

UNIVERSITY OF JYVÄSKYLÄ

**IN SEARCH OF EQUIVALENCE
- TRANSLATION PROBLEMS IN INTERNATIONAL LITERACY
STUDIES**

A Pro Gradu Thesis

by

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TIIVISTELMÄ

HUMANISTINEN TIEDEKUNTA
ENGLANNIN KIELEN LAITOS

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Tutkimus tarkastelee kansainvälisissä lukutaitotutkimuksissa käytettyjä käännöksiä. Tutkimuksen tarkoituksena on selvittää, minkälaisia ongelmia esiintyy käännettäessä, kun lähtö- ja tulokielisten tekstien luettavuus- ja vaikeustason tulisi pysyä ekvivalenttina.

Tutkimuksen materiaali koostuu kolmesta englanninkielisestä lähtötekstistä ja niiden suomenkielisistä käännöksistä. Tekstit sisältyivät kansainvälisen oppimistulosten arviointiohjelman PISAn (Programme for International Student Assessment) vuonna 1999 järjestettyyn lukutaidon esikokeeseen. Tutkimusmenetelmänä on laadullinen vertaileva tapaustutkimus, jossa englannin- ja suomenkielisiä tekstejä analysoidaan ja vertaillaan lingvistiksi kolmella tasolla: leksikaalisesti, syntaktisesti ja tekstuaalisesti. Analyysissä tarkastellaan erityisesti tekstien vaikeustasoja ja niitä käännösongelmia, joita vaatimus säilyttää sama vaikeustaso lähtö- ja tulokielen tekstien välillä synnyttää. Tekstien vaikeustason kriteerit pohjautuvat kognitiivisiin lukuteorioihin, joissa ymmärtäminen nähdään lukijan ja tekstin välisenä konstruktiivisena ja interaktiivisena luomistapahtumana.

Analyysien mukaan käännösongelmia on olemassa pääosin kolmenlaisia: kielten välisistä tyypologisista eroista johtuvia, konventio- ja kulttuurieroista aiheutuvia sekä käännösstrategian valintaan liittyviä käännösongelmia.

Ratkaisuiksi todettuihin käännösongelmiin ehdotetaan seuraavaa: käännösohjeiden tulisi olla ristiriidattomia ja selkeästi käännöksen tavoitetta tukevia; käännösohjeissa tulisi korostaa funktionaalista ekvivalenssia, makrorakenteita, pragmaattisia adaptaatioita ja kompensatioita sekä varoittaa liiallisesta eksplisiittisyydestä; käännös-ohjeet voisivat olla eri kielille soveltuvien osin erilaisia; lukukokeisiin valittavien tekstien tulisi olla kaikille kulttuureille yhtä tuttuja; käännösten pohjana kannattaisi käyttää kahta erikielistä lähtötekstiä; käännökset olisi hyvä luettaa ulkopuolisilla.

Asiasanat: translation, equivalence, text difficulty, reading comprehension, literacy studies

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1 INTRODUCTION

This study looks into translations utilized in international comparative assessments of reading literacy, using as an example the pilot test on reading literacy of the Programme for International Student Assessment (PISA) conducted in 1999. The main purpose of the study is to examine what special kinds of translation problems arise in these translations, where equivalence of difficulty and, thus, comparability between the original and translated texts are a key prerequisite for the validity of the tests. At the same time, however, the study will touch on the question as to whether or to what extent the translations are, in fact, equivalent with the source texts. These translations can further be regarded as the end products of the translation processes implemented by the organisations conducting these assessments. The study will thus further yield some information on how successful these procedures are in coping with the translation problems and ensuring equivalence between the texts.

The need to examine texts and translations produced in the context of international literacy assessments has become increasingly important, as the number of these studies has grown rapidly since the turn of the 1990s. The first study of this kind was the Six-Subject Survey of Reading and Literature conducted by the International Association for the Evaluation of Educational Achievement (IEA) at the turn of the 1970s. For some 20 years, this survey remained the sole representative of cross-national literacy assessments. The Reading Literacy Study, carried out in 1991 by the same organisation, however, marked a new, vigorous beginning of these studies. In 1994, the OECD administered the first survey concentrating on adults, the International Adult Literacy Survey. It was succeeded by the Second International Adult Literacy Survey in 1997 – 2000. The first PISA assessment, also organised by the OECD, took place in 2000. And in 2001, after a decade's pause, the IEA carried out a new multinational literacy assessment under the name the Progress in

International Reading Literacy Study (PIRLS). Today it seems that there will be no end to these studies: both the IEA and the OECD will be organising new assessments on a regular basis, the IEA every four years and the OECD every three years.

While the need to enquire into the texts and translations used in comparative literacy studies is evident, very little linguistic research has been done and documented on these texts. The organisations conducting these studies, for example, have mostly applied a more indirect method: they have concentrated on the question items and evaluated whether these perform in the same way across countries. If they do, they – and the texts they are based on – are regarded as equivalent. If they do not, they are dispensed with as non-equivalent. What are left, then, are texts and translations that are equally easy or difficult. This method thus, while relatively successful in guaranteeing comparability as far as content is concerned (Vehmas-Lehto 1999), is an indirect way of looking at the texts and coping with the translation problems. This method, which focusses more on symptoms, does not, however, say anything about the reasons behind the potential translation problems.

Another method used by those responsible for the literacy studies – a method more directly relying on linguistics – is back translations. In this method, texts are first translated from the source language into the target language and then back into the source language. This method was used in, for example, the Reading Literacy Survey in 1991. In the more recent studies, however, back translations have not been made. The reason for this is that back translations are today thought to concentrate too heavily on the source text and surface structure phenomena. They do not necessarily guarantee comparable texts.

In addition to these methods, those involved in the literacy studies usually refer to the rigorous translation and verification procedures they have established and maintain that thanks to these, they have mostly succeeded in coping with the majority of the translation problems and in

making the studies sufficiently valid. Among such procedures they name, for example, double translation, national and international verification, detailed guidelines for the translation of the texts, translation notes concerning specific translation problems, and information on the nature of the question items (to be described in more detail in 3.2.3, pp. 47-52). Nonetheless, those administering these studies acknowledge that the translations have had their limitations, that all translations have not been excellent (Elley 1998, see also Binkley and Pignal 1998). They admit that translation can present serious challenges to the comparability of the texts and to the validity of the tests.

Critics on international literacy surveys agree. In the recent years, a few critical studies of these surveys – more precisely of the IEA Reading Literacy Study in 1991 and the OECD International Adult Literacy Survey in 1994 – have been carried out and published (e.g. Bechger et al. 1998, Levine 1998, Bechger and van den Wittenboer 1999, Hamilton and Barton 2000). These have mostly concerned the validity of the literacy surveys in general. In these studies, translations have usually been examined as one part of the studies only and on a very general level, with no closer connection to any specific language. One of the studies, however, concentrates on the French translations included in the International Adult Literacy Survey (Manesse 2000).

The critics (e.g. Bechger et al. 1998, Levine 1998, Hamilton and Barton 2000) have pointed out what they have regarded as severe shortcomings in the implementation of the studies and named translations as one potential source of error and distortions. They mention, for example, differences in culture and conventions and hold that the texts have not been equally familiar to everyone. Similarly, in the French study it is claimed that the French translations were of poor quality and contained less precise terms than the English originals as well as lexical and pronominal errors; there were thus considerable differences between the French and English texts, and equivalence of difficulty was not

attained (Manesse 2000). All in all, while the critics feel that the studies have improved during the last few years, they argue that the distortions, including defects in the translations, still endanger the validity and comparability of the multinational comparative studies.

Research and above all linguistic research on the texts and translations used in international literacy studies, research concentrating on the level of difficulty and comparability of these texts is thus badly in need. The present study is an attempt to satisfy this need. Yet, as research in this interdisciplinary field seems to be only beginning, the present study is by necessity highly tentative in nature. The entire field is still waiting for the establishment of its theory and especially of its methodology.

In the present study, the translation problems encountered in international literacy surveys are approached, as mentioned right at the beginning, by using as an example the pilot test on reading literacy of the first OECD PISA assessment carried out in 1999. Of all the texts produced in different languages as part of the test, the study will employ as its material three English texts and their Finnish translations. These will be analysed and compared by means of the case study approach. The analyses will be done on three linguistic levels: lexical, syntactic and textual. The analyses will further rely on modern cognitive theories of reading comprehension, where reading comprehension is considered a constructive process and an interaction or transaction between reader and text. All the analyses will aim at locating, analysing and evaluating translation problems in relation to equivalence of difficulty between the texts.

The present study is divided into six chapters. Following the introduction and the discussion of what has been done to research into the translations used in international literacy studies, chapter (2) will review and examine theories of translation and reading comprehension. In translation theory, prominence will be given to the concept of equivalence

and to the purpose of the translation assigned by the translator's brief; as for theory of reading comprehension, emphasis will be on cognitive theories of reading and their application in determining what makes up a comprehensible text.

In chapter (3), the material and the method used in the study (already outlined above) will be delineated. This chapter will also include a description of PISA, from the context of which the texts contained in the present study are taken, and of the specific translation process that led to the translations. In chapter (4), the translation problems encountered in the texts included in the study will be analysed qualitatively, and in chapter (5), these problems will be summarised and discussed.

In the final chapter (chapter 6), the main results of the study concerning the translation problems, equivalence of difficulty between the texts and the efficacy of the translation process will be recapitulated, deliberated and evaluated. On the basis of the results, some suggestions will finally be made for translations used in cross-national literacy studies, for translations in general and for further research in the field.

2 THEORETICAL BACKGROUND

The present study, as mentioned at the outset, is primarily about translations. The study thus falls, first and foremost, within the scope of translation theory. In this study, however, translations are located in the context of a reading literacy assessment, and the specific angle from which they are examined is comprehensibility and readability. This, then, additionally brings the study within the framework of theory of reading comprehension. In the following, the two fields, translation theory and theory of reading comprehension, are discussed.

2.1 Translation theory

2.1.1 What is translation?

Definitions of translation abound. Depending on the approach and the prevailing school of thought, definitions of translations have varied to the point of being contradictory. Finding one universally valid and widely accepted definition for translation is therefore impossible. The following definition by Koller (1995:196) might be described as a representative of the "traditional" view¹ and would be readily and widely shared by, for example, advocates of what is known as the linguistically oriented school or equivalence theories:

Translation can be understood as the result of a text-processing activity, by means of which a source-language text is transposed into a target-language text. Between the resultant text in L2 (the target-language text) and the source text in L1 (the source-language text) there exists a relationship, which can be designated as a translational, or equivalence relation.

¹ The "traditional" view refers to the normative and source-text-oriented translation theories where much attention is paid to equivalence. These theories are viewed as "traditional" as opposed to the modern descriptive and target-text-oriented translation theories where equivalence plays a lesser role. Nida may be considered the divide between these two approaches (Tommola 1997).

The definition presupposes, to start with, the presence of two languages. The language from which the translation is made is usually named the *source language* (often also abbreviated to SL), while the language into which the translation is made is known as the *target language* (TL). The definition further presupposes two texts. The original text on the basis of which the translation is made is called the *source (language) text* (SLT or ST), and the product, the translated text is termed the *target (language) text* (TLT or TT). The third, key presupposition inherent in the definition is the existence of a certain relation, termed as *equivalence*, between the two texts.

A number of modern scholars, however, would not be happy with the above definition. For them, a translation is simply "any target-language utterance which is presented or regarded as such within the target culture, on whatever grounds" (Toury 1985:20).

Although there are other dissimilarities between the two definitions too, one prime difference – "one of the main lines of demarcation" – between them incontestably concerns the concept of equivalence (Halverson 1997:1). A lot has been written on this concept. Yet, the concept itself and its status in translation theory are still much disputed. To put it simply, though, one might say that today there seem to be two main lines of thought as concerns the concept of equivalence and its relevance to translation: the linguistically oriented school or equivalence theoreticians, for whom equivalence is absolutely crucial; and schools such as the historical-descriptive and the functionalist school, who unite in criticising the equivalence theories and for whom equivalence plays a lesser role (for the classification, see Halverson 1997, Tommola 1997). In the following, the concept of equivalence will first be defined and then looked at from the point of view of the two main lines of thought referred to above.

2.1.2 The concept of equivalence

Defining equivalence seems to be, if possible, even more difficult than defining translation. What appears to be comparatively widely agreed upon irrespective of the approach, however, is that equivalence signifies the relation that exists between target text and source text² (see e.g. Toury 1980, Nida and Taber 1982, Reiss and Vermeer 1986, House 1997). What scholars also agree upon is that equivalence is a relative concept (see e.g. Halverson 1997). As to the precise nature of the equivalence relationship and the utility or relevance of the concept to translation, conceptions vary considerably. These will be discussed in the following.

2.1.2.1 Equivalence – a must for the linguistically oriented equivalence theoreticians

In linguistically oriented theories of translation, equivalence is considered a necessary prerequisite for translation (as reflected in Koller's definition of translation above, p. 10). This view is traceable to the presumed "double linkage" of translation, which is emphasised in this approach: any translation is linked, first, to the source text and, second, to the target culture, specifically the "communicative conditions on the receiver's side" (Koller 1995:197, see also House 1997). Therefore, to be a (good) translation of a source text, a target text has to be equivalent with that source text.

In what way, then, is the translation to be equivalent with its source text? What type of equivalence relation is it to be? There is – again – no one answer to these questions. Rather, equivalence theoreticians hold that there are different types of equivalence which are appropriate for different kinds of texts and circumstances.

² There are, however, some, such as Snell-Hornby, who, regarding the concept as imprecise, ill-defined and out of place, would dismiss the concept altogether (see House 1997, Halverson 1997).

Probably the most widely used and most basic typology in this respect is the distinction, originally made by Nida (1964), between formal and dynamic equivalence. *Formal equivalence* refers to "the attempt to achieve equivalence not only of content but also of form between ST and TT" (Hatim and Mason 1990:241). *Dynamic equivalence*, for its part, alludes to "the attempt to achieve a similar effect on the TT receiver as the ST is deemed to have on ST receivers" (Hatim and Mason 1990:240). Formal equivalence, true to its name, thus gives high priority to form and the source text, seeking to reproduce in the target language the formal structures of the source text as far as possible. Dynamic equivalence, on the other hand, puts more emphasis on the communicative effects of the target text and the authenticity of language: the response of the target text receiver to the translated message must be equivalent to that of the source text receiver to the original message. Dynamic equivalence implies choosing "the closest natural equivalent" (Nida and Taber 1982:12); changes in form and even in meaning are made if these lead to increased authenticity.

Because of, among other things, the obscurity of the 'similar effects' presupposed by the concept dynamic equivalence – the effects on the receiver being difficult or even impossible to measure – many scholars today prefer to employ another term, *functional equivalence*. Functional equivalence is, in fact, often used as a synonym of dynamic equivalence. This is because the two concepts both seem to stress the communicative aspect of the text; they simply approach the issue from a somewhat different point of view. In place of similar effects on receivers, functional equivalence implies similar functions between source text and target text, thereby adopting a textual approach instead of the psycholinguistic approach evident in dynamic equivalence. (See Vehmas-Lehto 1999.)

Equivalence, however, has been described and classified in several other ways, too. Some scholars, for example, have chosen to employ somewhat different concepts, such as content equivalence and situational

equivalence, to describe very nearly the same phenomena as those entailed in the concepts formal and dynamic or functional equivalence. Others, again, suggest that there are not only two or three but even more types of equivalence. Koller (1989), for instance, distinguishes five equivalence types, each with a slightly differing emphasis: denotative, connotative, text-normative, pragmatic and formal equivalence. These other types and concepts of equivalence, while not of special interest to the present study and therefore only referred to briefly here, remind us of the fact that equivalence is after all a relative and complex relationship, which can be looked at from different angles. This is also what is emphasised in the statement made by Hartmann and Stork (1972 as quoted by Halverson 1997:5):

Texts in different languages can be equivalent in different degrees (fully or partially equivalent), in respect of different levels of presentation (equivalent in respect of context, of semantics, of grammar, of lexis, etc.) and at different ranks (word-for-word, phrase-for-phrase, sentence-for-sentence).

2.1.2.2 Equivalence according to approaches criticising equivalence theories

As opposed to the linguistically oriented approach, critics of equivalence theories – advocates of the historical-descriptive and the functionalist school as the most prominent among these – claim that a translation does not necessarily need to be equivalent with its source text (see e.g. Halverson 1997, Tammola 1997, Vehmas-Lehto 1999); equivalence between target text and source text is not a prerequisite for translation. This position is largely attributable to the fact that unlike equivalence theoreticians, who focus on the relation between target text and source text, proponents of these contending schools are less interested in the source text and consequently also in the relation between the translation and the source text and concentrate on features of the target culture instead (Halverson 1997, Tammola 1997). They argue that, as far as

translations are concerned, being acceptable or adequate in the target culture is what counts (as shown by e.g. Toury's definition of translation, p. 11; see also Vermeer 1989, Toury 1993).

These scholars, however, usually do not want to dismiss the concept of equivalence altogether (see, however, footnote 2 on page 12). Rather, they use it in a somewhat different, lesser sense. Toury, who in his historical-descriptive approach focusses on literary translation, for instance, maintains that equivalence is not a theoretical invariant or an ideal relation to be pursued between source text and target text. Instead, equivalence is a descriptive and functional-relational concept: it refers to all the real, actually existing relations that function as translation equivalences and that "distinguish appropriate from inappropriate modes of translation performance for the culture in question" (Toury 1995:86). For Toury, then, equivalence is an empirical term that depicts what is actually happening in translation.

The goal to be striven for and the prerequisite for a good translation, in contrast, says Toury (1980), is *acceptability*. Acceptability denotes adherence to the linguistic and literary norms of the target culture. Adherence to the norms of the target culture is imperative, because after its birth, the translation is a product of the target culture only. An acceptable translation is thus to be preferred to what Toury calls an adequate translation – a translation which observes the norms of the source language (as will be seen, the way Toury uses the term adequacy is in total contrast to the terminology used in the skopos theory).

The functionalist school, specifically the skopos theory developed by Reiss and Vermeer (1986), is another approach where emphasis is laid on the target culture and where equivalence is displaced to a subordinate position. According to the skopos theory, the most crucial factor in

translating is the *skopos*³, that is, the purpose or function of the translation. This argument is based on the view held by the skopos theoreticians that translation must be conceived of as an action. Every action and therefore also every translation must further have an aim, a purpose. It is this aim or purpose that ultimately guides the translation process, which, again, results in a translation.

In contrast, to what is presupposed in the functional equivalence theories, the skopos of the translation can be different from the skopos of the source text. This is the case when, say, a political source text with both an informative and a conative function (i.e. intending to have an influence on others) is purposely translated as a purely informative text with no conative function. In cases like these, the translation can be said to be *adequate*, that is, fulfilling the skopos of the translation in the target culture; yet, the translation could not be described as equivalent with its source text. If, on the other hand, the translation has the same skopos or function as its source text, the translation is also equivalent with the source text. Equivalence as understood by the skopos theory might, thus, be regarded as a term subordinate to adequacy: an adequate translation – which is the goal in the skopos theory – does not necessarily have to be an equivalent one. Often, however, the two, equivalence and adequacy, coincide.⁴ Being equivalent is, after all, one possible and noteworthy skopos. (Reiss and Vermeer 1986, Vermeer 1989, Vehmas-Lehto 1999.)

³ *Skopos* derives from Greek and literally means 'purpose' or 'aim'. The term is often used as a synonym of *function*. The term can, in fact, be applied in three different ways and thus have also three different meanings (Vermeer 1989): First, it may refer to the translation process and signify the goal of the translation process. Second, it may refer to the translation result and signify the function of the translation, translated text. And third, it may refer to the translation mode or method and signify the intention of the mode.

⁴ To be exact, Reiss and Vermeer (1986) use the concept adequacy to refer to a process, while equivalence, according to them, relates to a product.

2.1.2.3 Equivalence in PISA

As has been pointed out, in PISA, in the context of which the present study is situated, the concept of equivalence plays a vital role. Equivalence is referred to in PISA as the goal to be pursued when translating texts into different languages. The obvious reason for this is that equivalence between all the texts included in the study is a necessary prerequisite for the comparability of the texts and hence for the validity of the entire study. In view of the two main approaches to translation and equivalence discussed above, the approach adopted in PISA thus places it closer to the traditional linguistically oriented source-text-based theories of translation, even though it might also be regarded as sharing features of the skopos theory. This, then, is also the context in which the present study is located.

The type of equivalence, to be exact, pursued in PISA and in other international literacy studies seems to be of a special kind. It has been alluded to as *equivalence of difficulty* or *equivalence in difficulty* (see e.g. Elley 1993, Manesse 2000). Equivalence of difficulty implies the similar level of difficulty or comprehensibility between source text and target text – and finally between all the texts included in an international study (National project manager's manual 1999).

Equivalence of difficulty has never really been explicitly defined (continuing thus the tradition typical of the ill-defined concept of equivalence). Neither has it been explicitly related to any other type of equivalence, such as formal, dynamic or functional equivalence. In theory, though, the goal in making these equally difficult translations appears to be to produce texts, newspaper articles, advertisements, manuals and so on that "the student is likely to encounter in their daily life" (National project manager's manual 1999:36). To this end, translators are also advised to make "national adaptations" to the texts with a view to bringing them closer to the texts actually existing in the countries. This, then, might be taken as a token that equivalence of difficulty is closely related to

dynamic or functional equivalence and concerns every level of language, including the macrostructure of texts.

At the same time, however, the practical instructions given to translators tell them how to keep the vocabulary and syntax of the translation as close as possible to those of the source text. These instructions are given in order for the translation process not to unduly distort the level of difficulty between the texts. Furthermore, a closer look at the adaptations which translators are allowed to make reveals that they only concern the micro level of language. In practice, then, equivalence of difficulty seems to greatly resemble formal equivalence and to be mostly restricted to the lower levels of language.

As mentioned, equivalence in difficulty is considered the necessary prerequisite and the ultimate goal as concerns the texts translated in PISA. Understandably, the concept is thus an integral part of the present study, too. In the study it will further be possible to explore whether or how equivalence of difficulty relates to other types of equivalence.

2.1.3 What is a good translation like?

Over time, the question as to what a good translation is like has been one of the elementary concerns and problems of translation theory and practice. This is no less true today and as concerns, for instance, PISA. Over time, however, opinions have varied. Theodore Savory (1968:54) has listed twelve translation principles concerning a good translation, gleaned from several sources. His often cited list gives an impressive picture of the various and even contradictory requirements set for a good or correct translation by representatives of different schools of thought; it also illustrates and emphasises the dilemma facing everyone involved in translating:

1. A translation must give the words of the original.
2. A translation must give the ideas of the original.
3. A translation should read like an original work.
4. A translation should read like a translation.
5. A translation should reflect the style of the original.
6. A translation should possess the style of the translation.
7. A translation should read as a contemporary of the original.
8. A translation should read as a contemporary of the translation.
9. A translation may add to or omit from the original.
10. A translation may never add to or omit from the original.
11. A translation in verse should be in prose.
12. A translation in verse should be in verse.

Given these partly contradictory criteria for a good translation – which Savory seems to treat in pairs and as polar opposites – it is clear that none of them can be valid for all translations; likewise, they cannot all be attained in one translation. It is equally true, however, that all of them are justified in certain circumstances. In other words, the requirements cannot be taken for absolute criteria for making *the* good translation. Rather, the question of a good translation is a relative one and open to debate.

The debate over a good translation, in fact, dates as far back as the classical times and Cicero. At first, the debate was mainly approached from the angle of literal versus free translation. In this discussion, the traditional term *literal* or word-for-word translation has signified the attempt to adhere closely to the form of the source text; *free* or meaning-for-meaning translation, on the other hand, has implied supremacy of idiomatic language over form (see e.g. Hatim and Mason 1997:219). With Nida (1964), however, the debate shifted to different types of equivalence, specifically formal and dynamic equivalence⁵.

⁵ Later on, some scholars have preferred slightly different terms. Newmark (1989:118), for instance, uses the terms *semantic* and *communicative translation*, the former referring to the attempt to "render, as closely as the semantic and syntactic structures of the second language allow, the exact contextual meaning of the original" and the latter to the attempt to "produce on its readers an effect as close as possible to that obtained on the readers of the original". These terms are thus close to both the terms literal and free translation and the terms formal and dynamic equivalence; yet, they are usually considered less extreme, covering more of the middle ground of translation practice. In PISA, the terms literal and

In view of the question of a good translation and the literal versus free and formal versus dynamic discussion, most scholars (those who incline towards equivalence) would agree that different types of translation and equivalence are appropriate for different kinds of texts and circumstances. In linguistic books using as examples extracts from some exotic languages, for instance, it may be useful to give the exact renderings of the extracts so as to give readers a better idea of the structures of the languages. The type of translation and equivalence needed in cases like these is literal translation and formal equivalence.

Generally speaking, however, the use of literal translations and formal equivalence is relatively marginal today: languages are, after all, different from each other in form and in norms, and the more so, the farther the languages and cultures are from each other. Emphasis on literalness and formal equivalence therefore easily leads to *interference*, that is, undue influence by the source language and, in its extreme form, even to *translationese*, an artificial form of the target language (see e.g. Nida and Taber 1982:13, 208). The obvious threats related to too strict literalness and formal equivalence are alluded to by Nida and Taber (1982:112):

The attempt to preserve structural form usually results in either complete unintelligibility, or in awkwardness... too often the effort to reflect the source in these formal aspects results in badly overloading the communication and thus making it very hard for the reader to understand.

The orientation in more recent years, therefore, has been towards free translation and dynamic equivalence. This is the type of translation and equivalence that in view of differences between language systems and conventions is usually considered possible to attain. The greater degree of freeness implied in free translation and dynamic equivalence does not

free translation are employed together with the term equivalence. These – rather than semantic and communicative translation – are therefore the terms used in the present study.

mean absolute freeness, though. Rather, deviations from the source text should be well grounded: they should be made only if strict adherence to the source text would lead to erroneous or unnatural solutions (Ingo 1990:285).

Today, however, as has been pointed out above, many modern translation theoreticians have chosen not to speak about equivalence – nor about literal and free translation, which they regard as imprecise – and claim that a good translation does not need to be equivalent at all. For them, the main criterion for a good translation is adequacy. Interestingly enough, even though there are apparent differences between the modern functionalist approach centring on adequacy and the more traditional approach insisting on dynamic or functional equivalence, both, in fact, seem to stress similar factors that are nowadays considered characteristics of a good translation. These include, among other things, communicativity, reader-centredness, functionality and textuality.

Communicativity conveys that translation is not simply a linguistic act; instead, it includes communication, transmission of a message from person to person. In translation, only what is relevant in the message is transmitted (Vehmas-Lehto 1999). Similar communicative effects rather than similar meanings are thus required (Tommola 1997). Reader-centredness is seen in that the focus in translation today is on the relation between the translation and the receivers of the translation, not on the relation between source text and target text. Functionality, again, refers to the central directive role function or purpose plays in translation. And textuality, to conclude, implies that it is the text which is regarded as the translation unit, not, say, the word or the sentence.

Whatever the approach, then, translation theory today maintains that a good translation – unless otherwise determined by its *skopos*, of course – should be like any text originally written in the target language, with idiomatic target language (Ingo 1990, Karvonen 1997). A translation should not sound like a translation. To this end, the translation has to use,

not only the linguistic devices that it would be possible to use, but the devices that a person of the target culture would be likely to use (Vehmas-Lehto 1999).

This further implies that a good translation has to be true, not only to the linguistic rules but also to the *conventions* or *text conventions* of the language. Conventions refer to the regularities and unwritten laws of the language (see e.g. Reiss and Vermeer 1986:103). Conventions are based on tacit agreement: they state how it is customary to write texts belonging to a certain genre (Vehmas-Lehto 1999). Conventions are thus tightly interwoven with genres.

Genres, then, are text types whose exemplars are to a considerable extent similar in purpose; these texts further have a lot in common as far as structure, style, content and intended audience are concerned (Connor 1996). Genres are "conventional forms of texts" which are determined by the goals and purposes involved in a social occasion (Hatim and Mason 1990:241). Typical examples of genres are the academic paper, the sonnet and the cooking recipe. All these genres have different purposes and therefore also different schematic structures. Genres, however can differ in how conventionalised they are. A lease, for instance, is a highly conventionalised genre to the point of being stereotype, whereas in, say, memoirs conventions are less rigid.

Text conventions apply to all the levels of language. On the lexical level, for example, Finnish obituaries conventionally use either *nukkui pois* 'passed away' or *kuoli* 'died'. On the syntactic level, Finnish usually prefers the passive in instruction manuals. And on the discourse level, a weather forecast, for instance, starts with a look at what the weather has been like and is followed by a forecast for the next day(s).

Conventions and genres are culture-specific and may differ considerably across languages, as shown by Kaplan (1986, 1988, see also Connor 1996). Ingo (2000), for example, has found that in all informative genres, Finnish favours the use of embeddings at the expense of finite

clauses; in English, by contrast, and even more so in Swedish, finite clauses are more frequent. Likewise, Mauranen (1993) has shown that academic texts are constructed differently in Finnish and English: Finnish texts tend to be organised inductively, the main point being made at the end; in English texts, again, the main point is given at the very beginning. There are, however, differences between genres in that certain genres seem to be more culture-bound than some others. Marriage certificates and wills, for example, are often specific to certain societies, whereas treaties, declarations and resolutions are usually internationally valid and hence less culture-bound (see e.g. Hatim and Mason 1990).

Conventions have important functions: they arouse expectations and help the reader to understand the text (Reiss and Vermeer 1986). A good translation, therefore, respects the conventions of the target language. Without such respect, on the other hand, the translation may end up being awkward and difficult to understand (Vehmas-Lehto 1999). In practice, however, the respect for the conventions of the target language means that radical modifications often need to be made in the translation. This is the case when the conventions between target language and source language differ. In cases like these pragmatic adaptations are called for.

Pragmatic adaptations are modifications made to denotative meaning with a view to allowing for the readers, function and other situational factors involved in translation (Vehmas-Lehto 1999:100). Pragmatic adaptations make it possible to compensate for differences in culture and conventions and to bring the translation to the cultural setting of the target language. Pragmatic adaptations are needed when, for instance, dating a letter and writing an address on an envelope, because these conventions differ from culture to culture. Pragmatic adaptations may also be necessary when addressing people: in Finnish it is quite common to call people by their first names; in French, in contrast, addressing is much more formal. In translations or interpretations from Finnish into French, it might thus be necessary to make a pragmatic adaptation and use a formal

approach so as not to offend a French hearer/reader. As a final example of pragmatic adaptations we might name the modifications needed when currencies and measures are translated into a language where different standards and systems are in use.

Special problems with respect to pragmatic adaptations may arise when a concept or situation is lacking or rare in a language or culture. The various terms in Finnish for different types of snow, for instance, may at some level be considered untranslatable (cf. Bassnett 1991). Similarly, for the French *Bon appétit* there is no natural equivalent English. Rather than regard these as examples of absolute cultural untranslatability, modern translation theory tends to view them as cases calling for pragmatic adaptations: the pragmatic adaptation for, for instance, *Bon appétit* in English is simply silence (see Vehmas-Lehto 1999).

In addition to pragmatic adaptations, there is, however, another useable technique for ensuring respect of conventions – and allowing for what might be taken for untranslatability. This is the technique of compensation or compensatory equivalence (Reiss and Vermeer 1986). *Compensations* signify the attempt to make up for a loss of a feature in a text by reproducing a similar effect somewhere else in the text (Hatim & Mason 1990:202, see also Harvey 1998). Compensations are a viable means of tackling the problem of, for example, puns and metaphors. Puns and metaphors are often more or less untranslatable as such. To compensate for the loss of such puns or metaphors, the translator might invent and insert some new ones which are no part of the source text. Compensations can also be used to make good, say, conventional syntactic structures: if the frequency of a particular syntactic device (e.g. embeddings) in the translation is smaller than what is normally the case in parallel texts, the loss can be made up for by adding similar linguistic devices somewhere else in the text (see e.g. Vehmas-Lehto 1991, 1999).

2.1.4 Translation from the point of view of the translator – choices and compromises

In recent years, translation theory has been interested, not only in the product of translation, that is, the translation itself – and its correctness or goodness – but also in the translation process aiming at that product. Special attention has been paid, for instance, to the translator and the choices s/he has to make in translating.

From the point of view of the translator, translation can be described as a decision-making process involving choices and compromises (Jumpelt 1989, Levý 1989). In translating, the translator is constantly faced with situations where s/he has to choose. The translator has to make choices, for example, on the linguistic level: how precise terms and what syntactic structures to use. Choices are also needed on the semantic level: when it is not possible to transmit all the meaning, which part of it will be transmitted? On the functional level, choices may be necessary if there are several functions operating at the same time: which of them is given priority? And finally, the translator has to choose between situational factors: the time, place, receivers and function of the translation, among other things. (See Vehmas-Lehto 1999.)

Considered from the angle of the translation process, the choices the translator has to make are basically choices about the translation strategy. A *translation strategy*, as defined by Jääskeläinen (1993:116), is "a set of (loosely formulated) rules or principles which a translator uses to reach the goals determined by the translating situation in the most effective way". Translation strategies are thus the means the translator considers to be optimal in a certain situation (see also Reiss and Vermeer 1986); furthermore, they are guided by the goals set by the translation task. Translation strategies are of two kinds: global strategies and local strategies. Global strategies denote the hierarchically highest general decisions (on e.g. style), which are often made at the beginning of the

translation process. Local strategies, again, refer to more specific and detailed lower level decisions and activities concerning, say, the use of individual words and syntactic structures. These two kinds of strategies are connected to each other in that global strategies govern the choice and use of the lower level local strategies. (Lörscher 1991, Jääskeläinen 1993.)

To be able to make the choices and decisions needed, the translator needs criteria on which to base his/her decisions. To this end, the translator has to set up a hierarchy of priorities (see e.g. Nida and Taber 1982, Koller 1989, Vehmas-Lehto 1999). With the help of such a hierarchy of priorities the translator will be capable of determining what is relevant and what is less relevant in the message. Consequently, when confronted by "a conflict of interests" (Hatim and Mason 1990:8), the translator will be able to decide what aspects should preferably be retained in the translation.

The reverse side of this, of course, is that something else is often "lost" (Bell 1990:6) at some other level. In many cases it is not possible to do justice to every aspect of the source text; rather, choosing and focussing on one aspect frequently leads to the "sacrificing" of another (see Reiss and Vermeer 1986:25). Not surprisingly, then, translation has oftentimes been characterised as an act where compromises play a vital role (see e.g. Toury 1980, Vehmas-Lehto 1999).

In making the choices and setting up the hierarchy, the translator is guided by the purpose, function or skopos of the translation (Reiss and Vermeer 1986, Hatim and Mason 1997). The skopos thus tells the translator in what manner to translate. In practice, this means, as accentuated by the skopos theory (Reiss and Vermeer 1986, Vermeer 1989), that depending on the skopos, the translations of one and the same source text can differ considerably; furthermore, all these translations are good translations if they fulfil their skopos. In this sense, there is no one correct translation.

The purpose or *skopos*, which guides the translation process, again, is assigned by means of the brief or – in terms of the *skopos* theory – *commission* given to the translator (Vermeer 1989, Hatim and Mason 1997). A commission, according to Vermeer (1989:183), is the instruction to translate. It is usually given explicitly (*Please translate the accompanying text*) but can also be implicit or implied. A commission contains or should contain detailed information on the goal of the translation and the conditions under which the intended goal should be attained. Since translation is directed by the *skopos* and the *skopos*, in turn, by the commission, it is ultimately the commission that prescribes how the translator is to translate.

According to the *skopos* theory (Vermeer 1989), the translator has to negotiate the *skopos* and the way it is to be realised with the client (the commissioner). In the final analysis, however, it is the translator who decides whether the commission is realisable as such. If not, the translator needs to modify it. The translator is the expert in the translation process. Therefore, it is, in fact, the translator who is responsible for making the final decisions as to whether and how to translate.

As regards the present study, the translators involved in making the translations were given (by PISA) an explicit *skopos* and an explicit commission. The *skopos* was to produce translations that would be equivalent in terms of difficulty with the source texts. The commission, again, contained detailed instructions on how to translate so as to reach the goal of equally difficult texts. An important part of the present study, then, is to consider how the commission affects the translators' choices and to what extent it helps them to attain equivalent texts – whether the commission is appropriate in view of the *skopos* of the translations.

2.1.5 Summary

In translation theory, there is no consensus about the definition of translation, nor of equivalence. According to linguistically oriented scholars, translation is the transposition of a source language text into a target language text in such a way that a certain relation, termed as equivalence is preserved between the two. The equivalence relation is thus a prerequisite for translation. There are several types of equivalence, the best known among them being formal equivalence, emphasising reproduction of the formal structures of the source text, and dynamic or functional equivalence, focussing on similar effects between the receivers of source text and target text or similar functions between source text and target text respectively. The present study, however, concentrates on still another type of equivalence, equivalence of difficulty, which denotes the similar level of difficulty between source text and target text. Other scholars, such as historical-descriptive and functionalist theoreticians, on the other hand, argue that a translation does not need to be equivalent with the source text; being acceptable, true to the norms of the target culture, or adequate, fulfilling the skopos of the translation, is what counts.

Throughout history, one of the main concerns of translation theory has been the question as to what a good translation is like. Opinions have varied. Modern translation theory, however, generally expects that a translation be communicative, reader-centred, fulfil its function as a text – and use idiomatic target language. Depending on the approach, these requirements are reflected in an orientation today towards free translation, that is, translation that does not aim at word-for-word correspondence, as well as towards dynamic or functional equivalence and adequacy. Idiomatic target language encompasses compliance with the conventions, the unwritten laws of the language, dictating how to write certain culturally determined forms of text or genres. To compensate for

differences in conventions and culture between languages, it is often necessary to make pragmatic adaptations by modifying denotative meaning or resort to compensations, which make good losses in the text by substituting similar effects somewhere else in the text.

Of comparatively recent origin within translation theory is the interest in the translation process and the translator. From the point of view of the translator, translation is a decision-making process involving choices, which largely concentrate on translation strategies, and compromises. The choices in turn, are based on the purpose or *skopos* of the translation and the brief or commission of the translator. According to the *skopos* theory, however, the greatest responsibility rests with the translator, who has to make the final decisions concerning the translation.

In sum, in view of all the different conceptions of equivalence, the one that is of the greatest interest to the present study is equivalence of difficulty. This is because equivalence of difficulty is what is required of the texts analysed in the study – the texts being part of an international literacy assessment, whose validity is dependent on the comparability of the texts. Equivalence of difficulty is thus the *skopos* of the translations included in the present study. Another obvious concern of the study is to consider whether the commission – including the instructions provided by PISA for the translators – is appropriate and helps the translators to reach the *skopos*, notably equivalence of difficulty between the texts.

2.2 Theory of reading comprehension

In this study, the texts and translations analysed are part of a reading literacy assessment. In a context like this, where reading literacy and reading comprehension are measured, it is imperative that a similar level of readability and comprehensibility be retained between the texts. What, then, is implied by reading literacy, reading comprehension and comprehensibility? These are dealt with in the following.

2.2.1 What is reading literacy?

Definitions of reading literacy have changed over time depending on from which angle the term has been examined. In a narrow sense, reading literacy entails the ability to decode, understand and make inferences from texts (Linnakylä 1995:10). In PISA – and in other international reading literacy studies – however, the term reading literacy is employed in a much broader sense: "Reading literacy is understanding, using, and reflecting on written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society" (*Measuring student knowledge and skills* 1999:20). In this definition, reading literacy is seen as comprising understanding and use of as well as reflection on written information. Furthermore, the definition emphasises the functional nature of reading, the purposes for which reading is used.

As can be seen from the above definitions, whether broad or narrow, comprehension is an integral part of reading literacy. In fact, Brown (1980:454) and Stanovich (1991:418) argue that achieving understanding is the goal of reading. In the following we will have a closer look at what is involved in reading comprehension.

2.2.2 What is reading comprehension?

2.2.2.1 Different conceptions of reading comprehension

Modern approaches to reading comprehension – which are reflected in the above definition of reading literacy – are based on cognitive theories of reading. Cognitive theories of reading have revolutionised conceptions of reading comprehension during the last 30 years or so. According to these theories, reading comprehension is a much more complex act or process than conceived of by the traditional view.

In the traditional view, often termed as the *information transfer* view (see e.g. Binkley and Linnakylä 1997), meaning is understood to reside in the text alone; the meaning of the text is then reproduced by and the information incorporated in the text transferred to the mind of the reader. According to this behaviouristic view, the reader is a passive recipient and decoder of information (see Dole et al. 1991). Reading itself is a set of discrete skills, such as word recognition and sequencing ideas (see Binkley and Linnakylä 1997).

Cognitive theories of reading, by contrast, accentuate the interactive nature of reading and the constructive nature of comprehension (Spiro 1980, Dole et al. 1991, *Measuring student knowledge and skills* 1999). Among these, the theories inclining towards *interaction* maintain that meaning resides, not only in the text but with both reader and text, regarded as separable entities. During the reading process, the two meaning systems, that of the reader and that of the text, interact; at the same time, author and reader share knowledge and experiences. Background knowledge is required on the part of the reader. (Binkley and Linnakylä 1997.) The text, however, plays a central role in these theories (Linnakylä 2000). In these theories, reading is seen as a series of linguistic and cognitive steps (Binkley and Linnakylä 1997).

In the theories endorsing *transaction* – which have been the prevailing view in recent years – the reader is given the most prominent role. Reading is not simply reception or processing of information; rather, readers, while reading, actively construct and generate meaning in response to the text on the basis of their experience, attitudes, background knowledge as well as knowledge of, for instance, the text and language. Meaning is relative and varies from reader to reader (and even as concerns one particular reader, from context to context). In these theories, reading and reading comprehension are understood to be holistic in nature, requiring simultaneously the integration of skill, background knowledge, purpose, intention and attitudes. Moreover, according to the transaction

view, reader and text are inseparable and cannot be analysed separately. In addition to being a set of cognitive processes, reading is further viewed as social and linguistic processes – as a means to establish and maintain social relationships as well as to communicate intentions and meanings between author and reader. (See Binkley and Linnakylä 1997.)

Over the past few years, theories focussing on *social construction* and *cultural psychology* as well as *sociocultural approaches* to reading have added a social and cultural aspect to the cognitive views of reading comprehension (see Linnakylä 2000). In these theories, reading comprehension is regarded as ultimately a social and cultural act. The reader generates meaning, not in isolation, but rather as a member of a social community, influenced by the context and the sociocultural environment, and by using knowledge and texts that are socially and culturally patterned, conditioned and shared (see also Binkley and Linnakylä 1997).

The main lines of reading theories depicted here are to be seen complementary rather than contradictory: together they provide a relatively comprehensive view of what is involved in reading comprehension, concentrating as they do on different aspects of reading (Binkley and Linnakylä 1997, Linnakylä 2000). Taken together, however, it might be said that reading comprehension, as understood today, denotes generation of meaning in response to a text, whereby the reader uses "previous knowledge and a range of textual and situational cues that are often socially and culturally shared" (*Measuring student knowledge and skills* 1999:19; see also Dole et al. 1991, Linnakylä 2000). Reading comprehension thus implies interpretation based on an interaction or transaction between reader and text in a certain context.

In view of the theories described above, the present study clearly relies on the cognitive theories of reading: the study presupposes an interaction or transaction between reader and text, emphasising the reactions of the reader and his/her experience and knowledge. Yet, the

focus in the text analyses is understandably on the text. The present study might thus be situated near the transaction approaches, having, however, some views in common with the interaction approaches and the socially and culturally oriented approaches as well.

2.2.2.2 The reading comprehension process

According to the cognitively based views of reading, knowledge plays a decisive role in reading comprehension. While reading, or generating meaning, the reader has different types of background knowledge at his/her disposal, notably knowledge of the world, knowledge of the topic of the text, knowledge of text structures and knowledge of language rules (Anderson and Davison 1988, Dole et al. 1991, Pearson and Fielding 1991, Weaver and Kintsch 1991, Horning 1993). Apart from this prior knowledge, the reader is also provided with new knowledge on which to lean: the information emanating from the text – certain language and structural elements as well as a particular topic – and the context (Baker et al. 1988, Dole et al. 1991).

As to how the different types of knowledge operate and how they are processed during the comprehension process, there seem to be three main lines of thought. In the "bottom-up" model, reading is seen as proceeding from incoming textual information to higher level encodings; primary emphasis is on textual decoding and lower level processes, such as letter and word recognition (Stanovich 1980). In the "top-down" model, by contrast, emphasis is on higher level processes, reader interpretation and prior knowledge, among other things; it is these higher level processes which direct comprehension in that they help the reader to make predictions about the text (see Garner 1987).

Today, however, both the above models are regarded as inadequate. Today, reading comprehension is thought of as an interactive process: not proceeding in a unidirectional manner but rather as a process where

knowledge coming from various sources, both lower-level and higher-level, interacts or works together simultaneously in a heterarchical fashion (Spiro et al. 1980, Garner 1987). Reading comprehension, then, to put it simply, is an interaction between the knowledge held by the reader and the knowledge contained in the text.

The knowledge contained in the text, at its most basic level, is composed of words and sentences. It is assumed that all this new, incoming information first enters and is processed in short-term memory or working memory (see Daneman 1991, Stanovich 1991, Weaver and Kintsch 1991). The former of these terms, short-term memory is normally used to describe the fact that it holds information for a short time, a few seconds (Young 2000). The size of short-term memory is limited (7 items, on average, for young adults). The latter term, working memory refers to the same concept. Yet, with working memory the emphasis is on the active operation, the processing capacity of short-term memory: the ability to hold information in mind while working on it (Daneman 1991, Young 2000). Consistent with the limited size of short-term memory, working memory also has limited capacity (Anderson and Davison 1988). This, in turn, means that if while reading some lower level processes (e.g. encoding) begin to consume too much of the available capacity of or place too heavy a burden on short-term or working memory, more demanding higher cognitive processes (e.g. inferencing) will suffer and comprehension is impeded (Daneman 1991, Weaver and Kintsch 1991).

The knowledge held by the reader or prior knowledge, again, is organised in long-term memory into schemata, as maintained by schema theory (see e.g. Rumelhart 1980, Anderson and Pearson 1984). Schemata are abstract knowledge structures or mental representations – knowledge packaged into mental units – which, thanks to repeated experiences, have been stored in memory. A famous example of such schemata is the ship christening schema: everyone familiar with ship christening has a set of expectations as to what kind of information is to be included in any

description of a ship christening. Schemata are thought to be of two kinds: content schemata, which organise the contents of texts, and text structure schemata, which have to do with the structure of texts. Schemata are of vital importance in the organisation and interpretation of new information in that they create expectations: when new information fits a schema and the expectations of the reader, comprehension is facilitated; when there is no match between the incoming information and the schema stored by and the expectations of the reader, comprehension is hindered.

Van Dijk and Kintsch (1983) and Kieras (1985), however, suggest another approach to content schemata, emphasising the "bottom-up" processes of reading. They argue that when reading material whose content is new to the reader (e.g. technical texts), the reader has, in fact, no relevant content schemata or prior knowledge stored in long-term memory on which to rely. Therefore, comprehension is guided by the surface structure of the text. Comprehension involves, first, extracting the microstructure from the text and only then deriving a macrostructure for the text⁶.

Different types of knowledge are thus central to reading comprehension. Besides cognitive factors, however, also affective factors are today considered to be present and actively engaged in the reading comprehension process. While the role of affective factors in reading comprehension has been researched much less than that of cognitive

⁶ According to Kintsch and van Dijk (1978), knowledge or meaning is encoded in memory as a series of propositions. Propositions are the basic units of meaning; they only preserve the meaning, not the actual surface form of a text. Propositions consist of predicates and arguments. Predicates are the relationships between objects, while arguments are the objects and concepts mentioned in the text. All texts can be broken down into propositions. Propositions directly derived from a text are termed micropropositions; these represent the microstructure of the text. Macropropositions, for their part, are derived through the application of three macrorules: deletion, generalisation and construction. Macropropositions contain top-level or gist information on the macrostructure of the text. They are stored in memory and play a vital role in comprehension and recall. All the propositions in a text form a hierarchical textbase, where important information (usually the macropropositions) is at the top of the hierarchy and detailed information at the lower levels. As evidenced by research, top-level propositions are generally recalled more easily.

factors, it is known that affective factors influence the reader's orientation to the reading process. The attitudes, motives, interests and intentions of the reader, first, determine whether or not the reader is willing to read or continue reading a given text. They further determine how the reader approaches the text, in what depth or with what effort, for example. (Asher 1980, Binkely and Linnakylä 1997.)

During the reading process and while generating meaning, the reader needs, not only different types of knowledge – and appropriate affective qualities – but also various skills and strategies. Skills, such as word recognition skills, are routinised and automatic, mostly lower level techniques the reader applies unconsciously to the text (Dole et al. 1991, McNamara et al. 1991, Paris et al. 1991). Effective comprehension requires that these normally automated components of the reading process work easily and effortlessly (Stanovich 1991, Weaver and Kintsch 1991).

Strategies, by contrast, refer to conscious, deliberate, flexible and adaptable plans readers use to foster, monitor and regulate their comprehension (Dole et al. 1991, McNamara et al. 1991, Paris et al. 1991). Examples of strategies are predicting and summarising. Strategies imply metacognitive awareness. Metacognition, as defined by Garner (1987:1), basically means cognition about cognition and denotes "learners' knowledge and use of their own cognitive resources". Strategies, as widely accepted today, play a central role in the generation of meaning, much more so than skills.

In the following we will have a look at how all the different components interact in the comprehension process. When about to read, the reader may preview the material by skimming the text and having a look at some surface features of the text, including the title and subheadings (Paris et al. 1991). By using the surface features of the text, his/her background knowledge and experience – which are activated at this stage – and any other clues available, the reader gets a first impression of the text, its content, structure and purpose; against this first impression

the reader weighs the value and interestingness of the text, gets (possibly) motivated, deciding to read the text and, finally, makes hypotheses and predictions about the text, its content and structure (see also Langer 1995).

Going on, the reader gets more absorbed in the reading and comprehension process. The reader uses all his/her personal knowledge, the text and the context to gather more information; by means of this additional information the reader fills in the missing gaps and gains a more elaborate and complete understanding of the text (Langer 1995). While reading the reader looks for main ideas in an attempt to reconstruct the structure of the text, summarises and makes inferences, generating his/her own meaning for the text (Dole et al. 1991, Paris et al. 1991). Finally, the reader reflects on what s/he has read, assessing the information in the text against his/her own knowledge of the world, objectifying, analysing and evaluating (Langer 1995).

Reading for comprehension is thus a complex and multifaceted activity. Therefore, while the reading comprehension process and strategies have been presented here as if occurring in a linear order, the truth, in fact, is much more complicated. In reality, all the different processes and strategies may occur and recur at any time during the reading process or even afterwards as the need arises (Paris et al. 1991, Langer 1995).

2.2.3 Comprehension and comprehensibility

From the description of what happens during reading it is clear that the text plays a vital role in reading comprehension. Comprehension depends, not only on the reader, the different types of background knowledge s/he possesses and the strategies s/he uses; comprehension is also largely dependent on the text, the linguistic features used in it, its structure and content. Yet, these two, reader and text, are inseparable. In other words, comprehension is tightly interwoven with comprehensibility. In the

following we will discuss what comprehensibility is. We will first define comprehensibility and a term that often occurs together with comprehensibility, readability. Then we will see what contributes to increased comprehensibility and hence increased comprehension. All this information further serves as the foundation on which the analyses in the present study are built.

2.2.3.1 What are comprehensibility and readability?

Comprehensibility is a term with a special reference to the text. Horning (1993:4, 39) – who regards herself as being near the transactionist approach, while not "purely" so – has defined comprehensibility as the qualitative features of a text that facilitate the meeting of readers and writers in the text. Comprehensibility thus refers to the characteristics of the text which affect and promote the reader's comprehension of the text.

Another term that is closely related to and is often used as a near synonym of comprehensibility is readability. *Readability* alludes to the "ease of understanding" a given text, based on how the text is written (Klare 1984:681). Readability is the (reading) ability that is needed to understand a particular text (see Bechger et al. 1998:105). Both the above concepts, comprehensibility and readability, are given much less attention and used much less frequently today than, say, two decades ago. This is largely due to the trend apparent in modern reading theories to put more weight on the reader.

2.2.3.2 What promotes comprehensibility and comprehension?

The following discussion is based on the cognitive and more specifically the transaction approach to reading comprehension. The text and its comprehensibility are thus considered together with the activities and from the point of view of the reader. The discussion is not meant to be

exhaustive. Rather, it aims at presenting a very general view and some universal principles of how to contribute to increased comprehensibility and comprehension; the emphasis is on higher level cognitive processes (e.g. interpretation and inferencing). Such a discussion can further be expected to be valid across languages: the same principles can be assumed to promote comprehensibility in most cultures.

Considering the importance of the reader's prior knowledge and experience to reading comprehension, it is evident that the closer the knowledge presupposed by the text is to the reader's existing knowledge, the easier the text will be to understand (Anderson and Davison 1988). This is most readily seen in that the content that one is familiar with – for which one has a schema (Rumelhart 1980) – is usually felt to be much less complicated to comprehend than topics and themes that are strange and new (Pearson and Fielding 1991). The familiarity of content, of course, may vary considerably from culture to culture: practices and phenomena that are common in one culture may be totally unknown in another. Therefore, for a text to be easy to understand, the topics and themes dealt with in the text have to be familiar in the given culture (see Anderson and Davison 1988).

The same principle as concerns the match between the knowledge of the reader and the knowledge presumed by the text applies also to the linguistic devices used in the text. Hence, a text which contains, for instance, orthography, vocabulary and syntax which are conventional and with which the reader is familiar will be easier to comprehend than a text where there are a lot of strange combinations of letters as well as unfamiliar words and syntactic structures (Horning 1993).

Text structure is the third factor where the knowledge possessed by the reader and the knowledge demanded by the text should coincide. Text structures refer to the abstract hierarchies, the macrostructures of texts (Pearson and Fielding 1991, Weaver and Kintsch 1991). Text structures are often highly conventionalised as genres (Horning 1993) and, again, may

differ greatly from culture to culture (see pp. 22-23). As regards text structures, it has been widely attested that texts which have a conventional structure corresponding to what readers expect and are acquainted with – thanks to the schemata stored in their memory – are easier to understand than unconventional texts (Baker et al. 1988). Respect for conventions – whether at the micro level (i.e. vocabulary, syntax) or at the macro level of the text – is thus a prerequisite for readable texts.

Not only do the reader's prior knowledge and the knowledge presupposed by the text need to meet; the reader further needs as many relevant linguistic clues from the text as possible so as to be able to construct meaning (Rumelhart 1980; see also Langer 1995). To this end, the linguistic information contained in the text has to be presented in as informative a way as possible⁷. In other words, the text has to be redundant.

Redundancy in this context means overlapping information or information available from more than one source. Redundancy of this kind may obtain at all levels of the text: orthography, vocabulary, syntax, semantics and discourse. (Horning 1993.) Redundancy is thus a significant factor in comprehensibility: the more redundancy there is in the text, the more information the reader will have on which to lean when constructing meaning (Brewer 1980). The more explicit and concrete the text, the easier the task of the reader.

The greater readability of conventional, familiar, redundant, explicit and concrete texts and parts of texts seems to be largely attributable to the smaller number of inferences needed by the reader to understand these texts. Inference is a term that refers to the filling in details omitted in the

⁷ The linguistic information also has to be presented in such a way as not to place too heavy demands on the short-term memory of the reader (see e.g. Anderson and Davison 1988, Horning 1993). The analyses in the present study, however, predominantly concentrate on higher level cognitive processes. Hence, the processing of information in short-term memory is mostly disregarded in the study. The only exception to this is in the case of premodification. This is because of the absolutely central role premodification plays in the Finnish language.

text (Dole et al. 1991:245), the making explicit what is left implicit in the text. The number of inferences required when reading is considered one of the major determinants of readability (see Weaver and Kintsch 1991): texts where the number of inferences demanded is small, that is, where there are few gaps to fill in and where the knowledge is presented in an explicit manner, are easier to understand than texts where a lot of inferences are needed (Kemper 1988).

A match between the reader's knowledge and the knowledge presupposed by the text and the informativeness of the text, however, are not the only factors that contribute to comprehensibility. The interestingness of the knowledge presented in the text also seems to be significantly related to readability. Anderson and Davison (1988), for instance, claim that the influence of the reader's interest in the text on comprehension is possibly even more important than that of prior knowledge. Interestingness is thus a potent predictor of the comprehensibility of a text: a text whose content and way of presenting information are boring to the reader is less well understood than a text which the reader finds interesting (see also Asher 1980, Green and Olsen 1988, Weaver and Kintsch 1991).

2.2.4 Summary

Reading literacy, according to the broad definition adopted in, for instance, PISA, comprises the understanding and use of as well as reflection on texts; the definition further presupposes a purpose for the reading. Reading comprehension, in turn, is a central part of reading literacy. As understood in today's cognitive theories of reading, specifically the transactionist view coupled with the socially and culturally oriented approaches, reading comprehension signifies the reader's generation of meaning in response to a text; the meaning is generated

through the use of prior knowledge as well as of textual and situational cues which are often socially and culturally shared.

Reading comprehension is thus understood to be an interactive and constructive process where the reader's prior knowledge interacts with the knowledge emanating from the text and the context. Yet, while knowledge and the way it is processed play a crucial role in comprehension, affective factors, such as attitudes, motives, interests and intentions also have an effect on the comprehension process. And finally, in addition to these cognitive and affective factors, the reader further needs different automated and unconscious skills as well as conscious, deliberate and flexible strategies with the help of which s/he can foster and monitor his/her comprehension.

Comprehension is largely dependent on the text. The characteristics of the text that facilitate the meeting of reader and writer in the text are known as the comprehensibility of the text. Readability, for its part, denotes the "ease of understanding" a text, based on how the text is written. The basic principles that are known to contribute to readable writing are the following: first, the closer the knowledge presupposed by the text is to the reader's prior knowledge, the easier the text is to understand; likewise, the more redundant and informative the textual clues are, the easier the text is to understand. Why this is so is largely due to the reduced number of inferences needed in such texts. On the affective side, much less research has been done. What is known, however, is that interestingness, for instance, contributes to increased comprehensibility.

In sum, in the present study reading comprehension will be treated as a cognitive and constructive act – an interaction or transaction between reader and text. Comprehensibility will therefore be considered from the point of view of the reader: what features of the text help the reader to process the different kinds of knowledge needed in the reading comprehension process. The discussion on reading comprehension and comprehensibility presented here thus serves as the basis on which the

analyses of the comprehensibility of the texts included in the present study are conducted.

3 RESEARCH DESIGN

3.1 Aims of the study

The present study focuses on translations used in a cross-national literacy assessment conducted by PISA. The aim of the study will be to examine what kinds of translation problems are encountered in these translations where equivalence of difficulty between the source texts and target texts is a key prerequisite for the validity of the survey. As a by-product of this, the study will also address the question as to whether or to what extent the translations are, in fact, equivalent with the source texts. The translations can further be looked upon as the end products of the translation process utilised in PISA. The study will thus further yield some information on the efficacy of the translation process: how effective the PISA translation process is in coping with the translation problems and ensuring equivalence – and comparability – between the original texts and the translations.

3.2 The data of the study

The data of the study consist of three English source texts⁸ and their Finnish translations. Text 1, *Bees*, is a textbook-like expository text dealing with a biological theme, Text 2, *Bullying*, is a newspaper text and Text 3, *Warranty*, is a non-continuous text made up of a receipt and a warranty

⁸ In fact, the source texts were not all originally written in English. This is because in PISA, every participating country was allowed to suggest passages and items which they thought would fit into an international literacy study. The purpose of this arrangement was to avoid cultural bias. Of the three source texts included in the present study, *Bees* and *Warranty* were originally written in English; *Bullying*, in contrast, was initially published in Japanese. For the PISA assessment, however, all the texts were translated into English (and into French), and these English (and French) versions were then regarded as the source texts (except, of course, if it was the country in question that had suggested the text). This is logically the sense in which the term source text is used in the present study, too.

card (for a more detailed description of the texts, see chapters 4.1, 4.2 and 4.3 respectively). Also included in the data are the instructions and question items⁹ accompanying the texts. The reason for this is that the items and the instructions play an important role in the answering process; their translation thus requires as much attention as the translation of the passages they refer to (see Bechger et al. 1998). The three English and three Finnish texts together with the instructions provided for the students and the question items are to be found in Appendix (1).

3.2.1 The context of the texts and the entire study – The Programme for International Student Assessment

The texts contained in the present study were included in a multinational literacy study carried out by the Programme for International Student Assessment (PISA). To be precise, the texts were part of PISA's pilot test on reading literacy. The test was administered to 15-year-old students in 33 countries and took place in 1999¹⁰.

PISA is an international assessment of the skills and knowledge of 15-year-old students. PISA is developed and steered jointly by member countries of the Organisation for Economic Co-operation and Development (OECD); yet, also non-OECD countries can take part in PISA. For the first assessment proper in 2000, following the pilot test in 1999, for example, PISA brought together 32 countries, of which 28 were members of the OECD.

PISA is a regular, ongoing programme of assessment. As mentioned, the first PISA assessment took place in 2000. Thereafter, assessments will

⁹ Only the items that were included in the final versions of the original texts and translations will be analysed. Initially, there were quite a number of items which, however, were excluded from the final versions. These items will not be analysed. (See Appendix 1.)

¹⁰ Altogether some 50,000 students participated in the pilot test worldwide. In Finland, the trial took place in March-June 1999 with 922 students (i.e. 1.5% of the whole population of students of this age) from 28 schools being assessed.

occur every three years (preceded by respective pilot tests). In PISA assessments three domains are covered: reading literacy, mathematical literacy and scientific literacy. Every assessment cycle looks in depth at one of these major domains. In the first cycle, in 2000, reading literacy formed the core of the assessment; in 2003, emphasis will be on mathematical literacy and in 2006 on scientific literacy. The next assessment focussing on reading literacy will take place in 2009. All the time, however, wider knowledge, skills, and competencies are assessed as well.

The aim of PISA is to assess how far students approaching the end of compulsory education have acquired the knowledge and skills that are essential for future adult life and for full participation in society. On a more general level, PISA aims at producing regular and reliable measures of educational outcomes across countries. The objective is to develop international indicators of student achievement. With the help of these indicators, again, national policy makers will be able to compare the performance of their educational system with those of other countries. The ultimate purpose is to improve the effectiveness of education. (For more information on PISA, see <http://www.pisa.oecd.org>.)

3.2.2 The selection of the texts

The PISA trial 1999 comprised altogether 54 reading literacy texts, and as referred to above, the three texts (together with their translations) contained in the present study were chosen from among these. The first criterion for choosing these very texts was that they were not among the texts included in the PISA assessment proper in 2000. In this assessment, 37 of the original 54 texts were used. At the time of making the analyses for the present study, all these 37 texts were confidential. The reason for this was that these texts were meant to be reutilised in some of the PISA assessments to come. Therefore, only the 17 texts dropped from the

assessment proper were freely available for use and study. This, in fact, is also the reason why the pilot test was chosen as the wider context, not the assessment proper.

A second, practical reason for choosing these particular texts was that the Finnish translations of these texts are among the six texts that have been easily accessible to everyone via the Internet (<http://www.jyu.fi/ctl/pisa/readesim.htm>). And the final and most decisive criterion, again, for selecting the three from among the six was that these three texts were considered the most representative ones among the six as far as different types of texts and translation problems and translation strategies in particular are concerned.

3.2.3 The translation process

The translations that are part of the present study can be regarded as the end products of the translation process utilised in PISA. This is especially true in PISA, where detailed instructions were given on how to proceed with the entire translation process, how to select the translators and how to translate. In the following, the PISA translation process as realised in Finland will be looked at in more detail.

The Finnish translations included in the study were made at the turn of the year 1999. The translation process was carried out by a team of translators and proceeded through the following steps¹¹: Based on an English source text, one translator produced the first Finnish version of the text. This version was then commented on by another translator. On

¹¹ In Finland, the translation process differed somewhat from what was recommended by PISA. PISA recommended double translation followed by national and international verification. Hence, every country was advised to use two parallel source versions, one in English and the other in French. Based on these, two independent translators were to produce two independent versions in the target language. Eventually, these two versions had to be verified by a third independent translator and reconciled into one national version. In the final stage, this national version was to be verified by a team of international translators at the International Project Centre.

the basis of this version and with possible crosschecks from a parallel French source version, these two translators and a translator specialised in Finnish decided on a synthesised Finnish version. This version was next submitted to an external Finnish verifier. After this national verification, the Finnish text was verified one more time by a team of international translators at the International Project Centre.

In Finland altogether five translators¹² were engaged in the entire translation process. Of these two were professional translators, one with several years' and the other with a few years' experience in translating. One of the remaining three was a MA with Finnish as her main subject and with some experience in translation. One was a BA with applied linguistics as his main subject and English and Finnish as his secondary subjects; he further had five or six years' experience in translating. The last one was a major student of English with little experience in translating. The verifier, for her part, worked outside the team of translators. Unlike all the others, she was appointed by the International Project Centre and was – purposely – not specialised in languages.

As regards the three English texts and their Finnish translations analysed in this study, what is known is that the initial versions of two of the translations, *Bees* and *Bullying*, were produced by the translator with a BA in applied linguistics; the first version of the third one, *Warranty*, again, was produced by the more experienced professional translator. The other professional translator, by contrast, took no part in translating these three texts. The translator with a MA in Finnish was strongly involved in making all the final Finnish versions (before the verification), and the verifier checked all the texts.

¹² In Pisa, high requirements were set for the translators. They were to be professional translators with a good command of both the source language (English or French) and the target language. They further had to be acquainted with the educational systems of the countries involved and with the topics concerned. In Finland, these requirements were not met to the full.

The translators were given some detailed instructions on how to translate. Some of the most interesting ones of these instructions, as far as the present study is concerned, are the following (National project manager's manual 1999; for a fuller account of the guidelines, see Appendix 2):

- 1) respect the lay-out and the presentation shown in the source document;
- 2) avoid complicating or simplifying vocabulary and syntax:
 - a) avoid translating difficult words by expressions which paraphrase them in more common terms (or vice versa);
 - b) do not unnecessarily modify the degree of abstraction of the sentences by using nouns where the author uses verbs (or vice versa);
 - c) avoid, insofar as appears possible, translating an active turn of phrase by a passive one (or vice versa);
 - d) be very vigilant during the translation of passages containing negations, especially when double negations are involved, because the latter significantly increase the difficulty of understanding;
 - e) modify as little as possible reference chain(s) and do your best to respect the nature of the elements of reference (repetition, synonym, pronoun);
- 3) when translating the items, avoid involuntarily providing clues which direct the student towards the correct answer, or which make a wrong answer more attractive:
 - a) make every effort not to modify the respective lengths of the various distractors unnecessarily; long answers are more attractive than short ones;
 - b) if the stem literally produces expressions contained in the text, take care that the same is true in the translation;

- c) take care to provide all the information which is contained in the item;
- d) the order in which the author has presented the various pieces of information contained in the stem of an item is often important; try to produce that order insofar as possible;
- e) all conventions respecting word order significantly differ from one language to the other; however, various stylistic devices often make it possible to enhance this or that segment of the question;
- f) it may occur in a multiple-choice item that some of the alternatives proposed only differ by one key detail; be particularly vigilant on that subject;
- g) the items based on nuances of vocabulary often raise difficult problems; it is rarely easy to find terms in one's own language having exactly the same connotations;

Given the list of instructions, however, the translators were reminded that the guidelines were to be regarded as advice only and that too strict an application of the recommendations could lead to a cumbersome translation.

Besides the general instructions recapitulated above, the translators were also provided with specific translation notes attached to the texts. These notes were usually given for one of the following reasons (National project manager's manual 1999): first, to ask the translator to imitate as far as possible the stylistic characteristics of the source version; second, to point out where the translator should make a national adaptation; or third, to indicate where the translator was to remain strictly true to the original. In the following, examples (1 – 3) taken from the texts included in the present study are given of every three type of translation notes respectively:

- (1) "This warranty is not transferable." Retain the legal flavour of the expression.
- (2) Currency should be changed to local equivalent.
- (3) The "8" in "figure 8" should be produced as an Arabic numeral, because the shape of the number is important.

National adaptations were thus one of the main reasons for giving specific translation notes. The general principle concerning national adaptations, however, was to use them only when they were truly required. If therefore the translators considered a national adaptation necessary even though this was not referred to in the translation notes, they were asked to fill in a National Adaptation Form justifying the adaptation and have it approved by the International Project Centre. In the present study, the translation notes and national adaptations are referred to when considered of interest to the analyses (for national adaptations, see Appendix 2).

In addition to the general instructions and translation notes, the translators were supplied with still another kind of information. This was information on the nature of the question items and the strategies required to answer the questions. Thus, for every question item, the translators were told whether answering the item called for forming a general understanding, retrieving information, developing an interpretation, reflecting on the content of the text, or reflecting on the form of the text. Furthermore, in case of, for example, interpretation, the translators were told not to make a text more explicit by adding, say, connectors to the translation (or vice versa). The purpose of this information was to prevent the translators from modifying the nature of the questions and the strategies required to answer them correctly. The information given to the translators on question intent is illustrated by examples (4) – (8), which are from the texts contained in this study:

- (4) Understanding the main idea of a self-contained section of a text.
- (5) Finding explicit information in a text.

- (6) Inferring relationship between a sequence of facts.
- (7) Linking local and global cohesion.
- (8) Recognising graphical representation of information given in written text.

3.3 The analytic method of the study

The method used in this study is qualitative comparative case study based on text analysis: three texts translated into Finnish (together with their instructions and question items) will be compared with their English source texts with a view to locating, analysing and evaluating translation problems related to the readability and comprehensibility of the texts. The case study method was chosen because it was considered the best means of approaching the ways of translating different types of texts and examining the consequences of choosing, for instance, different translation strategies. The method further makes possible detailed analysis of texts.

In locating the problems, the guiding principle was to look for those linguistic units of the texts which function differently in the English and Finnish texts as far as equivalence of difficulty is concerned. By definition, then, only problematic cases were allowed for in the analyses. At this stage, the researcher was assisted by a 16-year-old student, who acted as an informant. She read parts of the Finnish texts and commented on the readability, comprehensibility and especially on the idiomaticity of the texts. The final decisions as to what to consider a translation problem and what to include in the analyses, however, were made by the researcher.

The analyses will be done on three linguistic levels: lexical (and phrasal), syntactic and textual. In considering and comparing the difficulty of the different linguistic solutions used in the source and target texts, the analyses will draw on the knowledge based on cognitive theories of reading comprehension that exists today regarding the readability and comprehensibility of texts. The emphasis will be on the universal principles of text comprehension and comprehensibility and on higher

level cognitive processes (discussed in the previous chapter). The advantage of this approach is that it may be assumed to be valid across languages and cultures. Ample reference will also be made to the translation guidelines and notes provided by PISA for translators (see pp. 49-50). This is because these instructions and notes were specifically meant to ensure equivalence in reading difficulty in the light of modern theories of reading comprehension; besides, they can also be interpreted as reflecting the level of efficiency of the PISA translation procedure.

Readability formulas have been a widely used method of measuring the difficulty of texts (see e.g. Bruce and Rubin 1988, Weaver and Kintsch 1991). They have even been applied in international literacy assessments, including PISA, as a subsidiary means to classify the texts written in one language in an order of difficulty and then comparing this order to the one in the source language. In the present study, however, readability formulas will not be applied. There are many reasons for this (see National project manager's manual 1999): Firstly, the formulas are normally designed for continuous texts, and the present study also includes non-continuous texts (e.g. tables). Secondly, these formulas are reliable only when the texts are long enough (500 words or more). This is not the case in this study, where also short passages as well as question items are included. Thirdly, these formulas are not directly comparable across languages (see e.g. Toury 1991). Finally and most importantly, readability formulas are today usually considered theoretically too simplistic and inappropriate with little connection to the cognitive reality of reading comprehension (see e.g. Bruce and Rubin 1998, Baker et al. 1988, Weaver and Kintsch 1991).

It must be admitted that comparing and assessing the reading difficulty of texts across languages is truly a challenge. To date there seem to be no viable or easily applicable linguistically based models for this purpose. Therefore, the analyses in the present study, while resting on established theories of reading comprehension, are highly hypothetical by

nature. Additionally, as all translation assessments and qualitative text analyses, the analyses in this study are also to a certain degree dependent on subjective judgement (House 1997).

3.4 Summary

The main purpose of the study is to explore what kinds of translation problems are encountered in translations used in international literacy surveys, where equivalence of difficulty between the source texts and target texts is a key prerequisite for the validity of the surveys. As its secondary aims, the study touches on the questions as to whether or in what way these translations are equivalent with the source texts and as to how effective the PISA translation process is in ensuring equivalence and hence comparability between the source and target texts.

The data of the study consist of three English source texts and their Finnish translations (coupled with the instructions and question items) used in the pilot test of an international literacy assessment conducted by PISA in 1999. The method applied is qualitative comparative case study based on text analysis: the three Finnish translations will be compared with their English source texts with a view to locating, analysing and evaluating translation problems related to equivalence of difficulty between the texts. The analyses will be done on the lexical, syntactic and textual levels and they will rely on cognitive theories of reading comprehension and on the translation guidelines and notes provided by PISA for translators.

4 ANALYSES

4.1 Text 1 – *Bees*

The extract is an expository text from the field of biology. It is taken from a booklet on bees and describes how bees collect nectar and make honey. The primary function of the text is to give information. This is done in a rather textbook-like manner, with a view of educating a relatively wide and heterogeneous audience. The text is accompanied by a picture showing a bee dancing in the shape of figure 8.

4.1.1 Lexical analysis

The first major lexical difference between the English and Finnish texts concerns a fundamental difference between the two languages that has to do with stylistic variation. Thus, while the original seems to favour relatively precise scientific terms, frequently of Latin (or Greek) origin, the Finnish translation uses more familiar, everyday words. This is illustrated by examples (1) – (6):

(1) foragers	työläiset ('workers')
(2) mandibles	leuat ('jaws')
(3) abdomen	takaruumis ('the posterior section of the body')
(4) exposing	altistaen ('laying open to')
(5) excess	liika ('overflow')
(6) substance	aine ('material')

To avoid this discrepancy would have been difficult, if not impossible. This is because the structure of Finnish vocabulary is different from that of English vocabulary: while the English language can usually freely choose between several synonyms of different origins and of different stylistic levels, the Finnish language tends to favour familiar

words of native origin (see Hakulinen 2000, Ingo 2000:100). In Finnish, the use of words of foreign origin is mostly restricted to highly specific scientific contexts and would have been awkward in this text.

As it is widely known that unfamiliarity – together with infrequency – of words is usually conducive to the difficulty of a text (see e.g. Anderson and Davison 1988, Charrow 1988), it might be hypothesized that, as regards these technical terms, the original is more difficult than the Finnish translation. It is to be noted, however, that in the English text, definitions are given for, for instance, *mandibles* and *foragers*. This, of course, makes the difference in comprehension less substantial; yet, a difference in processing remains. All in all, then, we are faced here with a problem that arises from a basic difference between languages systems. Consequently, a perfect match with regard to the level of difficulty between the lexical items is simply not possible.

In addition, due to the less scientific, more everyday vocabulary – where no definitions are needed – the Finnish translation stands out as less formal than the original. This, again, is in harmony with the general stylistic difference between the languages described above. Whether or not this stylistic difference has any influence on the reading and comprehension of texts, however, would call for further investigation. It would be interesting to study, for instance, to what extent formality affects readers, their motivation and their interest in the text, which, in turn, are known to affect text comprehension (Anderson and Davison 1988; see also Green and Olsen 1988, Guthrie and Greaney 1991).

Besides the terms of foreign origin, there is another interesting example (example 7) of a word which, when translated into Finnish, becomes more familiar and frequent than its counterpart in English:

(7) hive

pesä ('nest')

The Finnish *pesä* is a superordinate term for all kinds of nests. For nests of bees, the Finnish language has a compound, *mehiläispesä* 'beehive'. Using this compound here, however, would have led to an undue repetition of the lexeme denoting *mehiläinen*. Therefore, a more familiar and slightly easier term is used in the translation. This difference is probably not a very drastic one. Yet, it serves to remind us of the fact that vocabularies are constructed differently in different languages and that for textual reasons, for example, it is not always possible to use the exact equivalent of a word.

Still another, minor lexical difference between the texts is that in a couple of places the Finnish translation is slightly more explicit than the original. This is illustrated by the following examples (examples 8 and 9):

- | | | |
|-----|-----------------------------|--|
| (8) | a booklet <i>about</i> bees | mehiläisistä <i>kertova</i> kirjanen
(*'an about bees telling booklet') |
| (9) | the food <i>is</i> | ruoka <i>sijaitsee</i> ('the food is situated') |

In example (8), a lexical word *kertova* has to be added in Finnish. The addition can be regarded as more or less obligatory in this context: it is caused by the nature of the Finnish language, where the relations referred to by prepositions in English are usually expressed through case endings (Ingo 2000). In example (9), the 'empty' verb *be* is replaced by a slightly more precise, yet frequent expression. This substitution, unlike the previous one, is at least to a certain extent optional, chosen by the translators. In both of these cases, the result is a somewhat clearer, more explicit sentence. Explicitness, in turn, normally makes a sentence more comprehensible (see p. 40). This might be the case here as well even though the difference appears not to be very significant. Besides, especially in example (8), the relative ease brought about by the explicitness of the Finnish phrase seems to be partly compensated for by premodification, which, in turn, is known to complicate the reading process (see pp. 67-68).

A final interesting detail on the lexical level, related to class shifts (i.e. 'translation equivalents belonging to a different class than the original items', Catford 1989:76), concerns the numeral expression *figure 8*. In the translation notes, translators were specifically told not to omit the number "because the shape of the figure is important". Yet, apparently because the literal translation (*numero 8*) would have led to some other problems with clause structures, for instance, the translators decided to omit it, substituting a noun, *kahdeksikko* 'an eight', for it. They also explained their decision, stating that the Finnish noun is a familiar term commonly used for the number 8 and that the shape of the figure can be seen from the picture accompanying the text. Whether the substitution of the noun for the numeral in this particular case actually has an effect on readability and comprehensibility is not known. What seems obvious, though, is that the more literal translation would have necessitated some major changes in the translation. Otherwise, the Finnish translation would have been cumbersome and thus also more difficult to understand.

From a stylistic point of view, on the other hand, this substitution may add to the informality of the Finnish text. Firstly, because the word as such is slightly more colloquial than *figure 8*. And secondly, because numerals, in general, seem to be more normal in formal scientific texts. As mentioned above, however, the significance of formality or informality on text comprehension is not fully established as yet.

4.1.2 Syntactic analysis

In a few instances, syntactic structures, especially as concerns verbal structures, are slightly simplified in the Finnish text. First, in one sentence (example 10) a participial phrase functioning as an embedding is simply omitted. The reason for this omission was probably that the translators wanted to avoid making any major changes to and adding to the number of words in this sentence.

- (10) ... contains sugar and minerals
mixed with about 80% water. ... sisältää sokeria ja kivennäis-
aineita *sekä* noin 80 % vettä.
(... contains sugar and minerals as
well as about 80% water'.)

Second, a couple of non-finite clauses are turned into finite main clauses. These changes too, are largely optional, not necessitated by any structural differences between the languages. These are illustrated by examples (11) and (12):

- (11) ... shakes her abdomen from side to side while *running* värisyttää takaruumistaan puolelta toiselle ja *kiertää* samalla...
(... shakes her abdomen from side to side and runs simultaneously ...')
- (12) Refer to the information *to answer* the questions which follow it. *Vastaa* sitä seuraaviin kysymyksiin tekstin pohjalta.
(Answer the questions following it on the basis of the text.)

And third, some passive constructions are changed into active constructions (see examples 13 and 14). This is largely due to the different way the passive is used and particularly to the lack of the agentive passive in the Finnish language (Lieko et al. 1999).

- (13) ... about one third of them *will be involved* noin kolmannes niistä *on mukana* ...
(... about one third of them take part in...')
- (14) ... which *is* then *made* into honey by the house bees. ... jonka pesässä pysyttelevät työmehiläiset sitten *valmistavat* hunajaksi.
(... which the bees staying in the hive then make into honey'.)

Simplification of syntactic structures often leads to sentences which are easier to process and comprehend, as amply attested to by readability research (see e.g. Bruce and Rubin 1988, Charrow 1988). For instance, finite clauses, which present information in a relatively explicit way, are

usually considered easier than non-finite clauses, where information is given in a more condensed form and where some part of the sentence or the clause may be omitted (see e.g. Anderson and Davison 1988). Similarly, active constructions are normally regarded as more redundant and hence less problematic than passive ones (see e.g. Horning 1993), as specifically stated in the instructions provided for translators (see Appendix 2). The Finnish translations for all these sentences, therefore, can be hypothesised to be less difficult than their counterparts in the English original.

On the other hand, there are also two sentences in which a relative clause in the English text is translated as a participial phrase in the Finnish text. Neither of these sentences, however, is part of the text proper; instead, both are from the question items. These are the following (examples 15 and 16):

- | | |
|--|--|
| (15) ... the questions <i>which follow it...</i> | ... sitä <i>seuraaviin</i> kysymyksiin ...
(... the questions following it ...') |
| (16) ... the type of the plant <i>the foragers have found.</i> | ... ravinnonetsijöiden <i>löytämän</i> kasvin tyyppi.
(... the type of the plant found by the foragers'.) |

The participial constructions in the Finnish translation cannot be considered absolutely obligatory in this context. Yet, participial constructions are used very widely in Finnish instead of, for instance, relative clauses (Ingo 2000). Besides, in both of these examples and especially in example (16), the participial construction is clearly a better and more fluent alternative than a relative clause. Knowing, however, that relative clauses are usually easier to understand than more condensed and less redundant participial phrases, one might conclude that here the Finnish constructions are likely to be more difficult than the English ones. The difficulty of the Finnish constructions is further emphasised by

premodification (see pp. 67-68) accompanying these participial constructions.

If, however, one takes a closer look at the sentences where relative clauses and subordinate clauses have been translated strictly as such, that is, as subordinate clauses, the situation becomes somewhat more complicated. The following sentences may serve as examples (examples 17 and 18):

- | | |
|--|---|
| <p>(17) Foragers let the other bees know where the source of the nectar is by performing a dance which gives information about the direction and the distance the bees will need to fly.</p> | <p>Ravinnonetsijät välittävät toisille mehiläisille tiedon siitä, missä mesipaikka on, esittämällä tanssin, joka kertoo sen suunnan ja etäisyyden, mihin mehiläisten pitää lentää.
(Foragers convey to the other bees the knowledge as to where the source of the nectar is by performing a dance which tells them the direction and the distance where the bees will need to fly.)</p> |
| <p>(18) If the middle part of the figure 8 points straight up it means that bees can find the food if they fly straight towards the sun.</p> | <p>Jos kahdeksikon keskiosa osoittaa kohtisuoraan ylös, se merkitsee, että mehiläiset löytävät ruokaa, jos lentävät suoraan kohti aurinkoa.
(If the middle part of the eight points straight up it means that bees will find food if they fly straight towards the sun.)</p> |

In example (17), a Finn intuitively feels that there are too many relative clauses (three) in the sentence. Therefore, a Finn would normally replace, for instance, the first relative clause by a nominal phrase, *tiedon mesipaikan sijainnista* ('knowledge of the location of the source of the nectar'). When reading the second sentence (example 18), a Finn would also feel somewhat lost, because they are usually taught, when still at school, not to use too many (similar) subordinate clauses in one sentence.

In cases like these, therefore, Finnish readers are faced with sentences which they feel are somehow odd, awkward and unnatural. This is

because such sentences fail to conform to the conventions of the Finnish language. Namely, Finnish is a language favouring ample use of embeddings, especially participial phrases, infinitives and nominalizations. These are used much more frequently than subordinate and main clauses. Furthermore, finite clauses appear to be used less frequently in Finnish than in English. (Ingo 2000.) Yet, in this text (i.e. the text proper, excluding the question items) the situation is quite the opposite, with the Finnish translation containing more finite clauses than the English original. Taken categorically, this might mean that the Finnish text with its greater number of more redundant finite clauses is somewhat easier to comprehend than the English one. Considered from the angle of conventions, however, the situation becomes somewhat less straightforward. The reason for this is that disregard of conventions leads to a text being against the expectations of the reader, which usually makes the text more difficult to process and understand. Therefore, in for instance, examples (17) and (18), the subordinate clauses in the Finnish text, which seem to violate Finnish conventions, can be hypothesised to be slightly more difficult to comprehend than the corresponding English clauses.

Besides, the conventions have to be respected also on the level of the text as a whole. Hence, if, say, some of the embeddings are omitted from the translation – as is the case in, for instance, examples (10) and (11) – the loss, as compared to the normal frequency of embeddings in Finnish texts, should be compensated for by making pragmatic adaptations, that is, by using embeddings in some other parts of the text – in examples (17) and (18), for example. Interestingly enough, the compensations would also have greatly compensated for the differences in difficulty between the texts as concerns the different phrase and clause types.

These conventions also apply to cases where non-finite clauses have been translated literally as non-finite clauses, as seen from example (19):

- (19) The house bees move the nectar around with their mandibles, *exposing* it to the warm dry air of the hive. Pesätyöläiset kuljettelevat mettä leuoissaan *altistaen* sen pesän lämpimälle kuivalle ilmalle. ('The house bees move the nectar around with their jaws, exposing it to the warm dry air of the nest.')

Here the non-finite participial form *exposing* has been translated as an infinitive form, *altistaen*. Understandable though this rendering is, considering the knowledge that the translators must have had of the different levels of redundancy and readability of different phrase and clause types, most Finns would apparently regard this non-finite construction as slightly strange, out of place. This is due to the fact that this modal structure is mostly used when expressing manner and in more formal and elevated style (Itkonen 1991, Ingo 2000). Normally, the embedding would be translated as, for instance, a finite compound clause, e.g. *ja altistavat sen näin pesän lämpimälle ilmalle* ('and expose it thus to the warm dry air of the hive').

All in all, subordinate clauses and embeddings seem to present a special kind of dilemma to translations used in literacy studies. On one hand, subordinate clauses are considered easier because they are more redundant and explicit – and because they are not as heavily premodified as participial phrases. On the other hand, if used excessively and in places where they should not as compared to the normal frequency and distribution of different phrase and clause types in a language, subordinate clauses may violate the principle of naturalness and acceptability – which, in turn, may make a text more difficult to understand. One answer to this problem, as we have seen, seems to be compensations.

Passives are another example of problems caused by different language systems. In Finnish, where the agentive passive is lacking and where the passive has not the same kind of thematic function as it has in English, the use of the passive is not as frequent as it is in English.

Agentive passive constructions, in particular, usually have to be translated into Finnish as active constructions. (See e.g. Lieko et al. 1999.) Therefore, a literal correspondence as regards passive and active constructions between these two languages is impossible. Again, compensations might provide one means of tackling this problem.

From a stylistic point of view, the choice of syntactic structures is not without significance either. In line with a general stylistic difference between the languages, the Finnish text proper (i.e. excluding the question items), where there are fewer embeddings and passives than in the English original – and that would be the case in normal Finnish texts of this genre – is slightly less formal than the English one. Again, more research is needed to find out whether this difference in the level of formality has any bearing on the comprehension of texts.

A second syntactic problem relates to the use of pronouns. Another look at examples (17) and (18) discussed above will illustrate this:

- | | |
|--|--|
| <p>(17) ... which gives information about the direction and <i>the distance</i> the bees will need to fly.</p> | <p>... joka kertoo sen suunnan ja <i>etäisyyden</i>, <i>mihin</i> mehiläisten pitää lentää.
(‘... which tells them the direction and the distance where the bees will need to fly.’)</p> |
|--|--|

In the above sentence, the pronoun *mihin* is used in exact imitation of its English equivalent *where*. This, however, results in an ungrammatical Finnish structure because in Finnish – a language rich in cases – relative pronouns have to be in agreement with all the different functions they have in the different clauses of the sentence (Lieko et al. 1999). In this particular case, the pronoun is inflected to go with the first noun *suunnan* but not with the latter one *etäisyyden* (with which the form *joka* should be used). To make this sentence grammatical, one might say, for example, ... *joka kertoo mihin suuntaan ja kuinka kauas mehiläisten pitää lentää* (‘... which tells them into what direction and how far the bees will need to fly’).

- (18) If the middle part of the figure 8 points straight up *it* means that bees can find the food if they fly straight towards the sun.
- Jos kahdeksikon keskiosa osoittaa kohtisuoraan ylös, *se* merkitsee, että mehiläiset löytävät ruokaa, jos lentävät suoraan kohti aurinkoa.
(‘If the middle part of the eight points straight up it means that bees will find food if they fly straight towards the sun.’)

In example (18), the demonstrative pronoun *se* is used as a direct translation of *it*. In Finnish, however, the result seems to be somewhat heavy and clumsy. To make the sentence sound more fluent Finnish, more comprehensive changes would have to be done. The sentence might read, for instance, *Se että kahdeksikon keskiosa osoittaa kohtisuoraan ylös, merkitsee...* (‘That the middle part of the eight points straight up means ...’) or *Jos kahdeksikon keskiosa osoittaa kohtisuoraan ylös, mehiläiset tietävät ...* (‘If the middle part of the eight points straight up, the bees will know ...’).

Thus, it appears that both of these pronominal problems derive from too strict an adherence to the original text: the translators have tried to follow the original text as closely as possible. This, however, results in somewhat clumsy or ungrammatical sentences, where the decisions made are likely to distract readers and complicate their understanding of the text.

Still one sentence where pronouns seem to bring about some slight problems (which, in fact, might also be discussed in the textual analysis) is found in the question items. The sentence reads as follows (example 20):

- (20) The proportion of sugar to minerals in the substance.
- Aineen sokeripitoisuus suhteessa *sen* kivennäisaineisiin.
(‘The proportion of sugar in the substance in relation to its minerals.’)

The use of the pronoun *sen* ‘its’ in this sentence might be to some extent ambiguous. Grammatically the pronoun might refer either to the noun in the genitive case *aineen* or to the noun in the nominative case

sokeripitoisuus. The context, of course, helps to decide what is actually referred to by the pronoun. Yet, to make the reference completely unambiguous and straightforward, one would have to substitute a noun, for instance, *aineen* ('in the substance') for the pronoun. This, again, would result in an undue repetition of *aine* (three times) in this short sentence. Accordingly, avoidance of tautology as well as the translators' effort not to make the Finnish sentence too explicit as compared to the English one are probably the reasons why the pronoun was chosen instead. As it is, however, some Finnish readers may find the sentence slightly confusing and possibly hard to understand.

A third syntactic problem in this text has to do with word order. While word order in a synthetic language like Finnish is usually relatively free and often to a certain extent a matter of information structure, certain alternatives are often regarded as more normal than others (Ingo 2000). Thus, the word order in example (21) might sound slightly odd to some Finns:

- | | |
|---|--|
| <p>(21) At any one time the bees in a hive
<i>usually gather</i> nectar from the same
type of blossom ...</p> | <p>Saman kauden aikana pesän
mehiläiset <i>yleensä keräävät</i> mettä
samantyyppisistä kukinnoista ...
(‘During the same period the bees in
the hive usually gather nectar from
the same type of blossom ...’)</p> |
|---|--|

In Finnish, the normal unmarked place of adverbs like *yleensä* ‘usually’ is after the verb. Before the verb they usually get an extra stress. Yet, in this particular sentence, the reason for placing the adverb before the verb is presumably an overt influence by the original text. Consequently, when reading this sentence, a Finn might have to stop to wonder why the adverb has been placed the way it has. In this way, the placement of the adverb might have a negative effect on the readability of this sentence. Admittedly, though, with the increase of English influence on the Finnish language, through translations or otherwise, it might be hypothesised that

the Finnish language, including its word order, is changing little by little. Therefore, Finns today are probably more and more used to seeing, for instance, adverbs placed before verbs, and many Finnish readers would apparently not find anything strange in the word order of the sentence above.

Taken together, the pronominal and word order problems as well as a considerable number of the problems related to the choice of different phrase and clause types in this text appear to be examples of problems attributable, not to differences in language systems – with the exception of the use of passives – but to the strategy adopted for translating this text, which seems to aim at as literal translations as possible. These literal translations were evidently made with a view to ensuring equivalence in difficulty between the two texts. In many cases, however, the result appears to be rather the opposite: constructions which are slightly awkward or ungrammatical and which can therefore be hypothesised to add to the difficulty in readability of the Finnish text.

As concerns the final syntactic problem in this text, namely modification, the situation seems to be quite the contrary. In examples (8) and (16), already discussed above, we saw that in the Finnish translation the modifiers precede the head nouns; in the English original, by contrast, the nouns are modified by phrases following them. In the following, the head nouns are in italics.

(8) *a booklet* about bees

mehiläisistä kertova *kirjanen*
(*'an about bees telling booklet')

(16) ... *the type* of the plant the foragers
have found.

... ravinnonetsijöiden löytämän
kasvin *tyyppi*.
(... *'of by the foragers found plant
the type'.)

Here the discrepancy is caused by an elementary difference between the language systems and is thus virtually impossible to avoid. Unlike

English, which uses postmodification to modify nominal and adjectival phrases, the Finnish language – owing to its synthetic nature, among other things – favours premodification (Ingo 2000). This discrepancy, in turn, may have certain effects on the comprehension of texts. This is because heavy premodification, notably heavy information load before the head noun, is known to place an extra burden on the short-term memory and the processing of a text of the reader (see e.g. Nida and Taber 1982, Anderson and Davison 1988). Hence, when it comes to modification, the Finnish translation might be hypothesised to be slightly more difficult than the original.

4.1.3 Textual analysis

On the textual level, a first problem has to do with reference and reference chains, especially as concerns the use of pronouns. In the Finnish translation, there are two sentences where the reference chain has been changed – against the specific recommendations provided for translators (see p. 49). One of the sentences reads as follows (example 22):

- (22) If *it* [the food] is a long way away *she* shakes her abdomen for a long time. Jos *ruoka* on kaukana, *mehiläinen* väriseyttää takaruumistaan pitkän aikaa.
 ('If the food is a long way away the bee shakes her abdomen for a long time.')

In this sentence, the Finnish translation uses nouns instead of the personal pronouns that are utilised in the English original. This dissimilarity, again, is due to a difference between the language systems. In Finnish, the personal pronoun *hän* 'she' can normally only refer to human nouns; in case of non-human nouns the demonstrative pronoun *se* 'it' is used (Lieko et al. 1999). In this particular sentence, if pronominal reference were chosen, *se* would have to be used twice, in both of these cases, which

would make the sentence absurd, i.e. *Jos se on kaukana, se värisyttää takaruumistaan ...* ('If it is a long way away, it shakes its abdomen ...'). To avoid this absurdity, then, the Finnish translation substitutes nouns for the pronouns. Yet, as nouns are known to be more explicit than pronouns (see e.g. Horning 1993), it is very likely that in this case the Finnish sentence is easier to understand than the English one.

In another case, however, the result is quite the contrary. Example (23) consists of the first two sentences given as initial instructions to the reader.

- | | |
|---|--|
| <p>(23) <i>The information</i> on this page and the next page is from a booklet about bees. Refer to <i>the information</i> to answer the questions which follow <i>it</i>.</p> | <p>Tällä ja seuraavalla sivulla esitetyt <i>tiedot</i> ovat peräisin eräästä mehiläisistä kertovasta vihkosesta. Vastaa <i>sitä</i> seuraaviin kysymyksiin <i>tekstin</i> pohjalta.
 ('The information on this page and the next page are from a booklet telling about bees. Answer the questions following it on the basis of the text.')</p> |
|---|--|

In the first sentence, both of the texts refer to *information*. In the second sentence, however, the Finnish translation chooses to reverse the information structure, whereby also the reference chain found in the English text, *the information* and *it*, is lost. In the Finnish text, a new word, *tekstin* ('of the text'), appears, which might be regarded as referring either to *information* or *booklet*. The problem, though, is the pronoun *sitä* 'it', of which it is hard to know what it actually refers to. Grammatically, considering that it is in singular, the pronoun seems to refer to the last, singular noun in the preceding sentence, i.e. *vihkonen* 'booklet'. This, of course, is absurd and confusing and makes the sentence almost incomprehensible. Admittedly, from the viewpoint of understanding the text as a whole and the questions, this confusion in a sentence which, somewhat modified, is repeated and given more or less routinely before every text, is obviously of minor importance. Yet, it emphasises the need

(25) shakes *her* abdomen

värisyttää takaruumistaan

The omission of the demonstrative pronoun *this* (example 24) from the Finnish translation also appears to have an interesting stylistic effect on the text, decreasing the sense of closeness between writer and reader (Mauranen 1992). On the whole, and in keeping with a general stylistic difference between the two languages, the tone of the Finnish translation thus appears to be slightly more neutral and detached than that of the English original. What kind of influence this, in turn, has on readers and their understanding of a text is an interesting question, which, however, has not been much researched into as yet.

Another textual phenomenon, information structure, is mostly retained as such in the Finnish translation. Nevertheless, because of the different way existential structures are formed and the lack of the agentive passive in Finnish (for the passive, see pp. 63-64), the word order has to be changed in one sentence (example 26):

(26) If *there* are 60,000 bees in a hive about one third of them will be involved in gathering nectar which is then made into honey by the house bees.

Jos *pesässä* on 60 000 mehiläistä, noin kolmannes niistä on mukana keräämässä mettä, jonka *pesässä* pysyttelevät mehiläiset sitten valmistavat hunajaksi.

(*'If in a hive are 60,000 bees, about one third of them will take part in gathering nectar which the bees staying in the hive then make into honey.')

Finnish has often been described as a language lacking formal subjects. While this is not quite the case, formal subjects are, indeed, extremely rare in Finnish. In line with this, Finnish also lacks the existential structure corresponding to the English construction formed with the help of the formal subject *there*. (Ingo 2000.) The Finnish way of forming existential clauses consists of reversing the normal SV word order and placing the adverbial at the head of the clause.

What kind of influence this difference in information structure brought about by the dissimilarity in existential structures has on the comprehensibility of the sentences is hard to say. Both sentences, in fact, seem to be thematically rather complicated. In the English text, the complexity is caused by the dummy subject, which is usually considered to add to the abstractness and difficulty of a sentence (Horning 1993). In the Finnish text, on the other hand, the difficulty appears to be dependent on whether Finnish readers experience the concept *pesässä* ('in a hive') to be new or given information: for readers who regard it as new, that is, as not deducible from the previous text, the clause can be hypothesised to be difficult because it violates the "given information first" rule. Besides, a theme that is not the syntactic subject of the clause, as is the case with *pesässä*, is usually felt to be slightly more difficult to understand than themes which also function as the grammatical subjects of the clauses (cf. Lautamatti 1987). Apart from these language-specific factors, the thematic structures of both of the texts are further complicated by the fact that the sentences start with subordinate clauses, which thus act as the themes of the sentences. This, in turn, might mean that it is not quite easy to see what the sentence as a whole is about. Moreover, it means heavier information load before the main clause and the main verb and extra burden on the short-term memory of the reader.

Additionally, in one of the questions following the text proper, the thematic structure is changed. This, in fact, is against the instructions provided for translators, which advised them to keep the word order of the stem the same as far as possible (see p. 50). It is easy to see why this recommendation was given when we consider the consequences the change has in example (27).

(27) *In the dance*, what does the bee do to show how far the food is from the hive?

Mitä *mehiläinen* tekee tanssissa näyttääkseen, miten kaukana ruoka on pesältä? ('What does the bee do in the dance to show how far the food is from the hive?')

Here the two texts seem to concentrate on and talk about slightly differing topics and themes. In the English question, the attention of the reader is directed to *the dance*, which functions as the fronting frame and the theme of the sentence. In the Finnish question, the focus is exclusively on *mehiläinen* 'the bee', which, apart from being the theme, is also the syntactic as well as the psychological subject of the sentence. This thematic discrepancy is due to the structure of the Finnish language and especially of Finnish interrogative sentences, which always start with an interrogative word (Ingo 2000). Because of this dissimilarity in point of view, however, English and Finnish readers, when faced with and answering this question, might be expected to focus on somewhat different aspects. For the sake of objectivity, then, this should be taken into account when assessing and scoring the answers of the testees.

4.1.4 Summary

All in all, the Finnish translation follows the original text closely. The problem, in fact, is that sometimes it seems to do this even too closely. Hence, the impression one gets every now and then while reading the translation is that "normally you would not say like this". The reader feels that the translators have had to compromise and make some sacrifices so as to stick as close to the original as possible. The result, therefore, is a text from which it can at times be seen that it is not a normal text originally written in Finnish but, in places, a more or less literal translation from another language – a classical case of translationese (Toury 1980, Nida and Taber 1982).

This, however, is not the case with vocabulary. Contrary to the recommendations given to translators (see p. 49), the Finnish translation uses, as a whole, more familiar and, in a few places, more explicit terms than the original. This, as we have seen, is largely due to the very structure of Finnish vocabulary, where the scope of stylistic variation seems to be

more restricted than in English. As a result, though, when it comes to vocabulary, the Finnish text is obviously felt to be somewhat easier and less formal than the English one.

On the syntactic level, likewise, the Finnish translation is as a general rule slightly less complicated. This applies especially to the frequency of different types of phrases and clauses and passives. The less frequent use of passives in Finnish largely results from a language system difference, as explained above. Additionally, it is on this level in particular that the reader is presented with somewhat unnatural constructions, brought about by too strict an adherence to the original text. Of these, a couple of pronominal problems can even be regarded as more or less ungrammatical. In cases like these, it can be hypothesised that strict adherence to the original, which is obviously thought to make the Finnish sentences equivalent in difficulty with the original ones, actually leads to them being slightly more difficult and less equivalent in this respect. Even more interesting, however, is the tendency to disregard the Finnish conventions concerning the different phrase and clause types, which, in turn, makes the Finnish text slightly odd. To produce a natural translation, true to the conventions of the Finnish language, the Finnish translation could have resorted to pragmatic adaptations and compensations. These compensations, in fact, would also have made the two texts more alike as far as text difficulty is concerned. Stylistically, the unusually great number of subordinate clauses in the Finnish text makes the text less formal than the original and even somewhat naive, as compared to other Finnish texts of this genre.

Textually, the Finnish translation is very much like the original. In the text proper, for instance, the information structure coincides with that of the English text in all sentences except one. In one of the questions (example 27), however, because of language system differences, the thematic structures of the two texts differ to a certain extent, also bringing along some changes in the point of view. This, again, might be further

reflected in the answers the testees give to the question, which is a point worth bearing in mind in tests assessing text comprehension across languages. As for reference chains, these are mostly retained as such, as suggested in the instructions. Yet, there are a few exceptions. The most interesting one of these, the one caused by the rules governing pronominal usage in Finnish (example 22), leads to one Finnish sentence substituting nouns for pronouns and thereby being slightly more explicit and readable than its counterpart in English. Moreover, because of these pronominal rules, the Finnish translation might also be characterised as more matter-of-fact and detached, which, however, is in harmony with what has been found to be a general stylistic difference between the languages.

4.2 Text 2 – *Bullying*

The text is an article originally taken from a Japanese newspaper. The article reports in a rather detailed manner on a survey conducted by the Japanese Education Ministry on bullying at school. The text is mainly informative, yet at the same time it seeks to present information in such a way as to arouse interest. The article thus falls somewhere between more purely informative texts and literary texts; it shares features of both of the styles, being, however, closer to the factual style.

4.2.1 Lexical analysis

As in the text *Bees*, a discrepancy in vocabulary can be seen between the English original and the Finnish translation. This discrepancy, as we have seen (see pp. 55-56), is due to a difference between the language systems concerning stylistic variation. Accordingly, a number of Latin-based terms in the English text are replaced by more generic, familiar and frequent words of native origin in the Finnish one. This is illustrated by examples (28) – (32):

(28) percentage	osa ('part')
(29) decrease	aleta ('fall')
(30) conduct	tehdä ('do')
(31) prefecture	maakunta ('province')
(32) extort	kiristää ('obtain by illegal means')

Here, however, this situation appears to be somewhat different from and the problem slightly less important than that in the text *Bees*, that is, the text from the field of biology. This is because in this text some of the English terms (e.g. *decrease*, *conduct*) are not restricted to any specific scientific domain; instead, their scope seems to be relatively wide. Thus, an average reader of 15 years of age might be expected to be familiar with these words and would apparently not find them too hard to understand (see Anderson and Davison 1988). Besides, Nida and Taber (1982:149-150) suggest that within "a domain of general cultural interest", specific terms might be even easier to understand than generic ones, because the latter are often abstract and therefore difficult to define. All in all, then, it might be hypothesised that in this text the difference in difficulty between the English original and the Finnish translation may vary according to the range of use of the word – and the level of the reading skills of the reader (see Anderson and Davison 1988).

Stylistically, this lexical difference means that the Finnish text is slightly less formal than the original. This level of formality, however, suits well Finnish texts of this genre. This is inversely shown by example (33), where a Latin-based word has been translated as such into Finnish:

(33) ... parents and teachers should have closer <i>contact</i> with children vanhempien ja opettajien tulisi olla läheisemmässä <i>kontaktissa</i> lapsiin ... (‘... parents and teachers should be in closer contact with children ...’)
---	---

Kontakti, a word of foreign origin, is apparently not considered highly formal in Finnish; rather, it seems to be getting part of everyday vocabulary. Nevertheless, to some Finns this term may sound slightly

bureaucratic – officialese – in this text. Here, then, we are reminded of the stylistic consequences of foreign-based words for Finnish texts and the fact that the range of use of foreign terms is more limited in Finnish than it is in English. As for the consequences of this stylistic difference for text difficulty, more research is needed to find out what kind of effect formality, for instance, has on readers and their comprehending a text (see p. 56).

4.2.2 Syntactic analysis

The syntactic structures and especially the verb forms of the original text are very complex indeed with ample use of subordinate clauses, non-finite clauses, verbless clauses and passives. Unlike in the text *Bees*, however, in this text these constructions are usually not translated as such. For instance, in the original text, there are in all 15 participial phrases. Of these only six are retained as such in the Finnish translation. Hence, what follows is a discussion on the different phrase and clause types and verb forms and some of the problems encountered when translating them into Finnish while trying to keep the level of difficulty unchanged.

To start with, in quite a number of sentences, the Finnish translation replaces subordinate clauses by participial constructions, as shown by examples (34) and (35):

- | | |
|---|--|
| (34) ... said <i>they face</i> bullying ... | ... kertoi <i>kokeneensa</i> kiusaamista ...
(*'... told having experienced bullying...') |
| (35) ... said <i>they also have been</i> bullied. | ... sanoi myös <i>tulleensa</i> kiusatuiksi.
(*'... said also having been bullied'.) |

These renderings can hardly be regarded as absolutely obligatory. Yet, in Finnish past participles in the active voice are normal and fluent usage in sentences like these, where the participial construction, replacing a

subordinate clause, functions as the object of a verb denoting speaking, for instance (Ingo 2000). As a consequence, however, the Finnish sentences, which present information in a more condensed way, are presumably the ones that are felt to be more difficult to understand.

In examples (36) – (38), however, the situation is quite the opposite. Here the Finnish translation substitutes finite subordinate clauses, either relative or temporal, for participial phrases. In example (37), an extra noun phrase is added.

- | | |
|---|--|
| (36) The survey, <i>conducted</i> ... | Tutkimuksessa, <i>joka tehtiin</i> ...
(‘In the survey that was carried out ...’) |
| (37) ... 22 per cent ... said they face bullying, <i>compared</i> with 13 per cent of junior high school children ... | ... 22 prosenttia ... kertoi kokeneensa kiusaamista, <i>kun taas vastaava luku oli</i> yläasteen oppilailla 13 prosenttia...
(‘... 22 per cent ... told they had been bullied, whereas the corresponding figure was, for junior high school children, 13 per cent ...’) |
| (38) ... a note <i>saying</i> ... | ... viestin, <i>jossa kertoi</i> ... (‘... a note where he told ...’) |

In example (39), a long complex sentence is even split into two separate sentences when translated into Finnish.

- | | |
|--|---|
| (39) School bullying became a major issue in Japan after 13-year-old Kiyoteru Okouchi hanged himself in Nishio, Aichi Prefecture, in the fall of 1994, <i>leaving</i> a note ... | Koulukiusaaminen nousi Japanissa merkittäväksi puheenaiheeksi sen jälkeen, kun 13-vuotias Kiyoteru Okouchi hirtti itsensä Nishiossa, Aichin maakunnassa, syksyllä 1994. <i>Hän oli jättänyt</i> jälkeensä viestin ...
(‘School bullying became, in Japan, a major issue after 13-year-old Kiyoteru Okouchi hanged himself in Nishio, Aichi Prefecture, in the fall of 1994. He had left a note ...’) |
|--|---|

All the above substitutions (examples 36 – 39) are largely due to the different way participles and embeddings operate in the two languages. Besides, unlike in English, relative pronouns and conjunctions, for instance, cannot be omitted in Finnish (Ingo 2000). As a result of this greater redundancy and explicitness, all the Finnish sentences may be expected to be easier to understand than the English ones. This is especially true of example (39), where the Finnish translation uses two sentences instead of the one used in English.

The dilemma concerning participial constructions and different phrase and clause types, however, is not limited to the distinction between non-finite and finite clauses. In the following sentence (example 40), the Finnish translation replaces a participle by a verbless adverbial phrase (for verbless or predicatless phrases and clauses, see Ingo 2000):

- (40) Only one in three parents *polled* is aware ... Vain joka kolmas vanhempi on *kyselyjen mukaan* tietoinen ...
 ('Only one in three parents is, according to polls, aware ...')

Here again, a participle would not have been a natural Finnish translation for the English *polled*. Therefore, the participle is turned into a noun, *kysely*, (a class shift) modified by a postposition, *mukaan*. In the initial guidelines, translators were told to avoid as far as possible substituting nouns for verbs, for example, because nouns often add to the degree of abstraction and, consequently, the difficulty of a text (see p. 49). Yet, in this case also the original structure is condensed and impersonal in form. Both constructions can thus be hypothesised to complicate comprehension (see e.g. Charrow 1988).

The problem concerning clauses without verbs also works the other way round. In example (41), the English text uses a nominal phrase modified by a prepositional phrase, which in the Finnish translation is replaced by a participial construction:

- (41) ... the reason *behind* bullying kiusaamisen *takana piilevää* syytä
 ... (*... the behind bullying lying
 reason ...')

The resulting participial construction, used attributively, is very common in Finnish. This is because prepositions are rare in Finnish. Therefore, participles are often needed to specify relations referred to by, for instance, English prepositions (see p. 57). As a result, then, the Finnish sentence, where an extra word *piilevää* is added, appears to be slightly more explicit than its English counterpart, which, in turn, is normally conducive to ease of comprehension. Interestingly enough, though, this explicitness seems to be largely compensated for by premodification, which is known to cause an extra load on the reading process and short-term memory of the reader (see also pp. 67-68). Hence, from the point of view of modification the Finnish sentence seems to be the more difficult one.

In example (42), taken from the question items, an English adjectival phrase becomes a finite clause when translated into Finnish:

- (42) What percentage of teachers ... was Kuinka suuri osa ... opettajista *ei*
unaware that ... *tiennyt, että* ... ('What percentage of
 teachers ... did not know that ...')

Finnish does have an adjective equivalent to the English *unaware*, specifically *tietämätön*. Yet, this adjectival expression is often regarded as stylistically somewhat rigid, even officialese. In Finnish, therefore, this adjective is often replaced by a more neutral verbal phrase; a further alteration consists of a unit shift (see p. 70), whereby the negative prefix *un-* becomes a free morpheme, *ei*, which in Finnish functions as a verb. As a result, then, the Finnish phrase, where a verb has been substituted for the adjective and where a free morpheme replaces an affix, seems to be more explicit and easier to understand than the phrase used in the English text.

Still another way of translating a verbless clause into Finnish is exemplified by the following sentence (example 43):

- | | |
|---|--|
| (43) The survey, <i>the first of its kind</i> conducted by the Ministry, covered students ... | Tutkimus on ensimmäinen tämänkaltaisen selvitys ministeriöltä, ja sen piiriin kuului oppilaita
('The survey is the first account of this kind by the Ministry, and within the compass of it were students ...') |
|---|--|

Here the English sentence contains one main clause, whose subject is modified by a verbless clause, which, again, is modified by a participial embedding. The Finnish sentence, on the other hand, is made up of two main clauses. While other solutions would have been possible here, some major changes apparently had to be done to account for the lack of the agentive passive and the rareness of inanimate subjects in Finnish (for inanimate subjects, see pp. 83-84). What is of special interest to us here, though, is that the verbless clause is translated as a finite main clause into Finnish. At the same time, an extra noun, *selvitys* 'account' is added. Given that finite clauses contain more information and are more redundant than verbless ones and that the addition of the extra noun makes the sentence more explicit, it may be hypothesised that in this case the Finnish sentence is the one easier to comprehend.

Apart from different phrase and clause types – finite, non-finite and verbless – also passive constructions are used differently in the two texts. In example (44), a passive construction in the English text is replaced by an active past participle in the Finnish translation:

- | | |
|--|---|
| (44) ... 18 per cent said they <i>had been told</i> of bullying by teachers. | ... 18 prosenttia kertoi <i>kuulleensa</i> kiusaamisesta opettajilta.
(*'... 18 per cent told having heard about bullying from teachers.') |
|--|---|

As referred to above (see e.g. pp. 63-64), the agentive passive does not exist in Finnish. Therefore, when translating the agentive passive, Finnish

often uses an active transitive clause with reversed word order (Lieko et al. 1999). Here, however, the translators have wanted to retain the information structure and the word order of the original as such. To do this, they have changed the verb *tell* to its opposite, *kuulla* 'hear'. Moreover, they have chosen to use a participial form instead of a subordinate clause, which, as we have seen (see pp. 77-78), is very common in Finnish in contexts like this. As for readability, this participial construction may be regarded as less redundant and therefore presumably more difficult than the subordinate clause that is used in English. This difference, however, seems to be at least partly compensated for by the fact that the English clause is in the passive voice.

On the other hand, in two sentences the Finnish translation uses passive constructions where the original uses nominal phrases modified by prepositions. This is seen from example (45):

- | | |
|---|--|
| (45) Only 3 per cent to 4 per cent of the parents learned of the bullying from their children, <i>according to the survey</i> . | Vain 3 – 4 prosenttia vanhemmista oli saanut tietää kiusaamisesta lapsiltaan, <i>tutkimuksessa todetaan</i> . ('Only 3 to 4 per cent of the parents had learned of the bullying from their children, in the survey it is stated.') |
|---|--|

Finnish does have a term corresponding to *according to*, namely *mukaan*, which is a postposition. This postposition, however, sounds unnatural at the end of a sentence. Therefore, if one wants to keep the information structure of the sentence the same as in the original, one has to use another structure to denote the meaning conveyed by *according to*. Here, this phrase is replaced by a passive finite clause. From the point of view of comprehensibility, both the constructions, one in a condensed form and the other in the passive voice, might be expected to make some extra demands on the reader and his/her comprehending the sentence. As regards comprehending the text as a whole, though, these phrases, which

function as comment clauses, reminding the reader every now and then of the fact that it is the survey the text is referring to, do not seem to be of major significance.

Taken together, this discussion on different phrase and clause types and verb forms depicts a complicated picture, where literal matches between the English original and the Finnish translation are rare. This, as we have seen, is largely due, on one hand, to major language system differences, because of which formal equivalence in terms of phrase and clause types and verb forms between English and Finnish is often absolutely impossible, and on the other hand, to the translation seeking to comply with the conventions of Finnish. We have also seen that the discrepancy in these syntactic structures may have certain effects on the level of difficulty of certain individual sentences. As a whole, however, these differences in difficulty appear to be largely compensated for by other linguistic phenomena or other parts of the text. All in all, this discussion thus seems to speak in favour of non-literal translations – also in cross-national literacy studies.

A second syntactic problem, closely related to the preceding one, has to do with inanimate subjects. This is illustrated by examples (46) and (47):

(46) <i>The survey also found ...</i>	<i>Tutkimuksessa todettiin myös ...</i> (‘In the survey it was also found ...’)
---------------------------------------	--

(47) <i>Why does the article mention ...</i>	<i>Miksi artikkelissa mainitaan ...</i> (‘Why, in the article, is it mentioned ...’)
--	---

In Finnish, there is quite a clear distinction between verbs that take an animate subject and those that take an inanimate subject. Unlike in English, inanimate subjects are normally not used in Finnish with verbs requiring an animate subject. Therefore, in translations into Finnish, these inanimate subjects usually become adverbials, and the verb forms also undergo certain changes. (Ingo 2000.) Thus, in examples (46) and (47), the

English structures consisting of an inanimate subject and an active finite verb are replaced by structures composed of an adverbial followed by a passive finite verb. As a consequence, the Finnish sentences, which are in the passive voice, might be expected to be slightly more difficult than the English sentences, which are in the active voice. This, however, seems to be largely counterbalanced by the use of inanimate subjects in the English sentences, which, for their part, are also known to be somewhat more abstract and harder to understand than constructions with animate subjects (as mentioned in the instructions given to translators; see Appendix 2).

In example (48), the English text uses an inanimate noun followed by a participial embedding modifying it. In Finnish, this is turned into a structure consisting of an inanimate noun modified by a relative clause. Furthermore, the relative pronoun of the relative clause is an adverbial, whereas the subject, included in the predicate (*kertoi* 'told') of the clause, seems to refer to *Kiyoteru Okouchi*, mentioned earlier. The verb of the Finnish relative clause is thus an active finite form.

(48) ... a note saying viestin, jossa kertoi ... (... a message where he told ...')
----------------------------	---

In this case, the Finnish sentence might probably be considered the less difficult one. This is because the Finnish sentence substitutes, first, a more explicit finite clause for a condensed participial phrase and, second, an animate subject for a slightly more abstract inanimate subject.

A third syntactic phenomenon (also discussed above; see pp. 67-68) that from the point of view of text difficulty might be considered a problem is modification. By reason of a key difference between the language systems, the English nouns in examples (49) – (51) (where the head nouns are in italics) are modified by phrases that follow them; in the Finnish translation, by contrast, the modifiers precede the head nouns.

- (49) ... of the *parents* of bullied primary school children ala-asteella kiusattujen oppilaiden *vanhemmista* ...
 (*'... at primary school bullied school children's parents ...')
- (50) Of the *parents* aware of bullying ... Kiusaamisesta tietoisista *vanhemmista* ...
 (*'Of bullying aware parents ...')
- (51) ... of *bullying* aimed at their students. ... oppilaisiinsa kohdistuvasta *kiusaamisesta*.
 (*'... at their students targeted bullying'.)

This difference, as we have seen, is due to the fact that the Finnish language favours premodification, whereas in English postmodification is the common usage. Premodification, in turn, usually puts an extra load on the short-term memory of the reader. Consequently, it might be hypothesised that as far as premodification is concerned, the Finnish translation is more difficult to process and understand than the original.

In sum, the syntactic structures in the English original and the Finnish translation are very different. This is mostly because there are important language system differences between the two languages but also because the translation appears to respect, for instance, the Finnish conventions concerning different phrase and clause types. From the point of view of readability and text difficulty this discrepancy means that absolute equivalence between individual English and Finnish sentences is seldom possible. Besides, thanks to its greater explicitness, the Finnish translation might be, in places, somewhat easier to understand. On the whole, though, both the texts are syntactically complex and apparently difficult to understand. They simply attain this complexity by different means and partly in different places as well. Taken together, then, this syntactic analysis seems to show that in translating texts included in multinational literacy studies not too much emphasis should be put on literal correspondence.

As regards style, by reason of the syntactic structures used in the two texts, both the English original and the Finnish translation are highly formal and impersonal. The Finnish text, however, where some of the structures seem to be a little lighter, might perhaps be described as slightly less formal – in keeping with the general stylistic difference between the two languages. Here, again, the effects of this difference on text comprehension are not known as yet.

4.2.3 Textual analysis

The first problem on the textual level concerns reference chains and pronouns. Mostly the reference chains in the Finnish translation have been kept the same as in the original; yet, in a couple of sentences, some minor changes have been made. Example (52) is from the instructions given to the reader:

- | | |
|--|---|
| (52) Refer to <i>it</i> to answer the questions below. | Vastaa alla oleviin kysymyksiin <i>kyseisen artikkelin</i> pohjalta.
(‘Answer the questions found below on the basis of the article in question.’) |
|--|---|

In this sentence, the Finnish translation replaces the pronoun *it* by a noun, *artikkeli* ‘article’. This substitution can be regarded as more or less obligatory in this context, where the information structure and word order has been changed and where a demonstrative pronoun would have been ambiguous. Because of this substitution, however, the Finnish sentence ends up being more explicit, which, in turn, usually adds to ease of comprehension. In this case, of course, this difference in reference chains is presumably not as significant as it would have been if the sentence had been part of the text proper or the questions. Here the difference does not seem to have any greater influence on understanding the text itself or the questions.

Another way of changing a reference chain can be seen in example (53), where the Finnish translation substitutes a demonstrative pronoun for a definite article:

- (53) *The figure was 34 per cent for the parents of junior high school children ...* Yläasteen oppilaiden vanhemmilla *tämä* luku oli ...
 ('For the parents of junior high school children this figure was ...')

In Finnish articles do not exist. To denote definiteness and indefiniteness – which is considered of less importance than it is in English – Finnish uses, for instance, word order (Ingo 2000). In example (53), however, the word order does not seem to be enough to make the reference sufficiently clear and visible. Therefore, to elucidate the reference, the Finnish text uses a demonstrative pronoun, which can be expected to add somewhat to the explicitness of the sentence and the cohesiveness of the text, making thus the text slightly easier to read and understand. Here again, the difference is probably not a very important one, since the definite article found in the English text has largely the same functions as the demonstrative pronoun, be it to a lesser extent (see e.g. Mauranen 1992). Considering the thematic functions of the definite article related to cohesion, for instance, this sentence may thus, in fact, serve as a reminder of a very fundamental difference between the languages, the lack of articles in Finnish, which, in turn, might possibly have a slightly negative impact on the comprehensibility of Finnish texts.

Still another major difference in reference chains (referred to on page 71) between the two texts is that in the Finnish translation most of the personal and possessive pronouns are replaced by possessive suffixes. These unit shifts (see p. 70) are illustrated by examples (54) and (55):

- (54) ... said *they* have bullied kertoi kiusanneensa ...
 (*'... told having bullied ...')

- (55) ... of bullying targeted at *their* children *lapsiinsa* kohdistuvasta kiusaamisesta ...
 (*'... at their children targeted bullying ...')

In example (54), the Finnish text uses a participial construction. In such constructions, the subject of the participial phrase is denoted by a possessive suffix attached to the participle if this subject is the same as that of the main clause (Ingo 2000). In example (55), on the other hand, the possessive suffix attached to the noun replaces a possessive pronoun, which is the normal usage in Finnish in unstressed contexts. Both of the above substitutions or unit shifts, then, are due to the structure of the Finnish language. Nonetheless, if one assumes that affixes are less explicit than, say, free morphemes, the Finnish structures with suffixes – and participial constructions and premodification – might probably be expected to be more difficult than their counterparts in the English text.

The way reference and pronouns are used in the two texts may have stylistic significance as well. For example, the demonstrative pronoun *tämä* in the Finnish translation helps to bring writer and reader somewhat closer to each other, thereby making the text slightly less impersonal. The omission of the personal and possessive pronouns, on the other hand, appears to have a contrary effect, leading to a greater sense of matter-of-factness in the Finnish text. As a whole, though, the style in the Finnish translation seems to fit in the frame of and mirror the basic stylistic difference between the two languages. The effects of these stylistic features on the reader and on text comprehension call for additional research.

As regards another phenomenon on the textual level, information structure, the Finnish translation largely follows the structure found in the original. A few minor differences can be seen, though, many of which are linked to the syntactic choices discussed above (e.g. the substitution of finite clauses for embeddings, which understandably changes the thematic structure of the sentence as well). We shall first have another look at one

example of this kind, notably example (43). This time the themes are in italics.

- (43) *The survey, the first of its kind conducted by the Ministry, covered ...* *Tutkimus on ensimmäinen tämänkaltainen selvitys ministeriöltä, ja sen piiriin kuului ...*
 ("The survey is the first account of this kind by the Ministry, and within the compass of it were ...')

In the English sentence, the theme is a long one, made up of a noun modified by a verbless clause. In the Finnish sentence, by contrast, where the verbless clause has been turned into a finite main clause, the theme consists of one word only; in addition, the theme of the other finite main clause of this compound sentence makes pronominal reference to this same theme. Considering that long themes mean more concepts, arguments and heavier information load before the main verb (see e.g. Bruce and Rubin 1988), it is very likely that the Finnish sentence is felt to be easier, not only because of its greater redundancy, but also because its right-branching does not place such a burden on short-term memory, thereby making it easier for the reader to process the text. To reduce this difference in difficulty, then, one might have translated the verbless clause as a relative clause, for instance, *Tutkimus, joka on ensimmäinen tämänkaltainen selvitys ministeriöltä, kattoi ...* ('The research, which is the first account of this kind by the Ministry, covered ...').

A contrary situation, however, is seen in example (56), which has also been discussed above. Here, again, the themes are in italics.

- (56) *The figure was 34 per cent for the parents of junior high school children ...* *Yläasteen oppilaiden vanhemmilla tämä luku oli 34 prosenttia ...*
 ('For the parents of junior high school children this figure was 34 per cent...')

In this case, the thematic structure of the Finnish sentence has been changed so as to make it sound more Finnish. Consequently, the theme in the Finnish sentence consists of several concepts, whereas the English one is made up of only one term. The greater number of concepts combined with the premodification found in the Finnish theme can be hypothesised to place some extra burden on the short-term memory of the reader, complicating to a certain extent his/her processing of the sentence. As a whole, though, this sentence appears to be much more straightforward than the one in the previous example. Besides, the demonstrative pronoun in the Finnish text helps to make the link to the preceding sentence more explicit. The difference thus seems to be of somewhat minor importance than in the previous case.

4.2.4 Summary

To sum up, the non-literal translation strategy adopted for translating this text seems to differ considerably from that applied in the previous text. Thus, a significant number of the structures used in the Finnish translation are not identical with those found in the original. In fact, it appears that, for the most part, they do not even strive to be. Rather, the Finnish translation evidently gives more weight to authenticity and naturalness, both as regards, for example, syntactic structures and style. Interestingly enough, however, even though there may be some minor differences in difficulty between the texts as far as individual structures are concerned, on the whole the texts do not seem to be too far from each other in this respect.

As regards vocabulary, the same basic language system difference that was seen in the previous text can be seen here as well. Accordingly, the words used in the Finnish translation tend to be somewhat less formal, less specific and more familiar than those in the original. Here, however, the difference seems to be slightly less significant. Additionally, the

consequences of this discrepancy for text comprehension may not be as straightforward as in *Bees*: there may be cases where the Finnish word is felt to be easier; in some other cases, by contrast, the English word – thanks to its greater specificity and concreteness – may be the one easier to understand. Likewise, by reason of the addition of a few words, largely necessitated by differences between the language systems, the Finnish translation ends up being slightly more explicit than the original.

On the syntactic level, the Finnish translation is very different from the original and perhaps slightly more explicit. Basically, as we have seen, this is due to major differences between the language systems. Besides, in translating this text, the translators have chosen to strive to respect the conventions of the Finnish language. As a result, the level of difficulty between the two texts may vary from sentence to sentence or even within a sentence. Taken together, though, a large number of these differences seem to be compensated for by other parts of the text or by other factors (e.g. premodification seems to counterbalance a large part of the greater explicitness found in the Finnish text). This suggests that strict adherence to the original structures on the sentence level or below, is not the key to maintaining the same level of difficulty in the translation; instead, compensations made within or – even more interestingly – across sentences appear to be a valuable means of increasing equivalence in difficulty between the texts. This does not mean, however, that there would be no limit to the freeness of the translation. Rather, finding the right strategy and the suitable level of freeness may sometimes be a challenge, as shown by example (42) above, for instance. Stylistically, in accordance with a fundamental difference between the two languages, the syntactic structures in the Finnish translation are perhaps slightly less formal than those in the original; yet, thanks to conformance to Finnish conventions, the style is very appropriate for Finnish texts of this genre.

Textually, the Finnish translation is not quite as near the original as in the case of the previous text. This is partly accounted for by the

differences in the syntactic structures, which, in turn, bring about differences in the information structure of the sentences concerned. Likewise, because of the nature and structure of the Finnish language, some of the reference chains are slightly changed in the Finnish translation. These differences, however, seem to have contrary – and compensatory – effects on text difficulty: on one hand, there are cases where the Finnish text appears to be slightly more explicit than the original one; on the other hand, there are also cases where the original appears to be the one that is slightly more explicit. The same holds true for the stylistic effects of the textual differences: in a few instances, the Finnish text can be regarded as less impersonal than the original, in some others, again, it is the original that is the one that appears to be less impersonal. On the whole, though, the level of formality and impersonality of the Finnish translation seems to comply with what is considered a key stylistic distinction between the languages.

4.3 Text 3 – *Warranty*

The text is a non-continuous text pertaining to the fields of commerce and of law. The text consists of a receipt and a warranty card for a camera. Yet, with the exception of the name and address of the owner, the warranty card is not filled in. One of the tasks of the testee, then, is to complete the warranty card. The function of the text is to give information. The information, however, is in a highly condensed form.

4.3.1 Lexical analysis

The same lexical difference that has been seen in both of the preceding texts is very evident in this text as well. Hence, while the English original uses specific technical terms of Latin and French origin, the Finnish translation resorts to more familiar, everyday words of native origin

instead. The reason for this difference, as has been shown above (see p. 55-56), is a basic difference related to stylistic variation between the language systems. The lexical discrepancy is illustrated by examples (57) – (63):

(57) invoice	lasku ('bill')
(58) transaction	maksu ('payment')
(59) purchase	osto ('buying')
(60) tripod	jalusta ('stand')
(61) defect	vika ('fault')
(62) inspection	tarkastus ('check')
(63) election	valinta ('choice')

As regards text comprehension, it is very likely that the English text, which abounds with unfamiliar and infrequent technical terms, is felt to be more difficult than the Finnish translation. Yet, in this non-continuous text, some of these words appear only as individual entries either in the receipt or in the warranty card. This might mean that not all of these words are quite relevant to understanding the text as a whole.

From the point of view of style, the less technical, more everyday vocabulary of the Finnish translation further makes the Finnish text clearly less formal than the original. This is especially true for the receipt. This less formal style as concerns vocabulary seems to be normal for Finnish texts of this genre and aptly reflects the fundamental stylistic difference between the two languages, frequently referred to above (see e.g. p. 56). Yet, the potential effects of this difference in the level of formality on the reader and text comprehension call for further investigation.

Another lexical factor (also related to syntax) that seems to make the Finnish text somewhat easier to understand is addition of extra words. This is seen from the following sentences (examples 64 and 65):

(64) How long does Sarah have, to return the warranty card?	Kuinka paljon <i>aikaa</i> Saaralla on takuukortin palauttamiseen? (‘How much time does Sarah have, to return the warranty card?’)
---	---

- | | |
|---|---|
| (65) ... which is found upon inspection by Video House to be defective in material or workmanship ... | ... jossa Videotalon tarkastuksessa havaitaan <i>joko</i> materiaali- tai valmistusvika ...
(‘... where in the inspection by Video House, either a material or a manufacturing defect is found ...’) |
|---|---|

In example (64), taken from the questions, the addition of the noun *aikaa* ‘time’ can be regarded as obligatory: without a noun, the Finnish expression corresponding to the English *how long* would sound incomplete. This addition, however, leads to the Finnish sentence being slightly more explicit. In example (65), by contrast, the addition of the conjunction *joko* ‘either’ is not obligatory. Rather, it might be considered an attempt, either conscious or unconscious, to edit and improve the clause and make the whole sentence slightly more explicit and readable. As such it reminds us of an interesting universal tendency in translations: translations tend to be more explicit than the source texts (Nida and Taber 1982, Blum-Kulka 1986). From the point of view of cross-national literacy studies, of course, this tendency towards greater explicitness in translations is problematic because it may distort the level of difficulty between the texts. Therefore also the instructions given to the translators advised them not to make the translation too explicit by adding, for instance, connectors.

While the above lexical differences between the texts probably result in the Finnish translation being somewhat easier to understand, the opposite is likely true when it comes to certain names that have been transferred as such to the Finnish text. Examples (66) and (67) serve to illustrate this:

- | | |
|-------------------------------|--|
| (66) Rolly Fotonex 250 Zoom | Rolly Fotonex 250 Zoom |
| (67) Camera Shots Video House | Camera Shots Videotalo
(‘Camera Shots Video House’) |

Here Finnish readers apparently find the names slightly less familiar and consequently slightly more difficult to understand. This is due to the following factors: First, some of the words, such as *shots*, which are part of English vocabulary, are foreign words to a Finn (the Finnish equivalent for the word is 'kuva, otos, otto'). Second, a couple of the lexemes, e.g. *zoom*, have been borrowed as such from English into Finnish; therefore, they might be hypothesised to be somewhat more familiar to English readers. And third, the orthography of the words is atypical for the Finnish language. For example, a number of the letters used in these words, i.e. *f*, *x*, *z* and *c*, and certain combinations of letters, such as *m* at the end of a word and back and front vowels in the same morpheme as in *rolly*, are rare in Finnish and never appear in Finnish words of native origin (for the effect of orthography on text comprehension, see Anderson and Davison 1988, Horning 1993). Admittedly, the potential difference in difficulty caused by these factors might be expected to be lessened by the fact that by reason of growing English influence, Finnish readers are becoming more and more familiar with foreign words and foreign lexical structures.

Apart from the names which have been retained in their English forms in the Finnish translation, however, there are also names and other terms which have been changed so as to be more appropriate for a Finnish context. These are illustrated by examples (68) and (69):

- | | |
|---|---|
| (68) Sarah Brown
151 Glenlyon Street
Brunswick Vic 3057 | Saara Puska
Metsästäjäntie 5
65610 Mustasaari |
| (69) \$254.74 | 790,00 mk ('Fmk') |

In example (68), the name of the person and the address have been altered so that they conform not only to Finnish spelling but also to Finnish conventions of writing addresses. In example (69), likewise, the currency has been adjusted to fit the Finnish money system. Here, then, we have examples of pragmatic adaptations, which have been made in order to

allow for differences in conventions and culture. The result of these adaptations, again, is that the two texts might be expected to be closer to each other as far as text difficulty and text comprehension are concerned. Instructions concerning conventions like these have, in fact, long been included in international literacy studies. This is also the case in this study, where translators were provided with translation notes directing them to make the above adaptations.

In the following examples (examples 70 and 71), taken from the receipt, the adaptations go one step further:

(70) change	takaisin ('back')
(71) sub-total	yhteensä ('in all')

In these examples, the English nouns are turned into adverbs when translated into Finnish. The reason for these class shifts (Catford 1989) is, here again, a desire to respect the Finnish conventions concerning this genre and to contribute to a more authentic text. Whether there are any differences in comprehending nouns or adverbs has not been much researched into as yet; what seems to be even more important, however, is that without the class shifts, the Finnish translation would not have been completely in line with the expectations of Finnish readers, which, in turn, would have slightly complicated their comprehending the text.

4.3.2 Syntactic analysis

In this text, the syntax plays a lesser part than in the two preceding texts. This is due to the non-continuous nature of the text and the small number of complete sentences in the text. However, the same syntactic problem having to do with different phrase and clause types, which has been widely discussed in connection with both of the preceding texts, can be seen in this text too, yet on a minor scale.

In example (72), which is from the instructions given to the reader, a subordinate clause becomes a participial construction when it is translated into Finnish:

- | | |
|--|--|
| (72) Use the information from the receipt to answer the questions which follow it. | Käytä kuitenkin tietoja vastatessasi jäljempänä oleviin kysymyksiin. (*'Use the information from the receipt when answering the later being questions.') |
|--|--|

This example is identical with example (15) in the text *Bees*. As explained in that connection, the participial construction cannot be considered absolutely obligatory in cases like these. Yet, Finnish does prefer participial constructions to subordinate clauses and premodification to postmodification; besides, in this particular case, for instance, a relative clause would have sounded somewhat clumsy. As regards text comprehension, however, it might be hypothesised that the Finnish sentence, in which the information is in a more condensed form – and which appears to put a heavier load on short-term memory – is probably slightly more difficult to understand than the English one.

Even more interesting, however, are the cases involving phrases and clauses without verbs. In examples (73) and (74), the Finnish translation uses compound words instead of the prepositional and participial constructions found in the original:

- | | |
|---|--|
| (73) defects in material or workmanship | materiaali- tai valmistusvikoja
(‘material or manufacturing defects’) |
| (74) date purchased | ostopäivä (*‘purchase date’) |

In Finnish, both prepositions and postmodification are rare (see e.g. pp. 57 and 67-68 respectively). Therefore, to translate prepositional phrases postmodifying nouns, as in example (73), Finnish usually has to resort to some other means. One such means, used rather widely, is the use of

compound nouns. Compounds are also a convenient and very popular Finnish way of presenting information in a highly condensed manner (Ingo 2000). This is especially true in different kinds of forms, as is the case in example (74), which is an entry in the warranty card. The participial phrase in example (74), in fact, could have been translated somewhat more literally as, for instance, *päivä, jolloin ostettu* ('date when purchased'); yet, this would not have been the natural way of rendering the phrase. When it comes to text and reading difficulty, however, the information contained in the Finnish compounds seems to be even more condensed and less explicit than that contained in the English phrases, which might make the Finnish expressions slightly more difficult to understand. On the whole, though, the difference appears to be minimal only.

A substitution almost identical to that made in example (73) is seen in yet another sentence (example 65 discussed above), whereby a prepositional construction, *defective in material or workmanship*, is replaced by a compound, *materiaali- tai valmistusvika*. This substitution, however, is not the only difference having to do with verbless clauses found in this sentence, as can be seen from the following:

- | | |
|--|--|
| (65) ... which is found upon inspection by Video House <i>to be defective</i> in material or workmanship ... | ... jossa Videotalon tarkastuksessa havaitaan joko materiaali- tai valmistusvika ...
(‘... where in the inspection by Video House, either a material or a manufacturing defect is found ...’) |
|--|--|

Apart from the disparity discussed above, the two texts also differ in that the English construction consisting of an infinitive and an adjective is rendered as a mere noun in the Finnish translation. In other words, the verb of the original non-finite clause is omitted, resulting in a verbless phrase, and the adjective is replaced by a noun. While other solutions would probably have been possible here as well, these changes can be

regarded as being motivated by a desire to conform to good Finnish usage. The first of these changes, that substituting the verbless phrase for the non-finite clause, seems to lead to the Finnish structure becoming slightly more condensed and less explicit – and apparently also slightly more difficult to understand. Given, however, that the verb omitted is the verb *be* with a copular function only, the difference seems to lose part of its importance. As for the substitution of the noun for the adjective, its significance for text comprehension has not been widely researched.

Still another case where verbless clauses are involved can be seen from example (75). In this sentence, an adjective in the English text is translated into Finnish as a finite verbal construction.

- (75) This warranty is not *transferable*. Tätä takuuta ei voida siirtää kolmannelle osapuolelle.
 ("This warranty cannot be transferred to a third party.")

In Finnish, adjectives corresponding to those formed in English by affixing the suffix *-able* to the verb stem are often clumsy and difficult to use. In normal usage, therefore, they are usually replaced by verb phrases. This is the case here too, where translators were specifically advised to retain the legal flavour of the expression. As regards text comprehension, however, the verb phrase seems to explicate more than the adjective, thereby apparently making it easier for the Finnish reader to understand the sentence.

This discrepancy is further emphasised by the addition of the noun phrase *kolmannelle osapuolelle* ('to a third party') to the Finnish sentence. The addition seems to be semantically obligatory in this sentence; without the addition, the Finnish sentence would sound inadequate and even incomprehensible. Besides, the addition also appears to be called forth by Finnish text conventions concerning this genre. The addition might thus be regarded as still another example of pragmatic adaptations in this text.

Yet, taken together, the use of the verb phrase instead of the adjective and the addition of the noun phrase result in the Finnish sentence being more explicit and informative, which, in turn, might be expected to ease the Finnish reader's comprehension of the sentence.

Another syntactic problem, besides that related to different phrase and clause types, concerns negation, which is one of the issues translators were advised to pay special attention to (see p. 49). In the warranty there is one sentence where an affirmative English clause is rendered negative in the Finnish translation. This sentence reads as follows (example 76):

- (76) ... the camera *is free of* any defects in material or workmanship kamerassa *ei ole* materiaali- tai valmistusvikoja ...
 ('... in the camera there are no material or manufacturing defects ...')

Here the English sentence uses an adjectival phrase, *free of*, which cannot be translated as such into Finnish. To express the same thought, Finnish often resorts to an existential structure (cf. the discussion on inanimate subjects and the way they are translated into Finnish, pp. 83-84). Understandably, the structure further has to be in the negative. Negative statements are often felt to be more difficult to understand than affirmative ones (see e.g. National project manager's manual 1999). In this case, however, the situation might be quite the contrary. This is because *free of* also seems to contain the idea of negating something; yet, this negation is only implicit. Because of its implicitness, then, it might be hypothesised that the English sentence might be slightly more difficult to understand than the Finnish sentence, where the negation is explicit (see Wright 1991).

As so often before, the English original seems to be stylistically slightly more formal than the Finnish translation – which, however, appears to reflect the level of formality appropriate for Finnish texts of this genre – also when it comes to syntax. All this is, again, in line with what

has been found to be a basic difference between the two languages, a difference having to do with stylistic variation. As regards the impact of the degree of formality on the reader's comprehending the text, additional research is needed.

4.3.3 Textual analysis

As in the two preceding texts, in this text too the first textual problem is related to reference. In this non-continuous text, however, the number of referential differences between the English and the Finnish text is even smaller than in the texts above. In the entire text, there is one case where pronominal reference has been changed in the Finnish translation. This is the following (example 77), where apart from the pronominal change, there are other interesting changes as well:

(77) Thank you for <i>your</i> business	Kiitos käynnistä (*"Thank you for visit")
---	--

Example (77) is the final phrase on the receipt. As such it is an instance of a strongly culture- and language-specific phrase. In Finnish, it is not customary to thank the customer for *business*; neither do we usually include any reference to the customer (e.g. *you*) in the phrase. Rather, the Finnish phrase seems to be relatively neutral and moderate, referring simply to *käynti* 'visit' on a general level (more often than not, this phrase is followed by another phrase, *Tervetuloa uudelleen* 'Welcome back'). Thus, it is for pragmatic reasons that the pronoun *your* is omitted from the Finnish translation. The maintenance or omission of the pronoun can hardly be expected to have any greater significance for the understanding of the texts, since both of the phrases conform to the conventions of the languages in question and meet the expectations of the respective readers. Besides, in this non-continuous text, the phrase seems to stand relatively

disconnected from and the reference appears to have no bearing on the rest of the text.

Stylistically, the pronoun might bring the English text closer to the reader and make the text slightly more personal. This, as we have seen (see pp. 70-71), is in harmony with a general tendency in English, as compared to Finnish, which stands out as more neutral. For reasons similar to those mentioned above, however, it is likely that the impact of this difference on the comprehension of the texts remains at best limited.

Another referential difference between the texts, closely connected with the addition of words discussed above (see pp. 93-94), is found in the question items (example 78):

- | | |
|--|---|
| <p>(78) Use the details on the receipt to complete the warranty card. The name and address of the owner have already been filled in.</p> | <p>Käytä kuitin tietoja takuukortin täyttämiseen. Omistajan nimi ja osoite on jo täytetty korttiin.
(‘Use the details on the receipt to complete the warranty card. The name and address of the owner have already been filled in the card.’)</p> |
|--|---|

Here the Finnish translation adds a noun to the second sentence. The noun is *kortti* ‘card’, which as a superordinate term refers to *takuukortti* ‘warranty card’, mentioned in the first sentence. In the instructions, translators were told not to change the reference chains if possible (see p. 49). In this case, however, the change seems to be necessitated by the verb *täyttää* ‘fill in’, which in English can stand alone but in Finnish requires a complement. From the point of view of text difficulty the addition means that the Finnish sentence ends up being more redundant and apparently also somewhat easier to comprehend. Yet, in view of the fact that the two sentences are not part of a wider textual context, the difference can be hypothesised to be of limited significance only.

Besides the differences in reference and reference chains, another textual problem between the texts has to do with information structure,

especially as concerns the macrostructure of the text, and relates to major cultural differences and text conventions. This is illustrated by a passage in the warranty card (example 79):

(79) PLEASE NOTE:

Post Immediately – Postage Stamp
Necessary

This warranty card should be completed and returned to Video House within 10 days of purchase.

International Warranty Card issued on request.

HUOM:

Postita välittömästi – Postimerkki
välttämätön

Tämä takuukortti tulee täyttää ja palauttaa Videotaloon 10 päivän kuluessa ostoksesta.

Kansainvälinen takuukortti annetaan pyydettyessä.

The passage has been translated as such into Finnish. In Finland, however, the entire procedure referred to in the passage is unknown: In Finland, warranty cards are not posted anywhere; instead, the customer keeps the card to himself. International warranty cards are likewise unknown in Finland. Therefore, notes like the one above are never found in authentic Finnish warranty cards. All this, in turn, has drastic consequences for comprehension in that the unfamiliarity of the procedure and the unconventionality of the text can be expected to unduly and considerably complicate the Finnish reader's understanding of the text. In this case, then, a pragmatic adaptation might have been in place: the passage, which sounds strange and weird in Finland, might have been omitted from the Finnish text. Yet, this, again, would have meant that the Finnish translation would inevitably have been easier to understand than the English one. This example thus reminds us in a striking way of some of the seemingly unsurmountable problems that strictly culture-bound topics and texts may cause in international literacy studies.

In fact, the entire content, form and layout of the warranty card and the receipt may not be exactly what they normally are in Finnish texts of this kind (see Appendix 1). This potential divergence from Finnish text conventions further means that the text is probably not completely in line with what a Finn expects and is used to. This, again, usually has a

negative influence on text comprehension. In a non-continuous text like this, however, where the amount of information is limited, where much of the information stands as individual entries and where all the information is not relevant to the comprehension of the text as a whole, this influence is likely to be relatively insignificant.

4.3.4 Summary

In sum, the strategy applied in translating this text seems to be by and large similar to that used in the previous text. Here, too, the main goal appears to have been to produce a text that would sound as Finnish as possible and that would be appropriate in Finnish culture. Thus, for example, the phrases and structures in the Finnish translation may differ noticeably from those found in the English original. In this text, furthermore, the pursuit of authenticity and naturalness leads to a considerable number of pragmatic adaptations and to the Finnish translation being even more unidentical with the original than was the case in the preceding text. There is, however, one significant and serious exception to this: the passage in the warranty card which is both culturally and conventionally strange in Finland – and consequently also unduly difficult for a Finn to understand. On the whole, however, the majority of the great number of the dissimilarities in linguistic surface structures do not seem to have any greater significance for text difficulty; in some others, they might make the Finnish text slightly more explicit or simpler; and in the most drastic case, the Finnish translation is clearly more difficult to comprehend than the English original.

As in the two preceding texts, in this text too, the vocabulary of the Finnish translation differs from the original in that it is less formal, less technical and more familiar. The reason for this discrepancy is, here again, a fundamental difference having to do with stylistic variation between the two languages. Besides, thanks to the addition of certain words, the

vocabulary of the Finnish translation is also more explicit than that of the original. This, in turn, seems to be partly due to differences between the language systems and partly to what appears to be a universal tendency of translators to improve and explicate the text. The latter of these factors is likely the one that is of special interest here because it is the one that could and – according to the instructions provided for translators – should be avoided. It is easy to see why, since on account of this greater explicitness combined with the more familiar vocabulary, the Finnish translation ends up being less difficult to understand than the English one. In this text, however, there is one minor lexical factor, that is, foreign names with foreign orthography that might have a contrary effect, resulting in the Finnish translation being slightly more difficult to comprehend.

Syntax does not play such a central role in this non-continuous text as it does in the two preceding texts. Yet, on this level too, the Finnish translation differs from the original in, for example, the use of verbless phrases and clauses and negation. These divergences are mostly brought about by differences between the language systems; another obvious factor is the translators' respect for the conventions of the Finnish language. As in the previous text, these disparities seem to mean that there may be differences in difficulty between the individual clauses of the two texts. On the whole, though, these differences appear to be largely compensated for by other linguistic phenomena (e.g. the heavy compound nouns in the Finnish text are counterbalanced by the less technical vocabulary in the text) or other parts of the text. Stylistically, the Finnish translation might be slightly less formal than the original. This, again, is in keeping with what seems to be a basic stylistic difference between the two languages.

On the textual level, the differences between the English original and the Finnish translation are of another kind as compared to the two preceding texts. Reference chains, for instance, understandably play a minor part in this non-continuous text than in the two texts discussed

above. Interestingly enough, though, one of the referential differences in this text, that accounted for by the addition of a superordinate term to the Finnish text, once again, results in the Finnish translation being slightly more explicit than the original. Even more interesting on this level, however, is the problem occasioned by the passage which in Finland is strange both in terms of culture and in terms of text conventions. This further means that in the Finnish translation the passage is also much more difficult to comprehend. On the whole, this problem highlights the fact that to be comparable, texts chosen for cross-national literacy studies have to fit all the cultures involved. Stylistically, the Finnish text appears to be slightly less personal than the English one, which, however, seems to be a general stylistic difference between these languages.

5 DISCUSSION

5.1 Lexical problems

In all the three texts analysed, the greatest and possibly the most important lexical problem differentiating between the English originals and the Finnish translations seems to be that caused by an elementary difference between the language systems related to stylistic variation. In the initial guidelines, translators were advised not to translate difficult terms by more common words. Because of the basic language system difference, however, this piece of advice could not always be followed. Consequently, while a considerable number of the words in the English texts are formal and relatively precise technical terms of Latin, Greek or French origin, in the Finnish translation these are usually replaced by less formal and more familiar native terms. This discrepancy appears to be more notable in the texts *Bees* and *Warranty*, which pertain to the fields of biology and of law and commerce respectively, and less notable in the newspaper extract *Bullying*.

From the point of view of text comprehension this difference might be hypothesised to mean that thanks to its greater familiarity, the vocabulary in the Finnish translations is as a general rule somewhat easier to understand than that used in the English texts. The study of the three texts further seems to suggest that the more informative the text and the more specified the field, as in *Bees* and *Warranty*, the greater the discrepancy in difficulty between the two languages. This, of course, remains within the scope of texts meant for 15-year-olds, as in highly scientific texts containing expert knowledge the situation might well be rather different. As for less specified texts, such as *Bullying*, on the other hand, the difference in lexical difficulty appears to be generally speaking of minor significance. Besides, in texts of this kind, the effects of this lexical difference on text difficulty might be even contrary to what was

established above. This is because in less specific texts, generic terms often seem to add to the abstractness of the text. In the case of the text *Bullying* too, the Finnish text, which resorts to more familiar and more generic terms, might therefore be, in places, even slightly harder to understand than the English one, where more concrete terms are used.

A second lexical problem concerning the English and Finnish texts is related to the addition of extra words to the latter, by reason of which the Finnish translations tend to be, in places, somewhat more explicit than the English originals. This is true for all the three texts alike, irrespective of the function or the genre of the text. On the whole, this greater explicitness appears to be accounted for by two major factors: Firstly, there are elementary differences between the language systems. Prepositions, for example, are extremely rare in Finnish. To express the same relations, Finnish usually makes use of case endings frequently coupled with the addition of lexical words, namely participles. And the second interesting factor is the general tendency of translators to edit and improve texts with a view to making them more explicit and readable.

Whatever the cause, greater explicitness normally means also greater comprehensibility. At this point too, the Finnish texts might thus be expected to be slightly more comprehensible than the English ones. Part of this greater comprehensibility, however, seems to be compensated for by premodification, which has usually a negative influence on text comprehension. This compensatory effect of premodification appears to apply only to the cases where participles are added, that is, when the additions are attributable to language-specific reasons. This and the fact that the language-specific reasons conducive to increased explicitness in texts are, by definition, impossible to circumvent seem to emphasise the importance of the second type of reasons mentioned above, that resulting from the translators' tendency to explicate the text. Avoidance of such undue explicitness in translations is important in multinational literacy

studies, where the level of comprehensibility should be kept the same as far as possible.

A third, minor lexical problem concerning the English and Finnish texts is closely related to direct loans. More precisely, it pertains to some names which, apparently for the sake of authenticity, are transferred as such to the Finnish translation. The impact of this lexical phenomenon on the comprehensibility of texts might be hypothesised to be contrary to that of the two factors discussed above. This is because the words transferred or borrowed as well as the orthography of the words are, understandably enough, more unfamiliar to a Finn, whose comprehension of the text is thus somewhat complicated as compared to the English reader. In view of the growing English influence on the Finnish language, however, this difference in difficulty is probably losing significance. In this study this lexical problem applies only to the text *Warranty* and especially to the first part of the text, which is a receipt belonging to the field of commerce. Even though the data is limited, this might suggest that commerce in particular is a field susceptible to this lexical phenomenon, knowing as we do, for instance, that foreign and specifically English trade names, among other things, abound worldwide.

A fourth phenomenon worth bearing in mind when discussing lexical problems concerning the English originals and the Finnish translations has to do with cultural differences and conventions. The solution to this problem is provided in the translation notes: to translate certain highly conventional and culture-bound extracts or parts of text, such as addresses and amounts of money, translators were told to make pragmatic adaptations in order to bring the text more in line with the conventions of the culture in question. These, say, Finnish translations, then, are not literal; instead, they are the functional equivalents of their English counterparts. As regards text comprehension, both the original words and phrases and the translations might therefore be presumed to satisfy the expectations of the respective readers. In other words, the

pragmatic adaptations appear to fulfil their function in making the two texts virtually alike as far as text difficulty is concerned. All in all, therefore, cultural differences and conventions relating to, for example, vocabulary do not seem to be too severe a challenge to cross-national literacy studies. As in the previous case, here too, this lexical phenomenon is restricted to the text *Warranty*, consisting of a receipt and a warranty card. This seems to be in line with the finding that pragmatic adaptations are most in need in highly conventionalised genres.

A final lexical problem relating to the English originals and the Finnish translations, found in all the three texts analysed, concerns class shifts. These seem to be divided into two main categories. The first category includes class shifts attributable to syntactic factors. These class shifts relate to verbs and different phrase and clause types – exemplified by verbs translated as nouns and adjectives translated as verbs – and are motivated by a desire to find a natural equivalent for every phrase and clause type. The great majority of the class shifts in this study belong to this category. Besides, the class shifts in this category seem to be more common in the text *Bullying* and the "legal" part of the text *Warranty*. This might suggest that syntactic complexity and a high level of formality are factors that increase the need for syntax-based class shifts in the translation.

The syntax-based class shifts and their influence on the comprehensibility of texts have been dealt with in more detail in the syntactic analysis. Yet, it is worth mentioning here that these class shifts do seem to influence text comprehension. This, in fact, appears to be the reason why translators were instructed not to substitute, for example, verbs for nouns or vice versa. The influence, however, does not seem to show any consistent pattern between the English and Finnish texts. In other words, there are cases when due to a class shift, the Finnish translation might be somewhat easier to understand than the original, and then again there are cases when it is presumably the original that can be

considered easier. On the whole, then, undue syntax-based class shifts should obviously be avoided in literacy studies. Usually, though, it is apparently better to choose the natural equivalent even though this might lead to a class shift, because these class shifts appear to be compensated for by other class shifts or by other linguistic factors (discussed in the syntactic analysis).

The second category of class shifts, in contrast, contains class shifts necessitated by conventions and pragmatic reasons. These are only found in the text *Warranty*, more precisely in the receipt part of the text. Understandably then, pragmatically motivated class shifts seem to be more frequent in genres, such as receipts, where conventions play a decisive role. The impact of these class shifts – nouns translated as adverbs – on the comprehensibility of texts can be hypothesised to be different from or even contrary to that of the first category: while it is not known very precisely as yet how class shifts as such affect readability, the fact that these pragmatically motivated class shifts are the functional equivalents of the words used in the English original apparently leads to greater equivalence in difficulty between the two texts.

To sum up, the greatest problems on the lexical level seem to be related to two major factors: the first and by far the most important is the language system difference concerning stylistic variation, by reason of which the vocabulary in the Finnish texts tends to be less formal, less technical and more familiar than the vocabulary in the English texts; the second is the addition of some extra words to the Finnish translations, partly caused by language-specific reasons – and largely compensated for by other factors – and partly by the world-wide tendency of translators to improve and explicate texts, which, in turn, leads to somewhat greater explicitness in the Finnish translations. On the lexical level, then, it might be hypothesised that there is a slight imbalance in the comprehensibility of the English and Finnish texts in that the Finnish translations might be assumed to be somewhat easier to understand than the English originals.

As both of the factors conducive to the greater comprehensibility in the Finnish texts are mostly based on unavoidable differences between the language systems, it appears to be even more imperative to elude undue explicitness, specifically that caused by the translators' tendency to edit the text, in order not to overly distort the level of comprehensibility of the texts. Cultural differences and conventions reflected on the lexical level, for their part, do not seem to be a major problem in cross-national studies.

5.2 Syntactic problems

The by far most important syntactic problem as concerns all the English and Finnish texts analysed above relates to different phrase and clause types, finite, non-finite and verbless. In many cases, these function differently in the two languages. Because of this a literal translation is on many occasions impossible. In some other cases, however, a literal match might be possible; yet, often it would not be the idiomatic choice in Finnish. Besides, these phrase and clause types are normally considered to display different levels of difficulty: thanks to their greater informativeness, explicitness and redundancy, finite clauses, for instance, are usually thought to be easier to understand than non-finite clauses, and non-finite clauses, again, easier than verbless clauses.

The problem more precisely, then, seems to pertain to the choice of the strategy for translating these phrase and clause types, a key term in this respect being conventions. As we have seen, on the lexical level translators were given instructions to respect the conventions of the language and to make pragmatic adaptations where necessary. On the syntactic level, by contrast, conventions were made no direct mention of. This, in turn, may be one of the reasons why the three texts appear to differ in their approach to these conventions. In *Bees*, which is stylistically the most unmarked, textbook-like text, the strategy appears to have been to stick as close as possible to the original and retain the phrase and clause

types as such – irrespective of the conventions. *Bullying* and *Warranty*, for their part, which are both representatives of distinctly identifiable and specialised genres, do not even strive for literal translations; instead, seeking to remain true to the conventions, they seem to aim for functional equivalence and authenticity. This might suggest that in choosing the translation strategy, the more neutral and unmarked the genre, the more likely it is that translators follow closely the original, not daring to take great liberties in translations; in more distinguishable genres, on the other hand, translators might be more ready to opt for natural, non-literal translations.

The consequences of the two above strategies for comprehensibility are most interesting. In *Bees*, the strategy seems to aspire to relatively identical structures and high correspondence in form. Yet, in some cases these literal translations appear to lead to slightly unnatural sentences because they violate the Finnish conventions regarding the use of the different phrase and clause types, as exemplified by the few subordinate clauses that in imitation of the English original have been translated as subordinate clauses, even though embeddings would have been a more Finnish choice. Violation of conventions, in turn, usually adds to the difficulty of a text, which means that in cases like the one above the Finnish clauses, contrary to conventions as they are, are, in fact, slightly harder to understand than the syntactically identical English clauses.

Even more interesting, however, is the imbalance found in this text as concerns these conventions and the text as a whole. As pointed out on numerous occasions, Finnish has a clear preference for embeddings. Nevertheless, in this particular text, on account of a couple of sentences where an embedding has been translated as a finite clause, the number of embeddings in the Finnish translation is actually smaller than that in the English original, which, again, might slightly add to the relative ease of the Finnish text. To be an authentic Finnish text, then, the loss of the embeddings should apparently have been counterbalanced by means of

pragmatic adaptations, that is, by translating, for instance, some other finite clauses (e.g. the ones referred above that have been translated as subordinate clauses) as embeddings. Interestingly enough, these compensations made beyond the sentence level would further have led to greater equivalence in difficulty between the two texts.

All in all, the analysis of the text *Bees* seems to indicate that strict adherence to the original phrase and clause types is not the answer to maintaining equivalence in difficulty between the texts. A far better means appears to be to opt for the functional equivalent, true to conventions, because, through compensations, this strategy also seems to result in a better match as far as text difficulty is concerned. This, then, as well as conventions concerning syntactic structures should be emphasised in the instructions provided for translators.

The translation strategy applied in the two other texts, *Bullying* and *Warranty*, by contrast, does not seem to aim at imitating the phrase and clause types used in the English originals. Instead, these texts, usually resorting to the more natural Finnish equivalents of the English structures, appear to strive to respect the conventions of the Finnish language. As a result, the clause structures may differ considerably between the English and Finnish texts. This, again, means that there may be some differences in the level of difficulty of individual clauses and sentences. On the whole, though, these differences seem to be largely compensated for by other clauses or sentences or by other linguistic factors. The analysis of these two texts, then, provides another line of reasoning in support of non-literal translations.

Generally speaking, the two lines of reasoning based on the two different strategies for translating different phrase and clause types seem to suggest that at least in case of languages belonging to different families of languages, not too much weight should be put on formal equivalence between individual structures and sentences. This is, first, because differences between language systems often make formal equivalence

impossible, second, because on many occasions literal translations do not appear to lead to equivalence in difficulty, and third, because largely thanks to the language system differences and language-specific factors, a large number or possibly even most of the dissimilarities in individual structures are likely to be compensated for naturally anyway. In Finnish, for example, the language-specific factors that might be assumed to add to the ease of Finnish texts as compared to English ones might include familiarity of vocabulary, addition of extra words, more infrequent use of the passive and substitution of nouns for pronouns. On the other hand, the factors that might be expected to add to the difficulty of Finnish texts might include premodification, preference for embeddings, compound nouns and use of suffixes.

Even though this study thus seems to furnish evidence for non-literal translations also in multinational literacy studies, there appears to be a limit to the freeness of these translations. This is shown by example (42), for instance, where several alternatives were available and where, in the end, a relatively free alternative resulted in the Finnish sentence being clearly easier to understand than the English one. Evidently, then, as was the case with undue explicitness, undue freeness should also be avoided. The problem, however, is how to decide on what is undue freeness. A solution to this problem was, in fact, offered in the guidelines provided for the translation process. In the guidelines it was recommended that double translations be made, one from an English text and the other from a French one. With the help of these two translations it would have been easier to decide on the right level of freeness. Nonetheless, in Finland, translations from French were not made. In view of the few cases where undue freeness or explicitness seems to overly distort the level of difficulty between the English and Finnish texts, this study thus appears to lend further support to the recommendation to use two original texts in two different languages as the basis for the translations.

A second syntactic problem related to the English originals and the Finnish translations concerns the use of the passive and the active. One piece of advice specifically included in the initial guidelines told translators not to translate an active construction as a passive one or vice versa. The problem with this piece of advice, especially as concerns passive constructions translated as active constructions, however, is that in Finnish, the agentive passive is lacking; besides, in Finnish the passive is normally not used for thematic reasons the way it is in English. Due to this difference between the language systems, then, when translating an agentive passive construction, Finnish usually has to discard the passive and use a simple active clause. At the same time, the word order and the information structure are reversed.

Passive constructions are usually considered less redundant and hence more difficult to understand than active ones. Therefore, it might be hypothesised that when it comes to the use of the passive, the Finnish translations are at an advantage. The difference, however, does not seem to be overly significant, because even in this study, where all the texts are informative texts, in which passives are normally more likely to occur than in purely literary texts or advertisements, for instance, the number of the cases where a passive construction has been translated as an active one is comparatively small.

A third syntactic problem concerning the English and Finnish texts is also related to the use of the passive. More precisely, it has to do with inanimate subjects. Here again, the language systems differ. In Finnish, inanimate subjects are normally not used with verbs requiring an animate subject. To translate an inanimate subject occurring with a verb taking an animate subject, therefore, Finnish has to resort to some other means. One such very common means is to turn the subject into an adverbial, which is then followed by a verb in the passive voice. Thus, contrary to the instructions, by reason of different language systems, an active construction is translated as a passive construction.

The assumption, then, might be that this time it is the English originals which are slightly easier to understand than the Finnish translations. This time, however, the impact of the passivisation on comprehensibility does not appear to be as straightforward as in the previous case. This is because in this case the greater comprehensibility of the English sentences seems to be largely compensated for by the use of inanimate subjects, which on account of their abstractness usually adds to the difficulty of a sentence. Hence, while these clauses with inanimate subjects turned into passive constructions may not have a decisive influence on the comprehensibility of texts, they do remind us of important differences between the languages, because of which it is not always possible to follow all the instructions.

A fourth, minor syntactic problem as regards the English originals and the Finnish translations applies to negation. Negation was one of the factors translators were counselled to take special notice of so as not to change the level of difficulty between the texts. Generally speaking, negation does not seem to constitute a major problem when making translations from English into Finnish. Yet, in the text *Bullying* there is a phrase (i.e. example 42) where due to stylistic reasons, a negative prefix is translated as a negative free morpheme, specifically a verb. While the effects of such unit shifts on comprehensibility still need to be investigated in more depth, the Finnish phrase might in this case probably be presumed to be slightly more explicit and thus also slightly easier to understand.

Another kind of difficulty having to do with negation is encountered in the text *Warranty*. In this text, owing to differences between the languages, an affirmative adjectival phrase is replaced by a negative existential phrase in the Finnish translation. Although negative statements are usually thought to be harder to understand than affirmative ones, this might not be the case here. This is because the English affirmative clause is, in fact, an implicit negation. By reason of its implicitness, then, the

English phrase might be expected to be even more difficult to comprehend than the explicit negation contained in the Finnish sentence.

As a whole, this study thus seems to suggest that while negation as such does not appear to pose a major problem to translations from English into Finnish in the context of cross-national literacy studies, negative prefixes and implicit negations, for their part, might be slightly more problematic in this respect. Furthermore, there might be an infinitesimal tendency for Finnish translations to be somewhat easier when it comes to problems touching negation. And as mentioned above, these cases were found in the text *Bullying and Warranty*. This might mean that the problem concerning negations might be more common in syntactically complex and formal texts.

A fifth, minor syntactic problem, confined to the text *Bees*, involves the use of pronouns (as concerns reference chains, pronouns have been dealt with in the textual analysis). Unlike most of the problems discussed thus far, this problem does not seem to be attributable to differences between the language systems. Instead, it appears to be traced to the overall strategy applied in translating the text: a strategy which obviously aims at as literal translations as possible; yet, on a few occasions, it results in too strict an adherence to the original, that is, interference. In case of such interference, as we have seen, the too literal translations end up being somewhat clumsy or even slightly ungrammatical. This, in turn, might be expected to complicate the Finnish reader's comprehension of the text. This problem, then, seems to provide additional proof in support of non-literal translations, suggesting as it does that (too) literal translations do not add to the equivalence in difficulty between the texts – rather the opposite.

The sixth potential syntactic problem, that pertaining to word order, shares many features with the previous problem. This problem too is only found in the text *Bees*. Likewise, this problem further seems to be attributable to the translation strategy, which strives to stick as close to the

original as possible. In practice this can be seen in the placement of the adverb before the verb in example (18) as the rule is in English. And finally, the consequences of this problem for text comprehension might be presumed to be similar to those of the previous problem in that those Finnish readers who regard the word order as slightly odd probably also have to spend somewhat more time to process and understand the sentence.

Taken together, the pronominal and word order problems might thus be hypothesised to occur only in translations that strive for great formal equivalence. This appears to direct our attention to three important factors that are worth taking into consideration in literacy studies conducted cross-nationally: Firstly, this study seems to suggest that as concerns translations from English into Finnish, pronouns and word order might be among the linguistic phenomena especially susceptible to interference. Secondly, while literal translations are in all probability made so as to ensure greater equivalence in difficulty between the original and the translations, they, in fact, lead to many problems, including differences in comprehensibility. And finally, the fact that these literal translations have been made in the first place, even though translators have been reminded of the need to use natural language, might suggest that in the guidelines given to translators too much weight is placed on details – how to translate individual words and syntactic structures, for instance.

The at times detailed instructions concerning predominantly micro level linguistic phenomena, specifically vocabulary and syntax, might lead the translators unconsciously to pay too much attention to individual words, clauses and sentences and give them the impression that more or less literal matches on this level are the goal. This, of course, is the more likely to happen, the more inexperienced the translator is. In the guidelines, then, more emphasis should be put on natural and authentic language. Furthermore, translators might be reminded that – probably with the exception of the question items – usually it is not individual

words and phrases and clauses and sentences that count. Therefore, translators might be encouraged to look at and concentrate on larger entities. The translators themselves should naturally be well versed in the two languages in question, especially in the target language, and translation theory, including, among other things, concepts of equivalence and compensations.

A seventh problem bearing on the English and Finnish texts is, again, related to a most essential difference between the language systems, that concerning modification. Thus, while English predominantly makes use of postmodification, that is, modifiers following the head noun, the Finnish language, in contrast, definitely prefers premodification, sometimes featuring long chains of modifiers before the head noun. This very basic difference, in turn, supposedly puts the two languages in an unequal position as far as the comprehensibility of texts is concerned. This, as we have seen, has to do with the extra burden heavy left-branching places on the short-term memory of the reader. Premodification, then, is one of the elementary languages-specific factors that presumably add to the difficulty of Finnish texts. In this study premodification is, not surprisingly, found in all the Finnish texts. Yet, it seems to be most prevalent in the newspaper text *Bullying*. This is apparently connected to the journalistic style of the text, which has a liking for ample modification, and the syntactic complexity of the text.

A final problem on this level differentiating between the English originals and the Finnish translations concerns style, notably formality. Relating to and in conformance with the fundamental difference between the language systems having to do with stylistic variation, already discussed above, the English texts tend to be, not only lexically but also syntactically slightly more formal than the Finnish ones. This is reflected in, for instance, the number of the passives and embeddings used in the texts. It is interesting to note at this point that on account of the unusually great number of finite clauses in the Finnish text, this difference seems to

be most notable in the text *Bees*. In other words, the syntactic choices made in the text inevitably have a bearing on style as well. The influence of this difference in the level of formality on text comprehension, however, is not established as yet. What is known, though, is that, say, motivation and interestingness have a positive influence on text comprehension. An interesting line of research, therefore, would consist of exploring the relationship between formality and motivation or interestingness as well as the influence of the readers' expectations regarding text difficulty on text comprehension.

In sum, most of the various individual problems on the syntactic level seem to be crystallised into two main problems: The first main problem has to do with the fact that the two languages belong to different families, on account of which there exist elementary differences between the language systems and on account of which a literal match and perfect equivalence in difficulty between the English and Finnish texts is often impossible. These basic differences include, among other things, premodification, which as a phenomenon intrinsic to the Finnish language adds to the difficulty of Finnish texts, and the use of the passive, which, in contrast, appears to be less frequent in Finnish, thereby decreasing the level of difficulty of Finnish texts. The second and even more important problem, largely based on the first one, is related to the choice of the translation strategy. This study seems to lend ample support to the finding that a translation strategy emphasising strict adherence to the original and striving for formal equivalence may bring along many problems, specifically interference, violation of the conventions of a language and even ungrammaticality, which, in addition to being injurious to language, also have a negative effect on the comprehensibility of texts, thus actually resulting in greater imbalance in difficulty. This was best illustrated by the problems concerning the use of different phrase and clause types, pronouns and word order. On the other hand, a translation strategy aiming at functional equivalence and emphasising naturalness – within

certain limits – appears to lead to relatively high equivalence in difficulty, the key explanation for this being compensations. Therefore, for example, one should not be overly concerned about using in Finnish participial phrases, which are usually considered somewhat more difficult to understand than subordinate clauses.

5.3 Textual problems

A first major problem bearing on the English originals and the Finnish translations concerns reference and reference chains. At this point translators were given instructions to try to retain the elements of reference and the reference chains unchanged as far as possible. For the most part, these instructions have been followed. In a few places, however, some interesting differences occur, mainly brought about by language-specific reasons, which may further have some bearing on the comprehensibility of the texts.

Firstly, in the Finnish translations, some of the English pronouns have been replaced by nouns and a few extra nouns have been added in places where an ellipsis occurs in the English originals. These changes, found in all the texts, are traceable to differences between the language systems. The substitution of the nouns for the pronouns in example (22), for instance, is caused by the Finnish pronominal system, in which – unlike in the English one – only one third person singular pronoun *hän* 'he' or 'she' exists, which in normal usage merely refers to human nouns; in case of non-human nouns, Finnish uses the demonstrative pronoun *se* 'it'. This difference in the range of use of the third person pronouns, in turn, means that in translations from English, Finnish sometimes (not only to differentiate between non-human nouns, as in example (22), but also to differentiate between masculine and feminine) has to utilise a noun so as to make clear and unambiguous a pronominal reference that in English is completely unequivocal. Like the substitution of nouns for pronouns, the

addition of nouns in, say, example (78) is similarly necessitated by the structure of the Finnish sentence. The significance of these changes for text comprehension is obvious: owing to the substituted and, in particular, added nouns, the Finnish translations may be presumed to be more informative and explicit and also slightly easier to understand than the English originals.

Secondly, the demonstrative pronoun *this* seems to be used somewhat differently in the English and Finnish texts: in *Bees* the pronoun is omitted from and in *Bullying* it is added to the Finnish translation. In *Bees* (example 24), the omission appears to be motivated by stylistic reasons, especially the Finnish preference for relatively neutral style; yet, it also seems to have reference to a fundamental difference between the language systems, specifically the existence and non-existence of articles in these languages. An important consequence of the omission of the demonstrative pronoun, however, is that the Finnish translation loses some of the redundancy and cohesiveness found in the English original. Hence, the Finnish text might also be hypothesised to be slightly more difficult to read than the English one.

In *Bullying*, by contrast, the situation is rather the opposite. As often referred to above, articles do not exist in Finnish. Therefore, when translating English texts into Finnish, nouns preceded by definite articles are usually replaced by simple nouns, the definiteness of the noun being deducible from, for example, the word order. In one sentence in the data, however, the Finnish translation uses the demonstrative pronoun *this* to translate a definite article. This is done in order to emphasise the givenness of the reference in question. Here, then, the change in the reference is even more clearly related to the elementary difference between the language systems concerning the use of articles. In this case, logically, the consequences of the substitution of the pronoun for the article can be expected to be contrary to those of the previous case in that the pronoun probably helps to make the Finnish translation slightly more

cohesive and readable. Yet, in this case this difference seems to be lessened by the use of the definite article in the English original, whose textual functions are largely the same as those of the demonstrative pronoun.

All in all, judging from this analysis, the demonstrative pronoun *this* does not seem to be a major problem when it comes to translations made from English into Finnish in multinational literacy studies. Of the two ways of using the pronoun differently described above, the former, that is, the potential Finnish tendency to make lesser use of the demonstrative pronoun might be assumed to be more interesting and problematic. As for the latter one, using the demonstrative pronoun to replace a definite article, a far bigger problem appears to be the lack of articles and especially of the definite article in Finnish, because of which Finnish translations might be expected to be slightly less explicit and cohesive than their English counterparts. More than anything, then, this discussion on the demonstrative pronoun *this* seems to remind us of a key difference between the two languages, namely the lack of articles, which might be considered to add somewhat to the difficulty of Finnish texts as compared to English ones.

Thirdly, on numerous occasions and in all the three Finnish translations, personal or possessive pronouns found in the English originals have been replaced by possessive suffixes. These modifications or unit shifts are, again, largely due to language-specific reasons, such as the Finnish preference for possessive suffixes to possessive pronouns. The impact of these unit shifts on text comprehension is not fully known as yet. Nevertheless, it might be assumed that thanks to their greater explicitness, free morphemes are probably slightly easier to understand than affixes. If this is the case, the Finnish texts using possessive suffixes instead of personal and possessive pronouns might be expected to be somewhat more difficult to comprehend than the English ones.

Fourthly, although not usually problematic, the pronoun *it* may occasionally cause some difficulties (part of which have been dealt with in

the syntactic analysis). In example (23), where the Finnish text, reversing the word order, uses a direct translation of the pronoun *it*, the result is a somewhat absurd and ungrammatical sentence. As such the sentence might also be presumed to be slightly more difficult to comprehend than the one used in the English text. The ultimate reason for this pronominal problem seems to be, not any difference between the language systems but strict adherence to the original. The pronominal problem and the increased difficulty in comprehensibility occasioned by it might thus be regarded as further evidence against too literal translations. Not surprisingly, in this study the problem concerning the pronoun *it* seems to be restricted to *Bees*, the text apparently aiming at as literal equivalence as possible.

Lastly, the modifications made in the elements of reference also bring about some differences in style. Altogether, the number of pronouns in the Finnish translations appears to be smaller than that in the English originals. This, as we have seen, is mostly due to the substitution, first, of nouns for personal pronouns and second, of possessive suffixes for personal and possessive pronouns. By reason of this smaller number of personal pronouns in particular, the style in the Finnish translations can be described as slightly more neutral, impersonal and matter-of-fact. This difference in style, in effect, seems to be a general tendency as regards English and Finnish texts. The influence of this stylistic difference and the Finnish neutrality on the comprehensibility of texts, however, still needs to be investigated in more depth.

Another major textual problem concerning the English and Finnish texts relates to information structure. In the guidelines provided for translators, nothing as such was said about information structure or thematic structure – which in itself might perhaps be considered a defect. What was said, however, mainly bore on the question items and was that word order may differ from one language to another but that stylistic devices often make it possible to enhance a certain part of a sentence.

Mostly the information structure in the Finnish translations has been retained the same as in the English originals. Yet, a few modifications have been made, which are all largely motivated by language-specific reasons and which also seem to have some effects on text difficulty. Of these the modifications attributable to the lack of the agentive passive in Finnish have been dealt with in the syntactic analysis and, therefore, shall not be discussed here.

Firstly, in one sentence (example 26) the change in the information structure is caused by the different way existential structures are formed in the two languages. In Finnish there exists no structure corresponding to the English *there is* construction; instead, existential structures are built by placing the adverbial at the head of the clause, which is then followed by the predicate and the subject. As for the consequences of these different ways of forming existential structures for text comprehension, both ways, in fact, might be expected to be relatively complicated to understand: the English way because of the use of the abstract dummy subject, and the Finnish way depending on whether or not the reader can see the givenness of the concept – if not, the clause violates the "given information first" rule, thereby adding to the difficulty of the sentence – and because of placing the adverbial, that is, not the syntactic subject of the clause, in the theme position. Considering that both the ways of forming existential structures seem to result in somewhat increased difficulty in comprehension and that the use of existential structures in this study is limited to this one occurrence only, existential structures do not appear to pose a major problem to international literacy studies.

A second reason for modifying the information structure has to do with fronting frames. Fronting frames do not necessarily bring about any changes in declarative sentences; in interrogative sentences, by contrast, changes are necessitated by differences between the language systems. This is because whereas in English the interrogative sentence can have virtually any element fronted or placed at the head of the sentence, in

Finnish the interrogative sentence always has the interrogative word as the first element of the sentence. Understandably, then, the problem concerning fronting frames almost inclusively relates to questions and, in particular, question items. Even more importantly, the difference in the use of fronting frames in questions further leads to dissimilarities in the thematic structure and the point of view of the questions and might therefore be expected to be reflected in the answers to these questions. This, of course, should be taken into consideration when assessing these answers. In this study, altogether nine question items were included. Of these one was a question with a fronting frame (example 27), which might suggest that fronting frames, while not too severe a problem, certainly deserve special attention in multinational literacy studies.

Thirdly, in quite a number of cases, the changes in information structure seem to be directly attributable to syntactic choices, notably those concerning the different phrase and clause types. As these have been dealt with in the syntactic analysis, a brief mention, made by means of one example, of their thematic consequences may suffice here. In example (43), we saw that the number of concepts in the English theme, consisting of a noun followed by a verbless clause, was much bigger than that in the Finnish theme, in which only one noun was contained. Given that a great number of concepts in the theme, increasing the information load before the main verb, place some extra burden on the short-term memory of the reader, the longer English theme found in this sentence might be hypothesised to be more difficult to process and understand than its Finnish counterpart. As in the case of syntactic differences, however, this difference seems to be partly compensated for by other instances where the situation is very nearly the contrary (as illustrated by example 56).

The fourth and most important problem as regards information structure, however, concerns a case where no modifications in the information structure have been made – a case which has to do with the macrostructure of a text and cultural differences and text conventions. In

Warranty a passage (example 79) has been translated as such into Finnish, even though the procedure referred to in the passage is unknown in Finland and even though authentic Finnish warranty cards do not contain the kind of information included in the passage. Both of these factors, the unfamiliarity of the content of the passage and the unconventional information structure, in turn, have a crucial influence on text difficulty: the comprehension of the Finnish reader is unreasonably complicated. The other alternative, of course, would have been to make a pragmatic adaptation and omit the passage altogether. In this way the Finnish text would have been true to text conventions and also culturally appropriate for a Finn. Yet, it would also have rendered the Finnish translation considerably easier to understand than the English one. Both solutions thus seem to lead to a significant imbalance in the difficulty of the texts. All in all, then, the problem concerning strictly culture-bound texts and their macrostructure appears to be a more serious challenge to multinational literacy studies than the other problems discussed in this study. Understandably enough, though, the problem seems to remain restricted to highly conventionalised genres only.

To summarise, on the textual level the problems seem to be of two main kinds: The first kind of problems pertains, once again, to fundamental differences between the language systems, which, in turn, inevitably bring along differences in the comprehensibility of texts. These problems are best reflected, on one hand, in the use of pronouns and articles in the two languages and, on the other hand, in the information structure of the question items. Of these, pronouns seem to cause several kinds of problems, the most important of them possibly being the substitution of nouns for pronouns, which – together with the addition of nouns – adds to the explicitness of Finnish texts. The lack of articles in Finnish, by contrast, might be hypothesised to slightly decrease the explicitness and cohesiveness of Finnish texts. The most difficult problem of this kind, however, appears to be related to the information structure of

question items, which, if different in the two languages, may have a serious influence on the answers given to the questions. The second kind of problems, for its part, has to do with cultural differences and text conventions. Interestingly enough, this study seems to suggest that while cultural differences relating to the micro level do not usually appear to be a severe problem in multinational studies, those bearing on the macro level, notably on the macrostructure of the text may, instead, lead to grave problems and considerable differences in text difficulty. In this study, for instance, the retention in the Finnish translation of a paragraph which in Finland is strange both in terms of content and text conventions made the Finnish text more difficult to understand.

5.4 Summary

All in all, the various individual problems discussed in this study seem to be traceable to three main problems: differences between the language systems, differences in culture and conventions, and the choice of the translation strategy. Of these, the first two are the fundamental problems, on which the third is largely based.

The first main problem, differences between the language systems, is accentuated by the fact that the two languages belong to different families of languages. Not surprisingly, then, there exists a huge variety of linguistic phenomena – lexical, syntactic and textual – differentiating between the English and Finnish language. These include, to cite some of the most important and interesting ones, stylistic variation, combined with the level of formality and reflected especially in the choice of vocabulary, the use of different phrase and clause types, the formation and use of the passive, the Finnish preference for premodification, the use of pronouns, the lack of articles in Finnish, the formation of existential structures, and the use of fronting frames. An obvious consequence of these elementary differences, in turn, is that often it is not possible to keep individual

structures neither the level of difficulty of these individual structures the same between the languages. It is also interesting to note that by reason of the considerable language system differences, quite a number of the instructions given to translators with a view to ensuring equivalence in difficulty between the texts do not seem to be work when it comes to translations into Finnish; rather, the instructions appear to be best suited for languages belonging to the same family. Could one perhaps consider producing partly differing instructions, specifically adapted for different families of languages?

The second main problem has to do with differences in culture and conventions. This problem is thus closely related to the first one, which it, however, brings into a wider context, adding a pragmatic aspect to it. These pragmatically motivated differences are found at all the linguistic levels, lexical, syntactic and textual; yet, their consequences for text difficulty seem to vary in significant ways. On the lexical level, these differences are, as a rule, well represented in the instructions or notes provided for translators, and thanks to the pragmatic adaptations suggested and made, usually do not appear to cause noteworthy changes in the comprehensibility of the texts. On the syntactic level, by contrast, these differences are not directly touched on in the guidelines and depending on the translation strategy – whether emphasising formal equivalence – may lead to differences in comprehensibility. On the textual level, again, the differences are not directly accounted for in the guidelines, and when relating to the macrostructure of texts, may have drastic effects on text comprehension. All in all, then, at least three conclusions can be made on the basis of this study: first, pragmatic adaptations are an effective means of accounting for conventions operating on the lexical level and of ensuring equivalence in difficulty; second, conventions applying to the syntactic level should be given more attention in, for instance, the guidelines; and third, conventions

concerning the macro level pose a serious threat to the comparability of texts in the context of international literacy studies.

The third main problem, based on the first two, involves the choice of the translation strategy: because of the obvious differences in the relative difficulty of individual structures and the detailed instructions given to translators, translators may be tempted to make compromises and strive for literal translations. This approach, however, often leads to some further problems, the most important of which are interference, violation of the conventions of the language, ungrammaticality – and ultimately, changes in the comprehensibility of the texts. As solutions to these problems, then, one might consider placing more emphasis in the guidelines on the text as a whole, as opposed to details, and on the authenticity of language as well as having the texts read by a few people not connected with the translation process.

Choosing non-literal translations and functional equivalence, on the other hand, has its problems too, notably deciding on the level of freeness and undue explicitness. As for deciding on the level of freedom, this study lends support to the recommendation given in the instructions to use two source texts: one in English and the other in French. This – coupled with specific warnings against undue explicitness – might also be an answer to the problem concerning undue explicitness, which as a universal tendency in translations might be a problem in comparative literacy studies, as testified by the somewhat greater explicitness found in the Finnish texts. On the whole, though, it might be concluded that this study seems to indicate that functional equivalence and non-literal translations are a better choice also in cross-national literacy studies. This is because, interestingly enough, seemingly most of the differences in individual structures appear to be compensated for naturally.

To conclude, even though there seem to have been quite a number of problems involved in translating the three texts analysed, generally speaking the translations do, in fact, appear to be of good quality. Besides,

even though there exists, for the time being at least, no empirical way of comparing the comprehensibility of texts written in different languages and even though this study was not directly aimed at establishing the level of difficulty of the texts, this tentative study does seem to indicate that the texts analysed are relatively close to each other as far as comprehensibility is concerned – the Finnish translations being, however, perhaps slightly easier to understand. This might suggest that usually it may after all be possible to overcome most of the problems encountered in translating texts for comparative literacy studies. This being said, it must be remembered, though, that there still are certain problems, notably those concerned with the macrostructure of texts and with the information structure of question items, which seem to be more difficult to solve than most of the others and which present a more serious challenge to international literacy studies.

6 CONCLUSION

6.1 Summary of the study

The present study aimed at exploring what kinds of translation problems are met in translations used in international literacy assessments, where equivalence of difficulty between the source texts and target texts is a necessary precondition for the validity of the assessments. At the same time, however, the study touched on the questions as to whether or to what extent such translations are equivalent with the source texts and as to how efficient the translation procedures established by those administering the assessments are in coping with the translation problems and in ensuring equivalence and comparability between the texts.

The translation problems faced in cross-national literacy assessments were examined within the context of the pilot test of the first OECD PISA assessment carried out in 1999. Three English source texts and their Finnish translations included in the PISA trial were analysed and compared by means of the case study method. The analyses were conducted on three linguistic levels, lexical, syntactic and textual, and their purpose was to locate, analyse and evaluate translation problems related to equivalence of difficulty between the texts. In determining the level of difficulty, the analyses relied on cognitive theories of reading comprehension, where reading comprehension is considered a constructive transaction between reader and text. In practice, the analyses often drew on the translation instructions provided by PISA, which, in turn, were based on recent theories of reading comprehension.

6.2 Main findings of the study

The analyses of the study pointed to three main categories of problems of equivalence in difficulty encountered in translations made in the context of international literacy studies. These were the following: first, problems caused by differences between language systems; second, problems caused by differences in culture and conventions; and third, problems caused by the choice of the translation strategy.

The first category of translation problems, that is, problems caused by differences between language systems, was relatively numerous in the present study. The simple reason for this is that the texts analysed in the study were written in English and Finnish, languages unrelated to each other: English – as well as the vast majority of the languages included in the PISA trial – belongs to the Indo-European family of languages; Finnish, by contrast, is a member of the Finno-Ugric language family. The numerous language system differences, in turn, meant that frequently it was not possible to arrive at the formal equivalence implied by the instructions of PISA, nor to attain equivalence of difficulty between the languages as far as individual structures were concerned. This problem was further reflected in the translation process in that in quite a few instances, the instructions intended to guarantee equivalence of difficulty between the texts did not appear to apply to translations into Finnish; rather, the instructions seemed to be best suited for closely related languages. Occasionally, some poorly applicable instructions also mislead the translator into too literal renderings and translationese, which further made the translation strange and difficult to understand.

The findings may be regarded as more or less expected in light of modern translation theory. Largely on account of differences between language systems – and because formal equivalence, as a consequence, often results in artificial language and hence unintelligibility – modern translation theory does not usually foster formal correspondence on the

sentence level. Rather, emphasis is generally put on dynamic or functional equivalence and, more specifically, on the textual level, because these are normally considered the type and level of equivalence possible to attain. From the point of view of the organisations administering comparative literacy assessments the present study thus seems to suggest that less weight be placed in the instructions on formal equivalence and on the micro level; instead, functional equivalence and textuality should be accentuated. This seems to be imperative considering that also languages from, for example, the Sino-Tibetan and Altaic language families have been included in the assessments and that in the future, as anticipated, more languages unrelated to English and French will be involved in the assessments. As an additional way of answering the problem of differences between language systems, one might perhaps consider making partly adapted instructions for different languages or language families.

As regards the second main category of translation problems, those caused by differences in culture and conventions, the analyses in the present study indicated the following: first, on the lexical level, differences in culture and conventions were usually not a problem because they were allowed for by pragmatic adaptations; second, on the syntactic level, conventions were not consistently respected, which, in turn, resulted in some differences in equivalence of difficulty; and third, on the textual level, differences in culture and conventions were not always taken into account, thereby leading to culturally and conventionally strange solutions and hence to the most serious kind of problem to equivalence of difficulty. All these findings were further more or less directly related to the translation process, especially as concerns the instructions: on the lexical level, differences in culture and conventions were well accounted for in the instructions, where translators were advised to make pragmatic adaptations if necessary; on the syntactic level, conventions were not referred to in the instructions; and on the textual level, the differences

were not explicitly mentioned in the guidelines. On the textual level, the problems with equivalence of difficulty additionally testified to a culturally biased and thus unsuccessful selection of texts for the literacy test.

Generally speaking, these findings agree with the general conception prevalent in translation theory, according to which respect for conventions – arrived at through, for instance, pragmatic adaptations – is a necessary prerequisite for a good and understandable translation. Moreover, the findings are to a significant extent consistent with what has been pointed out by those criticising international literacy studies, who maintain that differences in culture and conventions have not been sufficiently allowed for in literacy surveys and that the texts included in these surveys have therefore not been equally familiar to everyone (e.g. Bechger et al. 1998, Levine 1998, Hamilton and Barton 2000). This seems to apply to the textual level in particular. As for the lexical level, the study, interestingly enough, appears to suggest that largely thanks to pragmatic adaptations, progress has been made in international literacy assessments and equivalence of difficulty is generally attained. The findings indicating insufficient respect for conventions on the syntactic level, for their part, seem to confirm what has been claimed by, say, Vehmas-Lehto: she (1999) asserts that conventions related to, for example, the distribution of syntactic structures are often more difficult to perceive and tackle than other kinds of conventions.

Given the clear connection between the problems related to differences in culture and conventions found in the texts analysed, on one hand, and the PISA translation process, on the other, some suggestions might be made for the organisations conducting cross-national literacy studies. Pragmatic adaptations, to start with, should be recommended in the instructions. They should be recommended on the lexical level, where they have already yielded good results. They should also – as shown by the present study – be taken special notice of and recommended on the

syntactic level, where they seem to have been mostly ignored. And of course, they should also be recommended on the textual level. Contrary to what is mainly the case with the two above levels, however, on the textual level, pragmatic adaptations do not necessarily solve the problem of equivalence of difficulty. Rather, the present study appears to indicate that to avoid cultural bias and hence differences in equivalence of difficulty, the organisations conducting international literacy studies should pay special attention to the selection of texts: only texts which are equally familiar to everyone should be chosen for international literacy studies. This, of course, is easier said than done, considering the wide range of different non-Western cultures that, in the years to come, are intending to participate in comparative literacy assessments. Besides, it also raises the question whether the selection is done at the expense of cultural richness.

The third main category of translation problems found in the study consisted of problems related to the translator's choice of the translation strategy. Basically, these strategies seemed to centre on either literal translation and formal equivalence or free translation and dynamic or functional equivalence. Both of these strategies, however, involved some further problems.

The problems related to the strategy aiming at literal translation and formal equivalence have already been referred to above (see pp. 134-135). These included – in line with what is accentuated in modern translation theory – interference, violation of conventions and ungrammaticality, which, in turn, rendered the translation more difficult to understand than its source text. It has also been mentioned that these problems seemed to be closely tied in with the translation process, where the in places detailed instructions tended to draw the attention of the translators to formal equivalence and the micro level. To solve the problems, it was suggested that more stress be placed in the instructions on functional equivalence and on the macro level of texts. A further solution to the problems might be to have the translations read by a few "ordinary" people not connected

with the translation process and see how idiomatic or non-idiomatic they find the language in the texts.

On the whole, then, the present study seemed to take a clear stand on non-literal translation and functional equivalence. This finding, while in total accordance with modern translation theory in general, may be considered significant in that it appears to suggest that functional equivalence is a better choice also in multi-national literacy studies, where equivalence of difficulty is the main concern. In other words, equivalence of difficulty tends to be more closely related to functional equivalence than to formal equivalence; therefore, functional equivalence is more likely to lead to equivalence of difficulty than is formal equivalence.

As an interesting and significant explanation for the potential superiority of functional equivalence over formal equivalence, the present study pointed to compensations. In translation theory and practice, compensations have been shown to be a viable means of making up for losses in translation. On the basis of the present study, however, compensations also appear to be an effective way of counterbalancing the level of difficulty between texts. A great number of the differences in the difficulty of individual structures, in fact, seem to be compensated for naturally by other parts of the text or other linguistic factors. This being the case, translators involved in international literacy studies should obviously be made more aware of this technique. This might be done by, for instance, discussing the possibility of using compensations in the instructions provided for translators, where they appear to have been completely disregarded thus far.

Even though the present study seemed to speak in favour of non-literal translation and functional equivalence, this strategy also led to some further problems. These included deciding on the level of freedom and undue explicitness. Of these, deciding on the level of freedom has been identified as one of the most common problems in translation, haunting translators ever since the classical times and Cicero. Yet, judging

from the present study, deciding on the level of freedom may be an even more difficult problem in comparative literacy studies, where different structures may be expected to display different degrees of readability. Explicitness, for its part, which aims at explicating the translation and making it easier for the target language reader to understand, has been shown to be a universal tendency in translation. Usually, of course, explicitness is not a problem in translation; rather, in many cases, it is even to be recommended (see p. 142). In literacy studies, however, explicitness may be a problem, as evidenced by the present study, because it may distort the level of difficulty between the texts.

The translation process suggested by PISA, in fact, provided a solution to the problems of deciding on the level of freedom and undue explicitness. The solution was double translation based on two source texts, one in English and the other in French. In Finland, however, double translations were not made; moreover, only the English source texts were used as the basis for translation with possible crosschecks from the French source versions. At this point – considering that deciding on the degree of freedom and undue explicitness did cause some problems for the translators – the present study seems to lend support to PISA's recommendation to use double translations preferably from two different languages to tackle the problems of undue freedom and explicitness. Another way of dealing with the problem of undue explicitness might be to make translators involved in international literacy studies expressly conscious, in the translation guidelines, for example, of the normal and even recommended tendency of translators to explicate texts.

From the point of view of the translator, the problem related to the translation strategy is essentially a problem of choice. In the present study, however, the translators' choices were greatly complicated by a significant discrepancy in the translation process. This was a discrepancy concerning the *skopos* and the brief or commission given to the translators: on one hand, the translators were advised to strive for equivalence of difficulty by

producing as authentic target language texts as possible; on the other hand, they were given instructions on how to remain lexically and syntactically as close to the source text as possible so as to attain equivalence of difficulty. The translators were thus left uncertain as to what exactly was implied by equivalence of difficulty and how it was to be pursued.

In modern translation theory, high priority is given to the *skopos* of translation and the brief or commission provided for the translator. This is especially true of the *skopos* theory, which claims that it is the *skopos* and, ultimately, the commission that guide all translation work. Given the decisive role these two play in translation, the discrepancy concerning the *skopos* and the commission found in the PISA translation process may be deemed a significant defect. The present study consequently seems to point to two urgent and pivotal needs facing the organisations administering international literacy studies: first, the *skopos* and, hence, the concept of equivalence of difficulty should be defined more clearly and unequivocally; and second, the *skopos* and the commission should be made compatible and unambiguous.

The problem of choice facing the translator may further be viewed as a problem related to the translator's translation skills: the more experienced the translator, the easier it will be for him/her to come to the right decisions. This is also emphasised in the *skopos* theory, which regards the translator as the expert in the translation process and therefore as ultimately responsible for the translation. In accordance with this and in view of the exceptional problems facing translators in international literacy studies, the present study thus seems to agree with the recommendation made by PISA – yet not completely respected in Finland – that only experienced translators be used in making translations for literacy studies.

All in all, despite the numerous and very special translation problems found in the study, the final finding of the present study was

that the translations were generally speaking of good quality. They further appeared to testify to relatively high comparability as far as equivalence of difficulty was concerned. At the same time, however, the study seemed to indicate that the Finnish translations as a whole were possibly slightly easier to understand than the English source texts. The study also revealed translation problems, notably those related to the macrostructure of texts and the information structure of question items, which posed a more serious threat to the comparability of the texts and which tended to be more difficult to solve than other kinds of problems.

On one hand, these findings appear to accord with the claim made by the organisations conducting comparative literacy assessments that they have managed to solve most of the translation problems encountered in these assessments. On the other hand, the findings also lend support to what is maintained by those criticising international literacy assessments – and what is likewise partly acknowledged by those involved in the assessments – that problems do exist which may still endanger the comparability of the texts and hence the validity of the very assessments. On the whole then, the present study seems to suggest that relatively high equivalence in difficulty might after all be attainable in texts used in international literacy studies. Yet, additional work is definitely needed, especially as concerns the macrostructure of texts and the question items, in order to ensure comparability of the texts across languages and cultures.

All the findings of the present study have here been considered from the point of view of translations made in international literacy assessments, in the context of which the study was strictly located. Understandably, though, most of the implications of the study are even more directly applicable to translations in general. This is because the implications mainly have their origins in common translation theory. Besides, readability and comprehensibility are attributes that concern all translations. The only suggestion, in fact, that may not apply to

translations in general might be the suggestion to avoid explicating the text. The main reason for this is that (excepting for increased explicitness caused by cultural differences and hence pragmatic adaptations manifested as additions), contrary to what is usually the case in international literacy studies, source texts in normal life are not always well written and clear. To arrive at a good and understandable translation, the translator therefore often has to edit and explicate the text.

6.3 Evaluation of the study

In interpreting the findings of the study, it should be borne in mind that the study also had its limitations. The first apparent limitation of the study is the to a certain extent subjective and relative nature of the qualitative analyses made in the study. While this limitation is shared by all translation assessments and qualitative text analyses, it, nevertheless, means that the present study lacks absolute objectivity. This applies to the interpretation and judgement of the analyses in particular, which like all human activities, necessarily contain a subjective element.

Second, the study is limited in that the criteria used for determining the difficulty of the texts was incomplete. In the present study the emphasis in determining the difficulty of the texts was on different types of knowledge and the higher level processes involved in reading comprehension. The functioning of, say, memory, by contrast, was not in itself in the interests of the present study. In practice this means that propositional analysis, for instance, was completely excluded from the study. Similarly, except for what was the case with premodification, the lower level processes involved in reading comprehension, including the functioning of short-term memory, were outside the scope of the study. Even though these latter factors may be less important to reading comprehension and also less applicable across languages, the fact that they were excluded from the present study, nonetheless, implies that the

criteria for determining the difficulty of the texts were to a certain degree lacking.

The third limitation of the study relates to the role of the reader in reading comprehension. As accentuated by the transaction view, in reading comprehension, reader and text are inseparable and cannot be analysed separately. Besides, comprehension varies from reader to reader and even as concerns one and the same reader, from situation to situation. In the present study, however, the reader was only implicitly involved in the analyses. How the readers really acted in the reading comprehension process, how they constructed meaning and how they answered in the literacy test was not examined in the present study. Therefore, we do not actually know, for example, whether or to what extent the differences in difficulty between the texts truly affected the readers' comprehension of the texts. Interpersonal and intrapersonal differences concerning the readers were likewise virtually disregarded in the present study. The study almost exclusively concentrated on the average reader.

The fourth limitation of the study is the restricted size of the data used in the study. The data of the present study consisted of three English source texts and their Finnish translations. All the texts analysed were factual texts and also at least partly informative texts. Considering the limited data, one understandably has to be careful with generalisations. This is especially true when it comes to different languages and cultures as well as genres different from those analysed in the study.

Finally, the study is limited as far as examination of the PISA translation process is concerned. This is most clearly seen in that, for reasons of confidentiality (see p. 46), the texts analysed in the present study were texts excluded from the PISA assessment 2000. In other words, during and thanks to the trial in 1999, the texts analysed here were found by PISA not to be among the most successful texts and hence were eliminated from the assessment proper. The texts analysed in the present study thus fail to do full justice to the translation process used in PISA.

6.4 Needs for future research

International literacy studies have a relatively brief history. While the first study of this kind was carried out at the turn of the 1970s, these studies mostly date back to the last decade. Not surprisingly, then, research on the translations made and used in the context of these studies is still in its infancy. Many questions and problems related to these translations are still waiting for their answers and calling for further research.

The first and most obvious need for future research in this field is developing a model for evaluating the difficulty of texts across languages. Such a model, understandably, needs to be based on modern theories of reading comprehension. It should thus allow for both reader and text. Ideally, it should also allow for different kinds of readers. It should further pay attention to both the high level and low level processes included in the reading process as well as, for instance, the operation of both short-term and long-term memory. Moreover, such a model should take into account different genres and text types. And finally, the model should be applicable across languages. It is easy to see that developing such a model is quite an overwhelming task. One might even ask whether the task is, in fact, realisable. If it is not, how does one measure the difficulty of texts and how does one ensure the comparability of the texts and the validity of the cross-national literacy tests?

Another major question facing those involved in translation within the context of international literacy studies concerns the notion of equivalence. Because of, among other things, major cultural differences, translation theory today appears to be unanimous in that equivalence is at best relative and that absolute equivalence is absurd and unattainable. What does this mean from the point of view of cross-national literacy studies, where equivalence of difficulty is presupposed? Is comparability of the texts ensured? Besides, if equivalence in translation is impossible,

how much difference would using authentic original texts similar in, for instance, type, function and style in place of translations make?

Apart from these major questions, future research also needs to examine the relationship between formality and text difficulty. In the present study, a clear distinction was detected between the English and Finnish texts in that the English texts were more formal than the Finnish ones. Formality might likewise be assumed to differentiate between other distinctly related or unrelated languages. To date, however, hardly any research has been done on the influence of the level of formality on text comprehension. What has been shown, though, is that the motivation of the reader and the interestingness of the text, for instance, contribute to comprehension. Furthermore, as a high level of formality and difficulty often go hand in hand, it might well be that readers have learnt to connect formality with difficulty. In addition to examining the relationship between formality and motivation or interestingness, then, future research should also investigate how readers' attitudes and expectations regarding text difficulty affect text comprehension.

To get a better idea of the translation problems encountered in multinational literacy studies and to improve the comparability of the texts, it is evident that those conducting the studies further need to extend research into various languages. Research on languages belonging to different language families and to different cultures might be expected to be the most revealing in this respect. In a similar vein, future research should include analyses of texts of different genres. Translation problems faced in translating literary and other expressive texts, for example, might be presumed to differ from those met in translating more informative genres.

Still another fruitful line for future research would consist of examination of the specific translation procedures established and used in international literacy studies. One could, for example, study the impact of the English and French source texts on the translations. What were the

French source texts like? How equivalent were they to the English source texts? Would using the French texts have yielded different Finnish translations? How comparable are all the different translations made from the English source texts, on one hand, and those made from the French ones, on the other hand?

What about the different translation versions made during the translation process? What were the first versions like? Were they very much alike or quite different from the final ones? In what respects? What kinds of problems were met and what kinds of changes were made at each stage? What was the motivation behind these changes? Did these changes actually promote equivalence of difficulty?

The instructions provided for the translators are also worth researching into. How did the instructions affect the translators and their translation? What would the translations have been like in terms of equivalence of difficulty, had the translators not been given detailed instructions on how to translate? What would the difference be if, say, one translator made the first version with the help of the instructions and another made his/hers without any instructions?

And to finish with where we started: What were the results of the literacy test? How did the students reading the texts written in all the different languages manage? Were there clear-cut trends or differences in, for instance, specific question items across languages? How were these possible differences related to differences in equivalence of difficulty between the texts?

In conclusion, translations produced and used in international literacy studies are a fascinating field of inquiry full of intriguing questions waiting to be answered. The present study was an attempt to provide tentative answers to some of the questions. Primarily, however, the study served to raise new questions, which will hopefully be addressed in the studies yet to come.

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Appendix 1

**THE ENGLISH SOURCE TEXTS AND THE FINNISH TRANSLATIONS
ANALYSED**

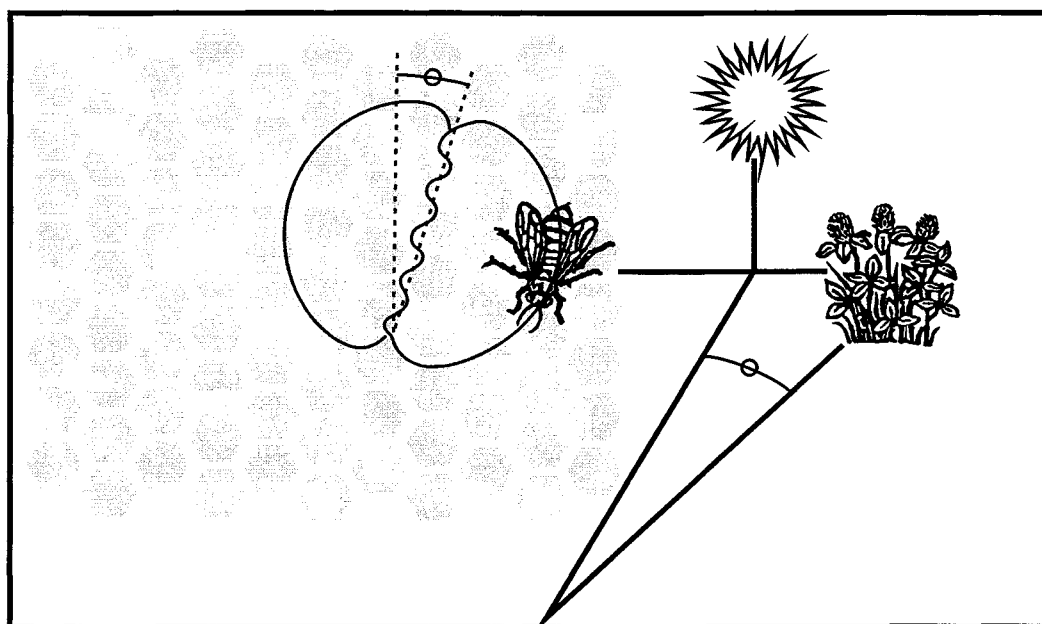
TEXT 1 – BEES TEXT

The information on this page and the next page is from a booklet about bees. Refer to the information to answer the questions which follow it.

COLLECTING NECTAR

Bees make honey to survive. It is their only essential food. If there are 60,000 bees in a hive about one third of them will be involved in gathering nectar which is then made into honey by the house bees. A small number of bees work as foragers or searchers. They find a source of nectar, then return to the hive to tell the other bees where it is.

Foragers let the other bees know where the source of the nectar is by performing a dance which gives information about the direction and the distance the bees will need to fly. During this dance the bee shakes her abdomen from side to side while running in circles in the shape of figure 8. The dance follows the pattern shown on the following diagram.



The diagram shows a bee dancing inside the hive on the vertical face of the honeycomb. If the middle part of the figure 8 points straight up it means that bees can find the food if they fly straight towards the sun. If the middle part of the figure 8 points to the right, the food is to the right of the sun.

The distance of the food from the hive is indicated by the length of time that the bee shakes her abdomen. If the food is quite near the bee

shakes her abdomen for a short time. If it is a long way away she shakes her abdomen for a long time.

MAKING HONEY

When the bees arrive at the hive carrying nectar they give this to the house bees. The house bees move the nectar around with their mandibles, exposing it to the warm dry air of the hive. When it is first gathered the nectar contains sugar and minerals mixed with about 80% water. After ten to twenty minutes, when much of the excess water has evaporated, the house bees put the nectar in a cell in the honeycomb where evaporation continues. After three days, the honey in the cells contains about 20% water. At this stage, the bees cover the cells with lids which they make out of beeswax.

At any one time the bees in a hive usually gather nectar from the same type of blossom and from the same area. Some of the main sources of nectar are fruit trees, clover and flowering trees.

GLOSSARY

house bee a worker bee which works inside the hive.
mandible mouth-part.

BEES QUESTION 1

What is the purpose of the bees' dance?

- A. To celebrate the successful production of honey.
- B. To indicate the type of plant the foragers have found.
- C. To celebrate the birth of a new Queen Bee.
- D. To indicate where the foragers have found food.

BEES QUESTION 2

What is the main difference between nectar and honey?

- A. The proportion of water in the substance.
- B. The proportion of sugar to minerals in the substance.
- C. The type of plant from which the substance is gathered.
- D. The type of bee which processes the substance.

BEEES QUESTION 3

In the dance, what does the bee do to show how far the food is from the hive?

BEEES QUESTION 4

Write down three of the main sources of nectar.

1. _____

2. _____

3. _____

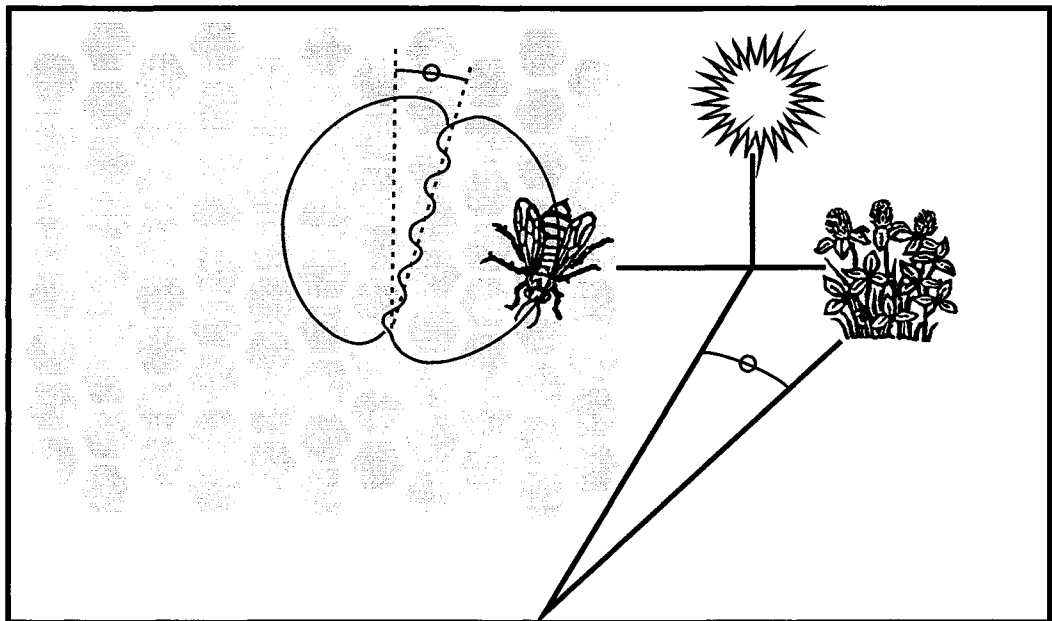
MEHILÄISET

Tällä ja seuraavalla sivulla esitetyt tiedot ovat peräisin eräästä mehiläisistä kertovasta vihkosesta. Vastaa sitä seuraaviin kysymyksiin tekstin pohjalta.

MEDEN KERÄÄMINEN

Mehiläiset tuottavat hunajaa pysyäkseen elossa. Se on niiden ainoa varsinainen ravintolähde. Jos pesässä on 60 000 mehiläistä, noin kolmannes niistä on mukana keräämässä mettä, jonka pesässä pysyttelevät työmehiläiset sitten valmistavat hunajaksi. Pieni osa mehiläisistä työskentelee ravinnon etsijöinä. Ne etsivät mesilähteen ja palaavat sitten pesään kertomaan muille mehiläisille, missä se on.

Ravinnonetsijät välittävät toisille mehiläisille tiedon siitä, missä mesipaikka on, esittämällä tanssin, joka kertoo sen suunnan ja etäisyyden, mihin mehiläisten pitää lentää. Tanssin aikana mehiläinen värähtää takaruumistaan puolelta toiselle ja kiertää samalla kahdeksikon muotoista ympyräkuviota. Tanssi noudattaa alla olevassa kuvassa esitettyä kaavaa.



Kuva esittää mehiläistä tanssimassa pesässä hunajakennon pystysuoralla seinällä. Jos kahdeksikon keskiosa osoittaa kohtisuoraan ylös, se merkitsee, että mehiläiset löytävät ruokaa, jos lentävät suoraan kohti aurinkoa. Jos kahdeksikon keskiosa osoittaa oikealle, ruoka sijaitsee auringosta oikealle.

Ravintolähteen etäisyys pesästä ilmaistaan sillä, miten kauan mehiläinen värähtää takaruumistaan. Jos ruoka on melko lähellä, mehiläinen värähtää takaruumistaan lyhyen aikaa. Jos ruoka on kaukana, mehiläinen värähtää takaruumistaan pitkän aikaa.

HUNAJAN VALMISTAMINEN

Kun mehiläiset saapuvat pesälle mettä kantaen, ne antavat sen pesätyöläisille. Pesätyöläiset kuljettelevat mettä leuoissaan altistaen sen pesän lämpimälle kuivalle ilmalle. Tuoreeltaan keräämisen jälkeen mesi sisältää sokeria ja kivennäisaineita sekä noin 80 % vettä. Kymmenen tai kahdenkymmenen minuutin kuluttua, kun liika vesi on suurelta osin haihtunut, pesätyöläiset laskevat meden hunajakennon kammioon, missä haihtuminen jatkuu. Kolmen päivän kuluttua kammioissa oleva hunaja sisältää noin 20 % vettä. Tässä vaiheessa mehiläiset peittävät kammiot kansilla, jotka ne valmistavat mehiläisvahasta.

Saman kauden aikana pesän mehiläiset yleensä keräävät mettä samantyyppisistä kukinnoista ja samalta alueelta. Pääasiallisia mesilähteitä ovat muun muassa hedelmäpuut, apila ja kukkivat puulajit.

TEHTÄVÄ 1: MEHILÄISET

Mikä on mehiläisten tanssin tarkoitus?

- A. Juhlia onnistunutta hunajan tuotantoa.
- B. Ilmaista ravinnonetsijöiden löytämän kasvin tyyppi.
- C. Juhlia uuden mehiläiskuningattaren syntymää.
- D. Ilmaista, mistä ravinnon etsijät ovat löytäneet ruokaa.

TEHTÄVÄ 2: MEHILÄISET

Mikä on tärkein ero meden ja hunajan välillä?

- A. Aineen vesipitoisuus.
- B. Aineen sokeripitoisuus suhteessa sen kivennäisaineisiin.
- C. Kasvityyppi, josta aine kerätään.
- D. Mehiläistyyppi, joka aineen käsittelee.

TEHTÄVÄ 3: MEHILÄISET

Mitä mehiläinen tekee tanssissa näyttääkseen, miten kaukana ruoka on pesältä?

TEHTÄVÄ 4: MEHILÄISET

Mainitse kolme pääasiallista mesilähdettä.

1. _____
2. _____
3. _____

TEXT 2 – BULLYING TEXT

PARENTS LACKING AWARENESS OF BULLYING

Only one in three parents polled is aware of bullying involving their children, according to an Education Ministry survey released on Wednesday.

The survey, conducted between December 1994 and January 1995, involved some 19,000 parents, teachers and children at primary, junior and senior high schools where bullying has occurred.

The survey, the first of its kind conducted by the Ministry, covered students from the fourth grade up. According to the survey, 22 per cent of the primary school children polled said they face bullying, compared with 13 per cent of junior high school children and 4 per cent of senior high school students.

On the other hand, some 26 per cent of the primary school children said they have bullied, with the percentage decreasing to 20 per cent for junior high school children and 6 per cent for senior high school students.

Of those who replied that they have been bullies, between 39 and 65 per cent said they also have been bullied.

The survey indicated that 37 per cent of the parents of bullied primary school children were aware of bullying targeted at their children. The figure was 34 per cent for the parents of junior high school children and 18 per cent for those of the senior high school students.

Of the parents aware of the bullying, 14 per cent to 18 per cent said they had been told of bullying by teachers. Only 3 per cent to 4 per cent of the parents learned of the bullying from their children, according to the survey.

The survey also found that 42 per cent of primary school teachers are not aware of bullying aimed at their students. The portion of such teachers was 29 per cent at junior high schools and 69 per cent at senior high schools.

Asked for the reason behind bullying, about 85 per cent of the teachers cited a lack of education at home. Many parents singled out a lack of a sense of justice and compassion among children as the main reason.

An Education Ministry official said the findings suggest that parents and teachers should have closer contact with children to prevent bullying.

School bullying became a major issue in Japan after 13-year-old Kiyoteru Okouchi hanged himself in Nishio, Aichi Prefecture, in the fall of 1994, leaving a note saying that classmates had repeatedly dunked him in a nearby river and extorted money from him.

The bullying-suicide prompted the Education Ministry to issue a report on bullying in March 1995 urging teachers to order bullies not to come to school.

Source: *The Japan Times* Ltd., Tokyo, May 23, 1996

The article on the opposite page appeared in a Japanese newspaper in 1996. Refer to it to answer the questions below.

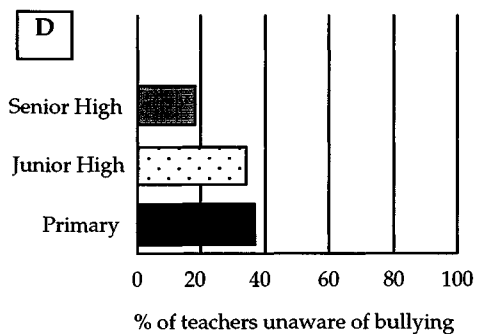
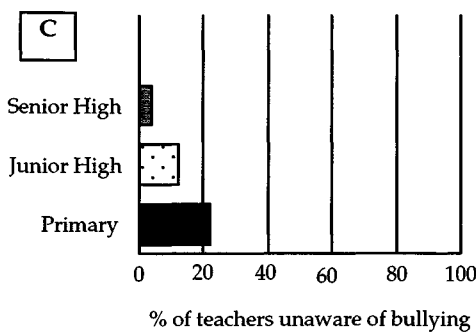
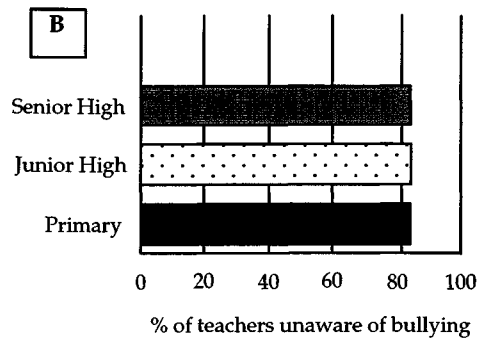
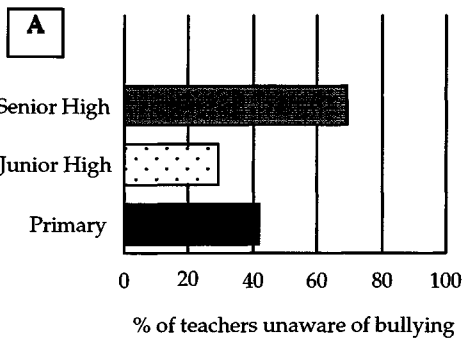
BULLYING QUESTION 1

Why does the article mention the death of Kiyoteru Okouchi?

BULLYING QUESTION 2

What percentage of teachers at each type of school was unaware that their students were being bullied?

Circle the alternative (A, B, C or D) which best represents this.



KIUSAAMINEN

VANHEMMAT EIVÄT TIETOISIA KIUSAAMISESTA

Vain joka kolmas vanhempi on kyselyjen mukaan tietoinen kiusaamisesta, jossa heidän lapsensa on osallisena, kerrotaan keskiviikkona julkistetussa Opetusministeriön tutkimuksessa.

Tutkimuksessa, joka tehtiin joulutammikuussa 1994 - 95, oli mukana noin 19 000 vanhempaa, opettajaa ja lasta ala- ja yläasteilta sekä lukioista, joissa kiusaamista on esiintynyt.

Tutkimus on ensimmäinen tämänkaltaisen selvitys ministeriöltä, ja sen piiriin kuului oppilaita neljäsluokkalaisista ylöspäin. Tutkimuksen mukaan 22 prosenttia kyselyyn vastanneista ala-asteen koululaisista kertoi kokeneensa kiusaamista, kun taas vastaava luku oli yläasteen oppilailla 13 prosenttia ja lukiolaisilla 4 prosenttia.

Toisaalta noin 26 prosenttia ala-asteen oppilaista kertoi kiusanneensa, kun taas yläasteen oppilailla tämä prosenttiluku aleni 20:een, ja lukion oppilailla se oli 6 prosenttia.

Niistä, jotka vastasivat olleensa kiusaajina, 39 - 65 prosenttia sanoi myös tulleen kiusatuiksi.

Tutkimus osoitti, että 37 prosenttia ala-asteella kiusattujen oppilaiden vanhemmista oli tietoisia lapsiinsa kohdistuvasta kiusaamisesta. Yläasteen oppilaiden vanhemmilla tämä luku oli 34 prosenttia ja lukion oppilaiden vanhemmilla 18 prosenttia.

Kiusaamisesta tietoisista vanhemmista 14 - 18 prosenttia kertoi kuulleen kiusaamisesta opettajilta.

Vain 3 - 4 prosenttia vanhemmista oli saanut tietää kiusaamisesta lapsiltaan, tutkimuksessa todetaan.

Tutkimuksessa todettiin myös, että 42 prosenttia ala-asteen opettajista ei tiennyt oppilaisiinsa kohdistuvasta kiusaamisesta. Yläasteella tällaisten opettajien osuus oli 29 prosenttia ja lukioissa 69 prosenttia.

Kysyttäessä kiusaamisen takana piilevää syytä noin 85 prosenttia opettajista viittasi puutteelliseen kotikasvatukseen. Monet vanhemmat nostivat pääsyyinä esiin lasten oikeudentajun ja myötätunnon puutteen.

Opetusministeriön edustaja sanoi, että tulosten valossa vanhempien ja opettajien tulisi olla läheisemmässä kontaktissa lapsiin kiusaamisen ehkäisemiseksi.

Koulukiusaaminen nousi Japanissa merkittäväksi puheenaiheeksi sen jälkeen, kun 13-vuotias Kiyoteru Okouchi hirtti itsensä Nishiossa, Aichin maakunnassa, syksyllä 1994. Hän oli jättänyt jälkeensä viestin, jossa kertoi luokkatovereidensa toistuvasti uittaneen hänet läheisessä joessa ja kiristäneen häneltä rahaa.

Kiusaamisitsemurha sai Opetusministeriön julkaisemaan kiusaamisesta maaliskuussa 1995 selonteon, jossa opettajia kehoitettiin kieltämään kiusaajia tulemasta kouluun.

Lähde: *The Japan Times Ltd.*, Tokio, 23. toukokuuta 1996

Edellisellä sivulla oleva artikkeli ilmestyi japanilaisessa sanomalehdessä vuonna 1996. Vastaa alla oleviin kysymyksiin kyseisen artikkelin pohjalta.

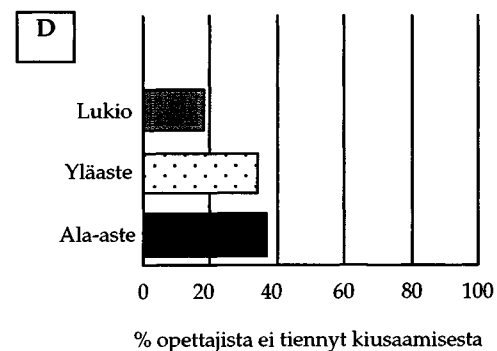
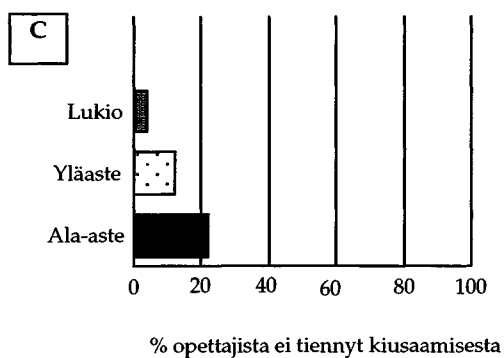
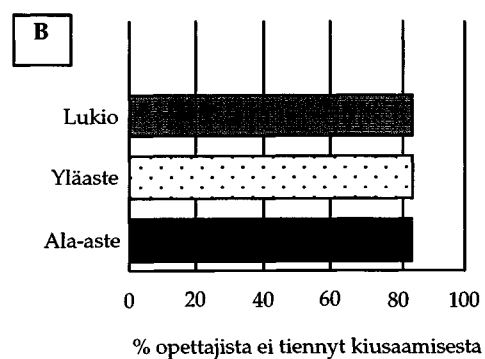
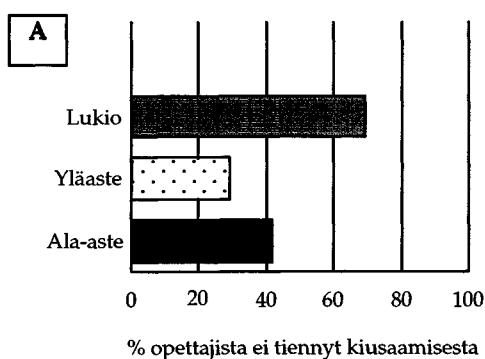
TEHTÄVÄ 1: KIUSAAMINEN

Miksi artikkelissa mainitaan Kiyoteru Okouchin kuolema?

TEHTÄVÄ 2: KIUSAAMINEN

Kuinka suuri osa kunkin kouluasteen opettajista ei tiennyt, että heidän oppilaitaan kiusattiin?

Ympyröi vaihtoehdoista (A, B, C tai D) se, joka parhaiten vastaa tilannetta.



TEXT 3 – WARRANTY TEXT 1

Camera Shots	Video House		CAMERA SHOTS VIDEO HOUSE 89 ELIZABETH STREET MELBOURNE VIC 3000 9670 9601				
	89 ELIZABETH STREET, MELBOURNE 3000 PHONE: 9670 9601 FAX: 9602 5527 http://www.camerashots.com.au		INVOICE 26802	DATE 18/10/99	TIME 12:10		
CUSTOMER SARAH BROWN 151 GLENLYON STREET BRUNSWICK VIC 3057		ACCOUNT 195927		SALES 24 RAY	REG. 16		
PRODUCT	DESCRIPTION	SERIAL No	LIST	QTY.	NET	TOTAL	EX
150214	ROLLY FOTONEX 250 ZOOM	30910963		1	249.08	249.08	X
33844	TRIPOD			1	5.66	5.66	X
Transaction Amount Change				Sub-Total		254.74	
Visa/Bank Card \$254.74				Total		254.74	
Thank you for your business							

On the opposite page is the receipt that Sarah received when she bought her new camera. Below is the warranty card for the camera. Use the information from the receipt to answer the questions which follow.

WARRANTY TEXT 2

<p>ONE YEAR WARRANTY: (Private Users) VALID ONLY IN AUSTRALIA VIDEO HOUSE & COMPANY PTY LTD – ACN 008 458 884 ('VIDEO HOUSE') warrants to the initial owner that the camera is free of any defects in material or workmanship. This warranty is not transferable. Video House will service, repair or replace at its election, and free of charge, any part which is found upon inspection by Video House to be defective in material or workmanship during the warranty period(s).</p>	
PLEASE PRINT CLEARLY	
	NO. M 409668
Camera – Model
Serial No:
Name of Owner:	<i>SARAH BROWN</i>
Address:	<i>151 GLENLYON ROAD</i>
.....	<i>BRUNSWICK VIC 3057</i>
.....
Date Purchased:
Purchase Price:

Rubber Stamp of Dealer

PLEASE NOTE:

Post Immediately – Postage Stamp Necessary

This warranty card should be completed and returned to Video House within 10 days of purchase.

International Warranty Card issued on request.

WARRANTY QUESTION 1

Use the details on the receipt to complete the warranty card.
The name and address of the owner have already been filled in.

WARRANTY QUESTION 2

How long does Sarah have, to return the warranty card?

WARRANTY QUESTION 3

The words "Thank you for your business" are printed on the bottom of the receipt. One possible reason for this is simply to be polite. What is another possible reason?

TAKUU

Camera Shots**Videotalo**

KAUPPAKATU 14, 65100 VAASA
 PUH: 312 2355 FAX: 312 2345
<http://www.camerashots.com>

ASTAKAS

SAARA PUSKA
 METSÄSTÄJÄNTIE 5
 65610 MUSTASAARI

CAMERA SHOTS VIDEOTALO
 KAUPPAKATU 14
 65100 VAASA
 Puh. 312 2355

LASKU 26802	PÄIVÄYS 18/10/99	AIKA 12:10
TILI 195927	MYYJÄ 24 RISTO	REK. 16

TUOTE	ERITTELY	SARJANRO	LUETTEL	KPL	NETTO	YHT.	TAR
150214	ROLLY FOTONEX 250 ZOOM	30910963		1	780.28	780.28	X
33844	JALUSTA			1	17.72	17.72	X
Maksu Summa . . . Takaisin					Yhteensä	798,00	
Visa/pankkikortti 798,00 mk					Loppusumma	798,00	

Kiitos käynnistä

Edellisellä sivulla on kuitti, jonka Saara sai, kun hän osti uuden kameransa. Alla on kameran takuukortti. Käytä kuitenkin tietoja vastatessasi jäljempänä oleviin kysymyksiin.

YHDEN VUODEN TAKUU: (Yksityishenkilöt) VOIMASSA AINOASTAAN SUOMESSA VIDEOTALO OY - LY 1432196-4 ('VIDEOTALO') takaa kameran ensimmäiselle omistajalle, että kamerassa ei ole materiaali- tai valmistusvikoja. Tätä takuuta ei voida siirtää kolmannelle osapuolelle. Videotalo huoltaa, korjaa tai korvaa valintansa mukaan ja veloitusetta minkä tahansa osan, jossa Videotalon tarkastuksessa havaitaan joko materiaali- tai valmistusvika takuukauden (-kausien) aikana.
TÄYTÄ SELVÄSTI TEKSTATEN <div style="text-align: right;">NRO. M 409668</div> Kamera - Malli Sarjanumero: Omistajan nimi: <i>SAARA PUSKA</i> Osoite: <i>MEISÄSTÄJÄNTIE 5</i> <i>65610 MUSTASAARI</i> Ostopäivä: Ostohinta:

Jälleenmyyjän leima

HUOM: <u>Postita välittömästi - Postimerkki välttämätön</u> Tämä takuukortti tulee täyttää ja palauttaa Videotaloon 10 päivän kuluessa ostoksesta. Kansainvälinen takuukortti annetaan pyydettyäessä.
--

TEHTÄVÄ 1: TAKUU

Käytä kuitin tietoja takuukortin täyttämiseen.
Omistajan nimi ja osoite on jo täytetty korttiin.

TEHTÄVÄ 2: TAKUU

Kuinka paljon aikaa Saaralla on takuukortin palauttamiseen?

TEHTÄVÄ 3: TAKUU

Sanat "Kiitos käynnistä" on painettu kuitin alaosaan. Eräs mahdollinen syy tälle on yksinkertaisesti halu olla kohtelias. Mikä on toinen mahdollinen syy?

Appendix 2

THE INSTRUCTIONS PROVIDED FOR TRANSLATORS BY PISA
(National project manager's manual 1999:29-33, 35-38)

ADVICE REGARDING TRANSLATION TRAPS

Many factors can undesirably bias the answers to items presented to the students in different languages. The list of advice provided below will help you to control some of the most commonly encountered among these. Take good note of the fact that they are to be regarded as *advice*. In practice, too strict an application of one or the other of the following recommendations may lead to an overly cumbersome translation, or it may occur that applying one recommendation would lead to violation of another. One should then give priority to one or the other, with a view to choosing the lesser of two evils. Please regard the following as an informative list of what MIGHT raise a problem with respect to equivalence between the source version and your version.

Respect, As Far As Possible, The Layout And Presentation Shown In The Source Document

It often happens that a translated document is longer than the original. This is due to the characteristics of each language, and does not seem likely to have a significant effect on performance (for example, languages less concise than English often have a morphology and a syntax which are more redundant, and overall the latter is likely to make up for the former in terms of reading difficulty). However, changes must be avoided in the page set-up of the test — which would oblige the student, for example, to turn a page to read the questions, whereas in the source version text and questions appear side by side. If necessary, use a slightly smaller or bigger font than the one in the original, if this enables you to keep a page set-up true to that of the source version.

Respect the cues provided in the original material (titles, subtitles, possible numbering of lines and paragraphs, and numbering of items).

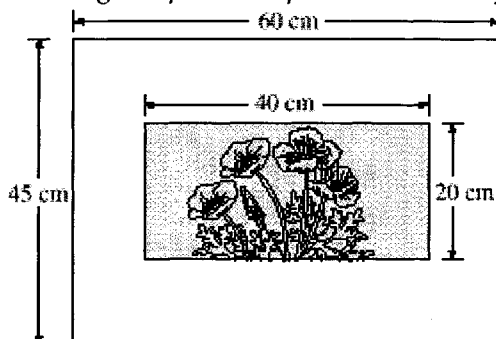
Be very vigilant about the rendering of illustrations and graphic elements. Check that no alteration occurs during the importing of these elements into your translated file, or during printing.

Do not forget to translate the verbal material contained in these graphic elements (in particular the captions, scales, units of measurement).

Think about the motivation of students. Presentation which is denser, big blocks of text which are less spaced out, printing which is more careless than the original may encourage some of the weaker students to turn the page without answering the questions.

In the following example, taken from the IEA/TIMSS survey, too pale a rendering of the graphic element of this item when printed can make the grey tint which is used as background for the flowered picture disappear, making distractor D much more attractive than in the original version.

A rectangular picture is pasted to a sheet of white paper as shown.



What is the area of the white paper not covered by the picture?

- A. 165 cm^2
- B. 500 cm^2
- C. 1900 cm^2
- D. 2700 cm^2

Avoid Complicating Or Simplifying The Vocabulary And The Syntax Of Text Excerpts Which Are Used As Stimulus, Or The Wording Of The Items (Stem And Distractors)

It is no coincidence that average word length and sentence length almost always appear among the indices of complexity used in readability formulas, whatever the language for which the formulas have been developed. Longer words tend to be less frequent, more technical and/or more abstract than short words. The basic vocabulary of a language (the most frequent and easiest 1500 to 3000 words of a language) is, more often than not, made up of very short words. Long sentences often contain many subordinate clauses and/or embedded clauses; the word order and the syntax in those sentences are usually more complex than when the passage is made up of two or three separate sentences rendering the same content.

In the following example, the *b* version is more complex than the *a* version, not only because of its vocabulary (term: *relief variation*) but also because of its syntax (subordinate clause):

- a. *It was easy: the route of the marathon consisted of few important differences in height.*
- b. *I found that easy, inasmuch as the route of the marathon consisted of few important relief variations.*

Except where it is necessary, avoid translating difficult words in the text by expressions which paraphrase them in more common terms (or vice versa).

In the following example, *b* is easier than *a*:

- a. Viewers empathise with good characters more so than with bad ones.*
- b. Viewers have more sympathy for good characters than for bad ones.*

Do not unnecessarily modify the degree of abstraction of the sentence by using nouns where the author uses verbs, or vice versa:

In the following example, *a* will be more difficult than *b*:

- a. The presence of humour in a violent scene can increase the chances that viewers will imitate or learn aggression.*
- b. When humour is present in a violent scene, viewers are likely to imitate or learn aggression.*

Avoid, insofar as this appears possible, translating an active turn of phrase in the original by a passive one, or vice versa.

In the following example, the *b* version increases the difficulty of the sentence, not only by the use of the passive form, but also because this version (as is often the case) uses as the subject an abstract word (*problems*) instead of an animate term (*families*):

- a. Many Russian families traditionally present their children with hundreds of problems of this type.*
- b. In Russia, traditionally, hundreds of problems of this type are presented to children by their families.*

Be very vigilant during the translation of passages containing negations, especially when double negations are involved: the latter significantly increase the difficulty of understanding.

In the following example, the *b* version is more difficult than *a*, as a result of the replacement of a negative term (*harmless*) by a double negation, syntactic and lexical (*is not harmful*):

- a. This does not mean that the violence in cartoons is harmless.*
- b. This does not mean that the violence in cartoons is not harmful.*

Modify as little as possible the reference chain(s) which is/are contained in the passage. A reference chain is the set of occurrences in the

text where the same character or the same notion is alluded to, often with the help of various linguistic tools (pronouns, synonyms, etc.).

The following passage contains three of these chains, one relating to the notion of violence (V), the other to the notion of punishment (P), and the third referring to the young viewer (Y).

“If the punishment (P1) for violence (V1) is delayed until the end of the program, this deterrent (P2) may go unnoticed by a young child (Y1). Punishment (P3) must occur in the same scene for a younger viewer (Y2) to connect it (P4) to the original aggressive behaviour (V2) which gave rise to it (P5).”

In a case of this type do your best to respect the nature of the elements of reference:

- Repeat the word if the author repeated it (punishment in P1 and P3).
- Use a synonym if the author used one (*violence* in V1 / *aggressive behaviour* in V2).
- Use the combined repetition and synonym when this is the case with the author (*young child* in Y1 and *younger viewer* in Y2).
- Use pronouns where the author uses them (P4, P5).

The text will be more difficult, for example, if you choose to avoid the repetition in P3 by using a synonym (*sanction* instead of *punishment*), or in Y2 by using a reference by position (*the latter* instead of *younger viewer*).

When Translating The Items, Avoid Involuntarily Providing Clues Which Direct The Student Towards The Correct Answer, Or Which Make A Wrong Answer More Attractive.

In multiple choice items, make every effort not to modify the respective lengths of the various distractors unnecessarily. Long answers are more attractive than short ones; therefore the item might become easier in your version if the correct answer is more elaborate (in relation to other answers), than in the source version. On the other hand, the item might become more difficult if an incorrect answer stands out from the others because of its length more than it does in the source version.

If the stem of the item (or some of the distractors) literally reproduces expressions contained in the text, take care that the same is true in the translation. If, on the contrary, the author of the item uses a different formulation from that of the text (synonym, indirect allusion) do not simplify the student’s task by using words of the text or derivatives of the same word in the stem or distractors. This aspect deserves special attention, since it is a very frequent cause of bad item functioning.

Take care to provide all the information which is contained in the item.

For example, if the item says “On line 20, the author uses the expression...”, do not forget to check whether this passage is in fact on that line in your version.

The order in which the author has presented the various pieces of information contained in the the stem of an item is often important. Try to reproduce that order insofar as possible.

When the stem is long, you may occasionally observe that the author has privileged certain elements of the question by placing them either beyond or right at the end of the phrase.

All conventions with respect to word order significantly differ from one language to the other. However, various stylistic devices often make it possible to enhance this or that segment of the question.

Teachers generally prove to be outstanding judges where way of formulating the questions of a test is concerned. If some members of your national panel are teachers, draw their attention to that point and ask them to be particularly aware of it: they will probably assist you in improving those items whose formulation is somewhat awkward or unclear due to the translation.

It may occur in a multiple-choice item that some of the alternatives proposed only differ by one key detail. Be particularly vigilant on that subject during the course of the translation procedure, the element that makes the difference between the two responses may inadvertently be toned down, thus impairing the item.

The items based on nuances of vocabulary often raise difficult problems of translation. It is rarely easy to find terms in one's own language having exactly the same connotations as those in the source language.

Example: One of the questions relating to the text *Me—An Exchange Student?* reads as follows:

Basically, the tone of this article is

English Version:	French Version 1:	French Version 2:
A. stern	A. <i>sévère</i>	A. <i>dur</i>
B. cautious	B. <i>prudent</i>	B. <i>circonspect</i>
C. humorous	C. <i>humoristique</i>	C. <i>comique</i>
D. encouraging*	D. <i>encourageant*</i>	D. <i>encourageant*</i>

We can expect that the pattern of answers to this item will not be the same in the French version 1 as in version 2, because of the slightly less attractive character of distractors A and B in version 2.

More often than not, when an item proves easier or more difficult in one language than in another one (for students of equal ability), this is because the formulation has somewhat modified the strategy required to find the correct answer. Therefore, it is essential for the translator to fully understand the **nature** of the item. The PISA documents help you to do that by specifying, for each item, which category it belongs to (**Question Intent**) as well as by describing the expected answers (Scoring).

NATIONAL ADAPTATIONS

A great deal of effort has been expended during the development of the material to prevent the content or presentation from abnormally favouring or putting at a disadvantage students of certain countries or certain cultures. The texts and documents which have been selected are of very varied origins; they have been selected by taking into account as much as possible the likely common interests and concerns of 15-year-old young people everywhere in the world. Moreover, the National Centre of each participating country was asked to have its committee of national experts evaluate the texts and documents, and to indicate to the International Centre those which the national committee judged not to be well suited to the culture of the country.

It should be said that to reach perfect cultural neutrality for the tests is probably not possible, nor even desirable. How literate would the youth of the year 2000 be if their competence did not allow them insight into cultures other than their own?

Therefore, the general principle will be to restrict adaptations to those cases in which they are truly required, so as to avoid needlessly disconcerting the students by confronting them with expressions or concepts which are much less familiar to them than to students in other countries, without that affecting the very substance of the text or the items.

The majority of the PISA texts are texts that the student would normally be likely to encounter in daily life when reading books, newspapers, magazines etc. Make it a rule to make adaptations only in those cases *where it would appear usual to make them in your country, should the text be published in a magazine or occur in a school textbook.*

In particular:

- When the text is a *literary* one, do not adapt the names of people, places, currencies etc. The only acceptable changes are those slight spelling adaptations that are generally used by your country's translators.

It would be ridiculous to translate “the brothers Karamazov ” into “the Thom(p)son brothers”.

- Adapt *the biographical names of famous characters* if they are usually adapted in your country.

Both the English and French source versions refer to the Portuguese explorer *de Magalhães* as *Magellan*.

- Do not adapt the names of *institutions or agencies* (unless there is a well-known national version of the same); rather, leave the name of the institution or agency in the source language and add its translation in square brackets if some of the information it contains is deemed important for the understanding of the passage.
- Similarly, please leave *the references presented at the bottom of the text* in the original language (and add their translation in square brackets if needed). For the test booklets these will go on the back of the front cover.
- In *geographical maps*, only those proper names, for which it is customary to have translation in your country’s atlases, are to be translated.
- In *graphs*: the captions, units of measure, coordinates of the axes must practically be translated every time.
- In *newspaper cuttings*, only translate or adapt what you would expect to see translated or adapted if the article were published in one of your country’s daily newspapers or periodicals.
- In *functional texts* (advertisements, instruction manuals, catalogues etc.), make sure that you comply with the Translation notes: they generally specify which aspects could licitly be adapted – to bring the document “closer” to advertisements, instruction manuals, catalogues etc. such as those which the student is likely to encounter in their daily life – without making amendments that could be harmful to proper item functioning.

The most common adaptations are well known by the teams responsible for the preparation of international tests. Most of them will be described in the *Translation notes*. However, not everything can be provided for. Your team of translators will probably be confronted with new problems requiring deviations from the source versions.

For example, in the countries where the school week goes *from Monday to Saturday*, it would be necessary to modify the headings of a possible school timetable, which would go *from Monday to Friday* in the source version. Of course, one must be careful that this modification does not affect the item(s) in any way.

In this case, the principles to be followed are the following:

- It is mandatory that **all** the modifications be mentioned by translators in the *National Adaptations* form. The verifier and the national experts are asked to monitor their relevance carefully and to see to it that they do not present any risk to the items, after checking whether solutions, which are closer to the source version, can be found. In the *National Adaptations* form that the verifier himself/herself will complete for the *International Project Centre*, only the deviations, which have been actually retained after this review, will be mentioned and justified.
- It is imperative that these modifications not affect the difficulty of the items. In particular, four aspects must be watched for:
 - the modification must not alter the complexity of the text;
 - it must not make more plausible or acceptable an answer other than the expected correct answer;
 - conversely, it must not make the correct answer immediately obvious. This would be the case for the question: *How many sides has a hexagon?*, in the languages where the term used to indicate a *hexagon* is in fact a transparent expression (*six sided figure*); and
 - It must not introduce inconsistencies. If you change a proper noun or the name of a currency, do not forget to do it every time these terms appear in the text or in the items referring to them, or in any illustration accompanying the excerpt.

If a *literary text* has been submitted by your country, in principle the English and the French source versions are scrupulously faithful to the original. Please report to the consortium any deviation you might observe and which could be liable to affect the equivalence between the original version and one or the other source versions. The latter will be corrected if needed, so that you can use the author's original without having to amend it.

If a literary text included in the PISA test material stems from an author in a different language than yours and if there exists a version of that text translated in your language, you may use that translation, provided that:

- permission has been granted by the owners of the copyright and the references are duly quoted, and
- the translated version's equivalence with the English and French source versions has been carefully verified. In case of diverging versions, the PISA source version will be the reference.

In various types of non-literary texts, slight adaptations may have been introduced in order to comply with certain needs of the assessment. If the test material for a particular task stems from your submission, please never use it in its original state without having checked whether it is consistent with the PISA source versions.