using dictionaries and other reference materials and theoretical work on terminology management are useful for translators. Experiencing things while working and reading makes one more knowledgeable in the use of terminology.

According to Robinson (1997:146), “it is far easier to learn and remember specialised terminology...if one thinks of it as simply the way working people talk and write, rather than trying to memorise long lists of words taken out of context”. He expresses his ideas on how a translator can explore terminology by using a web or mind-map as shown in Appendix C.

CONCLUSION

In conclusion, the researcher feels that to ensure faster and better translation, instructors in translation training institutions and publishers should be encouraged to practise the recommendations that have been put forward by the researcher which are based on the findings from this study. As teachers of translation programmes, we should be ‘ideas’ people and ‘rationale’ people (Allwright, 1981). We should always keep an open mind to new ideas and techniques. We should be confident enough to try out these new methods and where possible to adapt them to our Malaysian culture and environment.

Teachers must also know the rationale (be able to justify their opinions and advise their students) for introducing these new activities into the translation programme so that students will be able to obtain answers when questions are raised. Material designers in the translation field should come up with more updated teaching and learning materials. In this way trainee translators can benefit from these materials and master the translation strategies and approaches to the translation process better. In this way they can learn to manage their translation task and finally produce better translation products. Besides these, the qualities of a good translator as suggested such as having self-discipline, being good at both the source and target languages, being a subject specialist in his or her area and being able to keep himself or herself up-dated with the latest knowledge in his or her field of expertise, etc must also be highlighted while teaching so that these good habits are made known to trainee translators early.
From the findings of this, a translation strategies taxonomy and a translation model have been proposed by the researcher. These can be experimented by future researchers in the field of translation using other pairs of languages in the world. Future researchers can further add to these findings. This model should be explained and discussed with all translator trainees. It should be emphasised that translation is a communicative, problem-solving learning process and the translator is a learner and a communicator of information. A translator’s duty is to communicate the message in the source text to the target text accurately and clearly.

Instructors should advice would-be translators to read books which tell them how to overcome terminology problems. Abdullah Hassan, Ainon Muhammad, Asmah Haji Omar and Robinson have written on this aspect. They should also keep in mind the web or mind map on how to expand their terminology as put forward by Robinson (1997:158) as shown in Appendix C. The problem of terminology and how to go about solving it should also be included in all translation syllabuses. DBP officers should have brainstorming sessions with academic subject specialists from Institutions of Higher Learning and come up with more terminology lists and they should also keep on up-dating their previous terminology lists. Teachers can also put into practice in their teaching lessons on translation all the points on how to go about dealing with terminology as put forward by Ainon Muhammad (1994) and Robinson (1997) in their books on translation.

REFERENCES


# Appendix A

## Oxford's Strategy Inventory for Language Learning (SILL)

<table>
<thead>
<tr>
<th>DIRECT STRATEGIES</th>
<th>INDIRECT STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Memory strategies</strong></td>
<td><strong>1. Metacognitive strategies</strong></td>
</tr>
<tr>
<td>• Creating mental linkages (e.g. grouping, associating, elaborating)</td>
<td>• Centering your learning (overviewing and linking with already known material, paying attention, delaying speech production to focus on listening)</td>
</tr>
<tr>
<td>• Applying images and sounds (e.g. using imagery, semantic mapping)</td>
<td>• Arranging and planning (finding out about language, organising, setting goals and objectives, identifying the purpose of a language task, planning for a language task, seeking practice opportunities)</td>
</tr>
<tr>
<td>• Reviewing well (structured reviewing)</td>
<td>• Evaluating (self-monitoring, self-evaluating)</td>
</tr>
<tr>
<td>• Employing action (e.g. using physical response or sensation)</td>
<td></td>
</tr>
<tr>
<td><strong>2. Cognitive strategies</strong></td>
<td><strong>2. Affective strategies</strong></td>
</tr>
<tr>
<td>• Practising (repeating, formally practicing with sounds and writing systems, recognising and using formulas and patterns, recombining and practicing naturalistically.</td>
<td>• Lowering your anxiety (using progressive relaxation, deep breathing or meditation, using music, using laughter)</td>
</tr>
<tr>
<td>• Receiving and sending messages (getting the idea quickly, using resources for receiving and sending messages.)</td>
<td>• Encouraging yourself (making positive statements, taking risks wisely, rewarding yourself)</td>
</tr>
<tr>
<td>• Analysing and reasoning (reasoning deductively, analysing expressions, analysing contrastively (across languages), translating, transferring)</td>
<td>• Taking your emotional temperature (listening to your body, using a checklist, writing a language learning diary, discussing your feelings with someone else)</td>
</tr>
<tr>
<td>• Creating structure for input and output (taking notes, summarising, highlighting)</td>
<td><strong>3. Social strategies</strong></td>
</tr>
<tr>
<td><strong>3. Compensation strategies</strong></td>
<td>• Asking questions (asking for clarification or verification, asking for correction)</td>
</tr>
<tr>
<td>• Guessing intelligently (using linguistic clues, using other clues )</td>
<td>• Cooperating with others (cooperating with peers, cooperating with proficient users of the language)</td>
</tr>
<tr>
<td>• Overcoming limitations in speaking and writing (switching to the mother tongue, getting help, using mime or gesture, avoiding communication partially or totally, selecting the topic, adjusting or approximating the message, coining words, using a circumlocution or synonym)</td>
<td>• Empathising with others (developing cultural understanding, becoming aware of others thoughts and feelings)</td>
</tr>
</tbody>
</table>

Appendix B
RESEARCHER’S PROPOSED TRANSLATION MODEL

Involves use of all the main Direct, i.e. memory-MS, cognitive-CS and compensation-Comp.S and Indirect, i.e. metacognitive-MC.S, affective-AS and social-SS Translation Strategies in any combination (includes use of own beliefs while translating, using own solutions to solve problems and using the discrimination strategy to find matching equivalent terms in the target language).

START

Text to be translated received from publishing house (authorities here get copyright approval first)

Before translation

Get ready translation tools

During translation

Plan and Organise – make and implement decisions

Read and comprehend source text

Analyse and reason source text

Translate into target language

Review and revise translation

Evaluate final translation

Deliver translated text to publishing house to be edited

After translation

Edited translation returned to translator for reviewing

Translator reviews and returns translated text to publishing house for publication

END
The Translator's Experience of Terminology (Robinson, 1997:158)

- Working with them
- Observing them
- Imagining them
- Watching TV shows about them
- Reading about them
- Coursework in specialized fields
- Classes
- Terminology studies
- Lexicography
- Photocopied glossaries
- Dictionary, reference works
- Database searches
- Queries
- Books
- Other people
- Discussions
- Translator discussion groups