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Between Manual and the Reader

Technical Translation and the Usability of Manuals

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ABSRACT

Monikielisen teknisen dokumentaation tarve kasvaa jatkuvasti globalisoituvassa maailmassa. Suurin osa käyttöohjeista käännetään suomenkielelle muista kielistä ja usein käyttöohjeiden kääntäminen ulkoistetaan käännöstoimistoille, joiden kääntäjät eivät välttämättä tunne tuotetta, jonka käyttöohjetta he kääntävät. Tällöin mahdollisuus käännösvirheisiin on suuri, ja usein käännetyt käyttöohjeet tuottavatkin käyttäjilleen harmaita hiuksia.

Tämä tutkielma tarkastelee, millaisia lisäyksiä, vähennyksiä ja vaihdoksia esiintyy kahdessa englannista suomenkielelle käännetyssä käyttöohjeessa, ja miten nämä lisäykset, vähennykset ja vaihdokset ovat vaikuttaneet suomenkielisten käyttöohjeiden käytettävyyteen ja luettavuuteen. Tarkasteltaviksi käyttöohjeiksi valikoituivat tulostimen ja pelikonsolin käyttöohjeet siksi, että molemmat ovat tavallisia teknisiä laitteita suomalaisissa kodeissa, ja niitä käyttävät kaikenikäiset ihmiset. Käyttöohjeiden käytettävyyttä analysoitiin teknisen viestinnän ja luettavuuden teorioiden pohjalta. Oletuksena oli, että suurinta osaa lisäyksistä, vähennyksistä ja vaihdoksista olisi käytetty lokalisoinnin vuoksi, ja että lisäyksiä, vähennyksiä eikä vaihdoksia ei olisi käytetty käytettävyyden tai luettavuuden kustannuksella.

Tutkielma paljasta kuitenkin, että suurin osa suomenkielisissä käyttöohjeissa ilmenneista lisäyksistä, vähennyksistä ja vaihdoksista eivät olleet lokalisaation aiheuttamia. Lisäksi selvisi, että lisäykset, vähennykset ja vaihdokset olivat usein vaikuttaneet käytettävyyteen negatiivisesti.

1 INTRODUCTION

Multilingual product documentation is something that modern multinational companies can not avoid. When products are designed, manufactured and sold in several countries, this lays challenges for document design and for technical translation. The same products will be used by different people in different cultures and natural surroundings and these factors also affect user documentation. Translators who are language specialists have an important role in, not only translating user documentation, but also in localizing it so that it corresponds to the target culture's needs. This is not always an easy task, and it is a great responsibility for one translator who normally does not have neither technical nor document design qualifications.

Although the usability of products and their user documentation has lately been getting increasing attention, the effects of translating user documentation on its usability have not been studied to a great extent. Multinational companies tend to outsource the translation of user documentation to translation offices. This indicates that the multinational companies do not necessarily pay much attention to analyzing how usable the translated versions of their user documentation remain after the translation process.

The fact that many multinational companies and Finnish importers of their products rely on outsourcing the translation of user documentation to translation offices and do not want to use, for example, their own user documentation teams that would include people with both technical and communications qualifications when translating user documentation and the lack of previous research conserning the usability of translated Finnish user's manuals suggests that the the usability of translated Finnish user's manuals is a subject that requires further attention.

Techical documentation and technical translation are both broad concepts that can be clarified by briefly presenting what kinds of text types can be categorised as technical documentation. Gurak and Lannon (2007:7) identify eight categories of technical documentation types: manuals, procedures, instructions, quick reference cards, reports, proposals, memos and emails. What is common to all these types is that they include some kind of technical information and that they either give instructions on how to do

something or offer technical information for some other purpose. The eight categories of technical documentation are presented in greater detail in Section 2.1.

The usability of technical documentation is something that has been studied quite extensively. In most cases, these studies have concentrated on the usability of instructional manuals. After product developers realized the importance of usability testing of products, it was soon adapted to testing also product documentation.

Fox example James P. Gleason and Joan P. Wackerman (1984: 59-61) have studied the usability of instructional manuals. According to them manuals face many challenges because today's products offer so many functions and flexibility and the manuals must meet the needs of user's that can have very different backgrounds in using the products. They state that in order to provide the best documentation, manuals must be as usable as possible. In other words, manuals must enable the users to use the equipment the way they want to. Gleason and Wackerman list the following factors that contribute to usable technical documentation: organization, content, appearance and language. These factors will be presented in detail later in this thesis.

Ronald A. Guillemette (1989: 217) writes about usability and usability testing in computer documentation design. He stresses how much product documentation costs and states that if the documentation process is not properly managed and controlled this can lead to higher overall software development costs. Guillemette explains that there are many different approaches to document design, one of which is to test the usability of written material. This means finding out how well target readers can accomplish the tasks that they should by using the manual of the product. According to Guillemette, usability testing of product documentation requires that the interaction between the reader and the documentation is measured. He states that "Observations of reader performance with written materials provide informative feedback on the effectiveness of documenter efforts" (Guillemette 1989: 217).

David G. Novick and Karen Ward (2006: 84-91) have studied what users want in technical documentation. They interviewed 25 people about their needs and preferences concerning a software help system, both online and printed. Novic and Ward wanted to study both online and printed manuals in order to find out what kinds of usability

related differences could be found between them. The people interviewed for the study told that they preferred documentation that was easy to navigate, that provided explanations at an appropriate level of technical detail, that enabled finding and solving problems with the help of examples and scenarios and that was complete and correct. Novick and Ward identified five themes that characterized document qualities that the people interviewed appreciated. These themes were: navigation, appropriateness of explanations, problem-oriented organization, presentation and completeness and correctness.

According to Novick and Ward (2006: 84-91) navigation was a more recurring theme for online documentation. 80 % of the people interviewed commented on ways in which good user documentation enables the user to locate solutions to problems quickly and easily, or how bad documentation systems fail to do this. The next theme appropriateness of explanations, was mentioned almost as often in both online and printed documentation. The users felt that documentation tends to be prone to unfamiliar technical jargon and include irrelevant information. Some of the people interviewed said that documentation is often too simple and general, and someone suggested that documentation should be age-specific. 20 % of the respondents said that documentation writing should be clear, concise and to the point. Problem-oriented organization was an important theme because the respondants said that both online and printed manuals should present solutions to problems rather than the topics.

The people that Novick and Ward interviewed favoured step-by-step instructions, trouble-shooting sections and examples. Presentation theme showed clear differences between online and printed documentation. 80 % of the respondants commented on presentation in printed documentation. This indicates that presentation can be especially problematic in printed documentation. 52 % of the people interviewed preferred visual explanations, for example screen shots and pictures, to textual explanations. The respondants especially disliked extensive text blocks that did not include any pictures. Two people interviewed said that poor translations caused problems in printed documentation but this was not an issue in online documentation (Novick and Ward 2006: 84-91).

The last theme introduced by Novick and Ward was completeness and correctness. This theme was mentioned freguently in online documentation, whereas only two respondants talking about printed documentation mentioned features belonging to the completeness and correctness theme. Comments for both online and printed documentation were similar. The respondants commented that in both online and printed manuals, everything should be available and documentation should include pointers to additional sources of information (Novick and Ward 2006: 84-91).

Novick and Ward summarize the results of their study by stating that the issues describing either good or bad quality documentation were more or less the same in both online and printed documentation. Variety between online and printed documentation was detected in discussing the issues of presentation that included both poor translations and physical size of printed manuals. They also found out that some respondents regarded printed manuals bad only because they were in printed form. On the other hand, the respondants felt that although they were often dissatisfied with printed manuals, they still thought that they were necessary (2006:84-91).

Radegundis Stolze (2009: 124-142) has studied cultural elements in technical translation. She emphasizes that translation of technical texts includes much more than just handling terminology. According to Stolze, all texts either from technical or scientific field include both subject-relevant information and implicit references to cultural background. These cultural references may cause major translation problems, and this is why Stolze stresses how important it is to detect these cultural elements when translating scientific and technical texts.

Stolze writes that the normal translation conventions such as more or less adequate modulations and adaptations that couse cultural shifts do not necessarily apply to scientific and technical translation because the purpose of scientific and technical traslation is simply to continue scientific or technical communication across the language border. In technical translation the main focus must be on creating a translation that is communicatively adequate with the source text (2009: 124-142).

According to Stolze this includes clarity, precision and linguistic economy, because the key elements of scientific and technical texts, and also other types of LSP (language for

special purposes), are specification, condensation and anonymity of prepositions. Stolze quotes Schmitt (1999: 228) and writes that understanding terminology is not guaranteed by using dictionaries and databases beacause new terms appear constantly in scientific and technical texts. This is a real challenge for the translator.

Stolze also lists the folowing factors that cause problems for translators of scientific and technical texts: safety and construction rules that may be different between the source text culture and the target text culture because of, for example, different climate conditions, problems with equivalence and with metaphors that are not the same in the source culture, and the target culture and differences between the syntax of the source language and the target language (2009:124-142).

Leena Salmi (2003) has in her doctoral thesis, studied multilingual software documentation and usability. Salmi wanted to investigate what kinds of problems the users of a wordprosessing program had with software documentation and if it would be faster to use a wordporessing program in one's mother tongue than in English. Salmi collected her data by videotaping 33 user sessions and analyzed her material with both gualitative and quantitative methods. Salmi divided the problems that occured in her usability tests into six groups: problems, related to the use of the wordprosessing program specifically, those related to the use of computers in general, those related to the text in the userinterface (terminology), those related to the structure of the documentation, those related to the contents of the documentation and finally problems related to the task.

Her results indicated that it was faster for the user's to use the wordprosessing program in their mother tongue than in English. She also found that the more experienced the users were, the less problems they had and that documentation problems did not only occur in the translated documentation but also in the original version. According to Salmi (2003), most of the documentation related problems were not related to language versions although some problems were caused by innaccurately translated terms. Salmi also stresses that many problems that appeared when using product documentation in general can be explained by differend background knowledge. The users do not either

have all the knowledge that the writer of the documentation has assumed, or the users have more knowledge than the writers have assumed.

All the earlier studies presented here have concentrated on either usability of technical documentation or the special features of technical translation. As said earlier, usability testing was first common during product development, but it is nowadays also often applied to user documentation. The earlier studies analyzed the usability of product documentation by either observing users using the documentation or by interviewing people about their preferences concerning user documentation. Leena Salmi (2003) did include the aspect of multilingual user documentation in her study and found out that language versions were not a major problem from usability's point of view. However her study concentrated only on wordprosessing program documentation and she did found out that some problems with translated terminology did occur.

This study approaches multilingual technical documentation and it's usability strictly by concentrating on the text. The translated technical texts, which in this study will be user's manuals, are analyzed from the point of view of usability. This study includes elements from both the usability of technical documentation and technical translation.

The aim of this thesis is to find out whether the pragmatic changes (additions, omissions and replacements) that appear in the translated Finnish manuals have increased or decreased the manual's usability. Because localization can be expected to always improve the usability of the source text (from now on referred to as ST), the main focus will be on changes that occur for reasons other than localization.

Another point of interest will be how the pragmatic changes that appear in the target texts (from now on referred to as TT) affect the readability of the TT. Although it is likely that if the pragmatic changes appearing in the TTs have decreased or increased the usability of the manuals they have done the same to the readability of the manuals, some attention will be paid to possible differences between the effects on usability and readability.

After discussing some previous research and presenting the research question, hypothesis and material of this thesis, I will clarify the pragmatic changes of translation

that are additions, omissions and replacements. These pragmatic changes will be used in this thesis as a way of categorizing the differences between the STs and the TTs of the two user's manuals. Additions, omissions and replacements will be discussed and clarified with examples from the research material. This is followed by the representation of the different types of technical communication in order to define what technical translation is. Then the concept of localization is discussed. Usability and readability are discussed in paragraph 3, and this theory will later be used as a basis for the usability analysis of the found additions, omissions and replacements.

The analysis part of this thesis will be divided according to the three pragmatic changes of translation. Each of the three paragraphs will include three subsections: one which will discuss cases that have had a negative effect on usability, one which will discuss cases that have had a positive effect on usability, one which will discuss cases that have had an effect on readability. After discussing the cases of occuring additions, omissions and replacements found in the two translated Finnish user's manuals and after analyzing why they have occured and how they have affected the usability and readability of the translated user's manuals, the results are gathered and discussed and conclusions are drawn from the findings.

1.1 Material

The research material of this thesis consisted of two original English user's manuals and of their Finnish translations. The user's manuals were chosen in such a way that that they would represent different kinds of products that are commonly used nowadays. The products of which user's manuals were analyzed in this thesis were HP Deskjet1000 J110 series printer and an Xbox 360 game console by Microsoft

When technical documents are translated from source language (from now on referred to as SL) to target language (from now on referred to as TL), some changes always occur between the TT and the ST. This is normal to any kind of translation simply because languages have different structures. Because of this, word for word translation is usually impossible and undesirable. Word for word translation is simply impossible if the translator wants to produce a fluent TT.

One way to look at the changes that occur between the ST and the TT has been to investigate what has been added to the TT, what has been omitted from the TT or what has been replaced in TT when compared to the ST. These additions, omissions and replacements can be called pragmatic changes. Chesterman has defined pragmatic translation startegies as follows: "change concerning pragmatic aspects of a translation, involving some adjustment of the message for the target audience"(1997: add page).

The Finnish MonAKO glossary has defined additions as: "translation technique or strategy involving the adding of information not present explicitly or implicitly in the source text" (MonAKO glossary: 2011). Omissions have been defined as follows "translation technique or strategy in which the translator decides to leave out information that is present in the source text; can be seen as a translation error if the translator doesnt have an acceptable reason for the omission" (MonAKO glossary: 2011).

In technical translation some of the pragmatic changes that happen between the ST and the TT are caused by localization that is necessary in order for the translations to be uselfull in their target culture. However, also changes that are not caused by localization can occur.

The manuals that were chosen as the research material of this thesis were chosen because the companies that manufacture these products and manuals are multinational companies that were originally from the United States, and it could therefore be expected that their user documentation had originally been written in English and translated into Finnish from English. This was important because this thesis focused on analyzing the kinds of changes the translators had made into the original user documentation when translating the manuals into the TL and how these changes affected the usability of the translated user's manuals. It was important that the ST's were not translations but originals in order to make certain that the changes that occured in the Finnish translations were changes made by the translators of the Finnish user's manuals.

Additions appeared in the TT's when the translator possibly felt that something had to be added to the target text in order to make it clearer for the reader. Additions in TT

were used, for example, to clarify a concept appearing in the source text to make it possible for the reader to understand it.

When presenting the examples, I first presented the clause that appeared in the English manual and then the clause that appeared in the Finnish manual. Then I translated the Finnish clause into English (these back translations were indicated with square brackets).

In this thesis additions were defined as expressions that appeared in the TT but not in the ST. For exampe the following addition could be found in the Finnish translation of HP Deskjet 1000 J110 series user's manual on page 9.

> (1) You can load one or more envelopes into the input tray of the HP Printer. (Hewlett-Packard 2009, English version, later referred to as HP 2009 Eng.)
>
> Voit lisätä HP -tulostin -laitteen syöttölokeroon kirjekuoria.(Hewlett-Packard 2009, Finnish version, later referred to as HP 2009 Fin.)
>
> [You can add envelopes into the input tray of the HP Printer device]
>
> [Back translations by the author of the thesis]

Example one had one addition. The word "laitteen" [device] did not appear in the original English manual, but it had been added into the Finnish translation. This addition is not caused by localization because there are no cultural differences between the source culture and the target culture that would require this addition.

Omissions were used when some information was though to be irrelevant for the target readers and target culture of the translations; omissions were, thus, used as a means of reducing irrelevant information.

In this thesis omissions were defined as expressions that appeared in the ST but that did not appear in the TT in any form. For example the following omisission could be found in the Finnish translation of HP Deskjet 1000 J110 series user's manual on page 7.

(2)   From your software application, click the Print button.(HP 2009 Eng.)

Napsauta sovelluksen Tulosta-painiketta. (HP 2009 Fin.)

[click the print-button of the software application.]

In example two the word "your" had been omitted from the Finnish translation. This omission probably occured, because the translator had thought that he/she could shorten the Finnish manual and thus make it more usable by omitting the irrelevant word "your".

In this thesis replacements were defined as words that had, in some way, been changed in the TT when compared to the ST. When a ST word had, for example, been replaced by a TT synonym instead of a direct translation, this was considered to be a replacement:

(3)   On Layout tab select Portrait or Landscape orientation. (HP 2009 Eng.)

Valitse Asettelu-välilehdestä tulostussuunnaksi Pysty tai Vaaka. (HP 2009 Fin.)

[From the Layout tab select upright or horizontal for printing orientation.]

In example three the ST words "Portrait" and "Landscape" had in the TT been replaced by the Finnish words "Pysty" [upright] and "Vaaka" [horizontal]. This is a good example of a replacement where the translator has decided to use synonyms because he/she has most likely felt that the the replacement would make the TT more usable for the Finnish readers.

Also when a change in sentence structure between the ST and the TT had an effect on a translated Finnish word, this was considered to be a replacement. The following example showed how a change in sentence structure between the ST and the TT had caused a replacement in the TT:

(4)   To print a photo on photo paper (HP 2009 Eng.)

        Valokuvan tulostaminen valokuvapaperille (HP 2009 Fin.)

        [Printing a photo on photo paper]

In example four The ST word "print" has been replaced by "tulostaminen" [printing] in the TT. This replacement does not have any significant effects on the TT's usability and it probably occurs because the translator has decided that a different sentence structure in the TT would turn the translated manual into better Finnish.

1.2 Method

The hypothesis of this thesis was that because the translators had probably wanted to write a fluent TL text, it is likely that additions, omissions and replacements have occured in the two translated Finnish manuals. However, because the Finnish translators had been translating technical documentation (user's manuals), it could be expected that the additions, omissions and replacements that they had used when translating the two manuals, had not been used at usability's or readability's expence.

It could be expected that the additions, omissions and replacements did not have negative effects on the usability or readability of the translated Finnish manuals, and that most of them had been used because of the need to localize the Finnish manuals. When the Finnish translators of the two user's manuals analyzed in this thesis had made changes between the STs and the TTs by using either additions, omissions or replacements, it could be expected that they always had a good reason for doing this.

This thesis was a qualitative case study in which the replacements, omissions and additions found in the Finnish translations were analyzed from the point of view of usability and readability. The analysis was done by comparing the STs and the TTs and by analyzing the additions, omissions and replacements from the point of view of usability and readability.

The criteria for analyzing the effects of the pragmatic changes of translation on usability were taken from guidebooks written for technical writers and from research articles from the field of usability. The criteria for analyzing the effects of additions, omissions and replacements on readability were taken from the Federal Plain Language Guidelines (2011). These criteria are presented in tables one and two. The criteria for good readability and usability are presented more extensively in chapter 3.

The following tables include all the criteria for good readability and usability that were used in the analysis section of this study when determining whether the pragmatic changes of translation had had either a negative or a positive effect on the usability and/or readability of the translated Finnish user's manuals. If the features of good readability have corresponding usability features, they are presented side by side in the tables. This is because in most cases the same features appear in both usability and readability guidelines. The features of good readability and usability are divided into two different tables according to whether the features are user related (Table 1) or grammar related (Table 2).

Table one presents the readability and usability features that concentrate on how technical documents should be written in order for the users to be able to operate as well as possible. These features of good readability and usability are called user related features.

User related features of good readability	User related features of good usability
The text is written to an identified audience. Federal Plain Language Guidelines (2011)	The information conveyed should be written to an identified audience and the text should take into account that the audience(s) may have multiple interpretations of technical communication (Burnett 2005:6).
	Technical documents should be accurate and they should not include any mistakes or errors (Hargis, Hernandez and Ramaker 1997:2).
	Technical documents must be complete and they should include all information necessary (Hargis, Hernandez and Ramaker 1997:2).
	Technical documentation should always be relevant for the purpose at hand (Gurak and Lannon 2007:14).

Table 1. The user related criteria of good readability and usability used when analyzing the pragmatic changes of translation found in the TT's.

Table two presents the readability and usability features that concentrate on how to write a fluent technical text. These text oriented features are called grammar related features.

Grammar related features of good readability	Grammar related features of good usability
Precise and concise words are used. Federal Plain Language Guidelines (2011)	Technical documentation must be concise and text should be clear, simple and precise (Gleason and Wackerman 1984-59-61).
Precise and concise words are used. Federal Plain Language Guidelines (2011)	Familiar and unambiguous words should be used (Jones 1996:29).
Subject, verb and object should be kept close together. Federal Plain Language Guidelines (2011)	Straightforward, conventional sentence structure should be used (almost all sentences should have S-V-O patterns (Jones 1996:29).
	Conversational and easy to read text should be used and texts should be aimed at eight-grade reading level (Gleason and Wackerman 1984: 59-61).

Table 2. The grammar related criteria of good readability and usability used when analyzing the pragmatic changes of translation found in the TTs.

The pragmatic changes of translation could have either a positive or a negative effect on the usability and redability of a target text if having impacts such as presented in tables one and two. The following examples show how additions, omissions and replacements could affect the usability and/or readability of a target text.

The following sentence was found on page 1 in the Finnish HP printer manual and it included an addition that had decreased the usability of the TT.

(5)   Get to know the HP Printer (HP 2009 Eng.)

HP-tulostin ohjelmistoon tutustuminen (HP 2009 Fin.)

[Getting to know the HP printer software]

In example five the word "ohjelmisto" [software] had been added to the TT. Because it was clear that the user's manual in question instructed people how to use the printer

machine and, not how to use the printer software, the addition had made the translated Finnish manual less usable by adding a word that made the Finnish manual less accurate and somewhat ambiguous. Hargis, Hernandez and Ramaker (1997:2) support this by stressing that technical documents should be accurate and that they should not include any mistakes or errors.

The following instruction could be found on page 5 in the Finnish printer manual, and it included four additions that had increased the usability of the Finnish manual.

> (6)　Turns the product on or off. (HP 2009 Eng.)
>
> Tätä painiketta painamalla voit kytkeä ja katkaista laitteen virran. (HP 2009 Fin.)
>
> [By pressing this button you can turn the product's current on and off]

Example six shows how the additions used had increased the manual's usability according to the following criteria given by Gurak and Lannon (2007:14): The material should be relevant for the purpose at hand. The additions used had made the material more relevant for the purpose at hand and made the information conveyed to respond to the situation where it was used, because the text had become more instructional and personal for the user of the manual by saying that "By pressing this button" the user can "turn the product's current on and off" instead of just saying that "Turns the product on or off" which does not tell the user what he or she should do in order to succeed in the desired action.

The following omission that had decreased the usability of the Finnish manual could be found on page 10 in the Finnish HP printer manual:

> (7)　All of the paper in the stack should be the same size and type to avoid a paper jam. (HP 2009 Eng.)
>
> Kaikkien pinossa olevien arkkien on oltava samankokoisia ja -tyyppisiä, jotta tukoksia ei tulisi. (HP 2009 Fin.)
>
> [All of the paper in the stack must be the same size and type so that a jam does not occur.]

In example seven the word "paper" had been omitted from the Finnish translation and because according to Hargis, Hernandez and Ramaker (1997: 2): Technical documents must be complete and they should include all information necessary, it could be said that the omission had reduced the usability of the Finnish manual. Because the Finnish manual did not tell the user what kind of jam could occur if the papers used were not the same size and type, the user could be confused because he or she did not unerstand how paper size and type were connected to possible jams occuring in the printer device.

The following omission that could be found on page 9 in the Finnish printer manual had made the translated manual more usable:

> (8)   You can load one or more envelopes into the input tray of the HP Printer (HP 2009 Eng.)
>
> Voit lisätä HP -tulostin -laitteen syttölokeroon kirjekuoria. (HP 2009 Fin.)
>
> [You can add envelopes into the input tray of the HP Printer device]

Because Burnett (2005: 6) has suggested that in good quality technical documentation the information conveyed needs to respond to the organizational situation where it is conveyed and it should fulfill its identified task, this omission had increased the manual's usability by reducing information that was not relevant for the situation where the manual was used. The user did not need to know that he/she could add "one or more envelops into the input tray". It had certainly been enought to say that the user "can add envelopes into the input tray".

The replacement found on page 5 in the Finnish version of the HP printer manual had decreased the manual's usability.

> (9)   Use only with the power adapter supplied by HP" (HP 2009 Eng.)
>
> Laite on tarkoitettu käytettäväksi vain HP:n toimittaman verkkolaitteen kanssa (HP 2009 Fin.)
>
> [The device is meant to be used only with the net device supplied by HP]

In example nine the ST word "power adapter" had in the TT been replaced by the word "verkkolaite" [net device] which was not a synonym for power adapter but could mean a completely different thing. Because according to Jones (1996: 29) familiar and unambiguous words should be used and according to Hargis, Hernandez and Ramaker (1997: 2) technical documents should be accurate and they should not include any mistakes or errors in order to be usable, it was clear that the replacement in question had decreased the usability of the translated Finnish manual. The word "verkkolaite" [net device] was ambiguous and it could be considered to be a mistake since the ST word "power adapter" clearly referred to the power cord that connected the printer into the wall socket. The Finnish word "verkkolaite" [net device] was a word that referred to devices more complex than power cords and so the user of the manual was likely to be confused because of the replacement used in the Finnish manual.

The following replacement that could be found on page 8 in the Finnish manual had made the Finnish manual more usable.

(10) If the photo paper you are using has perforated tabs, load photo paper so that tabs are on top." (HP 2009 Eng.)

Jos valokuvapaperin reunassa on rei'itetyt repäisyliuskat, aseta valokuvapaperi niin, että liuskat ovat ylimpänä." (HP 2009 Fin.)

[If there are perforated tear strips on the side of the photo paper, load photo paper so that strips are on top]

Example ten demonstrates how the ST word "tabs" had been replaced by the target language word "repäisyliuskat" [tear strips] in the Finnish manual. The translator of the Finnish manual had probably thought that the source language word "tabs" would not be clear enough if a corresponding word was used in the TT. The replacement improved the usability of the Finnish manual because it followed a guideline given by Hargis, Hernandez and Ramaker (1997: 2): Technical documents must be complete, they must be complete and they should include all information necessary (Hargis, Hernandez and Ramaker 1997:2).

1.3 Background

Hewlett-Packard, a company founded in United States in 1939, is a manufacturer of for example printers, computers and computer monitors (Hewlett-Packard 2010). According to the Finnish office of Hewlett-Packard, the original user manual for the companys products are written in the United States and are then translated into other languages by translation offices. The Finnish translations of HP users manuals are mainly done in one translation office.

The whole translation process happens electronically, and therefore it is impossible to know in which country the translation is actually done. Previous Finnish translations are used as a basis when new manuals are translated. In HP Finland, Each person responsible for a certain product in Finland also goes through the Finnish translations of their own products' user manuals and accepts the translations (private communication 26.10.2010). The manual that will be analyzed in this thesis is a manual for HP Deskjet 1000 J110 series printer machine. The manual has been written in 2009 and the product is still sold around the world.

Xbox 360 is a game console created and manufactured by Microsoft. The Finnish Xbox 360 installation manual that is analyzed in this thesis has been translated into Finnish from the English manual version. The Finnish translation has been done by a translation office hired by the Microsoft. The translation office has been given training concerning Xbox (Private communication 15.11.2010). The Xbox manuals analyzed in this thesis have been written and translated in 2005 and the game console Xbox 360 and therefore also the manuals are still widely used around the world.

2 TECHNICAL DOCUMENTATION, TRANSLATION AND LOCALIZATION

Since the field of study of this thesis is technical translation, it is necessary to determine what actually is technical translation? What differentiates it from other forms of translation? In order to answer these questions it is first necessary to determine what technical communication is and what aspects of communication can be included in this field. One way to look at this is to determine what text types can be categorized as technical communication. This chapter will first clarify the different types of technical documentation. After this, the special features of technical translation are discussed and the concept of localization is explained.

2.1 Types of Technical Documentation

Technical documentation can be thought to be a main category of different types of texts that include technical content. These texts can be in very different forms and have different purposes. This thesis has focused on user's manuals, but they are only one type of technical documentation. This chapter presents eight different types of technical documentation presented by Gurak and Lannon (2007: 7-8) and discusses the similarities and differences between these types of technical documentation.

Gurak and Lannon list the most common technical documentation types that technical communicators produce although it is common that these different types overlap. They divide technical documentation types into eight categories that are manuals, procedures, instructions, quick reference cards, reports, proposals, memos and emails. According to them, manuals include information on, for example, how to use a product as well as background information about the product that can include technical specifications or lists of materials (2007:7).

 Manuals are perhaps the most familiar form of technical documentation since almost all technical products include a manual that is read more or less when people are learning to use new equipment. Manuals can be very different, and it might sometimes be difficult to separate them from, for example, procedures, that according to Gurak and

Lannon, "explain how to perform a task or how a particular process happens" (2007:7), whereas instructions are, according to them, a lot like manuals and procedures because they also explain how to do something, while instructions give more detailed information. Instructions can have systematic lists of the actions that the user needs to perform in order to use a product successfully (Gurak and Lannon 2007:7). It is clear that manuals, procedures and instructions are very close to each other, and they often serve the same purpose. It might also be possible that a manual includes elements from both procedures and instructions. A manual might have a section where a particular process, connected to the product, is explained in detail, or it could include a systematic list of actions needed to perform in order to use a product. A manual can, then, include elements from boht procedures and instructions.

However some types of technical documentation are easier to separate from manuals simply because of their purpose, or because of the way they are created. Gurak and Lannon write that for example quick reference cards are defined as summaries of longer instructions, summarized for a certain purpose that does not need to include all the instructions given in the longer manual (Gurak and Lannon 2007: 8). This definition makes it easy to separate quick reference cards from manuals or instructions. However, manuals may include lists that enable the user to for example find answers to most common problems connected to a certain product and these lists are is a way summaries of the whole manual and so also manuals can include quick reference cards.

Reports, according to Gurak and Lannon (2007:8) "...generally focus on a specific problem, issue, or topic", and they may, like manuals, include suggestions for course of action (Gurak and Lannon 2007:8). What might differentiate reports from user's manuals is that they are often less instructional. As Gurak and Lannon write, reports focus on a specific problem, issue or topic and not, for example, on how to use a product if one wants to accomplish a certain task.

Proposals is the sixth category of technical documentation presented by Gurak and Lannon. According to them, proposals are usually written when a reader is persuaded to improve conditions or accept a service or a product or to otherwise support a certain action or a plan (2007:8). "Proposals make specific recommendations and propose

solutions to technical problems" (2007: 8). Perhaps what differentiates proposals from the other types of technical documentation is that they are in some ways written for the user in order to make him/her to act in a certain way and not in order to help the reader to accomplish some task.

Memos, according to Gurak and Lannon (2007:8), have many purposes and are an important part of technical communication. They can be used to inform, to document, to persuade or to encourage discussion. Memos tend to be short (a page or two) following a certain format. Memos and emails have much in common according to Gurak and Lannon. According to them, emails be seen as electronic versions of memos, although emails are nowadays more common than paper memos. Both emails and memos tend to follow the same format.

These are the eight main categories of technical documentation that Gurak and Lannon present, but they also remind the reader that other categories do exist. They also write that technical documentation can appear in many forms. Besides traditional printed forms, technical documentation can appear on CD-ROM, on WWW pages, on intranet pages, on electronic text (emails and attachments), as on line help or as oral presentations or training sessions (Gurak and Lannon 2007:8). The category of technical documentation that will be studied in this thesis is manuals.

2.2 Technical Translation

After listing the forms of technical documentation, technical translation can be defined as translation of these types of texts. But how does the translation of these documentation types differ from translating other text types? Newmark (1988:151) has specified special features of technical translation. He states, for example, that technical translation is mainly distinguished from other styles of translation by terminology. This is significant although terminology only makes up about 5-10% of a text. Newmark also lists grammatical features such as nominalizations, passives, third persons, present tenses and empty verbs that are typical for English technical translation.

Mark Herman (1993:11) points out that technical translation includes several elements from technical writing. According to him: "Clarity, concision and correctness, the principal stylistic goals of technical writing, are simultaneously those of technical translation; an exellen technical translator is an excellent technical writer" (1993:11). Both technical translators and technical writers must concentrate on writing as usable text as possible. There is however one major diffenrence between technical writers and technical translators; technical translators must master both the source language and the target language. Technical translators must also be able to localize texts into the target country. This is something that a technical writer does not necessarily need to think about.

Mark Herman (1993:13) explains the special challenges that concern technical translation. He stresses that if clarity is to be achieved, the translator often has to completely recast sentences when writing the TT simply because of the differences between the syntactical and lexical features of the ST and the TT. This might be case with most translation types but what makes it especially challenging for technical translators is that they should be able to make the TT as close to the ST as possible. This is simply because tehnical translators often have very little information about the product of whose manual they are translating, and so they have very little freedom in making changes into the TT.

Herman (1993:17) also argues that a good technical translator must always aim at concision and that a technical translator should have the possibility to, besides translating, also edit the ST in order to be able to make the TT as concise as possible. However according to Herman, the translator is rearly given this opportunity, and the translator has to aim at improving the concision of the TT only linquistically.

The final special requirement distinquishing technical translation from other types of translation that Herman (1993: 18) presents is correctness. By correctness he means two things. Firstly, the ideas and technical terms of the ST must be accurately re-created in the TT. According to Herman, this is often impossible if the translator does not have detailed knowledge about the subject of the document to be translated (Herman 1993:18). This is, however, nowadays quite rare, especially with manual translation.

Most companies tend to outsource their translation to translation companies and this often leads to a situation where the translator has no experience of the product at all and has to rely solely on the ST when translating the TT.

The second requirement that Herman (1993:18) means by correctness is that a technical translator has to be able to create an accurate TT despite mistakes in the ST. He mentions that although it can not be expected that the translator would be able to discover and refute errors and falsifications, it can be expected that the translator can correct more obvious mistakes in the ST, such as inconsistencies and blatant errors of fact. After all, no one is likely to read the ST as closely as the translator and so he/she has the responsibility to correct the mistakes that he/she finds in the ST.

Because of the similarities between technical writing and technical translation, the same assessment criteria can often be used when trying to determine what is good and what is poor quality technical translation. One way to study both technical translation and technical writing is to analyze their usability by using for example the criteria presented in chapter 1.2.

2.3 Localization

Localization is a form of domestication, but it is also a term that in a way is a counterpart of the term globalization. Where as the process of globalization aims at designing products and documentation that are aimed at the international market, localization includes localizing products and services so that they are appropriate for specific users or small groups of users. The process must take into account the different needs of countries, languages and customers (Burnett 2005: 48-49).

In manual translation, localization is an important part of turning the ST into the TT. In translation, localization often appears through additions, omissions and replacements that are used to reduce information that is not considered important for the target users, or to add information that is considered important for the target country, but which has not been considered important in the source country. Replacements are used as a means of localization when the translator decides to replace words or even whole sentences

because he/she believes that doing so the translation will better answer to the needs of the target culture.

In technical translation typical localization includes changing measures and technical specifications of the ST to correspond to the measures and technical specifications used in the TT country. Localization is also needed, if the natural surrounding (e.g. climate) is very different in the ST country and in the TT country.

3 USABILITY AND READABILITY OF TECHNICAL DOCUMENTATION

Usability is a term that is usually connected to different techical products, and this shows, for example, in the following definition. ISO 9241-11 standard defines usability as follows: "Usability: the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use" (Usability net: 2011).

Although usability is often connected to technical products it is nowadays also connected to technical documentation. Technical documentation is a part of succeeding is a certain task just as the product itself, and also technical documentation must be usable if a good user experience is to be achieved. The usabiliy of technical communication can be assessed by many factors. Hargis, Hernandez and Ramaker (1997: 2) have developed a list of "quality characteristics" that can be used to assess the quality of a technical document. This list emphasizes that technical documents should be accurate, and that they should not include any mistakes or errors. Technical documents should also be clear, which means that no ambiguity should occur. Hargis, Hernandez and Ramaker also stress that technical documents must be complete. They should include all information necessary, and they should be concrete. Concrete examples and language should be used.

The importance of organization and visual effectiveness is also pointed out. Technical documents should be organized in such a way that the sequences of a document make sense for the situation where it is used. The last characteristic that is listed is layout. The layout, screen design, color and other graphical elements that technical documents may include should be used effectively (Hargis, Hernandez and Ramaker 1997: 2).

Another way to examine the usability of technical documentation is to study how often the intended reader must omit material or reverse directions in order to use technical documentation. This way of analyzing documentation is presented by Edmund H. Weiss (1991: 28-29). According to Weiss, the different error types leading to skipping and

looping when using technical documentation can be divided into three different categories. These categories are startegic errors, structural errors and tactical erroros.

Strategic errors in documentation cause the reader to search several books and use two books for one task. Strategic errors also cause the reader to ignore most pages of the documentation. Structural errors, on the other hand, make the user to jump from front to back when using documentation. They also cause the reader not to read pages in sequence and make the user search for exhibits and tables. Tactical errors appearing in user documentation cause the readers to stop noticing mechanical errors and getting stuck on inconsistent terminology. They also cause the readers to having to reread difficult text passages (Weiss: 1991: 28-29).

Gurak and Lannon (2007: 14) concentrate on more or less the same aspects than Edmund H.Weiss when discussing how to measure the usability of technical documentation. When the usability of a technical document is assessed Gurak and Lannon suggest that the following questions are asked: Can users find what they need efficiently? Is language at an appropriate technical level? Does the document contain a table of contents, index, or other such device? When assessing the relevance of technical documentation, Gurak and Lannon mention that it should be asked whether the material is adequate for the audience or whether it is adequate and relevant for the purpose at hand.

Another way to analyze the usability of technical documentation is introduced by Rebecca E. Burnett (2005: 6). She divides the factors contributing to the quality of technical communication into nine categories that all include different focuses. These categories that she calls the rhetorical elements of technical communication are: *content, context, purpose(s), audience(s), organization, visuals, document design, usability and language conventions.*

Burnett (2005:6) explains that the *content elements* include that the information conveyed through technical communication should be accurate and appropriate, and it should be adjusted to the audience(s) and that the information conveyed should provide necessary source citations and documentation. The *context element* suggests that the

information conveyed in technical communication needs to respond to the organizational situation where it is conveyed and that it should fulfill its identified task.

The element of purpose(s) includes that the purpose of technical communication is to give information and to persuade the intended audience(s) and to identify the position that the technical communication needs to take. *The audience(s) element* includes that technical communication should address an identified audience that often have different needs. Burnett also mentions that good technical communication should take into account that the audience(s) may have multiple interpretations of technical communication, whether this is a document, a visual or an oral presentation (2005:6).

Organization element suggests that information conveyed through technical communication should be organized so that it is logical, retrievable and accessible and so, that the information is easy to navigate, comprehend and recall. *The element of visuals* includes that technical communication should use different kinds of visual means to aid people to understand its content. *The document design -element* suggests that technical communication should be designed so that it presents information as accessibly, comprehensively and usably as possible. *The element of usability* focuses on the usability of technical communication. According to this element, the information conveyed through technical communication should be as functional and usable to its audience(s) as possible (Burnett 2005:7).

The element of language conventions suggests that technical communication should provide information that is straightforward and that differentiates opinions from verifiable information. Burnett (2005:7) mentions that the language of technical communication should provide information that is simple for the audience(s), but it should also provide information that is stylistically varied.

It is quite evident that most researchers in the field of usability of technical documentation agree that certain elements must be taken into account when assessing the usability of documentation. The different elements contributing to usability are however usually categorized in different ways according to the researcher.

Gleason and Wackerman (1984:59-61) list the following factors that affect the usability of instructional manuals: *organization, content, appearance and language*. By *organization* they mean that usable manuals must have a structured format, complete index, sections taht are set off by tabs and a table of contents. By *content* Gleason and Wackerman indicate that manuals should concentrate on operator tasks including practice exercises and providing clear illustrations and being concise. Into the *appearance factor* Gleason and Wackerman include attractive and colorful presentation that also includes plenty of white space and is divided in booklets that are small and easy to handle. The fourth factor, presented by Gleason and Wackerman, is *Language*. They state that usable instructional manuals include text that is conversational and easy to read and that is aimed toward an eight-grade reading level.

Gleason and Wackerman (1984: 59-61) also list factors that usually indicate bad usability in instructional manuals. According to them, the following factors can be found in instructional manuals that are not usable: inaccurate information, too much information or detail, demeaning or childish tone, formal, stiff-sounding or full of jargon, poor printing qualities, poor organization (the information is of no use if you can not find it).

Another way to inspect the usability of technical documentation is to analyze what needs to be avoided if one wants to write usable user documentation. Ronald A. Guillemette (1989:217) lists problems that are typical for software documentation: software structure, rather than task-oriented organization, unintuitive arrangement, depth-within-breadth (versus layered) development, abstract, vague, misleading or inconsistent language, unnecessary technical detail, complex instructions and graphics, overly formal or patronizing tone, legibility or dexterity concerns, variable layouts, lack of white space, insufficinet use of graphics with text, inadequate or excessive use of typographical and spatial cues, few concrete, relevant examples focusing on commonly used features, invalid or obsolete software descriptions and sketchy, fragmented, or incomplete information. These kinds of lists give a good understanding of what are the main issues concerning the usability of technical documentation. What is to be avoided and what should be aimed at when writing or translating technical documentation.

Because a technical translator is not a technical writer, he/she has only limited possibilities to have an effect on the usability of the TT. A translator can not usually make changes into the layout or structure of the TT, and the translator's only possible means to have an effect on the usability of a translated manual is to translate the text according to the quidelines of technical writing when applicable.

Readability is a term that is very similar to usability. However readability is a term strictly connected to written materials where usability is a broader concept, also including, for example, the usability of different machines or computer software. Usability is something that is strictly connected to technical communication and other instructive texts, whereas readability is connected to any kinds of texts.

Sometimes usability and readability can even contradict each other. When one feature of good readability is that abbreviations are used as little as possible (Federal Plain Language Guidelines 2011), usability guidelines, on the other hand, instruct that approved abbreviations should be used (Jones 1996:29). Contradictions like this are likely resulting from the different aims of usability and readability. A text might be difficult to read if it includes several abbreviations (especially if the reader is not familiar with the abbreviations), but when an experienced technician reads a manual in order to perform a certain task, abbreviations that he/she is familiar with are likely to make the manual more effective. If abbreviations were not used, the technician would probably feel that the manual includes irrelevant information and so finding the relevant information for performing the desired task would be more difficult. In other words, the manual would be less usable but might be more readable.

The next chapter illustrates the similarities and differences between the features of good usability and readability and presents the criteria for good readability and usability that will be used later when analyzing what kinds of effects the pragmatic changes of translation have had on the readability and usability of the manuals analyzed. The Federal Plain Language Guidelines (2011) list 35 features of good readability that in many cases, have more or less corresponding features in usability theory. The features of good readability and usability can be divided according to their functions. Some of the features listed are user related (texts need to be written in such a way that the user's

needs and qualifications are kept in mind) and some of the features are grammar related (texts should be written according to certain grammar rules). The user related features of good readability and usability used in this thesis are presented first.

The Federal Plain Language Guidelines (2011) state that a text should always be written to an identified audience. Burnett (2005:6) lists that if one wants to achieve good usability, the information conveyed should be adjusted to the audience(s) and the text should take into account that the audience(s) may have multiple interpretations of technical communication. Here the features contributing to good readability and good usability are very similar, which, as this chapter will demonstrate, is quite often the case.

The second usability related feature of readability, used in the analysis part on this thesis is that the text should be organized to meet the reader's needs (Federal Plain Language Guidelines 2011). The corresponding usability criteria presented by Burnett (2005:6) is that information should be organized so that it is logical, retrievable and accessible and that the information is easy to navigate, comprehend and recall. The third user related guideline for good readability suggests that examples should be used (Federal Plain Language Guidelines 2011) and the corresponding usability guideline says that concrete examples should be used (Hargis, Hernandez and Ramaker (1997:2). In this case the criteria for both good readability and usability are identical.

The following user related usability guidelines do not have corresponding readability guidelines in the Federal Plain Language Guidelines, but they are an important part of analyzing the usability of translated manuals in this thesis. The fourth user related usability quideline used in this study is that manuals should provide information that is straightforward and that differentiates opinions from verifiable information (Burnett 2005:6). The fifth usability guideline suggests that technical documents should be accurate and that they should not include any mistakes or errors (Hargis, Hernandez and Ramaker 1997: 2). Hargis, Hernandez and Ramaker (1997: 2) also write that technical documents must be complete and that they must include all information necessary. The last user related usability criteria that will be used to analyze the users's manuals in this thesis is presented by Gurak and Lannon (2007:14). They stress that technical

documentation should always be relevant for the purpose at hand. These features listed clearly concentrate on what is required of technical texts if the user wants to succeed in different tasks.

The following features of good guality technical documentation that will be used in the analysis section of this study are grammar related. Grammar related features concentrate on the readability and usability of technical documentation on more precise grammatical level. Texts must be fluent on the grammatical level if good readability and usability is to be achieved. The first grammar related features of usable technical documentation are mentioned in the Federal Plain Language Guidelines, and they have corresponding features also in usability theory. The Federal Plain Language Guidelines (2011) claim that if one wants to write readable text, it is important that precise and concise words are used. Usability researchers, on the other hand, stress that technical documentation must be concise and that text should be clear, simple and precise (Gleason and Wackerman 1984: 59-61). In usability theory it is also mentioned that familiar and unambiguous words should be used (Jones 1996:29). Once again, the readability and usability guidelines are very similar.

The Federal Plain Language Guidelines (2011) list that, if good readability is to be achieved, abbreviations should be used as little as possible. The corresponding feature of usability is that approved symbols, abbreviations and number-writing customes are used (Jones 1996:29). This is one of the few cases where the features of good readability and usability contradict each other. The next readability guideline used in this study suggests that legal, foreign and technical jargon must be avoided (Federal Plain Language Guidelines 2011), whereas the corresponding usability research suggests that conversational and easy to read text should be used and that texts should be aimed at eight-grade reading level (Gleason and Wackerman 1984:59-61). Usability researchers also stress that when writing technical documentation, one should use concrete language (Hargis, Hernandez and Ramaker 1997:2). The last readability guideline that has a corresponding usability guideline used in this study is that subject, verb and object should be kept close together (Federal Plain Language Guidelines 2011). The corresponding usability guideline presented by Jones (1996:29) stresses that

straightforward, conventional sentence structure should be used (almost all sentences should have S-V-O patterns).

The following features of good readability presented in the Plain Language Guidelines (2011) do not have corresponding features in usability theory, but they have an important role in the analysis section of this thesis. The Plain Language Guidelines (2011) list that the simplest form of a verb should be used and that "must" should be used to indicate requirements. The guidelines also highlight that pronouns should be used when speaking directly to readers. As is evident, these grammar related features of readability pay great attention to detail. Each word and pronoun counts. The Federal Plain Language Guidelines list the final features of good readability that will be used in this study: short and simple words should be used, unnecessary words should be omitted, same terms should be used consistently and short sentences should be used.

The above presented factors contributing to the usability and readability of technical texts will be used in this thesis to indicate whether the pragmatic changes that are replacements, additions and omissions appearing in the Finnish manual translations have had an impact on the usability or readability of the manuals analyzed. Because the translator can only affect the usability and readability of the TT on a textual level, the usability and readability factors related to textual content will be the basis for the analysis and no attention will be paid to for example visual aids or the structures of the manuals.

4 PRAGMATIC CHANGES AND USABILITY

The research question of this thesis is whether the pragmatic changes (additions, omissions and replacements) that appear in the translated Finnish manuals have increased or decreased the manual's usability. The research material of this thesis consists of two original English user's manuals and their Finnish translations. The user's manuals analyzed in this thesis ar a HP Deskjet1000 J110 series printer manual and an Xbox 360 game console manual. This chapter demonstrates what kinds of effects the pragmatic changes have had on the usability and readability of the manuals.

Additions are a pragmatic change that can add something relevant or less relevant into a TT. Additions were located by comparing the three STs and TTs and by counting how many times something had been added to the TTs. The Finnish Hewlett-Packard printer manual included 55 additions and the Finnish Microsoft Xbox 360 game console manual included 27 additions. All in all, additions were the second most used pragmatic change in the two manuals analyzed.

After locating all the additions in the two manuals, the ones that appeared to have the biggest impact on either usability or readability were chosen as examples. These chosen additions show how usability and readability has increased or decreased in the manuals. The following criteria for good usability and readability were used when analyzing additions found in the TTs:

Features of good readability used when analyzing additions	Features of good usability used when analyzing additions
The text is written to an identified audience Federal Plain Language Guidelines (2011)	The information conveyd should be adjusted to the audience(s) (Burnett 2005:6).
Precise and concise words are used Federal Plain Language Guidelines (2011)	Manuals must be concise The text should be clear, simple and precise (Gleason and Wackerman 1984:59-61).
Pronouns are used when speaking directly to readers Federal Plain Language Guidelines (2011)	Technical documents must be complete, they must include all information necessary (Hargis,Hernandez and Ramaker 1997:2).

Table 3. Readability and usability criteria used when analyzing the additions found in the TTs.

The additions that appeared in the two user's manuals for reasons other than localization and that were demonstrated with examples because they seemed to have an effect on the manual's usability, often had positive effects on usability because the additions adjusted the TT for different audiences (examples 12, 13, and 14).

When additions had negative effects on usability, the effects appeared through unnecessarily added words that made the TTs less simple or less precise when compared to the STs (examples 15, 16, and 17).

Omissions are a pragmatic change that delete something relevant or less relevant from the TT. Omissions were located by comparing the three STs and TTs and by counting how many times something had been omitted from the TTs when compared with the STs. The Finnish Hewlett-Packard printer manual included 27 omissions and the Finnish Microsoft Xbox 360 game console manual included 21 omissions. All in all, omissions were the least used pragmatic change in the two manuals analyzed.

After locating all the omissions used in two three manuals, the ones that appeared to have an effect on either usability or readability of the manuals were demonstrated with examples. The omissions were analyzed on the basis of the features of good usability and readability. The following criteria for good usability and readability were used when analyzing omissions found in the TTs:

Features of good readability used when analyzing omissions	Features of good usability used when analyzing omissions
The text is written to an identified audience Federal Plain Language Guidelines (2011)	The material is appropriate for the audience (Gurak and Lannon 2007:14).
Contractions are used when appropriate Federal Plain Language Guidelines (2011)	Conversational and easy to read text is used. (Gleason and Wackerman 1984:59-61).
Unnecessary words are omitted Federal Plain Language Guidelines (2011)	Manuals must be concise The text should be clear, simple and precise (Gleason and Wackerman 1984:59-61).
	The material should be relevant for the purpose at hand (Gurak and Lannon 2007:14).
	Technical documents must be complete, they must include all information necessary (Hargis,Hernandez and Ramaker 1997:2)

Table 4. The readability and usability criteria used when analyzing omissions found in the TTs.

The omissions that appeared in the two user's manuals for reasons other than localization often had positive effects on the TTs because they had either made the TTs simpler or more precise by omitting irrelevant information (examples 19, 20, and 21) or by making the TTs more relevant for their purpose by omitting information which was no important for the user (examples 22, 23, and 24).

Omisisons had negative effects on usability when relevant information had been omitted (examples 26, 27, 28, 29, and 30) or when the omission had made the TT less appropriate for the different audiences (example 31).

Replacements are pragmatic changes that occur when, for example, a ST word has been replaced by a TT synonym instead of a direct translation or when a change in sentence structure between the ST and the TT has an affect on a translated Finnish word.

Replacements were located by comparing the three STs and TTs and by counting how many times replacements occured. The Finnish Hewlett-Packard printer manual included 126 replacements and the Finnish Microsoft Xbox 360 game console manual included 69 replacements. All in all, replacements were the most used pragmatic change in the two manuals analyzed.

After locating all the replacements used in the two manuals, the ones that appeared to have an effect on either usability or readability of the manuals were demonstrated with examples. The replacements were then analyzed on the basis of the features of good usability and readability. The following criteria for good usability and readability were used when analyzing the replacements:

Features of good readability used when analyzing replacements	Features of good usability used when analyzing replacements
The simplest form of a verb is used Federal Plain Language Guidelines (2011)	Familiar and unambiguous words are used (Jones 1996:29).
Verbs are not turned into nouns Federal Plain Language Guidelines (2011)	Straightforward, conventional sentence structure is used (almost all sentences are S-V-O patterns) (Jones 1996:29).
	Technical documents should be accurate and they should not include any mistakes or errors (Hargis, Hernandez and Ramaker 1997:2).

Table 5. The readability and usability criteria used when analyzing replacements found in the TTs.

The replacements that appeared in the two user's manuals for reasons other than localization often had negative effects on the usability because they had either made the TTs less accurate or had caused an error in the TTs (examples 36, 37, 38, 39, 40, 41, and 42). In examples 42 and 43 usability decreased because the ST words had been replaced with ambiguous words in the TTs (examples 42 and 43).

When replacements caused positive effects on the TTs this often happened so that familiar and unambiguous words had in the TTs replaced strange and ambiguous ST words (examples 32, 33, and 34).

4.1.1 Additions and Positive Effects on Usability

An addition that improved the usability of the TT by adding relevant information to the ST can be found on page 10 in the Finnish HP printer manual:

(11) Install both the black and tri-colour cartridges correctly (HP 2009 Eng.)

Aseta sekä musta että kolmivärinen kasetti oikein paikalleen (HP 2009 Fin.)

[Install both the black and tri-colour cartridges correctly to the right position]

With the addition presented in example 11, the translator makes it easier for the user to understand what he/she needs to do with the cartridges. Without the addition the user could hesitate whether or not he/she needs to do something else besides putting the cartridges to the right position. The word install used in the ST could also mean something else and could thus make the user hesitate in his her/actions. Also Hargis, Hernander and Ramaker state that technical documents must be complete and must include all information necessary (1997:2). It can be argued whether the addition of this example includes necessary information, but it certainly makes the user less hesitant in his/her actions and so it improves the usability of the TT.

The following addition can be found on page 11 in the Finnish HP printer manual. This example demonstrates how an addition has made the TT more usable by adding a word that gives the user more presice instructions than the ST.

(12) You do not need to replace the cartridges until print quality becomes unacceptable (HP 2009 Eng.)

Mustekasetteja ei tarvitse vaihtaa uusiin, ennen kuin tulostuslaadun heikkeneminen sitä edellyttää (HP 2009 Fin.)

[The cartridges do not need to be replaced with new ones until unacceptable print quality demands it]

In example 12 the addition, besides adding relevant information, also takes into account the different users of the product. Although most printer users are likely to understand that the ink cartridges need to replaced with new ones every once in a while, it is not certain that for example an elderly person who just bought his/hers first printer will know this. For unexperienced users, it is good to mention that the cartridges need to be replaced with new cartridges when the print quality becomes poor. The addition in example 12 has made the TT more usable because according to Burnett (2005:6), the information conveyd in manuals should be adjusted to the audience(s).

The next example of an addition that has increased the usability of the Finnish manual by adding relevant information can be found on page 14 in the Finnish HP manual.

(13) […] matte-coated on both sides for two-sided use. (HP 2009 Eng.)

[…] mattapintaisia molemmilta puoliltaan ja sopivat siksi kaksipuoliseen käyttöön. (HP 2009 Fin.)

[matte-coated on both sides and therefore are suitable for two-sided use]

The addition in example 13 tells the Finnish printer users that although the papers in question can be used for printing only on one side, they are also suitable for two-sided printing. Wihout the addition, some unexperienced printer users might mistakenly understand that the paper can only be used for two-sided printing. Because of this addition, the Finnish manual is better adjusted to different audiences than the ST and thus is more usable. Burnett (2005:6) writes that in usable technical documentation the information conveyed should always be adjusted to the audiences.

The next example of an addition that has increased the Finnish HP manual's usability can be found on the manual's trouble shooting section on page 31.

(14) Depending upon your operating system, do one of the following: (HP 2009 Eng.)

Valitse tietokoneesi käyttöjärjestelmän mukaan jokin seuraavista vaihtoehdoista: (HP 2009 Fin.)

[Depending on your computer's operating system, choose one of the following:]

In example 14 the translator has decided to add the word computer's into the TT. This addition improves the manual's usability because it takes into account the different users of the product. For some users it might be obvious that when the word operating system is mentioned it refers to computer, but for some inexperienced computer and printer users this may not be the case and so the addition increases the manual's usability. Also Burnett (2005:6) stresses that in usable manuals, the information conveyed needs to be adjusted to different audiences.

4.1.2 Additions and Negative Effects on Usability

An example of an addition that makes the TT less usable can be found on page 9 in the Finnish HP printer manual.

(15) You can load one or more envelopes into the input tray of the HP Printer (HP 2009 Eng.)

Voit lisätä HP –tulostin –laitteen syttölokeroon kirjekuoria. (HP 2009 Fin.)

[You can load envelopes into the input tray of the HP printer device]

Example 15 shows how the Finnish translation includes an added word device. The added word does not include any relevant information for the Finnish user and unnecessarily lengthens the manual. Because according to Gleason and Wackerman (1984:59-61), manuals must be simple but as precise as necessary in order to be usable, it is clear that the addition in example 15 has made the TT less usable.

Page 14 in the Finnish HP manual includes an addition that has made the TT less usable by adding irrelevant information.

> (16) It features ColorLok Technology for less smearing […] (HP 2009 Eng.)
>
> Paperin ColorLok Technology –tekniikan ansiosta […] (HP 2009 Fin.)
>
> [Due to paper's ColorLok Technology –technology]

In example 16 the translator has most likely by mistake added the Finnish word "tekniikka" [technology] after the name of the technology in question. This decision only causes repetition and does not give any relevant information for the user. As according to Gleason and Wackerman (1984:59-61) manual text should be clear and simple, the addition of example 16 has clearly decreased the usability of the Finnish HP manual.

The next example of an addition that has decreased the usability of the Finnish Xbox 360 game console manual can be found on page 100 in the Finnish manual. Additions like the one presented in example seven appear several times in the TT.

> (17) To set up a router connection: (Microsoft 2005 Eng.)
>
> Voit asentaa reititinyhteyden seuraavasti: (Microsoft 2005 Fin.)
>
> [You can set up the router connection as follows]

In example 17 the translator has added the words "voit" [you can] and "seuraavasti" [as follows] into the TT. The purpose of these additions remains unclear, since they neither bring any relevant information into the TT nor they in any way make the clause more usable. The additions only make the clause longer on usability's cause. As Gleason and Wackerman (1984: 59-61) mention, manual texts should be as clear, simple and precise as possible and thus the additions in example eight have decreased the manual's usability.

The next example of an addition that has decreased the usability of the TT can be found on page 13 in the Finnish HP manual.

(18)   All papers with the ColorLok logo are independently tested to meet high standards […] (HP 2009 Eng.)

Kaikki ColorLok-logolla varustetut paperit on testattu riippumattomassa testauslaitoksessa […] (HP 2009 Fin.)

[All papers with ColorLok logo are tested in an independent testing facility]

Example 18 demonstrates how the translator has used an addition, of which purpose and source remains unclear. From where has the translator gotten the information that the papers in question are tested in a testing facility when the ST does not include this information. It can also be arqued whether the users of the manual need to know where the papers have been tested. The addition in example 18 includes irrelevant and possibly inaccurate information and so it has decreased the manual's usability. Because Burnett (2005:6) mentions that the information conveyed in manuals should be adjusted to the audiences, it is clear that an addition including irrelevant information concerning an ordinary user makes the manual less usable.

4.1.3 Additions and Readability

Most of the additions that had positive effects on the TT's usability for other reasons than localization had increased the TT's usability by adding information into the TT's so that the texts became better adjusted to different audiences. In other words, the additions usually made the manuals more usable for unexperienced users. These additions also made the TT's more readable because according to the Federal Plain Language Guidelines (2011), texts should be written to an identified audience. The translators of the Finnish manuals had used additions in order to target the Finnish manuals for inexperienced users.

In the examples presented in this thesis, when the the usability had increased because of the translators had used additios that had made the TT's more concise and had made the TT's more clear simple and precise, also the readability inmproved because according

to the Federal Plain Language Guidelines (2011), precise and concise words make texts more readable.

When additions had decreased usability, also readability had decreased apart from example eight. In this example, the translator had decided to use an addition that does not bring any relevant information into the TT, but which follows the Federal Plain Language Guidelines (2011) by using a pronoun when speaking directly to the reader and thus has increased readability.

4.2.1 Omissions and Positive Effects on Usability

The first example of an omission that has increased the usability of the TT can be found on page 13 in the Finnish HP printer manual.

(19) If you want the best print quality… (HP 2009 Eng.)

Parhaan tulostuslaadun saa… (HP 2009 Fin.)

[For best printing quality]

In example 19 the translator has omitted the pronoun you and thus perhaps made the sentence less personal for the reader. However this omission has shortened the TT and because the omitted words do not include any relevant information concerning the user, this omission is well-grounded. As Gleason and Wackerman (1984: 59-61) stress, technical texts should be as clear, simple and precise as possible. The omission in example 19 has made the TT more simple and clear than the ST simply by making the manual shorter.

The following omission that has had a positive effect on the usability of the Finnish HP manual by omitting irrelevant information can be found on page 25 in the Finnish manual.

(20) […] the product cannot detect that the print cartridge is installed. (HP 2009 Eng.)

[…] tuote ei havaitse kasettia. (HP 2009 Fin.)

[the product cannot detect the print cartridge]

Example 20 shows how by using omissions (the words that, is and installed are omitted), the translator has been able to shorten the Finnish manual without loosing any relevant information. Because of the omissions the Finnish clause is shorter and simpler when compared to the English manual and thus the omissions have made the Finnish manual more usable. As Gleason and Wackerman (1984: 59-61) stress, technical texst should be as clear and simple as possible.

Page 104 in the Finnish Xbox 360 manual includes an omission that has decreased the TT's usability by omitting irrelevant information.

(21) Connect your Xbox 360 console to your PC using one of the networks described earlier in this manual in "Connect to Xbox Live". (Microsoft 2005 Eng.)

Yhdistä Xbox 360 –konsoli tietokoneeseen käyttämällä jotakin kohdassa "Xbox Live –palveluun yhdistäminen" kuvattua tapaa. (Microsoft 2005 Fin.)

[Connect the Xbox 360 console to PC using one of the networks described in "Connect to Xbox Live".]

The omission presented in example 21 shows how the TT clause has become clearer and shorter without loosing any relevant information. It is not necessary to mention that the networks in question have been "earlier" described in "this manual". It is obvious that if something is referred to in a manual, the referred information can be found in the the same manual. The omissions of example 21 follow the guidelines of usable technical documentation presented by Gleason and Wackerman (1984: 59-61): The text should be clear, simple and precise.

The following example of an omission having a positive effect on usability can be found on page 13 in the Finnish HP printer manual.

(22) […] HP recommends using HP papers that are specifically designed for […] (HP 2009 Eng.)

HP-papereilla, jotka on suunniteltu erityisesti […] (HP 2009 Fin.)

[HP papers that are specifically designed for]

Example 22 demonstrates how irrelevant words have been omitted in order to make the TT more usable. Because the manual in question is a HP printer manual it is obvious that all the information that the manual includes comes from HP. This is why the omission of example 22 does not include any relevant information. The user is likely to understand that all the instructions and suggestions that the manual includes come from HP. It is not necessary to mention that HP recommends doing as the manual says. Technical texts shouls always be relevant for the purpose at hand (Gurak and Lannon 2007:14) and by omitting irrelevant information the omission of example 22 makes the TT more relevant for its purpose.

The next example of an omission that has had a positive effect on the usability of the HP printer manual by omitting irrelevant information can be found on page 14 in the Finnish HP manual.

(23) This film is easy to use and handle […] (HP 2009 Eng.)

Nämä kalvot ovat helppokäyttöisiä. (HP 2009 Fin.)

[These films are easy to use]

In example 23, the word handle has been omitted from the Finnish translation. This omission is well grounded since the user does not loose any relevant information because of the omission. Easy to use and easy to handle mean more or less the same thing and thus it has been a good decision to omit the other one. As Gurak and Lannon

(2007:14) stress, the material in technical documents should always be relevant for the purpose at hand and since the omission presented in example 23 does not omit any relevant information but shortens the Finnish manual, this omission has made the Finnish manual more usable.

The next example of an omission increasing the usability can be found on page 93 in the Finnish Microsoft X Box 360 manual. This manual section gives the user instructions on how to keep the game console's power cords and power supply undamaged.

> (24)   Do not allow them to bite or chew on them. (Microsoft 2005 Eng.)
>
>   Älä anna lasten tai eläinten purra johtoja. (Microsoft 2005 Fin.)
>
>   [Do not allow children or animals to bite them]

In example 24 the translator has omitted the word "chew" from the Finnish manual. Because of this omission, the Finnish clause has become a litte bit shorter but no relevant information is lost. Bite and chew indicate more or less the same action and so the user is likely to understand that if biting the power cord is not acceptable then also chewing it can cause damage. As Gurak and Lannon (2007: 14) mention, in usable manuals the material should be relevant for the purpose at hand. The omission presented in example 24 has made Finnish manual more usable than the ST since, by shortening the clause and thus makin it faster to read, it makes the material more relevant for it's purpose, that is to offer instructions for the user's as quickly and as easily as possible.

In the following example, the translator of the Finnish X Box 360 manual has once again decided to omit irrelevant information in order to increase the Finnish manual's usability. The omission appears in a manual section that tells the users how to connect the X Box controller to the game console.

> (25)   Be sure to pull on the connector, not the cable. (Microsoft 2005 Eng.)
>
>   Vedä liittimestä, älä johdosta. (Microsoft 2005 Fin.)
>
>   [Pull on the connector, not the cable.]

Example 25 demonstrates how the translator has omitted the words "be sure to" and has thus icreased the Finnish manual's usability by making the text shorter, more conversational and easier to read when compared to the ST. Accordin to Gleason and Wackerman (1984: 59-61) these are all features that can be connected to usable technical documentation.

4.2.2 Omissions and Negative Effects on Usability

The Finnish Xbox 360 game console manual includes an omission that clearly includes relevant information. The omission can be found on page 90 that gives the user instructions on what kind of surface can the game console be placed on.

(26)   Is clean and free of dust and debris. (Microsoft 2005 Eng.)

puhdas ja pölytön (Microsoft 2005 Fin.)

[clean and free of dust]

In example 26 the Finnish translator has decided to omit the word debris from the TT. The reasons for this remain unclear, since localization does not explain the omission. Also Finnish homes can have debris that could harm the game console. The omission makes the Finnish manual less usable because according to Hargis, Hernandez and Ramaker (1997:2), manuals should include all necessary information in order to be usable. The TT does not include all necessary information because of the omission.

The next example of an omission having a negative effect on usability can be found on page 14 in the Finnish HP printer manual. This example demonstrates how relevant information has been lost because of an omission.

(27)   […] ColorLok Technology for less smearing, bolder blacks, and vivid colors. (HP 2009 Eng.)

[…] ColorLok -tekniikan ansiosta se tahraa vähemmän ja tarjoaa voimakkaammat värit. (HP 2009 Fin.)

[because of ColorLok Technology it smears less and offers more vivid colors.]

In example 27 the translator has for some reason omitted the words "bolder blacks". Perhaps he/she has thought that since the clause appears to be a marketing text for HP papers, the omitted information would not be relevant for the user. However this decision can be argued. If the paper in question has a quality that might affect the user's decision on what paper to buy for his/her printing purposes, it is likely that the user would like to know about this quality. As Hargis, Hernandez and Ramaker (1997:2) mention, in order to be usable technical documents must include all information necessary.

The following omission that can be found on page 25 in the Finnish HP manual is a good example of an omission that has led to loosing relevant information in the Finnish manual.

(28)   This warranty does not cover HP ink products that have been refilled, remanufactured, refurbished, misused, or tampered with. (HP 2009 Eng.)

Tämä takuu ei koske HP:n mustetuotteita, jotka on uudelleentäytetty tai uudelleenvalmistettu tai joita on käytetty väärin tai muokattu jollakin tavoin uudelleen. (HP 2009 Fin.)

[This warranty does not cover HP ink products that have been refilled, remanufactured, misused or tampered with.]

In example 28 the translator has for some reason omitted the word refurbished from the Finnish manual. It is possible that HP has different warranty terms in Finland and that this is the reason for the omission, but it is more likely that the translator has simply forgotten to translate one of the terms. If this is the case, the omission causes a serious mistake because the user is given incorrect information about the warranty terms of the product and the usability decreases. Hargis, Hernandez and Ramaker (1997: 2) write that in order to be usable, technical documents must be complete and that they must include all information necessary.

The following omission can be found on page 93 in the Finnish X Box 360 manual. The omission appears on a chapter that tells the users how to avoid damaging the game console's power cords and power supply.

(29) Protect cords from being pinched or sharply bent […] (Microsoft 2005 Eng.)

Varmista, että johdot eivät jää puristuksiin ja että niitä ei taiteta. (Microsoft 2005 Fin.)

[Make sure the cords are not pinched or bent.]

In example 29 the word "sharply" has been omitted from the Finnish manual and thus relevant information has been lost. This omission can also cause confusion among the users, since sometimes it can be necessary to bent the game console's cords. Slight bending does not usually damage any cords and soit would have been important to, also in the Finnish manual, mention that particularly sharp bendig can damage the cords. Because of the omission of example 29, the usability of the Finnish Microsoft manual has decreased. Also Hargis, Hernandez and Ramaker (1997: 2) stress that in order to be usable, technical documents must include all information necessary.

The next example of an omission decreasing the TT's usability can be found on page 105 in the Finnish Xbox 360 manual. The omission appears on a manual section that presents the different kinds of memory units that can be used with the game console.

(30) You can also connect up to two portable memory units […] (Microsoft 2005 Eng.)

Voit myös yhdistää kaksi kannettavaa muistikorttia […] (Microsoft 2005 Fin.)

[You can also connect to portable memory units]

In example 30 the translator of the Finnish manual has omitted the word "up to", which in this case holds relevant information. Because of the omission, the Finnish Xbox users are likely to understand that, instead of choosing between one or two memory units, they can only connect two memory units to the console's memory unit ports. This omission decreases the Finnish manual's usability because as Hargis, Hernandez and Ramaker (1997: 2) list, in order to be usable, technical documents must be complete and they must include all information necessary.

Page 95 in the Finnish X Box 360 game console manual includes an omission that by omitting relevant information has decreased the Finnish manual's usability. The addition appears in the manual section that explains the users what kinds of family settings can be applied in the game console.

> (31) The new Family Settings feature on the Xbox 360 console […] (Microsoft 2005 Eng.)
>
> Xbox 360 –konsolin perheasetusten avulla […] (Microsoft 2005 Fin.)
>
> [With the help of Xbox 360 –console's family settings]

In example 31 the translator has omitted the word "new". Thus being only a minor omission, the word "new"can be regarded as relevant information. Especially for users who have used the previous versions of the game console and who thus will probably only read the manual of the new version in order to find out what has changed compared to the earlier model. These users may fail to notice the new features in the family settings, simply because the Finnish translator has omitted the word "new" from the Finnish manual. At least for these users the omission presented in example 31 has decreased the manual's usability. Gurak and Lannon (2007: 14) remind that in technical documentation, the material should always be appropriate for the audience in order to be usable. Because audiences can be very different, the translator has to be careful in what he/she decides to omit, as example 31 demonstrates.

4.2.3 Omissions and Readability

Most of the omissions that that had positive effects on the usability of the TT's for other reasons than localization had increased the TT's usability by omitting irrelevant information and thus making the TT's clearer, simpler and more precise. In these cases also the readability of the TT's was improved because according to the Federal Plain Language Guidelines, readability improves when unnecessary words are omitted and when contractions are used when appropriate.

In the presented examples, when usability decreased because the omissions had deleted relevant information from the TT's, also readability decreased because the different audiences (including the inexperienced users of the product) where not taken into account by giving them all information necessary. The Federal Plain Language Guidelines remind that a redable text should always be written to an identified audience.

4.3.1 Replacements and Positive Effects on Usability

The following example can be found on page 3 in the Finnish HP printer manual:

(32) Load media (HP 2009 Eng.)

Lisää tulostusmateriaali (HP 2009 Fin.)

[Load printing material]

In example 32 the ambiguous word "media" has been replaced by the more precise word "tulostusmateriaali" [printing material]. This replacement does not occur because of localization but it still improves the usability of the TT by using a more precise word that gives clearer instructions for the user. The usability of the TT is improved because a more familiar and unambiguous word is used in the TT when compared to the ST. This is one of the usability factors presented by Jones (1996:29).

The second example of a replacement having a positive effect on the usability of the TT can be found on page 11 in the Finnish HP printer manual.

(33) Use maximum dots per inch (dpi) mode to print high-quality, sharp images on photo paper (HP 2009 Eng.)

Käytä suurinta tulostustarkkuutta, jos haluat tulostaa hyvälaatuisia, teräviä kuvia valokuvapaperille (HP 2009 Fin.)

[Use maximum printing accuracy if you want to print high-quality, sharp images on photo paper]

In example 33 the translator has decided to use a replacement in order to explain to the user what the dpi mode means. Instead of trying to translate maximum dots per inch into Finnish, the translator has simply explained that it means the maximum printing accuracy. This replacement is likely to make the manual more usable for the Finnish users because, as Jones (1996:29) mentions, familiar and unambiguous words should be used.

Page 19 in the Finnish HP manual includes a replacement that, although not having a major impact on the information conveyed, still has an effect on the usability of the manual.

(34) The side to be printed on should face up. (HP 2009 Eng.)

Tulostuspuolen on oltava ylöspäin. (HP 2009 Fin.)

[The side to be printed on must face up]

The replacement presented in example 34 more clearly informs the user what to do when compared to the original English manual. Conditional should not be used if the described action is the only right way to proceed. Because of the replacement used in the translation, the Finnish manual gives the user clearer instructions and thus improves the manual's usability. As Jones (1996:29) mentions, unambiguous words must be used in good quality technical documents. Althoug the word "should" can not be said to be an unambiguous word, the word must still gives the user clearer instructions because it leaves the user no choice on what to do.

The following example of a replacement that has increased the TT's usability can be found on page 106 in the Finnish Xbox 360 game console manual. Although the example also includes additions, it is presented as an example of a replacement because the ST sentence has changed so dramatically in the TT. The replacement appears in the heading of a security note.

(35) Do Not Attempt Repairs (Microsoft 2005 Eng.)

Konsoli ei ole käyttäjän korjattavissa (Microsoft 2005 Fin.)

[The console can not be repaired by the user]

In example 35 the translator of the Finnish manual has wanted to replace the ST heading with a bit longer heading compared to the ST. The reason for this has probably been the fact that if one wants to write a usable manual, one should, according to Jones (1996: 29) use straightforward, conventional sentence structure (almost all sentences should be S-V-O patterns). Because of the replacement presented in example 35 the clause's sentence structure has become conventional and thus usability has increased.

4.3.2 Replacements and Negative Effects on Usability

The first example of a replacement that has had negative effects on usability can be found on page 89 in the Finnish X Box 360 game console manual. The example appears on a page that presents a picture of the different parts of the game console.

(36) Stream pictures, music, and more to your Xbox 360 console […]
(Microsoft 2005 Eng.)

 Saat Xbox 360 –konsoliin kuvia, musiikkia ja paljon muuta […]
(Microsoft 2005 Fin.)

[You get pictures, music and more to your Xbox 360 console]

In example 36 the word "stream" has in the Finnish translation been replaced by the Finnish word meaning "to get". This replacement has a major effect on the meaning of the clause, since the ST word does not mean that the user will get the pictures, music and more for free. However the Finnish word used in the TT includes a connotation that will make the user expect that he/she will get free pictures and music. Althoug it is not certain whether the pictures, music and other content available for the user are free or not, it has been unwise to replace the ST word in the TT. It can not be quaranteed that the pictures, music and other content, even if free at the moment, will still be free for the user after a few years. The usability of the manual has decreased because of this replacement, since according to Hargis, Hernandez and Ramaker (1997:2), technical documents must be accurate and they should not include any mistakes.

The next example of a replacement having a negative effect on usability can be found on page 9 in the Finnish HP printer manual. The replacement appears in a manual note.

(37) Do not leave unused photo paper in the input tray. (HP 2009 Eng.)

Älä jätä ylimääräistä valokuvapaperia syöttölokeroon. (HP 2009 Fin.)

[Do not leave extra photo paper in the input tray]

In example 37 the replacement of the word "unused" with the Finnish word meaning "extra" is not justifiable by usability standards. What is extra photo paper? How does the user know how much is extra paper? This replacement changes the meaning of the ST word and thus causes an error in the TT. Hargis, Hernandez and Ramaker (1997:2) stress that technical documents should not include any mistakes or errors.

Page 14 in the Finnish HP manual includes a replacement that, because perhaps misleading the user, can be a translation error.

> (38) HP Iron-on transfers (for color fabrics or for light or white fabrics) are the ideal solution for creating custom T-shirts from your digital photos. (HP 2009 Eng.)
>
> HP:n silitettäviä siirtokuvia (värillisille tai vaaleille tai valkoisille kankaille) voit tehdä digitaalisista valokuvista vaikka omiin T-paitoihin. (HP 2009 Fin.)
>
> [You can make HP's iron-on transfers (for color or light or white fabrics) from digital photos for example to your own T-shirts.]

In example 38 the ST clause has changed so much that the translator has most likely missed the fact that the meaning of the ST clause has changed in the TT. This TT clause that actually includes several replacements is likely to cause confusion in the manual users. They will wonder whether they really can make HP iron-on transfers themselves. Because the replacements presented in example 28 cause an error in the TT, the usability of the Finnish HP manual decreases. Hargis, Hernandez and Ramaker (1997:2) stress that technical documents shouls be accurate and that they should not include any mistakes or errors.

The next example of a replacement having a negative effect on the usability can be found on page 21 in the Finnish HP printer manual.

> (39) Order ink supplies (HP 2009 Eng.)
>
> Mustekasettien tilaaminen (HP 2009 Fin.)
>
> [Order ink cartridges]

In example 39 the translator of the Finnish manual has likely assumed that ink cartridges are the only ink supplies that the Finnish printer user's can order. This is the only explanation for the replacement. But it is also likely that the Finnish translator has not confirmed his/hers assumption from HP and thus the replacement decreases the manuals`s usability. As Hargis, Hernandez and Ramaker write, technical documents

must include all information necessary and they must not include any errors in order to be usable. The replacement of example 39 misleads the users by letting them understand that ink cartridges are the only ink products that they can order from HP.

The following example can be found on page 21 in the Finnish HP manual.

(40) […] to open the printer software. (HP 2009 Eng.)

   Avaa HP –tulostin […] (HP 2009 Fin.)

   [to open HP -printer]

The replacement in example 40 shows how the words printer and software have been replaced by the word HP-printer. This replacement can cause misunderstandings among the printer users, since opening the printer and opening the printer software on the computer are two totally different things. It is likely that the translator of the Finnish manual has simply made a mistake that has decreased the Finnish manual´s usability because according to Hargis, Hernandez and Ramaker (1997:2) technical documents should be accurate and they should not include any mistakes or errors.

The next example of a replacement that has decreased the Finnish HP manual's usability can be found on page 37. This section of the manual presents the printer's technical information.

(41) For additional specifications, see the printer documentation […] (HP 2009 Eng.)

   Tulostuskaseteista on lisätietoa […] (HP 2009 Fin.)

   [For additional information about the printing cartridges]

In example 41 the words additional specifications have been replaced by the words printing cartridges. Here the translator has likely assumed that the printer documentation only includes additional specifications about the printing cartridges and this is the reason for the replacement. However it is not certain whether the translator has assumed right and so the replacement may mislead the user and has thus decreased

the Finnish manual's usability. Misleading information always decreases usability. Hargis, Hernander and Ramaker (1997: 2) mention that technical documents should always be accurate and that they should not include any mistakes or errors.

The next example of a replacement having a negative effect on usability is found on page 5 in the Finnish HP printer manual:

> (42)   Power connection: Use only with the power adapter supplied by HP (HP 2009 Eng.)
>
> Virtaliitin: Laite on tarkoitettu käytettäväksi vain HP:n toimittaman verkkolaitteen kanssa (HP 2009 Fin.)
>
> [Power connection: The device can only be used with a network device supplied by HP]

Example 42 demonstrates how the translator has decided to use a target language word that does not correspond with the source language word. This decicion can not be justified by localization, since a direct Finnish translation of the work power adapter would be clearer for the Finnish user than the replacing word verkkolaite [network device]. Actually the Finnish user is likely to incorrectly link the word network device to internet and so the replacement in the TT is likely to cause hesitation and misunderstanding on the user's part. Because Hargis, Hernandez and Ramaker (1997:2) stress that technical documents should be accurate and should not include any mistakes or errors and because Jones (1996:29) mentions that unambiguous words should be used, it is clear that this replacement has decreased the usability of the TT.

The last example of a replacement having a negative effect on usability appears on page 13 in the Finnish HP printer manual. This example shows how a replacement has made the TT less usable than the ST, because the word used in the TT is ambiguous.

(43) Your prints have a look and feel comparable to a store-processed photo (HP 2009 Eng.)

[…] valokuvat näyttävät ja tuntuvat laboratoriossa kehitetyiltä (HP 2009 Fin.)

[photos have a look and feel comparable to a laboratory-processed photo]

In example 43 the Finnish word "laboratorio" [laboratory] has replaced the ST word store-processed. The purpose for this replacement remains unclear, since the word laboratory is not usually connected to photo-processing in Finland. A better Finnish replacement would have been e.g. "ammattimaisesti kehitetty" [professionally-processed]. The replacement might cause hesitation in the Finnish manual user and has thus made the Finnish manual less usable. Jones (1996:29) stresses that familiar and unambiguous words should be used in technical texts and thus makes the replacement of example 43 very questionable.

4.3.3 Replacements and Readability

Three of the presented examples of replacements that had increased the usability of the TT's had done it by replacing unfamiliar and ambiguous words with familiar and unambiguous words. In these cases also the TT's readability became better because according to the Federal Plain Language Guidelines (2011), precise and concise words make texts more readable. One example increased usability because the replacement had made the clause's sentence structure more conventional when compared to the ST. In this case the replacement also made the Finnish manual more redable, since it followed the following readability guideline presented in the Federal Plain Language Guidelines (2011): Verbs are not turned into nouns.

Most of the replacements that had decreased the usability of the TTs did so because they had made the TTs less accurate and had caused mistakes or errors. In these cases redability was not affected. However in examples 42 and 43 where usability decreased because of ambiguous words, also readability decreased because of the replacements.

This happened because the Federal Plain Language Guidelines (2011) mention that precise and concise words should be used if one aims at a readable text..

5 CONCLUSIONS

It was assumed that most of the pragmatic changes appearing in the TTs would be caused by localization. This, however, was not the case. Only a few additions, omissions and replacements that occurred in the translated Finnish manuals appeared to be caused by localization. Most of the pragmatic changes that appeared in the translated HP printer manual and in the Xbox 360 game console manual were small changes probably caused by the translator's own preferences. These additions, omissions and replacements did not have any remarkable effects on the usability or readability of the two manuals.

When all of the pragmatic changes having major effects on usability that appeared in the two translated manuals analyzed in this thesis were counted together, the results showed that 19 of the pragmatic changes had negative effects on usability and 15 of the pragmatic changes had positive effects on usability. In other words, the translated Finnish manuals were less usable than the original English manuals.

This result contradicts Leena Salmi's (2003) study in which her results indicated that manual language versions were not a major problem from usability's point of view. This contradiction is interesting and perhaps the different results can be explained by the different research methods. Salmi (2003) conducted her study as a traditional usability test where the users where observed while using the product documentation. In a situation like this, the user's previous experiences and personality often have a major effect on how well they are able to use a product with the help of a manual. In other words, if the user is experienced, also a less usable manual can lead to good results. In this study the user's previous experiences or personality did not have any effects on the results, since the analysis was done strictly by analyzing the texts.

The translated Finnish HP printer manual included 55 additions and the Finnish Xbox 360 manual included 27 additions. On the whole, additions where the second frequently used pragmatic change in the manuals analyzed. The likely reason for this is that the translators often feel that they need to add some information into the TT in order to make it as precise as possible. However, according to this study, 50% of the additions

having an effect on usability had actually made the TTs less usable by adding irrelevant information and thus making the manuals longer without any reason. This suggests that the translators need to pay careful attention on whether the additions really bring relevant information into the TT.

The translated Finnish HP printer manual included 27 and the Finnish Xbox 360 game console manual included 21 omissions. Additions were the least used pragmatic change in the research material of this thesis. This might be because the translators hesitate to omit anything that could be even remotely useful for an unexperienced user. This is understandable since usable documentation should take into account the different users. However seven omissions that had effects on usability in the research material actually had positive effects on usability, where as only six omissions had negative effects. These results indicate that the translators should more frequently omit words that do not include relevant information.

Replacements were clearly the most used pragmatic change in the material analyzed. The two translated manuals included 195 replacements. The replacements that had effects on usability and which were presented as examples in this thesis, usually had negative effects on usability (9 of 13 examples). Only 4 replacements had positive effects on usability. These results suggest that although it is sometimes necessary to use replacements when translating manuals, the translators tend to use them even when it would not be necessary. The translator should always be careful when using replacements and take into account the usability's point of view. At worst, replacements can lead to translation mistakes and thus cause serious problems for the users of the documentation.

The first hypothesis of this thesis was partly confirmed. Additions, omissions and replacements occured in the two translated Finnish manuals when compared to the original English ones. However, the translators had often used pragmatic changes on usability's expence and thus the hypothesis that the translators would not have used additions, omissions or replacements on usability's expence was not confirmed.

The second hypothesis of this thesis was that the additions, omissions and replacements would not have negative effects on the usability or readability of the translated Finnish

manuals and that most of them would have been used because of the need to localize the Finnish manuals. This hypothesis was not confirmed since only a few pragmatic changes that appeared in the TTs were caused by localization and most of the pragmatic changes that appeared in the translated Finnish manuals actually had negative effects on usability. In most cases when usability increased or decreased, readability acted accordingly.

The results of this study indicate that manual translation is an interesting topic of study and that manual translations should definitely be analyzed from the point of view of usability. Manual translation is a demanding task especially if one wants to pay attention to usability. However nowadays companies tend to outsource their manual translation and little attention is given to proofreading the translated manuals. This fact is supported by a note that appears in the HP printer manual: "HP shall not be liable for technical or editorial errors or omissions contained herein."

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