

UNIVERSITY OF VAASA

School of Marketing and Communication

Master's Degree Programme in Language Expertise in Specialised Society

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Translated English Online Patient Information on Finnish Public Hospital
Websites

Usability and Equality in Focus

Master's Thesis in English Studies

Vaasa 2021

TABLE OF CONTENTS

ABSTRACT	3
1 INTRODUCTION	5
1.1 Material	11
1.2 Method	16
2 THE READERS OF ENGLISH ONLINE PATIENT INFORMATION	20
2.1 Health and Social Services Reform in the Finnish Government Programme	23
2.2 Linguistics Rights in Legislation	26
2.3 Immigration to Finland	28
3 USABILITY AND ENGLISH ONLINE PATIENT INFORMATION	32
3.1 Institutional Translation and Multicultural Healthcare	33
3.2 Medical Translation	36
3.2.1 Medical Language	37
3.2.2 Medical Terminology	39
3.3 Comparative Approach	41
3.4 Skopos Theory and Text Types	42
3.5 Heuristic Evaluation	45
3.5.1 User Match	47
3.5.2 Genre Conventions	48
3.5.3 Cognitive Load	50
3.5.4 Grammar and Consistency	51
3.5.5 ST–TT Integrity	53
3.5.6 Severity Rating	55
4 PATIENT INFORMATION ON HOSPITAL WEBSITES	57
4.1 HYKS Catchment Area	58
4.1.1 HY1	59
4.1.2 HY2	63

4.2 TYKS Catchment Area	66
4.2.1 TY1	67
4.2.2 TY2	70
4.3 TAYS Catchment Area	72
4.3.1 TA1	73
4.3.2 TA2	75
4.4 KYS Catchment Area	76
4.4.1 KY1	77
4.4.2 KY2	79
4.5 OYS Catchment Area	81
5 EQUALITY AND ONLINE PATIENT INFORMATION	84
6 CONCLUSIONS	89
WORKS CITED	94
PICTURES	
Picture 1. Hospital districts and catchment areas	13
TABLES	
Table 1. Material and word count	15
Table 2. Modified categories	54
Table 3. HYKS catchment area results	58
Table 4. TYKS catchment area results	66
Table 5. TAYS catchment area results	72
Table 6. KYS catchment area results	77
Table 7. OYS catchment area results	82
Table 8. The combined results	85

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Master's Thesis:	Translated English Online Patient Information on Finnish Public Hospital Websites. Usability and Equality in Focus.
Degree:	Master of Arts
Programme:	Language Expertise in Specialised Society
Date:	2021
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ABSTRACT

Tutkielmassani arvioin englannin- ja suomenkielisten potilasohjeiden eroja ja englanninkielisten potilasohjeiden alueellisia käytettävyyseroja tasa-arvoisuuden ja käytettävyyden näkökulmista. Lisäksi vertasin operatiivisten ja informatiivisten tekstityyppien käytettävyyttä. Hypoteesina oli, että operatiivisissa tekstinäytteissä on informatiivisia tekstinäytteitä vähemmän käytettävyysongelmia niiden akuutimmasta sisällöstä johtuen.

Käsitykseni englanninkielisten potilasohjeiden lukijoista perustin tilastoihin ja kirjallisuuteen. Tutustuin vähemmistökielten asemaan lainsäädännössä, ulkomaalaistaustaisen väestön määrään ja alueelliseen sijoittumiseen Suomessa sekä Suomessa käytettyjen kielten valikoimaan. Perehdyin myös instituutioissa tuotettujen sekä lääketieteen tekstien kääntämisen erityispiirteisiin. Tekstinäytteet keräsin sairaaloiden ja sairaanhoitopiirien internet-sivustoilta. Analysoin aineiston laadullisesti. Analyysimenetelmiäni olivat vertaileva käännotutkimus ja muokatut käytettävyyshauristiikat.

Tutkimustuloksista kävi ilmi, että englanninkielisten potilasohjeiden käytettävyydessä on alueellisia eroja ja että käytettävyyden eri osa-alueet painottuvat eri tavoin eri alueilla. Vakavimmat käytettävyysongelmat liittyivät tekstilajikonventioihin. Ongelmia aiheuttivat virkakielisyys ja muut tekstilajille tyypilliset piirteet sekä lähtökielen tekstilajikonventioiden siirtyminen kohdekieleen. Tuloksista ilmeni myös suomen- ja englanninkielisten potilasohjeiden välisiä eroja. Tiedon saatavuus ja määrä oli kattavampi lähdekielellä. Kohteliaisuusstrategiat, rekisteri ja tyyli vaihtelivat englanninkielisissä teksteissä suomenkielisiä tekstejä enemmän siten että samassakin kohdetekstissä tyyli saattoi vaihdella muodollisen kohteliaasta puhekieliseen. Vaikka englanninkielisissä potilasohjeissa lääketieteen termejä ja fraaseja käytettiin pääosin yhdenmukaisesti, lähdekielen tekstilajikonventioiden siirtyminen kohdetekstiin aiheutti toisinaan sanan tai fraasin merkityksen laajenemista tai hämärtymistä. Kohdeteksteissä myös tekstilajille tyypilliset ei-toivotut piirteet usein vahvistuivat. Osa eroista johtunee alueiden erityispiirteistä, kuten siitä kuinka suuri osa väestöstä on muunkielisiä. Tulokset osoittivat hypoteesin oikeaksi eli operatiivisten potilasohjeiden käytettävyyden oli parempi kuin informatiivisten potilasohjeiden.

KEYWORDS: Online patient information, User-Centered Translation (UCT), medical translation, institutional translation, usability, equality

1 INTRODUCTION

Following the elongated process of Finnish health and social services reform in the media and more recently, the news about higher covid-19 infection rates among the ethnic minorities (Butcher & Massey 2020) made me contemplate the communication needs of non-native speakers of national languages in Finnish healthcare. The subject of this thesis, usability and equality of English language online patient information in Finnish public hospital websites, is the consequence of that contemplation.

The material consists of regional samples of operative and informative English online patient information texts and the corresponding Finnish source texts. The text samples were collected from Finnish public hospital websites and the subject was approached from three slightly different angles. Two languages (Finnish and English), five different regions and two text types (operative and informative) were contrasted. The main aim was to find whether there is variation in the usability of English online patient information in different parts of Finland and whether there are differences between Finnish and English online patient information.

After the usability of operative and informative text samples was analysed, the results were contrasted to test the hypothesis that the different functions of the two text types affect also their usability. Reiss (Reiss and Vermeer 1986: 114–116) divides text types to four based on their functions. Informative and operative text types both have informative function but operative text type has an additional appellative function to persuade the reader to act according the instructions (*ibid.* 114–116). Therefore, based on the appellative function and an acute context where clarity, efficiency and readability are highlighted, the hypothesis was that the usability of operative text samples will be higher than the usability of the informative ones.

On their websites, hospitals provide information about facilities, treatments, organisation as well as instructions regarding a hospital visit. In addition to patients and their relatives, the readers of English patient information comprise of other organisations, health care professionals and public at large. Due to the limited scope of this thesis, defining the

cultural and linguistic background of a typical online patient information reader posed a challenge. Therefore, instead of adding another empirical method I based the definition of readers of English online patient information to statistics and literature. While the focus of this thesis is on the primary readers of online patient information, it is good to remember that there may also be others who search health related information from Finnish hospital pages.

Researchers have explored the motives for searching health related information from the internet. Where some see the increased access to quality medical information on the internet as positive development (Resurrecció & González Davies 2007: 62), others, Wiese (2018: 202), quoting Lenz (2012: 406), for example, consider the lack of source criticism as problematic. Nkayama, Nishio, Yokoyama, Setoyama, Togari and Yonekura (2009: 731) found that patients search answers from internet to questions they did not have time during the doctor's appointment. The clarity and readability of online patient information are highlighted especially in situations where patients need instructions urgently or prior to the arrival to the hospital. In Finland, the patients' freedom to choose the place of their care (STM 2020) further highlights the significance of usability of online patient information as it has the potential to either invite or dispel future patients.

After the 2015 immigration wave many a Finnish hospital updated their website to include English in their online language options. The increase of English online patient information was noticeable also between the material collection of this thesis in spring 2019 and the preliminary material search the preceding year. Moreover, the preliminary material search revealed regional variation in contents and language options between different hospital websites. Some of the variation could be attributed to regional differences, such as population structure, cross-border collaboration or tourism. For example, on coastal regions both national languages, Finnish and Swedish were well represented due to the concentration of Swedish speaking population whereas closer to the eastern border Russian seemed more prominent language option. In addition to Finnish, Swedish, Russian and English patient information some websites, particularly in Lapland region, displayed a variety of language options, albeit brief. Overall, there were many websites where English surpassed Swedish, the other national language, as the only other language option

besides Finnish. In Southern Finland English seemed to be the most prominent language option on hospital websites alongside Finnish. That raised a question whether English language alone is sufficient for all online patient information readers as it is likely that the readers' background and therefore also their language skills vary.

Several studies abroad demonstrate that patients with different cultural background are more likely to receive lower quality care (Bradby 2001: 132; Malin & Suvisaari 2010: 134) and that good communication and co-operation with the patients have been linked with successful care outcomes and efficient and safe care (Flores 2000; Collins, Peters & Watts 2011: 103–104; Bradby 2001: 132; Lavalley, Chenok, Love, Petersen, Holve, Segal & Franklin 2016). Shortening consultation times accentuate the meaning of written patient information (Torkkola, Heikkinen, Tiainen 2002: 7). English online patient information provides an additional information source for foreign residents who often need more information and time for its interpretation compared to the majority of patients who speak fluently one of the two national languages. Torkkola et al. (2002: 8) state that the enduring issue in patient satisfactory surveys is underperformance in provision of information. Online patient information supports good patient care by providing answers to some of the questions prior to the arrival to the hospital and clarifying issues left unanswered during the visit (Bradby 2001: 133).

The connection between language and culture is well-established in translation studies as the two are in constant interaction with each other (Hiirikoski 2006: 37). In translation studies the transition towards cultural emphasis was launched by functional theories between the 1970's and 1980's (Munday 2012: 110), although some, for example Nida (1964: 147) have recognised the connection already before that. Since then, the cultural aspects of language have been approached in translation studies from various angles (see Leppihalme 1997; Kramsch 2011: 305–317). The sociocultural interaction manifests in a variety of culture specific language items and different genre conventions that are result of interaction between languages and cultures or smaller social groups within one language. For example, Halliday (Munday 2012: 137–139) and Reiss (Reiss and Vermeer 1986: 107) link sociocultural environment with genre conventions which guide the reader to understand the meaning of the text.

Within translation studies translated online patient information belongs to a wider subject area called medical translation. Although medical translation has traditionally been associated with highly specialised texts, it encompasses a range of genres which vary in their degree of popularisation from highly specialised research articles to popularised TV programs (Montalt Resurrecció & González Davies 2007: 21; Montalt 2011: 79). Based on their social function Montalt (2011: 81) divides medical genres to four categories: research, professional, educational and commercial. The social function of online patient information falls under educational in this categorisation and in a continuum from specialised to popularised it is situated towards the popularised end. Unlike in some specialised medical genres, in online patient information many of the textual choices are subordinate to the skills and needs of the readers. Furthermore, features such as accuracy, reliability and sensitivity towards patients are crucial although medical translators need also to be familiar with different text genres, conceptual networks, terminological range and social context in order to translate medical texts at any level of popularisation (Montalt 2011: 79).

In addition to multiple genres and medical specialities some of the challenges of medical translation are related to medical language. In the course of time medical language has integrated terminology and other features from multiple medical related and other specialised fields. In fact, because of these shared features, Montalt (2011: 79) relates medical translation with scientific and technical translation. Moreover, medical language contains features from other languages which in the past have been the *lingua franca* of science. These languages include Greek, Latin and more recently, English (Montalt 2011: 79–81). The current position of English language as *lingua franca* of medical translation Montalt (2011: 80) relates to biomedical research which is mainly published in English. Moreover, English as the *lingua franca* of global medical community means that the medical professionals of various nationalities share their findings with the international medical community in English. Consequently, these texts pose a challenge for the translators not only due to their high level of specialisation but because they are often produced by non-native English speakers who are not professional writers (Montalt Resurrecció & Gozáles Davies 2007: 22).

Within translation studies, medical translation research is a relatively new field of study (Montalt 2011: 81–82). Collins et al. (2011: 103) describe both descriptive and prescriptive approaches to medical communication research. According to Collins et al. (2011: 102–103), various methods are employed and depending on the aim of the study they include conversation and discourse analyses, corpus linguistics, coding, surveys, and interviews. Montalt (2011: 81–82) on the other hand sees prescriptive approaches as traditional and mainly focused on terminology. Instead, he (ibid. 81–82) accentuates descriptive approaches to interlingual and intercultural register incongruity, terminological problems and corpora-based studies of medical genres. Montalt (ibid. 81–82) sees cognitive approaches to comprehension and readability research as especially applicable to medical translation practice and translation studies due to their close connection with skopos theory. The most recent shift in medical translation research according to Montalt (2011: 82) is towards sociology with “[...] the role of genres as social construct in patient-centered environments”.

In Finnish context, the previous medical translation research is largely product oriented and focused on specialised medical terminology in various genres. Textual and terminological level approaches to medical language include Välimäki (2004) as well as a variety of master’s theses where the focus is prevalently on terminological issues of medical genres such as patient files, case histories and occasionally on patient information leaflets. Elberkennou (2008: 3, 80–82) found notable shifts in the accuracy and degree of certainty in translations of symptom descriptions and concluded that in professional textbook the information provided in Finnish was more implicit and impersonal than in English. Stenroos (2013: 66) found that the user is often overlooked in Vaasa hospital inhouse translations. It seems that methods from the User-Centered Translation (UCT) model introduced by Suojanen, Koskinen and Tuominen (2015) are often chosen to accompany medical text research in master’s theses. Highly specialised medical texts tend to be challenging research subject for a novice whereas heuristic evaluation according to Suojanen et al. (2015: 80, 130) is suitable also for beginners although usually accompanied by experts who are familiar with either usability or the evaluated text, or both. Another incentive for the popularity of the combination of UCT and medical texts may be the lack of user-

focus, noted also by Stenroos (2013), on many popularised medical texts which highlight the importance of the medical texts research despite of the challenges they may pose.

Within Finland the translation studies research that is related to social aspects of translated medical genres is scarce. However, the social aspects have recently evoked the interest of researchers in medical field. Tervola (2019: 93) focused on aspects of immigrant physicians' cultural and interpersonal language proficiencies in a recent doctoral thesis. The results show that although most immigrant physicians perform well, some experience problems with written patient documentation and verbal language skills (*ibid.* 94). Consequently, this is reflected to other healthcare staff as increased workload and stress and in some circumstances as reduced patient safety (*ibid.* 94).

The Finnish Institute for Health and Welfare (THL) launched recently a FinMonik 2018–2019 research (Kuusio, Seppänen, Jokela, Somersalo & Lilja 2020) where various aspects of health and welfare of “population with foreign background born abroad and living in Finland” were surveyed including their use, trust and need for health services. The results demonstrate, in accordance to the results of similar studies abroad, that migrants experience problems in access to healthcare services and that the problems could be alleviated by increasing the availability of standardised information in different forms (Derose 2009 quoted in Kuusio, Vehko & Aalto 2020: 164; Kuusio, Lumme and Koponen 2020: 154, 159). Hanhinen and Martikka (2014: 8, 37–41) noted the reduced ability to learn new languages in elderly immigrants and immigrants with mental health issues. They (*ibid.* 2014: 7, 41–42) confirm that the response to the migrants' needs for health services in Finland has been insufficient in the past and that the municipalities differ in how easy the access to health services is for migrants.

One of the aims stated in Finnish Government Programme (FGP 2019) is to provide equal services to healthcare users. The concept of equality in the FGP was my point of departure for defining the concept of equality in this nationwide review of usability of English online patient information in Finland. Contrasting the usability of English and Finnish patient information may provide an additional, linguistic, viewpoint to the Finnish health and social services reform as the diversity of users of Finnish health services is steadily

increasing. One of the three analysis methods used in this thesis was usability heuristics. Heuristics were chosen because they are flexible, user centred and the connection with user-interface research makes them suitable for evaluating websites. The two-part Skopos theory consists of Vermeer's skopos theory and Reiss' text types of which the latter was used in the material selection of this thesis (Reiss & Vermeer 1986). Comparative approach was utilised throughout the analysis as it is a traditional approach within translation studies.

The structure of this thesis is as follows. In the following two sections the material and method are described. In chapter two I will draw an outline of the English online patient information readers. Statistics and literature are reviewed to outline the diversity of nationalities and languages in contemporary Finland and how they are distributed in Finland. The concept of equality is related to the Finnish Government Programme's strategic theme 3.6 "Fair, equal and inclusive Finland" in parts that are related to the health and social services reform (FGP 2019). Then the access to Finnish health services is discussed in relation to international agreements and legislation about languages used in health care. Chapter three starts with a discussion of aspects of medical and institutional translation and some resolutions to multicultural healthcare related issues in other countries, followed by the theoretical framework and description of the methods used in the analysis. In chapter four the results of the analysis are presented district by district. In chapter five the results are drawn together and related to the research questions. Chapter six concludes with reflection and future contemplations.

1.1 Material

The material of this thesis consists of regional samples of online patient information from the websites of Finnish public hospitals or hospital districts. Regional samples enabled comparison between different locations and collectively the samples formed an overall picture of the usability of English online patient information in Finland. The samples were collected during the first two weeks of April in 2019 and the selection was based on availability and set criteria that included two of the Reiss' (Munday 2012: 111–115) four

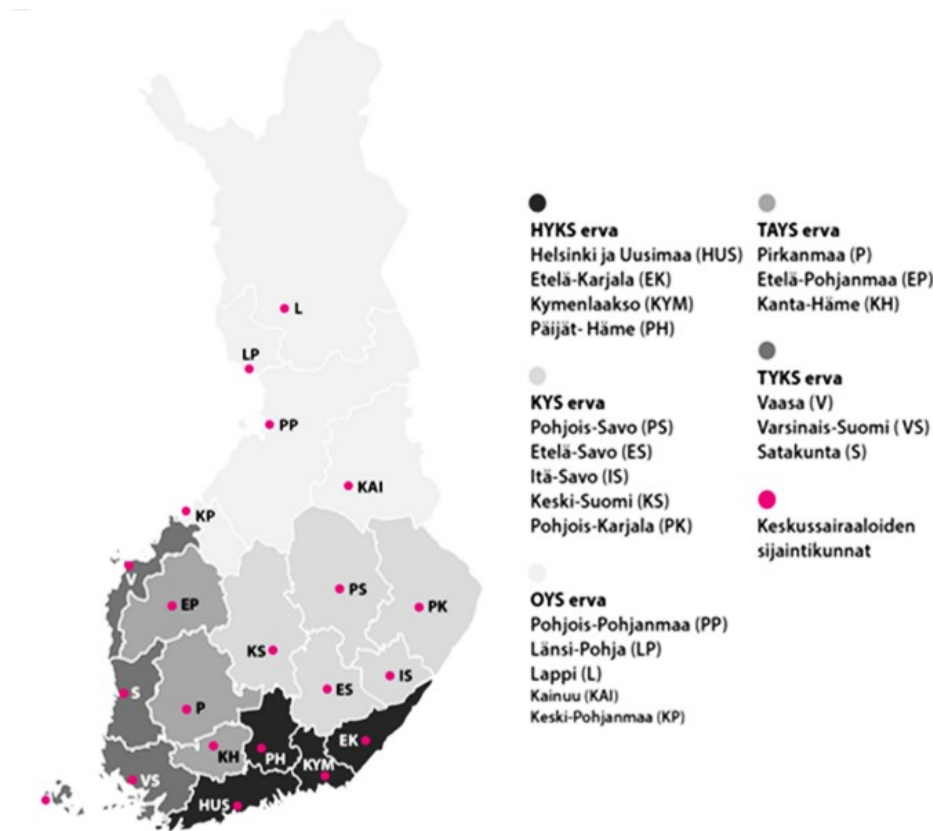
text types. Reiss' text types are part of a skopos theory where the purpose (skopos) of translation is highlighted. Operative and informative text types appear frequently on patient information as the purpose of patient information is to instruct patients to ensure their cooperation and engagement to the treatment (Montalt Resurrecció & Gonzáles Davies 2007: 52–60).

The preliminary material search revealed how time-consuming a nationwide search for patient information is so I set a two-week time limit for the material collection and ensured the comparability of the collected texts by setting criteria that helped finding right amount of right kind of material in reasonable time. Reiss' (Reiss & Vermeer 1986: 114–115) operative and informative text type definitions were used as a guideline when collecting corresponding texts of similar genre (e.g., online patient information). One page of dominantly operative and one page of dominantly informative text type was collected from each region. I collected the first page of the Finnish source text (ST) and the corresponding English target text (TT) because as noted by Torkkola et al. (2002: 39), the most important information is usually placed at the beginning of the text. The ST word count was restricted to 200 (+/- 50) words. Delimiting the word count ensured that similar amount of material was collected from each website. The aim was to collect approximately four pages of material from each region. Once the material was collected, the total word count including both the source and the target texts was 5000 words. As languages differ in how words and sentences are formed (c.f. agglutinative and analytic languages) and as additional explications are often needed, the word count tends to increase in translation. Munday (2012: 302–303) estimates an average 10 per cent increase in text length after translation, but notes that the increase depends on the language pair and how close the translation adheres to the ST.

A webpage consists of a variety of elements such as external links, images and videos. As the layout, font, spacing, pictures and other elements vary, I restricted the sample to the main body of text only, thus excluding pictures and text in all other website elements such as headers, footers, sidebars and navigation menus. The added benefit of this was that it further limited the material and increased its uniformity as on some webpages only the main body of the text was translated. However, external links, pictures and icons that

were embedded on the main body of text were included in the material as they often provide valuable additional information about the subject.

To ensure nationwide coverage I used the Finnish Ministry of Social Affairs and Health (STM 2017) division of five university hospital led “catchment areas for highly specialised medical care” (Finto 2020). The Finnish definition of these catchment areas is “*erikoisvastuualue*” thus forming the acronym “*erva*”. Due to space restrictions, I will use the Finnish acronym “*erva*” in tables. To avoid the long phrase “university hospital led catchment areas for highly specialised medical care” I will use a slightly shorter phrase “catchment areas” in the text from here on. One sample was collected from each of the five catchment areas shown in Picture 1 below.



Picture 1. Hospital districts and catchment areas (Sairaanhoitopiirit ja erityisvastuualueet STM 2017)

The five (erva) catchment areas are displayed in Picture 1 along with the further division to 20 hospital districts (the southwestern archipelago region Ahvenanmaa excluded) (STM 2017). University hospitals provide the most advanced medical care primarily for the inhabitants of their respective catchment area (STM 2017). Therefore, the patient information on their websites is likely to contain higher concentration of medical terminology and phraseology than the information in other smaller hospital websites. When I refer to a sample that is collected from a hospital within one of the five catchment areas, I will use the university hospital acronym HYKS, TAYS, KYS, TYKS and OYS as they are shown in Picture 1. I decided to do this because the catchment areas generally have more than one hospital and sometimes the website address refers to a hospital district, but the hospital logo on the page heading indicates a certain hospital within that district. The main point is that each sample is from different catchment area, and therefore specifying the exact hospital or hospital district the sample is collected from is not relevant.

Table 1 on the following page displays the word count, hospital district and the title of each text sample. The two text types are distinguished by numbers so that number one refers to informative text type and number two to operative text type. Initials ST and TT differentiate the Finnish source text (ST) and the English target text (TT). The operative sample from OYS catchment area is missing from Table 1 because I was only able to find one, informative, sample from that catchment area that fitted the set criteria and the time limit for material collection. As displayed in Table 1, both HYKS catchment area samples are from Helsinki and Uusimaa hospital district (HUS), but the sample is labelled as HYKS erva because that is how the catchment area is referred to on Picture 1. With TYKS, KYS and OYS the site's address referred to hospital district, but the sample page header displayed a university hospital logo. There is only one sample (KY2) that did not originate from a hospital district where also the university hospital is located. KY2 sample is from South Savo (ES) hospital district and therefore in the table 1 two hospital district initials are mentioned in KYS erva heading. From here on all samples will be referred by their catchment area acronym and by the text type number when applicable (i.e., KY2 as the operative sample from KYS catchment area).

Table 1. Material and word count

HYKS erva HUS hospital district	w/c
HY1 Informative source text (ST): Ortopedia ja traumatologia	248
HY1 Informative target text (TT): Orthopedics and Traumatology	398
HY2 Operative ST: Ensihoito ja päivystys	180
HY2 Operative TT: Emergency Care	<u>263</u>
Word count (Finnish words 428, English words: 661)	1089
TYKS erva VS hospital district	w/c
TY1 Informative ST: Synnytys	228
TY1 Informative TT: Childbirth	355
TY2 Operative ST: Asiointi päivystyksessä	246
TY2 Operative TT: Attending emergency services	<u>447</u>
Word count (Finnish words: 474, English words: 802)	1276
TAYS erva P hospital district	w/c
TA1 Informative ST: Potilaana Taysissa	219
TA1 Informative TT: As a patient in Tays	289
TA2 Operative ST: Lasten päivystys	229
TA2 Operative TT: Paediatric emergency services	<u>421</u>
Word count (Finnish words: 423, English words:670)	1158
KYS erva PS and ES hospital districts	w/c
KY1 Informative ST: Potilaana sairaalassa	179
KY1 Informative TT: As a patient	364
KY2 Operative ST: Päivystys	182
KY2 Operative TT: Emergency Department (A&E)	<u>299</u>
Word count (Finnish words: 361, English words: 663)	1024
OYS erva PP Hospital district	w/c
OYS Informative ST: Potilaana päivystyksessä	192
OYS Informative TT: As a patient	<u>261</u>
Word count	<u>453</u>
Total word count (Finnish words: 1903, English words: 3097)	5000

The specific features and emphases of each region made finding comparable texts challenging. The contents of hospital websites varied from cross-border collaboration and administrative texts to procedure descriptions. I found a common denominator for foreign healthcare customers from hospital introductions and emergency instructions as most hospitals appeared to have at least one of those. I launched the material search from university hospital districts as they were the most likely candidates to yield material. Based on the

preliminary material search I excluded health centres and local hospitals from the search because they rarely had comparable English language pages unlike most university hospital districts. University hospitals draw patients also from the surrounding hospital districts to receive specialised medical care, hence a greater variety of available patient information also in English. The first text that fit the criteria, was collected. Consequently, the material is largely from university hospital/hospital district's websites.

At the end of the two-week time limit I was two texts short from the target of four pages of texts from each catchment area. To replace one of the missing texts, I updated one informative procedure description from the earlier collected preliminary search material. Procedure description added some variety to the material as did the regional hospital webpage (KY2) and different specialities (e.g., obstetrics, paediatric emergency). In the end all but OYS catchment area had the intended four pages with one operative and one informative page in Finnish and their corresponding English translations. Although the operative texts were missing from the OYS catchment area, the informative texts were included to the material to prevent the northern parts of Finland being left out altogether.

1.2 Method

The analysis was qualitative incorporating data-driven, User-Centered Translation (UCT) and comparative approaches. Comparative method and heuristic evaluation with the related severity rating were utilised to find how equally usable English online patient information is in different regions of Finland. By contrasting the Finnish source text and the English target text the comparative method brought out another, interlingual, aspect of equality. Additionally, Reiss' definitions of operative and informative text type (Reiss & Vermeer 1986: 114–115) served initially as criteria for material selection and after the usability analysis the results of the two text types were contrasted to confirm or negate the hypothesis that the usability of operative texts is higher than that of informative texts.

Torkkola et al. (2002: 36) highlight the receiver emphasis in patient information texts. Choosing a method with a strong receiver emphasis enabled maintaining the essential

reader focus throughout the analysis. Due to the limited scope of this thesis, the characterisation of the readers of English online patient information was based on literature and statistics of foreign residents in Finland. Similarly, most of the empirical methods introduced in User-Centered Translation (UCT) model exceeded the scope of this thesis. Nevertheless, heuristic evaluation is described by Suojanen et al. (2015: 80–81) as adaptable and suitable method for various translation contexts. Due to the data-driven approach adaptability was elemental feature for categorisation of the found issues.

Based on the found material, six of the ten usability heuristics introduced by Suojanen et al. (2015: 90) were modified to form six categories. The items that were allocated to these categories are in this thesis called “usability issues” instead of “usability problems” as proposed by Suojanen et al. (2015: 77). The name was changed to counter the problem centeredness of heuristic evaluation also noted by Suojanen et al. (2015: 80) who, quoting Korvenranta (2005: 122), recommend including also positive changes to the evaluation. Moreover, the categories were renamed to better describe their contents and to distinguish them from the original UCT heuristics. The categories were named as follows (the name of the original UCT heuristic is displayed in brackets):

user match (match between translation and users),
 genre conventions (match between translation and genre),
 cognitive load (cognitive load and efficiency),
 consistency (consistency),
 ST-TT integrity (match between source and target texts) and
 grammar (error prevention).

The criteria according to which the found usability issues fell in the above-mentioned categories were derived from the definitions for textual elements of usability and the criteria for the original usability heuristics introduced by Suojanen et al. (2015: 49–59, 90). The four textual elements presented by Suojanen et al. (2015: 49–59) are legibility, readability, comprehensibility and accessibility. Suojanen et al. (2015: 54–55) relate comprehensibility to readers abilities and cognitive processes. Comprehensibility is related to many categories including cognitive load and grammar. For example, the category named “grammar” is related to comprehensibility as grammar errors may sometimes cause misunderstandings and consequently reduce the comprehensibility of a text. However, how

big an effect the grammar errors have to usability varies. Therefore, to estimate how each categorised item affected usability I united two severity rating scales introduced by Suojanen et al. (2015: 131–133) and formed a five-part scale which I then used to evaluate the severity of all found issues. (More detailed description of each criteria and textual element is available in section 3.3.)

In this thesis the concept of equality is twofold. Firstly, it is related to the regional usability of English online patient information and secondly, to interlingual equality between the Finnish source text readers and the English target text readers. The regional aspect of equality of English patient information is studied by contrasting the results of usability analysis regionally to bring out possible differences between them. The relatively small sample size meant that the regional results are less significant than the results of the interlingual comparison where the whole material is utilised. Comparative approach is a traditional method in translation studies (Koster 2011: 21; Munday 2012: 13–15). Essentially, it means comparison of two or more texts or corpora of texts to find different or similar features between them (Koster 2011: 21). In translations studies it often involves comparing a source text with its corresponding translation.

The four text types described by Reiss are operative, informative, expressive and audio–medial (Munday 2012: 111–115). Most texts contain more than one text type, but in different parts of the text one type is usually dominant (Reiss & Vermeer 1986:116). As the social function of online patient information is to instruct and ensure cooperation and engagement to care (Montalt Resurrecció & Gonzáles Davies 2007: 52–60), informative and operative texts types appear frequently in patient information texts. Therefore Reiss' (1986: 114–115) operative and informative text types were used as parameters in the material collection process to find corresponding and comparable texts of similar genre. The chosen operative pages contained instructions for urgent or otherwise distressing situations where clarity and readability are highlighted. The informative pages provide a contrast for the operative texts as they contain more general and less urgent information such as practical matters regarding a hospital visit. After the usability analysis, also the results of the two text types were contrasted to negate or confirm the hypothesis that the vital

information in the operative texts would result in higher usability rating compared to the informative texts, thus demonstrating a pre-existing hierarchy between the two text types.

As the sole estimator, my level of expertise concerning the usability evaluation and the material may perhaps also be of interest. Throughout the analysis I supplemented my non-native English abilities by referring principally to Cambridge and Lexico online English dictionaries and grammar text books. I am reasonably familiar with patient information as I have long experience of perioperative nursing both in Finland and abroad (Great Britain and Australia). Of heuristic evaluation I had no previous experience. The compensatory measures related to my status as a single estimator are discussed in chapter 3.

The use of multiple methods ensured that the material was viewed repeatedly from a slightly different angle in each round of evaluation. I collected the most salient features first from the English language material. These included spelling mistakes and deviations from conventional expressions for the target text genre. The analysis continued with comparison of the English language target text (TT) with the corresponding Finnish source text (ST) sentence by sentence to collect interlingual inconsistencies for further analysis of their usability. The analysis proceeded from individual lexical items to larger units such as phrases, paragraphs, subsections and eventually to the entire text. Thus found issues were then divided into categories. To distinguish the most notable usability issues the severity of all issues was rated. Finally, the results of each region, the two text types and the two languages were contrasted to find whether there is any evident variation in them.

2 THE READERS OF ENGLISH ONLINE PATIENT INFORMATION

To estimate the usability of any given text it is essential to know not only what the purpose and context of the text is, but also who the readers are and what specific requirements they might have. In this chapter, I will form a picture of the readers of English online patient information in contemporary Finland based largely on statistics and literature. I will examine the perimeters of inclusion to Finnish society by reviewing the concepts of inclusion and equality in the Finnish Government Programme's strategic theme 3.6 "Fair, equal and inclusive Finland" (FGP 2019: 151–172) which is related to the health and social services reform. To find which minority language speakers are acknowledged in public health services, I will investigate language and healthcare related legislation and agreements that define who has access to Finnish healthcare. I will also shortly review international agreements that are related to the access to Finnish healthcare. Finally, I will chart the variety and distribution of languages and nationalities in contemporary Finland.

Foreign inhabitants come to Finland from various reasons of which approximately 90¹ percent are related to work, family or education (Martikainen, Saari & Korkiasaari 2013: 38–40). Most arrive prepared for the new language and culture but the remaining 10 percent that includes tourists, refugees and asylum seekers may not be quite as ready. Communication is essential part of successful healthcare and yet it can sometimes be problematic especially if the participants do not share a common language or if their cultural background is very different. Even when the communication occurs in one's native language, it may fail if an underlying behavioural cultural code goes unrecognised. In a stressful or frightening situation, such as an accident or other emergency, efficient communication is essential because if it fails the consequences may be detrimental for patients and their family. (see Bradby 2001: 132–133).

Globally speaking, multilingual and multicultural clientele in healthcare is not a recent phenomenon and various aspects of the topic have been approached by researchers (see

¹ The figures include under year stays and exclude people moving within EU.

Connel 2011; Devillé et al.² 2011; Kemppainen, Kemppainen, Skogberg, Kuusio & Koponen 2017). The reasons for providing multilingual patient information vary between nations. The available language options are subject to the specifics of each region such as population structure but they are also dependent on the choices of the service providers who govern the available language options through guidelines and policies. In the United States, where approximately one fifth of the healthcare users are of multicultural background, the lack of cultural knowledge amongst the healthcare staff is still considered significant (Wolz 2015: 248–250). With over 31 million Americans unable to communicate in the language of the healthcare provider, the communication problems are reported to have substantial impact on patients' access and their use of health services (Flores 2000: 14–23). In Europe immigration, tourism and globalisation have increased the ethnic and linguistic diversity of healthcare customers. In Spain, for example, mass tourism has increased the need for translated patient information (see Goretta 2015).

Bradby (2001: 139) sees healthcare providers' poor communication practices as part of the reason that patients with different cultural and linguistic background often receive lower quality care. Oroza (2010:276) on the other hand places the emphasis of communication difficulties to cultural rather than language issues. Malin and Suvisaari (2010: 134–135) add that the variety of cultures, languages and reasons for arriving to a new country makes it challenging to attend to the needs of multicultural healthcare users. Devillé et al. (2011) searched consensus of 16 EU Member State experts to find what constitutes a good healthcare for immigrants. The resulting nine themes included “easy and equal access to health care”, “patient/healthcare provider communication” and “culturally sensitive health care services” (ibid. 2011).

Kuusio, Koponen, Castaneda, Lilja, Manderbacka and Koskinen (2016) and more recently Kuusio, Seppänen et al. (2020) confirm that also in Finland the access to healthcare services is lower amongst people with foreign origins. Despite of the numerous studies (see Flores 2000; Collins et al. 2011: 103–104; Bradby 2001: 132; Ludwig-Beymer 2003:

² Greasen, Bogic, Dauvrin, Dias, Gaddini, Koitzsch Jensen, Karamanidou, Kluge, Mertaniemi, Puigpinós i Riera, Sárváry, Soares, Stankunas, Straßmayr, Welbel & Priebe

252; Lavalley et al. 2016; Wiese 2018: 202) abroad demonstrating that good communication is the key to safe, efficient and successful care, Kuusio, Koponen et al. (2016) found no connection between working age immigrants' unmet medical care needs and their language skills, age³, education or length of stay in Finland. Instead, they (ibid.) connected the unmet needs with refugee status and social and financial exclusion. Hanhinen and Martikka (2014: 7–8) concur on the part of refugees and asylum seekers, but add that old age and mental health issues often inhibit learning a new language and thus also engagement to other activities. Iley and Nazroo (2001: 81) point out the possible connection between racism, mental health issues and poverty. Ludwig-Beymer (2003: 252) conclude that there is a variety of potential barriers to the access to healthcare, including age and literacy level.

Another aspect of multilingual healthcare is medical tourism. According to Connell medical tourists often arrive from the neighbouring countries and belong typically to the elite or wealthy part of the population. Factors influencing to patients' decision to cross borders for medical care include quality of the care and language issues. Connell observes that although there are not yet accurate or reliable research on the impacts of medical tourism to local health and social system, medical tourism provides nevertheless a notable economic contribution and therefore also ethical questions regarding the appropriate use of medical resources should be considered in connection with it. (Connell 2011: 113–147)

In translation studies language and culture are often perceived as a combined entity because language may convey cultural manifestations of life such as religious and behavioural codes and customs. Therefore, in this thesis the word “multicultural” is tied to language related issues in online patient information context and understood as “[r]elating to or containing several cultural or ethnic groups within a society” (LED 2021) “including people who have many different customs and beliefs” (CED 2021).

³ The computer assisted survey conducted by Kuusio, Koponen et al. (2016) in 12 languages included only working age (18–64) respondents.

The readers of English online patient information are likely to be a heterogeneous group of people, and therefore choosing a relatively short term to refer to them was necessary. In Lexico online English Dictionary (LED 2020) “immigrant” is described as a “person who comes to live permanently in a foreign country”, whereas a “migrant” is a “person who moves from one place to another, especially in order to find work or better living conditions”. The latter definition emphasises not only the reasons for moving but the fluctuating nature of foreign residency also noted by Lönnroth and Laukkanen (2015: 165) in the Finnish context. However, as the different emphasis of these two definitions are delimiting, I will instead refer to “foreign residents” when discussing people whose language and/or cultural background is other than native Finnish and who are visiting or temporary/permanently residing in Finland and who are therefore potential users of Finnish health services and online English patient information. However, due to the delimiting nature of the previously defined words and some others not mentioned here, when I refer to external sources of information where these terms are used, I will use the same term as mentioned in the source because changing the term would consequently also change the meaning and the extent of the reference.

2.1 Health and Social Services Reform in the Finnish Government Programme

In this section I will form a picture of how the variety of languages spoken among the potential readers of the English language online patient information are taken into consideration in the government plan for health and social services reform. I decided to use the Finnish Government Programme (FGP 2019) as current trend in contrast to the legislation (section 2.2) which tends to be somewhat obsolete. I will review from mainly linguistic point of view the parts of the FGP (2019) that are related to the sote reform⁴, equality and access to Finnish health services.

The health and social services reform was launched to realign fragmented healthcare services, allocate funds to changing service needs, cut the expenses by shifting the focus of

⁴ Sote is Finnish acronym derived from the words “social and health” [sosiaali -ja terveyst]

health and social services gradually from specialised care towards basic and preventive services and to move the financial responsibility from municipalities to larger provinces (FGP 2019). Municipalities' resources for funding and organising health and social services were estimated to be insufficient and therefore the Finnish Government's plan is to shift the responsibility of providing the health and social services from the 300 municipalities to 18 counties instead (FGP 2019, AFM 2020). The means for cutting the costs and improving accessibility to the primary care includes developing digital and remote services for healthcare (FGP 2019: 166). While the plans for digitalisation include language rights in some sections of the FGP (see chapter 3.4 in FGP 2019: 116), in healthcare context the digitalisation is related chiefly to interdisciplinary cooperation (FGP 116, 160–161).

In the Finnish Government Programme equality and non-discrimination are defined as fundamental values (2019: 152). In the strategic theme 3.6.1 under the heading of “Restructuring of health and social services” it is stated that “The central objectives of the health and social services reform will be to reduce inequalities in health and wellbeing, safeguard equal and quality health and social services for all, improve the availability and accessibility of services [...]” (FGP 2019: 163). However, only well-established language minorities are mentioned by name and the linguistic rights are: “secured in practice, especially for Swedish speakers, Saami speakers and sign language users” (FGP 2019: 154). Although linguistic rights are mentioned on several occasions, they are again associated mainly with the well-established minorities: “The health and social services reform will safeguard quality, client-oriented services on an equal basis for Finnish speakers and Swedish speakers” (FGP 2019: 165) and discrimination in the healthcare context is related to people with disabilities and sign language users (FGP 2019: 154, 155). In addition to a mention of guidance (FGP 2019: 155), the concrete measures in which healthcare professionals are supported in their duty to respond to linguistic and other needs of minorities remain as indistinct as to how the equal access to care for other than established minorities (FGP 2019: 160) will be dealt with.

The range of other minority language speakers who are neither established domestic minorities nor undocumented migrants include among others the planned number of annual

quota refugees which according to the Government's plan is estimated between 850 to 1,050 people (FGP 2019: 88). In objective four, undocumented migrants are guaranteed the "[...] necessary care and treatment" (FGP 2019: 161). Undocumented migrants' access to healthcare is currently dependent on their location as municipalities retain the right to decide whether they treat undocumented migrants and when they do, the care is subject to a fee (THL1 2020). Other language speakers in healthcare within EU include people with European health insurance who are entitled to receive care with certain restrictions in Finland (STM 2020; Act on Cross-Border Health Care § 2 chapter 1). Temporary visitors are treated according to their status and as such they are subject to the conditions of the current agreement with their respective country (European Commission 2020).

Since 2014, patients have been able to choose the healthcare professional providing the treatment as well as the place of their care (in collaboration with the physician) including specialised medical care (STM 2020). The online patient information tends to be more commercial in private sector where its potential to attract customers is utilised. Although commercial approaches to public healthcare services have not always been advantageous in the past, language options and quality in online patient information could be perceived as a form of advertisement also in public sector. Quality patient information answers questions prior to the appointment and gives a good impression of the named institution which all contribute towards reducing fears and increasing engagement to the care. The freedom to choose the place of care increases the significance of patient information websites as they may affect the flow of patients (and funds) either towards or away from the municipalities. Furthermore, the shift in financial responsibilities brought about by the health and social services reform may affect municipalities' incentive for savings and improvements, although currently according to the Health Care Act, § 12, chapter 2, municipalities are required to monitor and report the welfare of their residents (THL 2020) and regardless of the location where the care was received, patient's residence municipality is responsible for the expenses of their residents (STM 2019).

2.2 Linguistic Rights in Legislation

Some of the minority languages spoken in Finland are protected by legislation. The rights of the users of the two national languages Finnish and Swedish are stated in the Language Act. The Sámi Language Act specifies the rights of the speakers of Sámi languages. Other traditional minority languages in Finland are Romani, Karelian and sign languages of which the sign languages are recognised in legislation (Kotus 2020). In healthcare context, the citizens of the Nordic countries may use their national languages and the authorities of the hospital districts are responsible for arranging translation and interpretation when necessary (Health Care Act § 6 chapter 1). However, also the citizens of European Union member states are entitled to use Finnish healthcare services if they are insured in another member state (Act on Cross-Border Health Care chapter 1 and § 16 chapter 4). Other nationalities' access to Finnish healthcare is subject to other international agreements. The legislation related to patient documentation concerns mainly confidentiality issues (Act on the Status and Rights of Patients chapter 4).

The legislation related to patients' linguistic rights include the Language Act, the Health Care Act and the Finnish Act on the Status and Rights of the Patients among others. In the Act on the Status and Rights of the Patient (§ 3 chapter 2) permanent residents are guaranteed good quality healthcare without discrimination to their dignity or convictions and “[t]he mother tongue, individual needs and culture of the patient have to be taken into account as far as possible in his/her care and other treatment⁵”. The language is not specified but in the following entry the rights are related to the national languages Finnish and Swedish. In the current legislation the recognition of patient's linguistic and cultural needs in healthcare is largely based on residential status and international agreements. Permanent residency guarantees right to use healthcare services and to attain a residential status one must pass written and spoken language test at least on satisfactory level (Räsänen 2017). Despite the results of the language test, the most fluent and accurate communication tends to occur in one's native language. Moreover, the foreign users of

⁵ An unofficial translation of Ministry of Social Affairs and Health.

Finnish healthcare include temporary visitors and non-residents whose access is regulated by various international agreements.

Castles, Haas and Miller see the citizenship as essential not only for acquiring the legal but also linguistic and cultural rights. They discuss the symbolic meaning of language and culture and see them as central for group cohesion and formation of ethnic communities which provide support for its members. Castles et al. note that in a foreign country the language perseveres two to three generations, whereas the more significant cultural customs and rituals persist much longer. They point out that creating policies that improve access to public services such as healthcare and reduce discrimination are beneficial for all parties. However, they warn that multicultural strategies, such as Canada's policy of two official languages, may lead to limited recognition and support of immigrant languages and that even monolingual countries have had to address the migrants' communication needs in health and other public services. (Castles et al. 2014: 57, 80, 287–292)

Although patients clearly are the priority as they are the receivers of the care, a foreign language and culture is sometimes problematic also from the healthcare professionals' point of view. In Act on the Status and Rights of Patients, § 5, chapter 2, it is stated that healthcare professionals have obligation to provide information in a way that patient understands it, with the aid of interpreter when necessary. When the hospital visit is scheduled, (i.e., the case is not an emergency), and the online material supports the task of informing the public, there should not be problems. In an urgent situation, however, suitable interpreters are not always available on short notice or out of hours. The questions of how and which healthcare professionals should gain the skills required to communicate with the patients from varying cultural and language backgrounds is problematic. As described by Tervola (2019: 94) the work load of the other staff increases when patients fail to understand the instructions from one member of staff. Bradby (2001: 129–132) adds that in Great Britain good quality nursing care consists of good communication and cultural competency towards patients routinely from all members of staff.

2.3 Immigration to Finland

In this section I will look at immigration to Finland and the variety of nationalities and languages present in contemporary Finland to find how heterogeneous the potential readers of English online patient information are. At the end I will shortly review the distribution of foreign residents in Finland.

The number of foreign citizens and speakers of other than national languages have increased in Finland since the beginning of the 1990's (Martikainen et al. 2013: 38; Statistics Finland 2020, 2020a, 2020b). Consequently, the diversity of healthcare customers and their need for multilingual patient information has increased also. The reasons behind global scale migration movements that affect also Finland include climate induced crises and conflicts resulting from financial or political decision-making (Martikainen et al. 2013: 23–26). Castles et al. (2014: 123–125) note also connection between economic situation and immigration rates, whereas Martikainen et al. (2013: 33) describe smaller scale motives for immigration such as trade, relations, income and education.

The estimated number of foreign citizens in Finland stayed around 20,000 for over a century after the 1870's with a large portion of foreign residents arriving from adjacent countries (ibid. 33–36, 38). After the second World War the numbers were halved to 10,000 for a few decades (Martikainen et al. 2013: 35–36). By the 1990's the previously predominant trend of emigration from Finland changed to immigration (ibid. 33) starting a growing trend in the numbers of foreign citizens (Statistics Finland *Foreign citizens* 2020a) and breaching the limit of 25,000 for the first time (Martikainen et al. 2013: 35, 38). Joining the European Union (EU) in 1995 and signing the Schengen Agreement in 1996 (Castles et al. 2014: 232) brought free mobility and changed immigration policies which further accelerated migration movement within Europe and to Finland (Martikainen et al. 2013: 37; Castles et al. 2014: 232). The 2015 migration wave to Europe increased the annual number of asylum seekers in Finland momentarily from 1500-6000 to 32,476 (Kuusio, Somersalo, Lilja, Seppänen & Jokela 2020:12). In 2018 the number of foreign citizens in Finland had risen to 250,000 with majority of immigrants coming from Estonia (50,000) and Russia (28,000) (Statistics Finland *Foreign citizens* 2020a). In 2019 the

number of foreigners and foreign language speakers was over 400,000 (Statistics Finland *Persons with foreign background* 2020).

The steadily increasing immigration has diversified the variety of languages used in Finland. The number of other than domestic language speakers in Finland has risen in less than thirty years from 24,783 (0.5%) to 391,746 (7.1%) (Statistics Finland *Population according to language 1980–2018* 2020). Amongst the most spoken foreign languages in Finland Martikainen et al. (2013: 38–39) mention Russian and Estonian, and add Arabic and English as languages that are used in many countries (Martikainen et al. 2013: 38–39). In 2018 Russian and Estonian speakers were the two largest groups of foreign language speakers in Finland with nearly 130,000 speakers (Statistics Finland *Foreign language speakers* 2020b). English was in the 5th place with 20,000 speakers after Arabic speakers (Statistics Finland *Foreign-language speakers* 2020b).

In 2016 there were 157 languages spoken as a mother tongue in Finland (Räsänen 2017). However, the languages are not divided equally between speakers and 90 % speak one of the 10 most spoken languages (ibid.). Of the other 130 languages 70 have less than 100 speakers and 40 have less than 10 speakers (Räsänen 2017). Moreover, Lönnroth and Laukkanen (2015: 166) note the difference between the language and nationality in statistics and point out that these days nationality does not equal with speaking of certain language. They continue that in statistics often only the mother tongue is registered thus ignoring the possibility of bi- or multilingualism as well as the speakers of minority languages (Lönnroth and Laukkanen 2015: 166).

Larja (2020: 48) notes that less than one third of migrants in Finland consider their Finnish or Swedish skills as excellent and roughly 40 % estimate their Finnish skills to be poor, particularly Asians who typically come to Finland to study or work and use mostly English in their daily life. However, only part of all foreign residents attends health services or read online patient information and some may not be able or capable to access online services at all. In the absence of other language options, the clarity and readability of English online patient information is highlighted because those whose English and

Finnish skills are poor may need to rely on other means such as interpretation or online machine translation to attain information about health services and how to access them.

Rasinkangas (2013: 40, 135–136) note that despite the refugee placement decentralisation policy immigrants tend to gravitate toward larger cities and population centres and a large portion of immigrant population resides in the southern and capital region of Finland and other larger cities as in 2010 nearly half of the foreign residents resided in the Uusimaa region. Lönnroth and Laukkanen (2015: 167) concur by noting the percentage of other than statutory language speakers in 2012 in the Helsinki region (12.2%) and the surrounding cities Vantaa (11.9%) and Espoo (11.3%) followed by Turku (8.7%), Kotka (7.2%) and Tampere (5.9%).

Castles et al. discuss immigration and the related practices and describe problems and changes migration can produce in both the source and receiving society. They conclude that although patterns of migration are reasonably similar in every country in respect to settling, residing, ethnic group formation and work, the variety between countries is produced by differences in public attitudes and government policies on immigration, housing, citizenship, and cultural pluralism. Castles et al. name intolerance and inequality as the two issues at the root of the problems related to immigrant incorporation and point out that migration tends to strengthen the existing trends whether they are positive or negative. They note that citizenship is an important part of immigrants' incorporation as it provides access to political and social rights, but also linguistic and cultural rights. Therefore, creating legal channels for migration as well as incorporation policies that avoid marginalisation is beneficial for both the receiving nation and migrants. (Castles et al 2014: 66–82, 264–294)

To summarise the preceding discussion, with some exceptions, residential status is essential for gaining access to Finnish health services and accordingly, learning statutory languages is encouraged, but in public services minority language speakers and healthcare professionals dealing with them are not supported. In the Finnish Government Programme (FGP 2019) equality and inclusivity are fundamental values and equality is related to non-discrimination although with health services context it is mostly linked with

established minority languages and physical disabilities. In connection with the health and social services reform only the well-established national languages are mentioned. Similarly, in the legislation the established minority languages are named even when large portion of the potential readers of English online patient information in Finland are non-native English speakers with variable language skills and cultural background. However, according to government report, complains to Parliamentary Ombudsman or to the Chancellor of Justice regarding oversights of linguistic minorities are relatively rare (Finnish Government 2017: 43).

The majority of foreign resident come to Finland from adjacent countries and Europe and although some may speak Finnish, the majority estimates their Finnish skills below average (Larja 2020: 48). Therefore, the readers of English online patient information are indeed a heterogenous group varying in their reasons for arrival, length of stay, age, and in their set of language and other skills. Moreover, the number of people whose first language is other than one of the two Finnish statutory languages is increasing and the mixture of languages spoken may vary with the changing situations both globally and locally.

3 USABILITY AND ENGLISH ONLINE PATIENT INFORMATION

In this chapter I will first discuss issues related to translation of institutional and medical texts. I will then introduce the theoretical framework I used to examine the two main concepts of this thesis, usability and equality. I will start with the comparative approach and the parts of skopos theory that were applied to material selection and testing the hypothesis of the study. I will then describe heuristic evaluation and severity rating and their modifications.

In this thesis, the three main communication participants of translated patient information are the institutional information provider, the reader and the translator. The translator mediates between the other two parties bearing in mind their cultural and language differences and the difference in their level of expertise. The communication goals of the institutional information provider include responding to the readers' need of information and attaining their compliance to the procedures and approved institutional guidelines. The readers expectations include that they are informed in clear and appropriate manner. In medical LSP textual features are highlighted, whereas in patient information the receiver's abilities and the context guides the language use. Because in heuristic evaluation textual features and user-centredness are incorporated it was deemed an appropriate method for this study. Moreover, contrasting the results of usability analysis reveals whether there exist regional differences in the usability of English online patient information i.e., whether all regions are equal in that respect. Comparative approach, the traditional method in translation studies, in turn enabled to observe whether the information is delivered equally to the readers in both languages.

Yli-Jokipii (2006: 96–98, 100) divides communication to internal and external elements of language and highlights the importance of including both when translating specialised genres. Internal language elements are textual and they comprise the entire text including syntax, vocabulary and terms (ibid. 98). External elements on the other hand are contextual and define the required level of specialisation (ibid. 96–98). External elements are related to skopos theory as they comprise the participants such as the producer and the receiver and the purpose of the text (ibid. 96). Reiss' (Reiss & Vermeer 1986: 114) text

types are based on the functions of the text which are universal to all cultures. There is a hierarchy between internal and external language elements so that the external elements define the internal (Lux 1981: 35–36 quoted in Reiss & Vermeer 1986: 98). In other words, the producer of the text defines the text's function and receivers the level of its specialisation.

3.1 Institutional Translation and Multicultural Healthcare

Most institutional translations are collectively produced but appear anonymous as the language is often standardized and therefore the authority of the text may be perceived to be the named institution. Koskinen points out how institutional translations are often produced outside the target culture which makes them appear unaccustomed to the target culture readers. This, according to Koskinen, is a result of the tendency to pursue equivalence with the source text instead of the parallel texts of the target culture. The variation amongst different institutional texts Koskinen perceives as sign of underlying different aims and ideologies which lead to different translation strategies. (Koskinen 2011:58–59)

Koskinen points out that there is not yet enough information regarding institutional paths of translation practices within a single institution. Depending on the size of institution, translators of institutional texts vary from multiple inhouse translators to outsourced ones. Despite the size of institution, “the issues of power, status and authority” vary between them depending on the legislative regulation, local guidelines and customs as well as the degree of institutionalization. Koskinen calls for more detailed case studies on different institutional contexts to better understand institutional translation locally. (Koskinen 2011: 58–59)

Flores discuss culturally sensitive healthcare in the context of interpreting for Spanish speakers of Latin American origin in the United States. He claims that patients from other cultures often receive lower quality care. Cultural education can help healthcare staff in decision making and enable staff to utilize their knowledge in practice. Flores defines normative cultural values “as beliefs, ideas and behaviours that particular cultural group

values and expects in interpersonal interaction”. Furthermore, the use of incorrect medical terminology and inaccurate interpreting may compromise patient care. Flores proposes a five-component model for the healthcare staff to attain “cultural competency” and thus be able to provide “culturally sensitive healthcare” (Flores 2000). The following issues are presented in Flores’ five-component model “normative cultural values” (include courtesy expected from the treating healthcare staff), “language issues, patient/parent beliefs”, and “provider practices” (e.g., institutional quality assessments). (Flores 2000: 14–23)

Albin notes that in the United States the simplification of texts is not fully comprehended or utilized by the healthcare staff and that there is still a great deal of room for improvement in legibility and readability in the staff produced patient information texts. Furthermore, the producers of unfunctional texts are often inhouse writers who lack the appropriate writing skills to produce accessible, legible and readable texts. Legibility (typographical features) and readability are essential for the patients to understand and follow written instructions. Albin points out that inexperienced translators often try to simplify the text by replacing specialist terminology with lay terms. This can be problematic as lay terms are not standardized and may therefore carry meanings other than the one intended by the writer. (Albin 1998: 117–127)

On Finnish hospital websites there are often contact details for interpreters. However, interpreting does not make online patient information in other than domestic languages redundant. In an afterhours emergency the clarity and accuracy of written online information are highlighted as the first contact with the healthcare services often occurs prior to the arrival to the hospital when information about the contact details is searched. At the hospital, the staff’s linguistic and cultural competence become highlighted as the interpreter may not always be available on short notice and out of hours. In the United Kingdom Bradby (2001: 132), quoting Gerrish et al. (1996), argues that healthcare professionals are not judged based on the skills of one member of staff but the routine practice of all members of staff. Bradby (2001: 131, 143–147) notes that on some countries a patient’s relative or a nurse may act as patient’s advocate, but without training, reward or adequate skills for the task. This can be problematic as next of kin, underage child or male interpreters are not ideal replacements as they sometimes act against patient’s best interest

by altering or withholding important information to protect the patient from dishonour or bad news (Bradby 2001: 143–147). Furthermore, young children acting as an interpreter might not fully comprehend the circumstances in which they are at. Moreover, Kuusio, Vehko et al. (2020: 164) noted differences in availability of interpreting services between foreign nationalities in Finnish healthcare. Where only one in hundred Estonians use an interpreter, the similar number for people of African origin is close to one third (Kuusio, Vehko et al. 2020: 170).

Interpreters need often booking in advance and are not available on short notice for ad hoc session in an afterhours emergency (Bradby 2001: 134). In out of hours emergencies, the importance of written patient information is highlighted. Pain and distress among other factors may also affect the communication in healthcare context (Bradby 2011: 133). Albin (1998: 118–119) notes that in United States the instructional medical material is often too difficult when compared to the literacy level of the patients and that the patients, especially if temporarily handicapped or otherwise impaired, are unable to comprehend subject-specific terminology, analyse instructions or draw conclusions from the instructions. Albin (1998: 118) suggests the use of simplified language variety to compensate the patient's lowered understanding caused by distressing situation, cultural and language differences or possible low literacy. Bradby (2011: 133) notes that in Great Britain the recently arrived migrants who are illiterate in English may not be illiterate in their native language. Matching the text with the target audience's knowledge and expectations is important especially when the audience "[...] lack the implicit cultural presuppositions encoded in the source text [...]" (Suojanen et al. 2015: 44).

Healthcare professionals are responsible for providing the necessary information in a way that the patients are able to understand. Moreover, people tend to prefer to use their native language in matters that are related to their health as distinguishing or conveying implicit denotations is easier in one's native language. In the United Kingdom Bradby (2001: 129, 139) describes a two-level approach to reduce the communication barriers between healthcare staff and patients: imposing national policies for staff education and enabling sufficient funding for managing staff-patient communication. Written and online patient information is part of that chain of communication. There is already in place a variety of

computer applications to alert the staff in advance about health and other care-related issues that may affect patient's welfare during a hospital visit. As part of the health and social services reform plan is the new technology, it could also include access to linguistic and cultural databases to help the staff to fulfil their responsibilities and to respond equally to the linguistic needs of all the healthcare customers.

3.2 Medical Translation

From a global perspective, medical translation endorses the development of the medical field as it enables the spreading of innovations across medical community (Montalt 2011: 80). Because the new biomedical research results are mostly published in English, it is the present lingua franca of the global medical community and as such it is often either the source or target language of translations as researchers from various countries share their findings (Montalt 2011:80). Although medical translation is often associated with highly specialised language of medical research articles or text books, it covers a range of texts from highly specialised to popularised (Montalt Resurrecció & González Davies 2007: 21). Specialised and popularised texts both have specific issues of their own but some of the features of specialised language are also present in popularised texts.

One of the issues related to medical translation is the large variety of specialities and subspecialities in medical field where each speciality has its own specific terminology. Wiese (2018: 186) sees the abundance of specialities and subspecialities as one reason for the complexity of medical communication. She (ibid. 186) dates the onset of division to various specialities around the eighteenth century, to the time of finding the first evidence of medical language in Europe. According to Wiese (2018: 186) the main division of medical specialities is between medical-theoretical (e.g., anatomy and physiology) and clinical-theoretical (e.g., pathology, microbiology). Clinical specialities Wiese (2018: 186) divides further to multiple disciplines such as paediatrics, orthopaedics and gynaecology. Moreover, collaboration with adjacent fields of science such as technology, pathology, pharmacology, radiology and biochemistry where new innovations are constantly made, ensure the importation of new terminology also to medical field. Coinages

and neologisms are frequently added to medical language for the same reasons (Wiese 2018: 186).

Medical translation occurs in various contexts, academic, professional, institutional and commercial alike. Consequently, it encompasses a variety of genres with different degree of popularisation. Montalt Resurrecció and González Davies categorise medical genres based on their purpose to instructional, expository or argumentative texts, and to further subcategories based on the social function. Genres adhere to formal features in order to be recognised and thus fulfil the expectations of the readers and engage them to the purpose set by the writer. Despite of the genre divisions or the level of popularisation, the translator needs to be familiar with the nuances of medical language and terminology as well as differences in genre conventions in medical texts. The multiplicity of specific features makes medical translation challenging and therefore translator needs to have a variety of skills and resources to draw from. To achieve an accurate medical translation, it is important to know not only the features of source text but also typical conventions, terminology and phraseology of the target text. (Montalt Resurrecció & González Davies 2007: 20–22, 57–59).

3.2.1 Medical Language

The highly specialised communication between professionals is called Language for Special Purposes (LSP). Professional languages are different from languages for special purposes (LSP) as professional languages are tied to situations and to the users of the language as for example in aviation or shipping where communication between two professionals is sometimes incomprehensible to a layman. However, the communication in professional languages stays on the basic level of general language whereas communication within medical or legal profession for example is classified as LSP due to the features that set them apart from general everyday language use. (Yli-Jokipii 2004: 83)

In the context of specialised scientific medical language, Välimäki describes typical LSP features such as lexical repetition and avoidance of personal addressing, but also clarity, unambiguousness, and simplicity. Other typical features for highly specialised medical

LSP include nominalisation, initialism, medical jargon and passive voice as well as awkward sentence structure and style. However, there has been a change in conventions related to medical texts regarding the use of passive voice as it has recently changed from mandatory to optional in some contexts, although there still are occasions where the use of passive voice pertains, procedure descriptions for example. In highly specialised medical texts, the subject matter is often more significant than the style of writing. The communicative aims of medical LSP according to Välimäki (2004: 116), quoting Hoffman (1984), include clarity, conciseness and unambiguity. These Välimäki connects with consistent use of terminology. (Välimäki 2004: 113–124)

Montalt Resurrecció and González Davies (2007: 156–157) perceive different norms in communication between nations, specialties and professionals and note that they manifest in different degrees of formality, register, tenor and style. How frequently these features appear in medical texts depends on the genre and the degree of popularisation. They (ibid. 113, 156–157) continue by stating that medical texts are intertextual, often lack personal pronouns and that their quality varies. The reason for varying quality they (ibid. 22, 224–225) attribute largely to the writers, medical professionals, who are not professional writers and whose native language is not always English, the lingua franca of global medical community. The low quality of the text increases the workload of translators as the texts often need revising (ibid. 22). Therefore, the stylistic decisions of the source text should be carefully inspected before transferring them to the target language (ibid. 22). Furthermore, they (ibid. 23) point out that in patient information leaflets prioritising clarity often ensures also the reader's safety. O'Neill (1998: 70–71) agrees that depending on the purpose of the translated text inaccuracies in medical texts have the potential to cause serious consequences. O'Neill (ibid. 70–71) noted also that medical language tends to contain jargon and unusual sounding "idiosyncratic phrases" but he advice against omitting them as they may result in change in register, unprofessional language or translation errors which again may lead to misunderstandings.

Albin (1998: 117) notes that sometimes patient instructions are written by healthcare providers who may not have appropriate written communication skills. Albin (ibid. 117) reports deficiencies in the essential background information, omission of the procedural

steps and reductions of the essential data, as to the healthcare professional writer they seem obvious and therefore not worth mentioning. Moreover, terms are left undefined or are replaced with imprecise lay terms or jargon, resulting to text that is incomprehensible for a lay person (ibid.117). Suojanen et al. (2015: 23–25) highlight the importance of the translator’s cultural and intercultural competence in relation to usability and point out how erroneous estimation of readers’ cultural competence sometimes results in exceedingly extensive or insufficient explanation. This is likely to happen especially if the translator considers their own competence to be equal with the competence of the readers (Suojanen et al. 2005: 24). The conventional phraseology used in English patient information texts helps the reader to recognize the genre and to understand the message as does acknowledging the readers’ abilities and adjusting of the differences between source and target language genre conventions.

Although English is currently the lingua franca of the global medical community, some of the features of preceding lingua franca languages of science are still present in today’s medical language. Understanding the nuances of some of the features of medical language is a skill learned in association with the specialists who use medical language in their profession. When specialised medical language is explained in layman terms using standard language, it tends to expand as the explanation is usually longer and requires more words than the compressed medical terms. As an example, a procedure called *hemiarthroplasty l. sin.* means left sided (l. sin) partial (hemi) moulding (plasty) of joint (arthro). In layman terms it usually means partial replacement of left side joint, often with prosthetic material. Additionally, the implicit information gives away the context, that this is a relatively large surgical procedure of orthopaedic specialty and that it therefore also involves some form of anaesthesia.

3.2.2 Medical terminology

Montalt (2011: 80) considers terminology as one of the most characterising features of medical translation. The origins of medical terminology can be traced back to Greek and Latin (Välimäki 2004: 111–112; Montalt Resurrecció & González Davies 2007: 232–

233). Anatomical names are mostly Latin based whereas the vocabulary for clinical concepts is more often than not based on the Greek language (Wiese 2018: 187, 189). In addition to the Greek and Latin-based medical vocabulary, the international interaction of medical specialists has resulted in the use of hybrid terms and abbreviations and acronyms borrowed to and from other languages (Wiese 2018: 189–190). Montalt (2011: 80) confirms that the internationalisation of Greek and Latin-based medical terminology is seen in how the spelling varies only slightly when terms are transferred from one language to another. Wiese (2018: 190–191), quoting Karenberg (2015: 22), notes how international classification of diagnoses (ICD) has stabilised the terminology compared to clinical vocabulary which tends to vary between languages.

The origins of English medical terminology is in old English and French (middle English) and although some of the common contemporary medical terms based on generic English have similar denotations to layman and expert alike (Välimäki 2004: 111). The difficulty of medical English stems at least partially from the fact that some of the terminology, although based on general English, sometimes carries an additional metaphorical or exact secondary meaning in medical context (ibid. 111). Where Montalt (2011: 80) exemplifies this duality of medical terminology in English language with the simultaneous existence of technical and popularised version of the words *cephalalgia* and *headache*, Välimäki (2004: 119) found three layers (strata) on the lexis of medical English; basic, fundamental and specialised. The basic layer comprises everyday language use in the general public's interactions. Specialised medical English is used in expert-to-expert communication and it is typically laden with highly specialised terminology and bound to a specific context and topic of a given medical speciality (ibid. 119). The third fundamental layer of medical English is composed of the lexicon from the basic medical English layer, but is laden with specific meaning in medical context (ibid. 119–120). Välimäki (2004: 120) exemplifies this with the unidiomatic use of preposition “for” in a phrase “antiserum for” where the meaning is reverse: “antiserum specifically against”. The prefix “anti” being the source of the reversed meaning in that phrase.

Humbley (2018: 439) notes a difference between languages in how they deploy various means to form new specialist term. These various types of term formation include morphological derivation (e.g., prefixation, affixation and suffixation), syntagmatic (lexicalisation), semantic (metaphors), abbreviation (initialism) and borrowing (ibid. 439). Humbley (2018: 437, 443) considers the formation of new terms a substantial part of LSP and sees borrowing a term from language where the required term has already been formed as a common method to acquire new terms to medical language. Montalt (2011: 80) observes that medical terminology has two opposing tendencies, the tendency for standardisation and variation.

3.3 Comparative Approach

Koster (2010: 21) states that comparative approach has always been inherent to translation studies but relates more systematic approaches to collaboration with adjacent disciplines of comparative literature and contrastive studies (e.g., contrastive linguistics). In comparative literature works of literature are compared between nations and cultures (Munday 2012: 14). In contrastive linguistics translations of a text in two or more languages are compared to find differences between them (Munday 2012: 14). Munday (2012: 283–288) adds that recently computer assisted corpus-based approaches have been used to analyse various intra- and interlingual text corpora. Lounela and Heikkinen (2012: 121) note that although there are differing definitions of corpus, in linguistic research corpus is usually a sample of written or spoken language that represent a certain language or genre.

Koster (2010: 21) describes that comparative approach essentially involves a corpus of text, aim, method and conceptual apparatus. The most frequently used corpus of text according to Koster (2010 21–23) is original text and its translation. Aim refers to the aspect of the text that is studied, which can for example be an ideology or translation strategy (ibid. 21–23). Conceptual apparatus can be part of methodology which provides the terms that are used to describe the relationship between the corpora of compared texts. The

method, therefore comprises of the different stages and/or units of comparison. Furthermore, Koster (2010: 23–24) notes that more important than from which of the two texts the analysis is begun is observing the text as a whole as well as the parts it is constructed from and distinguishing the two from each other. The two opposing comparison methods he calls top-down and bottom-up methods (*ibid.* 24). In this thesis the collected samples of Finnish source texts and the corresponding English target texts formed the corpora. The aim was evaluating the usability of the English target texts and the conceptual apparatus with which the aim was reached consisted of the modified usability heuristics. The comparison of the usability of two text types ensured the top-down approach to the material whereas the bottom-up approach involved interlingual comparison of words, phrases and paragraphs.

3.4 Skopos Theory and Text Types

The two text types used in the material selection and in testing the hypothesis of this thesis belong to a skopos theory, a functional translation theory, which is a combined work of Hans Vermeer and Katharina Reiss (1986). In Vermeer's skopos theory the text is tied to purpose which again is related to context (Reiss & Vermeer 1986: 54–57). The success of the translator's action is estimated by two partly opposing rules, the coherence and fidelity rules (*ibid.* 63–67). The coherence rule concerns the target text (TT) which after translation should be so coherent and comprehensible that it matches the readers' skills and requirements (Reiss & Vermeer 1986: 63–65; Munday 2012: 123). The opposing fidelity rule is in turn related to coherence between the source and target text which means that the translator understands and interprets the source text message correctly and coherently for the target text (Reiss & Vermeer 1986: 65–66; Munday 2012: 123). The hierarchy between the abovementioned rules gives priority to the purpose, followed by the TT coherence and finally the ST-TT coherence (Reiss & Vermeer 1986: 65; Munday 2012: 123). The skopos theory has been criticised for the incongruity of the two theories, highlighting factual texts over literary ones and overlooking the stylistic and semantic features (Munday 2012: 125–126).

Reiss' textual level approach includes classifying texts to different text types and text varieties now better known as genres⁶. According to Reiss the classification helps to define the hierarchy of source text norms and conventions so that they can be correctly replicated in the target text (Reiss & Vermeer 1986: 90–92). Initially, Reiss introduced three text types, informative, operative and expressive (ibid. 114–116). Informative function is for conveying information (ibid. 114–115). User instructions and handbooks exemplify typical informative texts, whereas in operative texts the aim is also to influence the receiver as seen for example in advertisements (Yli-Jokipii 2006: 98). In expressive texts, in texts such as poems, the artistic expression and the way language is used is highlighted (ibid. 98). There is also fourth text type which was introduced later. It concerns audio-medial texts and complements the other three text types (Munday 2012: 113).

The function of operative text type is, in addition to informing, to appeal and to persuade the reader to act in a certain way (Reiss & Vermeer 1986: 115). As the functions of operative and informative texts are different, so are their translation strategies (ibid. 120). When translating informative texts, the focus is on the content and explanations are added when necessary, whereas the translation method for the operative texts is adaptive, as the aim is an equivalent effect with the source text (Reiss & Vermeer 1986: 120; Munday 2012: 112). Even if user instructions contain imperatives as an occasional appeal function, they are still classified as informative because their dominant function is to inform (Reiss & Vermeer 115–117). The dominant coding defines the text type even when the function may change from one part of the text to the next (ibid. 114–117). Criticism of Reiss' typology includes the absence of some of the language functions (such as phatic) and difficulty to distinguish text types from genres based solely on function (Munday 2012: 115–116).

Reiss and Vermeer describe two reasons for defining the ST text type in translation research. Firstly, to understand the relevance of individual text elements in relation to the text it is important to understand the status and function of the source text in the source

⁶ Reiss preferred the expression “text variety” in place of the word “genre”, but as the word “genre” is now more common expression, it will be used from now on.

culture. If the function stays the same after the translation, the text type features should remain similar in the translation. Secondly, if the function of the text or parts of the text change after translation (for example from informative to expressive), the translator needs to decide how big a deviation from the original is justified. ST–TT equivalence is only possible when the function stays the same. The decision of how free or literal a translation should be needs to be considered in relation to the texts genre, text type and skopos (purpose) of the translation. (Reiss & Vermeer 1986: 119–121)

Where text types are universal forms of communication, genre conventions develop in a specific socio-cultural context and are therefore usually culture specific. However, there are genres that have spread to many cultures and others that are known only in one. Genre conventions form as a consequence of repetitive language use in certain situation. In time, thus created features become conventionalised, typical features for that particular genre. Genre conventions are unwritten rules that appear in the common features of the text and change together with the culture they are formed in. That is why they are more flexible than for example norms or grammar rules. Genre conventions appear in all levels of language including lexicon, phrases, grammar, punctuation, structure and form. They help the reader to understand the context by raising expectations based on the choices made by the writer. An example of a conventional commencement of a fairy-tale is the phrase “Once upon a time...”. The commencement helps the reader to understand that the text in question is a fairy-tale and that it should therefore not be interpreted as a factual record of real events. The amount and type of conventions vary between genres. Reiss perceives genres found from expressive and operative text types often less conventionalised and notes that when translating less conventionalised genres the translator should concentrate on the features of the text type. (Reiss & Vermeer 1986: 97–107)

Genre conventions are culture bound in such a way, that recognising them in texts is an inherent skill, a product of socialisation to a certain culture or subculture. Reiss designate the following three communicative functions to genre conventions; to aid in recognising a certain genre, to raise expectations on the receiver and to operate as a guiding signal in understanding the message. After recognising a particular genre, the reader will have certain expectations based on the conventions of that genre, and if these expectations are not

met, the communication may fail. In other words, when the signals are typical for the genre, the resulting text is free from ambiguities and the reader is able to interpret the message correctly. Since genre conventions affect the translator's decisions throughout the text, it is important to recognise the source text genre to be able to reproduce the right genre conventions for the target text. Although it is impossible for any one translator to know all genres, awareness of the existence of different genres helps noting where the conventions are different between the source and the target text. (Reiss and Vermeer 1986: 85–113)

3.5 Heuristic Evaluation

Technical communication and usability were first combined during the Second World War to enable soldiers to learn the use of the new machinery quickly. Later, when user-interfaces were tested in a discipline called Human-Computer Interaction (HCI) user experience and context turned out to be the two central elements of usability. Jacob Nielsen and Rolf Molich developed heuristics where user's experience was included to the evaluation thus expanding the application range beyond the field of engineering. Usability heuristics are essentially a checklist for evaluation of product's usability. Suojanen et al. perceived translation as a product and associated Nielsen's concept of social acceptability to a similar concept in Toury's translation theory regarding source and target text norms. Suojanen et al. adapted Nielsen's heuristics to translation studies and added other methods to further highlight the needs of the user. The User-Centered Translation (UCT) model for evaluation of translations includes also other methods such as audience design, mental models, personas and reception research. (Suojanen et al. 2015: 2, 13–17, 78–81)

In UCT model the heuristic evaluation comprises a list of 10 heuristics, which according to Suojanen et al. (2015: 89) are suitable for both producing and evaluating translations. They are based on "Nielsen's principles and Purho's list for assessing the usability of technical documentation" (ibid. 89–90). As the origins of heuristic evaluation is in technical engineering and informative texts, efficiency and the experience of the product's

use are important (ibid. 35). Similar features are essential also in online patient information, especially in texts that contain instructions for an emergency. Suojanen et al. (2015: 3, 13) describe UCT model as a tool that connects the translation theory to practice and define usability as "[...] the ease of use of a product in a specified context of use; users are able to use a product effectively, efficiently and to their satisfaction".

Heuristic evaluation involves comparing a list of heuristics with the evaluated text and rating the severity of thus found issues with a similar list of severity rating scale. The ideal number of estimators according to Suojanen et al. (2015: 80) is between three and five with 30-minute time limit for severity rating. With a single evaluator, as in this study, the number of found issues is likely to be reduced to less than half (ibid. 80). This clearly affects the reliability of the results in this thesis. Therefore, to somewhat counter the effects of single evaluator, the time limit and evaluation cycles were not limited. Another challenge with heuristic evaluation was its problem centredness. Suojanen et al. (2015: 80), quoting Korvenranta (2005:122), propose a resolution where the well-functioning parts are included in the evaluation. Therefore, to counter the problem centeredness I included and rated the severity of both the positive and negative changes. The changes that helped the reader by increasing the readability or usability of the text were classified under "user match" category. Therefore, also the definition "usability problem" was changed to "usability issue" to include also the positive changes.

Suojanen et al. (2015: 49–53) describe textual elements as specifically related to reading as they provide a more versatile picture of usability of texts than for example quantitative readability testing alone would. Suojanen et al. (2015: 49–53) describe readability as style of writing that consists of various features such as word choice, sentence length, active vs. passive voice and smooth transitions between different parts of the text. Quantitative readability testing measures the sentence or word length, lexical density, word frequency or the number of propositional phrases (ibid. 51–53). However, quantitative readability testing has been criticized for superficiality as some features such as structure are excluded (Nickl 2018: 329). Furthermore, despite the various applications available for testing readability, according to Suojanen et al. (2015: 52) readability formulas and indexes are often language specific and the results do not always equal with readability, even less

with usability, and they focus on the product instead of the reading process. Instead of using readability formulas, Suojanen et al. (2015: 53) propose improving readability by matching the text with readers.

The four textual elements proposed by Suojanen et al (2015: 49) of usability are legibility, readability, comprehensibility and accessibility. In this thesis the description of textual elements was combined in suitable parts with the chosen usability heuristics to create criteria for the formed six categories to which the found issues were divided to. Although in this thesis the formed categories are based on the heuristics proposed by Suojanen et al. (2015: 90), the modified heuristics are called categories instead of heuristics to distinguish the two from each other. The following subsections are named after these modified categories. In each subsection in addition to the categories also the features of **textual elements of usability (highlighted** in the following subsections) included in that category are introduced. The modified severity rating scale is discussed in the last subsection.

3.5.1 User Match

The first category is called “user match”. The corresponding heuristic suggested by Suojanen et al. (2015: 90) is “match between translation and users”. In this category the focus is on translation solutions that accommodate the reader of the text. The user match category reflects those textual choices that support the user and increase the usability of the text. Therefore, all textual features that notably support the user and the delivering of the message were allocated to the user match category. Consequently, features of user match category comprise e.g., additional explications, politeness indicators and simplified English variety. Other additional features include available language options and external links. Language options were counted in user match category when they exceeded the national languages and English language options. External links were counted as user match when they were embedded to the main body of text and there was an equal amount or more links in the TT than in the ST.

The amount of language options and external links are mentioned in chapter four at the beginning of each catchment area. Issues allocated to user match category increased the

usability of the text unlike all other negative usability issues that were allocated to the remaining five categories. Because of the negating effect of all other usability issues, at the end of the analysis the total number of user match issues was reduced from the total number of other usability issues. Therefore, in the tables the numbers in user match category are preceded by minus mark to highlight this opposing effect.

3.5.2 Genre Conventions

Genre conventions category is related to the fourth usability heuristic introduced by Suojanen et al. (2015: 90), “match between translation and genre”. As only the usability of English texts is analysed, genre conventions are related to English language and to the context, which is medical and institutional. Although readability covers also visual, auditory and multimodal elements, they were excluded from this category as the material only consists of text. Suojanen et al. (2015: 51, 53) define **readability** as style of writing and connect it to readers’ abilities such as technical reading skills, age and pre-existing knowledge. Suojanen et al. (2015: 51) see readability as conventionalised and culturally defined in such a way, that in different cultural context the style needs to be adjusted to meet the expectations of the new readers. Style of writing covers features such as word choice, sentence length, reader orientation and active versus passive voice (ibid. 51). The following features were chosen for the second, genre conventions category: passive vs. active voice, register, terminology, phraseology, officialese and source language interference.

Officialese was an additional and somewhat profuse feature found on the material as it is a feature typically found from institutional texts. Koskinen (2011: 58) describes institutional translations and administrative texts as “[...] unnecessarily complex, dense and lacking in readability”. She (ibid. 58) also notes that officialese is rarely removed in translation. In Lexico (2020) online English dictionary the word “officialese” is defined as “the formal and typically verbose style of writing considered to be characteristic of official documents, especially when it is difficult to understand”. The definition of the term “officialese” in this thesis follows the two above mentioned definitions. As officialese is

a known yet undesired feature of the genre, extra attention should have been paid to remove it from both the ST and the TT.

The conventional medical terminology and phraseology typical for English patient information are focused on in this thesis as they guide the reader in deciphering the intended meaning from the text. However, there seems to be some dispute amongst scholars regarding the context in which popularised and highly specialised terminology are to be used. Välimäki (2004:118) sees jargon as highly specialised, whereas Albin (1998: 117) sees both imprecise lay terms and jargon incomprehensible for laymen. Moreover, O'Neil (1998: 70–71) advises against removing jargon as it may lead to errors, shifts in register and misunderstandings. According to Suojanen et al. (2015: 51–52) conventions help readers to recognise familiar textual features which increases the readability of a text. Stylistic conventions are generally not universal but culture bound and therefore they need to be amended to a form that readers are able to recognise (*ibid.* 49–51).

In a context where readers are culturally heterogeneous, and vary in their English skills as well as in their knowledge of Finnish and English language, translator needs to consider how familiar the readers are with the conventions and the variation in meaning between the terms in different English varieties. Consideration need also how interference from the Finnish source language may affect readability. Albin (1998: 118) recommends favouring a simplified English in medical information that is aimed for non-native English readers (see also Huckin and Olsen 1991: 63–64). Furthermore, Albin (1998: 119–120) points out that when editing patient instructions, legibility and readability are essential features to consider in instructional texts where the aim is the reader's compliance and cooperation. Therefore, in this thesis, the used terms and phrases are considered individually in relation to the context they appear in.

Nickl (2018: 331) promotes usability testing for instructive texts and adds that in examining comprehensibility of instructive texts the receiving audience should be considered. However, comprehensibility can be difficult to achieve when the receivers' cultural background is diverse. Due to their different background the readers may understand the text differently from each other and therefore same text may be incomprehensible for one and

too simple for another (Nickl 2018: 330). Huckin and Olsen (1991: 63-64) recognise the same problem in professional communication and propose a variety of methods for delivering a message to different audiences, including “international” and “nonspecialist audiences”. To international audiences they (ibid. 63–64) propose the use of simplified structures and avoidance of long phrases, slang and idiomatic vocabulary. For non-specialist readers they (ibid. 61–62) recommend avoidance of specialised terms and the use of examples, explanations and illustrations.

3.5.3 Cognitive Load

Suojanen et al. (2015: 49–51) describe **legibility** as a textual element of usability that is largely related to the visual, outward appearances of text. It includes the chosen typography, font size and spacing. With a material only consisting of texts, evaluation of the visual elements was not part of the analysis in this thesis, except for those that are embedded in the text. However, legibility covers also features of textual organisation such as sentence length and paragraph division (Suojanen et al. 2015: 49–51). **Comprehensibility** covers features such as understandability and the reader’s ability to follow the text. Suojanen et al. (2015: 53–56) relate it to legibility, readability and the reader’s cognitive skills as well as to the contents and context of the text. Comprehensibility measures the reader’s comprehension and understanding of the text (ibid. 54–56). It is bound to culture, time and mental capability and therefore the individual’s personality, motivation, skills and state of mind all affect to comprehensibility (ibid. 53–55). Increase in cultural distance between the writer (or translator) and the reader of the text reduces comprehensibility (ibid. 54). Because comprehensibility is largely related to the reader’s abilities, improving it is difficult (ibid. 54–55). However, Suojanen et al. (2015: 54–55) state that clarity, legibility, readability as well as additional explications may reduce the cognitive load of the reader.

Cognitive load is a concept that Suojanen et al. (2015: 54) relate with the concept of cognitive ergonomics, which comprises mental processes such as perception, reasoning, memory and decision making as well as human-computer interaction. Cognitive load is an important aspect to consider in English online patient information because the readers’

cognitive load may already be strained due to shock, stress or injury when they read instructions in a foreign language. Therefore, the third category is called “cognitive load”. Explications and clarifications reduce cognitive load as new information increases it (Suojanen et al. 2015: 54–55). Other means to reduce cognitive load include pragmatic adaptations which comprise additions, omissions, replacements and textual rearrangement (ibid. 53–56). According to Suojanen et al. (2015: 56) they level out cultural differences as well as differences between genre conventions and expectations. Despite of seeing the role of a translator in cultural usability research fairly insignificant at present, Suojanen et al. (2015: 22–23) point out that translators have a great deal to offer as part of an interdisciplinary team in creating websites and multimedia in institutions that are inclined to consider the need of different text versions for readers with varying language and cultural background.

Deviations from the norms can sometimes increase ambiguities and unintended connotations as well as cognitive load because the reader must decide which one is the intended message. According to Montalt Resurrecció and González Davies (2007: 23) clarity should be a priority in patient information leaflets as it may affect patient safety. Nickl (2018: 325) notes that although it is not always necessary to have a professional to produce instructional texts, amateurs are less skilled in creating efficient functional design and they tend to change orders to polite requests which often result in ambiguities and misunderstandings. Cognitive load category is related to the seventh usability heuristic named as “cognitive load and efficiency” by Suojanen et al. (2015: 90). The cognitive load category includes structures that reduce clarity and conciseness, features that increase the reader’s cognitive load on sentence or paragraph level (e.g., combining two or more ST sentences to one long one in the TT), shifts or deviations from the typical sentence structure, changing paragraph order or the order of presenting important information in comparison to the ST. Because additions and explications are generally considered positive changes, they were counted in the user match category.

3.5.4 Grammar and Consistency

Other two categories closely related to **comprehensibility** are Grammar and Consistency. Grammar category is based on usability heuristic called “error prevention” by Suojanen et al. (2015: 90). Grammar category covers issues such as capitalisation, punctuation, orthography and subject-verb concord. This category is related to minimising misunderstandings by adhering to the grammar rules of the target language. As all issues do not affect usability, rating their severity was elemental in finding the most significant issues. For example, missing comma or misspelled word alone are not significant unless they change the meaning or reduce the comprehensibility of the text.

Consistency of the TT was estimated both on its own and in relation to the source text so that if source text (ST) inconsistency was corrected in the TT it was considered as a positive change and allocated to the user match category, but if an issue appeared independently in the TT or was transferred over unchanged from the ST it was categorised in the consistency category. Consistency was observed in English variety, terminology and phraseology. Consistency is directly related to usability heuristic number five suggested by Suojanen et al. (2015: 90), and has the same criteria and name except for register, which in this study belongs to the genre conventions category.

Mixing American and British English variety is generally classified as minor consistency issue when it does not affect usability, whereas the use of simplified English variety is classified as a user match. In American and British English varieties the vocabulary is similar, but with some words the meaning may be different. When both varieties are used in the same text also the interpretations may vary depending on which variety the reader is more familiar with. Therefore, using both varieties simultaneously may lead to ambiguities or misinterpretations. For example, the meaning of the word baby is quite universally known, whereas the meaning and connotations of the word “infant” vary depending on the context and the used English variety. Moreover, the spelling may be different between British and American English varieties and in some occasions the different spelling indicates that also a change in the meaning of the word. Therefore, due to the shift in

meaning, such issues were allocated to ST–TT integrity category instead of for example to grammar category.

3.5.5 ST–TT Integrity

The final textual element of usability, **accessibility**, Suojanen et al. (2015: 57) relate to governmental regulation to ensure equal access for everyone. Furthermore, they (ibid. 58) link accessibility with administrative texts and “[...] equal right to access public information [...]”. Accessibility is often related to people with special needs, but Suojanen et al. (2015: 57) expand the context to cover also “[...] simplified texts and the use of plain language for those with cognitive challenges or limited language skills [...]”.

The sixth and final category is called “ST-TT integrity” and it is related to usability heuristic number nine outlined in Suojanen et al. (2015: 90) as a “match between source and target text”. The focus is on shifts between the ST and the TT and whether all relevant information is transferred to the TT. The features that are classified in the ST–TT integrity category include omissions and shifts in connotation, denotation and tenor. Some of the positive features, such as simplified English variety, that reflect the user’s needs were allocated to the user match category. Furthermore, some of the aspects related to accessibility have already been discussed in chapter two.

Thus formed six usability categories and their related contents are summarised on the following Table 2. The name and number of the corresponding usability heuristic related to each category are shown in the column marked UCT.

Table 2. Modified categories

Category	UCT	Textual element(s)	Contents
User match	2 Match between translation and users	All	Textual choices that reflect the needs of the TT user; sentence length, paragraph division, simplified English variety, additions, clarifications, politeness indicators and external links.
Genre conventions	4 Match between translation and real world	Readability	TT officialese and ST interference. Adherence to the TT genre conventions in terminology, phraseology, register, addressing and passive vs. active voice.
Cognitive load	7 Cognitive load and efficiency	Comprehensibility, legibility	Clarity and comprehensibility of the TT; shifts or nonconformity in expressions, sentence and paragraph structure, ambiguities.
Consistency	5 Consistency	Comprehensibility.	The TT consistency in style, terminology, phraseology and English variety (Am./Br).
Grammar	10 Error prevention	Comprehensibility	Error prevention, minimising misunderstandings by abiding the TL grammar rules in capitalisation, punctuation, orthography, subj-verb concord, etc.
ST–TT integrity	9 Match between ST and TT	Accessibility	Shifts between the ST and the TT, all relevant material transferred to the TT. Additions, omissions and shifts, connotation, denotation, tenor.

Out of the original 10 usability heuristics two were directly related to translation specification and user's personal experience and thus excluded from my categories as they were clearly outside the scope of this thesis. The 3rd usability heuristic was related to culture (Match between translation and real world: translation's alignment with its cultural context and the need for cultural adaptation). As no cultural issues were found from the material, it too was excluded. Välimäki (2004: 120) notes that in medical LSP cultural issues are rare. The cultural background of the readers is variable as is their knowledge of Finnish and English language conventions. Some of the receivers would have knowledge of Finnish language and culture to some degree depending on their individual background and reasons for reading the Finnish public hospital online patient information. Moreover, in the material the source culture and language are Finnish, target language is English and although the readers are mostly located in Finland, they are likely to have varying cultural and linguistic backgrounds. However, some of the cultural aspects are related to user match and genre conventions categories. To avoid counting twice some of the issues that overlapped between categories, the categorisation was based on the most dominant feature. For example, issues such as unconventional word choices are related to genre conventions but affect also cognitive load.

3.5.6 Severity Rating

Nielsen's (1994) five-part severity rating for usability heuristics was combined with similar four-degree tentative proposition presented by Suojanen et al. (2015: 132) for evaluation of translation errors⁷. The resulting five-part severity rating scale that was used to evaluate the severity of the findings in this thesis is as follows:

- 0 = This is a matter-of-taste, not a significant, issue.
- 1 = Cosmetic issue only; need not be fixed unless extra time is available.
- 2 = Minor usability issue; fixing this should be given low priority.
- 3 = Major usability issue; important to fix, so should be given high priority.
- 4 = Critical error: imperative to fix this

I redefined Nielsen's zero (0) category's definition "not a usability problem at all" to the form "not a significant issue" because if an issue is not a problem, it is not likely to be picked from the material in the first place and consequently does not need severity rating either. From the similar zero category proposed by Suojanen et al. (2015: 132), the phrase "This is a matter of taste" was included to enable discussion of smaller usability issues. As already mentioned earlier, the word "problem" was replaced with the word "issue", to be able to refer to the positive ratings of the first category (user match). As the material was already published online, the word "catastrophe" from Nielsen's (1994) rating scale was removed with the part mentioning the release of a product. It was replaced with a more neutral "critical error", a term from the alternate severity rating scale proposed by Suojanen et al. (2005: 132). Moreover, the final critical error category was reserved solely for issues that would directly affect the safety of the reader (patient safety).

Niinimäki (2006: 64), quoted in Suojanen et al. (2015: 132–133), defines major error with the following criteria:

- An error that makes one individual statement misleading.
- An error which occurs in a particularly visible part of the text (such as headline or picture).
- An error which results in a phrase that is considered offensive in the target culture.

⁷ The scale is representation made by Suojanen et al. (2015: 132) based on Williams' (2009: 7–8) description of quantitative Sical system that is used for evaluating translations in Canadian Translation Bureau.

A **minor error** which is repeated three or more times.

The above lists were employed when evaluating the severity of found issues in this thesis. Dividing the results into categories based on usability heuristics proposed by Suojanen et al. (2015: 90) and rating their severity helped in categorising the material and finding the features that are significant when estimating the usability of the text. The purpose of the severity rating was to aid in the analysis and to counter the reliability issues related to sole estimator. In the results section the range of severity ratings in each category is shown in the tables where they either reinforce or alleviate the effect of usability issues in each category and further discussed in connection of each found issue.

There were occasions when an issue (such as punctuation) that would initially be low severity, occurred recurrently in certain context such as lists. These occasions, when a problem was related to certain area or context, were considered as one entity, and accordingly discussed as such. Therefore, a minor issue (such as punctuation) that would otherwise have low impact on usability, when occurring repetitively (three or more times), in a certain context (lists), was marked as a major issue.

4 PATIENT INFORMATION ON HOSPITAL WEBSITES

I analysed and estimated the usability of translated English patient information samples by comparing them with the corresponding Finnish STs. The main focus of usability analysis was in the English TTs. The found issues were divided into six categories; user match, genre conventions, cognitive load, consistency, grammar and ST-TT integrity. To find the most prominent usability issues, the severity of each item was rated. The main findings of the usability analysis will be presented in the following sections one catchment area at a time. Each section starts with short synopsis of the results of the catchment area. In the subsections the results of informative texts are presented first, followed by the results of the operative texts. The general idea was to present the most significant results first and then proceed one category at a time, but because sometimes the issues overlapped and the number of issues and high severity rating did not always occur in the same category, the order of presenting the results may vary.

At the beginning of each section the number of issues in each category from that catchment area are displayed in a table as well as the range of their estimated severity rating. As previously discussed, it is worth remembering that despite the statistical representation, this is a small-scale study and the results are therefore indicative at best. More comprehensive sample would be required for drawing any definite conclusions or making generalisations. Moreover, the results based on these samples do not represent usability of all documentation in any particular hospital as documents vary even within one hospital depending on the subject matter. The main object of this study was not to map features of language as such, but to find how usable the English texts are and how much variation there exists between the five regions and the two languages. That is why discussion of issues that do not affect usability is kept to a minimum even when they deviate from the typical target language norms.

I have provided examples to display some of the most prominent or otherwise interesting issues found from the material. These examples will start with the source text (ST), continue with my own back translation (BT) followed by the target text (TT) which is displayed last. The backtranslations (BT) on these examples do not always follow English

language conventions or grammar rules. Deviations from the English language norms and conventions in the backtranslations include omission of articles, following the ST (Finnish) word order instead of the typical English language one. Consequently, some of the features in the BTs are unconventional for English language. Moreover, hyphen is used to indicate a ST compound word in the BT and I have occasionally used *italics* to highlight some portion of the text or there might be further explanation or clarifying translation in the brackets next to the back translation. The reason for these changes is to highlight and facilitate better understanding of the point that I am making in that example.

4.1 HYKS Catchment Area

The material from the HYKS catchment area is from Helsinki and Uusimaa Hospital district (HUS) website. The informative HY1 TT contains the first page of an online article titled as “Orthopedics and traumatology”. The first page of HY2 TT online article, entitled “Emergency Care”, is the opposing operative document. There were more usability issues in the informative HY1 TT than in the operative HY2 TT. The available language options on the main website were Finnish, Swedish and English. From the five external links in the STs, four were on HY1 ST and one in HY2 ST. The HY2 TT had one link, which was a phone number to a medical helpline. There were no issues related to politeness when addressing the reader, but no additional politeness indicators either in HY2 TT. The total number of issues in HY1 and HY2 TTs and the range of their severity ratings in each category are displayed in the following Table 3.

Table 3. HYKS catchment area results

Category	HY1 (inf.)	severity	HY2 (op.)	severity	Total
Grammar	14	1–3	9	1–3	23
ST-TT integrity	14	1–3	2	1, 3	16
Cognitive load	5	2,3	2	2	7
Consistency	2	0, 1	–	–	2
Genre conventions	9	0, 3	2	1	11
User match	–2	0	–4	1, 2	–6
Total	44/42	0–3	15/11	0–3	59/53

The most prominent feature of HY material was a strong ST influence which resulted in untypical expressions for the TT genre. Only consistency and user match categories did not have issues with a major severity rating. As a result, in HY TT's readability, comprehensibility and accessibility were reduced.

4.1.1 HY1

The division of surgical specialties differ between US and Britain. The American College of Surgeons (ACS 2020) list “orthopedic surgery” on its own as one of the 14 surgical specialties whereas the Royal College of Surgeons of England (RCSE 2020) lists 10 surgical specialties of which one is “trauma and orthopaedic surgery”. The first word of the specialty “Orthopedics and traumatology” mentioned in HY1 TT main title adheres to American English orthography (CED 2020). In Finnish context, dictionary of medical terminology, by the Finnish Medical Society Duodecim (2007: 516), includes an entry with English translation for both “orthopedics” and “orthopedics and traumatology”. Therefore, despite the American English orthography of the word “orthopedics” was considered to be a set term and therefore not related to any particular English variety.

The second word “traumatology” with the Greek suffix -tology (study of) is rarely mentioned in the more popularised parallel native English texts. Moreover, neither Lexico nor Cambridge English online dictionary acknowledge the word. However, Merriam-Webster English online dictionary (2020) recently added traumatology under the heading of Science and Medicine. In native English context a shorter version of the word appears frequently in set genre-typical phrases such as “trauma orthopaedics” or “trauma emergency”. In Finnish context, the word “traumatology” is listed in Duodecim's (2007: 732–733) dictionary of medical terminology as “traumatologia” and the shorter version of the word appears in combination words. Furthermore, variants of the word “traumatology” appear in many European languages. Therefore, the word “traumatology” was considered a standardised and internationalised English variant (see Montalt 2011: 80) and therefore a user match. Out of three occasions where the shorter word “trauma” was used, one was

not in a set phrase. It was counted as a matter-of-taste (0) terminological issue in consistency category as the one occasion could also be perceived as user match, a figurative nod towards the native English readers.

At the first glance of the material, the American English orthography of the word “orthopedics” seemed to be in contrast with distinctively British English orthography of the word “speciality” (CED 2020) spelled with a second letter “i” at the end of the word. However, in medical context “specialty”, written with only one “i”, is used in both English varieties (including the Royal College of Surgeons of England internet pages). It was therefore counted as a typographic grammar issue with major (3) severity rating due to over three occasions and change in meaning. Despite of the high severity rating and the medical context, the effect of this small orthographic nuance to usability amongst largely non-native English laymen readers was likely to be relatively small.

Other grammar issues found from HY1 TT included punctuation, coordination, subject-verb disagreement, verb tense, typographical errors, and prepositional issues. Apart from one exception (see example 1 on p.61), their severity rating was mostly cosmetic (1) or minor (2) and despite of the abundancy their effect to usability was generally small. Another cosmetic (1) issue in consistency category was a shift from one unconventional word in a noun phrase “highly demanding care” (HY1 TT) in the 1st subheading to equally unconventional variant of it in the first sentence of the following paragraph; “high-demanding medical acute- and operational care” (HY1 TT). The effect of the shift was considered to be merely cosmetic. The unconventional expressions, however, had more severe effect. It is discussed in example 1 (in the following page) together with other issues.

Interference and unconventional expressions featured strongly in HY1 TT. When typical ST features were transferred to the TT unrevised, the resulting text became unconventional for the target language genre and therefore difficult to comprehend from time to time. In the following example 1 is the first subheading on HY1 displaying a selection of overlapping issues.

(1) **ST:** Vaativimmat potilasryhmät ja hoitomuodot

BT: The most-demanding patient-groups and treatment-forms (i.e., Advanced care of seriously ill)

TT: Patient groups requiring highly demanding care and forms of treatment

In example 1 is demonstrated a shift between the ST and the TT. The comprehensibility of the TT is reduced by combination of overlapping issues including addition, interference and untypical word and phrase choices for the TT genre. The phrase “highly demanding care” is unconventional expression for the TT genre. It was classified as interference because the word “demanding” is also used in the ST where it is a conventional choice. In parallel English texts the phrase “advanced care” is frequently used in this context. Where in the ST the phrases “patient groups” and “highly demanding care” both adhere genre conventions, in the TT they are less conventional and enable an alternate interpretation especially when combined with the non-finite verb “requiring”. Consequently, the shifts enabled secondary interpretation which reads like a newspaper headline where it is implied that patients who in the past have not been treated adequately, are now getting organised and are forming groups of which each will make a claim for attaining better care in the future. Moreover, one of the connotations of the word “demanding” enables interpretation where the writer’s (the institution) point of view of the matter is that the care the patients require may be a bit arduous for those who must carry out the requested task. In the first sentence of the following paragraph there was a similar issue with coordination and unconventional phraseology resulting to ambiguity which further strengthened the impression initiated by the first subheading.

In example 1, the ST the coordination between “patient groups” and “treatment-forms” both referring to “highly demanding” is functional. In the TT, the additional phrase “forms of treatment” is a redundant as it does not convey additional information. The word “care” already comprises treatment. Moreover, in the TT the coordination with the connector “and” is unsuccessful. With the coordinator “and” equivalent units are linked together (Leech & Svartvik 1994: 264–267). In example 1 the two noun phrases “highly demanding care” and “forms of treatment” are equivalent units. Because the phrase

“highly demanding” is part of the first noun phrase, its influence does not cover the second phrase the way it was intended. Consequently, the resulting coordination in the latter TT clause is incomplete: “Patient groups requiring forms of treatment” instead of patient groups requiring highly demanding care and *highly demanding* forms of treatment. Additionally, discussing patient groups instead of patients as individuals could be perceived as an institutional approach in both the ST and the TT.

The shift between the ST and the TT in example 1 was caused by multiple overlapping issues including unconventional word and phrase choices and interference. They were allocated to genre conventions category with major (3) severity rating due to the visible location in the subheading and repetitive nature (over three occasions of unconventional word and phrase choices throughout the whole text). The addition was categorised in ST-TT integrity category with major (3) severity rating due to the visible location. The unsuccessful coordination was marked in grammar category as major (3) issue. The ambiguities reduced clarity and comprehensibility and were therefore assigned to cognitive load category with major (3) severity rating for the one appearing in the subheading and minor (2) for the ambiguities found from the following text. Another cognitive load issue with minor (2) severity rating involved an unnecessarily complicated sentence structure after combining two ST sentences into one in the TT.

Nida (1964: 121–122) discusses cognitive issues in written communication and names misspelling as one of the disruptive elements of information exchange. Torkkola et al. (2002: 46) concur that in patient instructions spelling mistakes reduce comprehensibility. Suojanen et al. (2015: 56) propose the use of explications to improve comprehensibility. One of the explications in HY1 TT was later contradicted by using word “speciality” and an additional word “subspeciality”, as synonyms in the TT, whereas in the ST only the word specialty was used. In the TT “orthopedics and traumatology” had an additional clarification where it was defined as “surgical subspeciality” thus creating a hierarchy where the subspeciality “orthopedics and traumatology” becomes a hyponym and therefore subservient to the concept of specialty. From this it follows that the words “specialty” and “subspeciality” cannot be used interchangeably. In this occasion, instead of improving comprehensibility, the additional word and the related explication reduced it. The two

occasions of contradicting the additional explication were marked as major (3) cognitive load issues because the resulting statement was misleading especially when considering that the division to specialties vary between countries.

Another word choice issue in HY1 TT was the use of English version of a Finnish place name Karjala (Karelia). It is uncertain whether all readers are familiar with the English name and whether they are able to connect it with the Finnish equivalent in maps and other sources. It was marked as matter-of-taste (0) genre conventions issue. Another manifestation of ST interference in the TT was an unconventional and repetitive use of plural. With over three occurrences in one sentence, they were allocated to ST–TT integrity category with major (3) severity rating. Other issues allocated to ST–TT integrity category included connotations, shifts and additions with varying degree of severity. Cosmetic (1) issues included omission and reorganisation of sentence and paragraph order. There was also an occasion where reorganisation improved readability and the timeline of the TT events became more logical. It was considered to be somewhat beneficial for the reader and therefore it was marked a matter-of-taste (0) issue in user match category.

4.1.2 HY2

HY2 TT had major severity ratings in two categories and no inconsistencies in terminology or phraseology. Despite of some shifts in clause and sentence order between the ST and the TT, all relevant information was transferred, terminology was consistent and the resulting translation mostly adhered the target language genre conventions. The number of found usability issues in the operative HY2 TT was roughly one third when compared to HY1 TT. With nine entries, grammar category had the greatest number of issues in HY2 TT. The severity of grammar issues ranged from cosmetic (1) to major (3). The entries in grammar category were related to punctuation, preposition, typography and subject-verb concord. One typography issue in a phrase “difficult to breath[e]” caused a minor (2) shift in meaning. There were also two shifts from ST singular to the TT plural which increased the list coherence as all items were in the same grammatical form. These were counted as user match issues with cosmetic (1) effect. One grammar issue was related to a list within a list where the main items already separated with comma (instead

of semicolon) were followed by list of ailments which were similarly separated with a comma which made it difficult to distinguish the two from each other. It was categorised as cognitive load issue with minor (2) severity rating. Grammar issues that were related to list formation were considered as one entity because they occurred in certain context. Issues related to list formation included punctuation error and missing verb in a sentence that introduced a list. The severity of list-related grammar issues would have initially been minor (2), but as there were over three entries their severity rating was raised to major.

The conventions regarding the use of passive voice differ between Finnish and English language. Parvinen and Koivusalo (1994: 103) note that the use of passive is more restricted in Finnish than it is in English. In United States, Albin (1998: 122–123) notes that among other things short words, simple sentences, the use of lists and active voice increase readability for low literacy patients. In Finnish context, Torkkola et al. (2002: 35–39) discourage the use of passive voice in written patient instructions and highlight the importance of personal addressing especially when instructing patients in practical matters. Moreover, Torkkola et al. (2002: 37) mention that passive voice is sometimes used to avoid personal addressing altogether. The use of passive voice may encourage to ignore given instructions and therefore especially when preparing a patient to a procedure personal addressing is preferable (Torkkola et al. 2002: 34–38).

Genre conventions category had two issues with minor severity. The first issue was related to shift from the ST passive to active voice in the TT with the help of subject pronoun *you* which increased the sentence length and caused a shift towards colloquial register which is untypical for the TT genre. It was marked as cosmetic only (1) issue in genre conventions category. Another cosmetic (1) issue in genre conventions category was caused by focus on an injury instead of the injury of a patient in both the source and target texts.

The following example 2 shows a small shift in the degree of formality between the ST and the TT where the change towards passive adheres to the TT genre conventions (*my italics*).

- (2) **ST:** Terveystenhoollon ammattilaiset vastaavat puheluusi ympäri vuorokauden.

BT: Healthcare professionals will answer *your* call around the clock (i.e., at all hours of the day).

TT: Medical helpline answers 24/7.

In the ST the actor is somewhat distant “healthcare professionals” personal addressing is shown with the suffix “-si” (your), whereas in the TT an inanimate actor “medical helpline” is used with s-passive. The resulting TT clause is clear and concise. In an emergency the reader benefits from clear and concise expression and as Välimäki (2004: 116) noted, clarity and conciseness are one of the aims of medical language. Moreover, similar expressions are typical for parallel native English texts. Conciseness is also highlighted in this material due to website space constrictions, the tendency of the word count to increase in translation and the readers’ need for additional explications. Therefore, the concise expression granted an entry to user match category with minor (2) severity rating. However, the informal (CED 2020; LED 2020) abbreviation “24/7” was marked as minor (2) issue in cognitive load category because the meaning of “24/7” may not be equally conveyed to all readers. Another cosmetic (1) user match issue was caused by an additional TT clause, “We will instruct you to the correct place [...]”.

The severity of one of the two issues in ST-TT integrity category was estimated as major (3). A word choice caused a shift in meaning between source and target text. The ST phrase “vastasyntyneen lapsen kuume” (new-born child’s fever) was translated as an “infant’s fever” in the TT. Omission of the word “new-born” from the TT phrase caused a shift between the source and target text and increased the potential age range of the patient in the TT. With an older child fever is less likely to be an emergency. In the American English variety, the primary definition of the word “infant” is a “baby” (CED 2020), whereas in British English variety the primary definition of “infant” is “a very young child” (LED 2020). Furthermore, in the British variety the word carries also additional connotations and depending on the contexts it may refer to “a schoolchild between the ages of about four and eight” and in legal context the extent of the possible age range increase is broader (LED 2020). The additional connotations increased the age range in

the TT and thus also the potential for misunderstandings. The other issue in ST-TT integrity category had cosmetic (1) severity rating as an additional word “situation” was deemed redundant when combined with the word “emergency”.

4.2 TYKS Catchment Area

TYKS catchment area material was collected from Varsinais-Suomi (VS) hospital district website. The topics were childbirth (TY1) and emergency (TY2). There were more usability issues in the informative TY1 TT than in the operative TY2 TT. The highest number of issues were in cognitive load, user match and genre conventions categories. No consistency issues were found. The main website had three language options, Finnish, Swedish and English. Both STs had one external link embedded in the text, whereas between the two TTs there was only one. The other external link (onset of a Childbirth) was in the TY1 ST embedded in the main body of text whereas in the TT it was placed at the end of the document together with other external links⁸. The total number of issues in TY1 TT and TY2 TT and the range of severity ratings in each category are displayed in the following Table 4.

Table 4. TYKS catchment area results

Category	TY1 (inf.)	severity	TY2 (op.)	severity	Total
Grammar	4	0,1	3	1	7
ST-TT integrity	2	2	–	–	2
Cognitive load	12	0–3	2	0,2	14
Consistency	–	–	–	–	–
Genre conventions	3	0–1	7	0, 2,3	10
User match	–6	1,2	–6	2,3	–12
Total	21/15	0–3	12/6	0–3	33/21

⁸ The links at the end of the document were not part of the material of this thesis as only the first page was analysed. However, for the ST readers these links provided virtual introductory tour of the premises and additional information about normal birth. The TT additional links were about “Infertility”, “High-Risk Pregnancy” and “Onset of a Childbirth”. Out of 10 additional links in Finnish, two were in English.

TY TTs were mostly concise with few usability issues. The consistent use of phraseology and terminology increased comprehensibility of the TYKS TTs, but the high number of issues and major severity rating in cognitive load and genre conventions categories reduced comprehensibility somewhat and affected also readability to some extent. However, due to low severity ratings and only a few issues in ST–TT integrity category, the TYKS samples were accessible.

4.2.1 TY1

In TY1 TT the presentation was straightforward and the tenor, register and terminology were typical for the TT genre. However, at times the word choices, although right for the genre, increased cognitive load. Reader consideration was demonstrated by an occasional word choice such as “s/he” and “support person”. The mainly passive voice, lack of politeness indicators and minimal personal addressing gave both the ST and the TT a slightly detached although proficient impression. There were no shifts in paragraph or sentence order between the ST and the TT and the severity of found omissions and shifts was estimated as minor (2) or cosmetic (1).

There is fluctuation in what concepts words and terms cover between different languages and language varieties. As already discussed in the case of HY2 TT, in the American English variety (CED 2020) the primary definition for the word “infant” is a “baby”, whereas in British English variety (LED 2020) the age reference of the word “infant” is more dependent on the context which increases the potential for misunderstandings. The primary meaning of the word “baby” on the other hand refers to a “very young child” in both varieties (CED 2020; LED 2020). Moreover, for those with limited English skills, the onomatopoeic word “baby” may be easier choice compared to words “infant” or “fetus” both of which are derived from Latin (LED 2020). In both American and British English varieties the word “fetus” refers to an unborn human being or animal as it is developing in uterus before birth (CED 2020; LED2020). The orthography is similar in both varieties, although in British English also “foetus” is possible. In Finnish the word

“sikiö” similarly refers to an unborn baby although it also has a parallel (though old fashioned and colloquial) meaning in some dialects where it is used to refer to young children. The context defines which word, “foetus”, “baby” or “infant”, is appropriate.

In TY1 TT the main issue with major (3) severity rating was with words “baby” and “infant” the meaning of which, as already discussed, is dependent on context and the used English variety and may therefore affect clarity. The ST word “baby” (vauva) was translated as “infant” in the TT similarly to HY2 TT except that unlike in HY2 TT here the issue was not with the age-range since in TY1 TT the intended age could be inferred from the context (childbirth). The word “baby” occurred nine times in the ST with one instance of words “foetus” (sikiö) and “child” (lapsi) whereas in the TT the numbers were reversed so that the word “infant” dominated with eight occurrences and was replaced by the word “baby” once and by “he/she” twice. The word “foetus” was not used at all in the TT. The use of the word “infant” increased the cognitive load of the TT reader at times as the exact meaning had to be inferred from the context. With over three occasions it amounted to major (3) severity rating in cognitive load category. Other issues that reduced comprehensibility included two ST sentences that were combined into one in the TT. The severity of both occasions was rated as minor (2). Another cosmetic (1) entry to cognitive load category was caused by reversed word order.

An occasion where changing the ST word “sikiö” (foetus) to “infant” in the TT resulted to a slight shift and conflict in meaning as displayed in the following example 3.

- (3) **ST:** Synnytyksen aikana seurataan sekä äidin että sikiön vointia huolellisesti, jotta ongelmat voidaan havaita ajoissa.

BT: During the delivery the condition of both the mother and the foetus are monitored closely to detect problems well in advance.

TT: During the delivery the conditions of both the mother and the infant are monitored closely in order to detect possible problems well in advance.

The time frame “During the delivery” mentioned at the beginning of the example 3 conflicted somewhat with the word choices in both the source and the target text. The ST word choice “fetus” (unborn baby) suggests that the monitoring occurs before and during

the delivery whereas the TT word choice “infant” refers to a time after the delivery. Using the word “baby” in both the ST and the TT would have solved the conflict, increased the ST-TT integrity and reduced cognitive load. Due to the conflict in meaning this was categorised as ST-TT integrity issue with minor (2) severity rating.

Another minor issue that affected ST–TT integrity was a shift from the ST passive to the TT active voice. Passive voice was used in the ST to inform the reader that after the measurements of the baby there will be a transfer to the maternity ward, whereas in the TT only “the mother is transferred to the maternity ward after the baby has been measured” (TY1 TT). Whether mother and baby will stay together after the transfer remained unclear in both texts, but in the TT the degree of certainty for separation increased compared to the ST. However, as the separation issue was clarified in the next paragraphs, the shift was classified as a minor (2) ST–TT integrity issue. The additional TT word “possible” in the example 3 made the expression more agreeable. It was estimated as a cosmetic (1) user match. Other cosmetic (1) user match issues were the alternate word choices “him/her” and an occasion of “support person”. Dividing one ST sentence to two in the TT was rated as minor (2) user match issue and an occasion of plural that only appeared in the TT was rated as cosmetic (1) genre conventions issue. The phrase “in order to” (instead of more concise “to”) was estimated as a matter-of-taste (0) issue in cognitive load category.

The four grammar issues found from TY1 TT were related to article, preposition, punctuation and capitalisation. Their severity varied between matter-of-taste and minor (0-2). The prepositional issue increased ambiguity enabling an alternate interpretation where only those families who manage a successful first breastfeed receive support from the staff. It was rated as minor (2) issue in cognitive load category. Two slightly unconventional expressions for the TT genre were categorised as shifts towards informal register and colloquial language. The writing form “there’s” (cf. there is) was classified as matter-of-taste (0) genre conventions issue, and the colloquial expression “checks on” referring to doctor’s examination prior to a release from hospital was classified as a cosmetic (1) genre conventions issue.

4.2.2 TY2

TY2 TT was carefully constructed document with only few usability issues that mainly affected readability. The greatest number of issues were to be found in genre conventions and user match categories. Grammar issues were related to punctuation or subject verb concord and their severity was rated cosmetic only (1). There were no ST-TT integrity or consistency issues and consequently the accessibility of TY2 TT was good.

There were two informal expressions in contrast with the formal expression “be seated”, the writing form of “that’s” (cf. that is) and the expression “24-7”. While these expressions are not exceedingly uncharacteristic to parallel native texts, some of the non-native readers might have benefitted from a clarification of the expression “24-7”. The severity of the first issue was estimated as a matter-of-taste (0) in genre conventions category and the “24-7” as minor (2) cognitive load issue. Shifts from the ST active to the TT passive voice dominated with three occasions compared to the one change from the ST passive to the TT active. As all shifts adhered to TT genre conventions, they were not counted as usability issues.

The most prominent issue in TY2 TT was officialese. On one occasion the institutional actor (and a subject-verb concord issue) only appeared on the TT where instead of the staff the “[...] emergency services manages acutely ill patients [...]” (TY2 TT). In the ST passive was used. It was classified as minor (2) genre conventions issue. The following example 4 illustrates another occasion of officialese (*italics my emphasis*).

- (4) **ST:** Sinut ohjataan odotusaulaan *odottamaan* joko lääkärin tai sairaanhoitajan tapaamista.

BT: You will be directed to the waiting lounge *to wait* for a meeting with either a doctor or a nurse.

TT: You will be directed to the waiting lounge. *After a variable amount of time* you will see a doctor or a nurse *for further management of your condition*.

Compared to the ST the TT has two additional phrases. The first phrase although longer and more complex expression provided additional information about varying waiting times. It was therefore marked as a matter-of-taste (0) issue in cognitive load category. The missing comma after the first phrase was not marked as it did not affect usability. The second additional phrase under a title “arriving at the emergency services, entering” was deemed redundant officialese with minor (2) severity. The reference of the word “further” in a context where patient has only just arrived was unclear. Even if some of the patients may arrive from other care units, they are likely to seek information from the staff rather than from hospital website.

The second additional phrase in example 4 was classified a minor (2) genre conventions issue because the lengthy expression did not contain additional information. The word “management” was considered a shift towards institutional language. Moreover, it inferred inequality in patient-provider power relationship. More conventional and concise alternatives in healthcare context would have been “treatment” or “appointment”. Furthermore, on two out of three occasions the object of management in TY2 TT was patient’s condition instead of patients themselves. Referring to an injury instead of a patient is a typical yet unwanted feature of medical texts. The feature appeared only in the TT. The incidents of managing patients and their conditions were classified as major (3) genre related usability issues. The division of one ST sentence to two in the TT was considered a cosmetic only (1) user match issue as it was likely to be caused by the additional phrases which increased sentence length and thus reduced conciseness.

One of the positive features in TY2 TT was the versatile translations of the word “hoito” (care, treatment). Out of the 12 ST occasions 10 were transferred to the TT and two omitted. The words used for translating the Finnish word “hoito” in the TT varied depending on the context. The following expressions were used: medical needs, condition, manage/management, treatment and care. In most cases the variation contributed towards natural flow of the TT and it was therefore not counted as inconsistency. Other assets of this document included added politeness indicators. Additional politeness is highlighted in instructive texts where imperative is sometimes combined with direct addressing by add-

ing the subject pronoun “you”. When used together they strengthen the effect of imperative (CED 2019). In TY2 TT the reader consideration was displayed with the use of six additional politeness indicators (please). They were used in connection with imperative clauses and in an occasional additional TT sentence such as “Please use them”. Two such additional sentences were counted in user match category with minor (2) severity rating. The six occasions of additional politeness amounted to major (3) severity rating in user match category.

4.3 TAYS Catchment Area

The material from TAYS catchment area was collected from Pirkanmaa (P) hospital district, Tampere University Hospital website. There were more usability issues in the informative TA1 TT, “As a patient in Tays”, than in the operative TA2 TT, “Pediatric emergency services”. In TAYS catchment area material the terms and phrases were used consistently and various means were employed to attend the needs of the reader. However, institutional language featured prominently and issues with ST–TT integrity reduced readability and comprehensibility, whereas the occasional user match issue compensated it to some extent. There were four available language options: Finnish, Swedish, English and Russian. The extra language option increased the total sum of user match issues with one entry. To the five external links in the STs, there were three in the TTs with varying contents. The total number of issues found from TA1 TT and TA2 TT and the range of severity ratings of each category are displayed in Table 5 below.

Table 5. TAYS catchment area results

Category	TA1 (inf.)	severity	TA2 (op.)	severity	Total
Grammar	3	1	3	1,2	6
ST-TT integrity	5	1–3	1	2	6
Cognitive load	3	2	4	2,3	7
Consistency	–	–	–	–	–
Genre conventions	5	2,3	2	2	7
User match	–2	2	–10	0–3	–13
Total	16/14	1–3	10/0	0–3	26/13

Apart from grammar and consistency categories, there were usability issues with major (3) severity rating in all categories. When compared to all other samples, TA2 TT had the greatest number of user match issues.

4.3.1 TA1

The most dominant feature of TA1 TT was officialese. The occasional word “provide” in the TT increased complexity. The use of singular verb instead could have reduced the cognitive load of the reader (cf. assist or treat instead of provide assistance/provide treatment). The following example 5 demonstrates an occasion of officialese (*my emphasis*).

- (5) **ST:** Jos haluat, läheisesi voi tulla sinun kanssasi mukaan poliklinikalle. Läheisesi voi myös osallistua keskusteluihin, jotka liittyvät hoitoosi, ja olla mukana auttamassa sinua.

BT: If you wish, your family member may accompany you to an outpatient clinic. Your family member may also participate in discussions related to your care and participate in assisting you.

TT: If you wish, a family member may accompany you to an outpatient clinic visit or participate in discussions and *provide assistance relating to your treatment*.

Combining two ST sentences into one in the TT increased the complexity of the TT. The sentence grew longer due to officialese that involved two additional words “provide” and “relating”. They reduced clarity and increased the cognitive load. Moreover, there is a shift in ST-TT integrity because the ST coordinator “and” is substituted with “or” in the TT. Consequently, in the ST, family member is invited to accompany the patient on the outpatient clinic and participate in discussions and assisting, whereas in the TT there is a choice to either participate the outpatient visit or discussion and assisting. The officialese in example 5 was allocated to genre conventions category with major (3) severity rating. The shift related to connector “or” was entered to ST-TT integrity category with major (3) severity rating. Omission of the last sentence of the mission statement caused another entry in ST–TT integrity category with minor (2) severity rating. Omission of the latter part of the mission statement meant that unlike the ST readers, the TT readers were not assured that only authorised personnel have permission to handle their personal data.

Institutional language in TY1 TT included an inanimate actor performing tasks instead of the hospital staff as in the following clause (italics my emphasis): “*The invitation letter or the ward will provide* you with more detailed instructions [...]”. Koskinen (2011: 58) notes the anonymity of collectively produced institutional translations where the institution often bears the authority of the text. This occasion of officialese was evaluated as a minor (2) issue in genre conventions category. Another ST–TT integrity issue was related to instructions about hand hygiene at the end of the TA1 TT. It involved a verb choice that increased the length of a visit to the lavatory indefinitely. The reduced possibility of a TT reader’s return from the visit caused an entry to ST–TT integrity category with a cosmetic (1) severity rating.

In the following example 6 another ST–TT integrity issue and its effect to accessibility are displayed.

- (6) **ST:** Perheesi on tärkeä myös silloin, kun tulet hoitoon sairaalaan.
BT: Your family is important also when you come to treatment in hospital.
TT: You will remain a member of your family even when you receive treatment or are ill.

Due to a clear shift in meaning compared to the ST, this was classified as major (3) usability issue. The shift affected also comprehensibility because without additional guidance the TT reader is unlikely to infer the intended meaning. In the ST the importance of family’s support during hospital visit is acknowledged, whereas in the TT another, alternative interpretation reads as an assurance against the (grim) possibility of ceasing to be part of your family when receiving treatment. The shift in meaning was caused by TT word choices “remain”, “member” and “even” in place of the ST’s “is”, “important” and “also”. The omission of the word “hospital” was not rated because the context, patient information on hospital website, disclosed the evident location.

Another small shift was observed in an expression where the ST family members “can usually visit” and the TT family members “are allowed to visit freely”. The few politeness indicators found from TA1 TT included a tentative word choice “may” and an additional word “please”. They were marked as minor (2) issues in user match category. The found

three occasions of combining ST sentences into one long one in the TA1 TT were entered to cognitive load category. Grammar issues in TA1 TT were cosmetic only (1).

4.3.2. TA2

There were altogether 10 user match issues in TA2 TT. The number of usability issues was higher than in any of the other samples. In the TA2 ST only one word was used consistently to refer to a “child”, whereas in the TA2 TT a variety was used from specialised “paediatric”, to “baby” and “child”. However, as the word child would not have been an appropriate choice for every occasion in the TT genre (e.g., paediatric emergency services, babies under 3 months of age) the variety was considered as user match with minor (2) severity rating. In instructions for life threatening or otherwise distressing situations, “your child” was replaced by “the child” which was marked as a matter-of-taste (0) issue in user match category because it could be observed either as slightly unsympathetic way of addressing or as a way to distance the reader from the described distressing situations and prevent the parents from imagining their own child in that situation.

An occasion of removing officialese from the TA2 TT was marked as a cosmetic (1) user match. The object of treatment was changed from the ST’s situations to patients in the TT. Another feature of user consideration displayed in TA2 TT were added politeness indicators. Added politeness was marked as minor (2) user match issue. Furthermore, the consistent use of different vocabulary (Emergency services/unit/department/room) when referring to different emergency departments (and locations) made it easier to distinguish the multiple emergency departments from each other. The variation was marked as major (3) user match issue. User consideration displayed also the descriptive expression “every day around the clock”.

Genre conventions issues were related to officialese. At the beginning of the first paragraph the ST’s concise “[...] we examine and treat [...]” was translated as “[...] we examine and provide treatment [...]”. At the end of the first section there was an institutional actor in both the ST and the TT. In the TA2 TT “The Emergency Room at Tays Valkeakoski Hospital provides treatment to paediatric patients [...]”. The s-passive combined

with the verb “provide” improved the TT’s expression compared to the ST where the institutional actor was more pronounced. However, in the light of the notion of Torkkola et al. (2002: 37) about the use of passive voice to avoid personal addressing and Albin’s (1998: 122–123) recommendation of the use of short words, simple sentences and active voice for low literacy patient, both occasions were classified as *officialese* in genre conventions category. Their severity was estimated as minor (2).

In an emergency, clarity and comprehensibility are imperative features in written instructions. Torkkola et al. (2002: 39) highlight presenting the important information first. The cognitive load category had altogether four issues. One section and one paragraph both containing vital information for a paediatric emergency were moved further down the page in the TT. The ST paragraph containing instructions for a life-threatening situation was in the TT moved towards the end of the page to the end of the second subsection. The second section of the first ST page, entitled “contact information”, was in the TT moved to the end of the second page. The severity of the first reordering was rated as a minor (2) and the latter as major (3) issue in cognitive load category. Moreover, the transferred paragraph had an additional minor (2) shift in meaning between the ST and the TT. Usability issues that were related to register included some fairly formal word choices such as “children presenting at Tays due to a trauma, [...]” and “referrals are drawn up”. They were classified as minor (2) cognitive load issues because they may be challenging to comprehend for some of the non-native English readers. The three grammar issues in TA2 TT were related to preposition and punctuation. Their severity was classified as cosmetic (1) or minor (2).

4.4 KYS Catchment Area

KYS catchment area material was collected from Pohjois-Savo (PS) and Etelä-Savo (ES) hospital district websites. The Informative KY1 TT “As A Patient” is from North-Savo (PS) hospital district website and operative KY2 TT “Emergency Department (A&E)” from South Savo (ES) Hospital district website. The informative KY1 TT had one more usability issue than the operative KY2 TT. The TTs word count increased more than in any of the other samples. It was partly related to the additional explications as some of

the ST's links were written open in the TT. There were altogether five external links in the two STs and three in the TTs. The available language options were Finnish, Swedish, English and Russian. The additional language option increased the total number of user match issues with one entry. The number of usability issues found from the KYS catchment area samples and their severity ratings are displayed in the following table 6.

Table 6. KYS catchment area results

Category	KYS1 (inf.)	severity	KYS2 (op.)	severity	Total
Grammar	6	1,2	5	2,3	11
ST-TT integrity	3	2,3	–	–	3
Cognitive load	–	–	4	0, 2	4
Consistency	–	–	1	3	1
Genre conventions	3	3	1	2	4
User match	–6	2,3	–7	0–2	–14
Total	12/6	1–3	11/4	0–3	23/9

Overall KYS material was well constructed, fairly consistent and it had the least number of usability issues compared to all other samples. Uncomplicated language and user consideration increased the usability of KYS TTs. As a result, the comprehensibility, accessibility and readability were generally good although issues with major severity rating were found from nearly all categories. User match and grammar categories had the greatest number of issues. There was also officialese to be found in KYS samples, especially in the STs. The most prominent feature in the TTs was user consideration which was displayed in additional explications and correction of ST errors in the TT. The found one word with distinctively American English orthography did not affect usability.

4.4.1 KY1

With no consistency or cognitive load issues and the severity rating of the found six grammar issues either cosmetic or minor, the comprehensibility of KY1 TT was good. The most sever issues in KY1 TT were to be found in genre conventions and user match categories. User consideration was displayed by two additional links embedded in the TT where the ST had none. Their severity was evaluated as minor (2). Another TT addition

included a paragraph under the heading of “Visit to the emergency department”. In the additional paragraph the working hours and the coverage of emergency services in PS hospital district were explained. The addition was rated as major (3) user match issue. However, as it did not have equivalent in the ST, the addition was not otherwise evaluated. Other additional instructions were rated as minor (2). While there were no added politeness indicators in the TT, tentative language was used to display politeness. The following example 7 has an occasion of tentative language use as well as correction of the ST’s officialese.

- (7) **ST:** [...] ja sairaala toivoo, että potilaat eivät tupakoi hoitajakson aikana.
BT: [...] and the hospital hopes, that patients do not smoke during the care interval.
TT: [...] but we encourage patient not to smoke at all during their treatment.

The ST wish was changed to encouragement in the TT. Moreover, in the TT the ST’s institutional actor was changed to personal addressing with the pronoun “we”. It was classified as minor (2) user match issue. Example 7 shows also a shift between the ST and the TT. The intended meaning in both texts is that it would be preferable if patients did not smoke during the whole time they stay in the hospital. However, the TT word choice “treatment” enables an alternate interpretation where the suggestion only concerns the fairly short stretch of time when the patient is actually receiving treatment and therefore smoking may be acceptable in other times, notwithstanding that smoking in public premises is prohibited in Finland. Therefore, the time frame in the TT is considerably narrower from that of the ST. The shift was marked in ST–TT integrity category with minor (2) severity rating. The addition “at all” and the changed conjunction “but” did not affect usability and were therefore not categorised. The plural marker missing from the word “patient” was counted as minor (2) grammar issue. Other grammar issues in KY1 TT involved subject verb concord, preposition and capitalisation. All grammar issues were either cosmetic (1) or minor (2) and their effect to usability was not considered significant.

On one occasion a ST error was corrected in the TT. It was related to information about where referrals to KYS are attained from. In the ST the referral to KYS were written by KYS physicians, whereas in the KY1 TT the referrals were attained from “[...] your own health center, occupational health care, or private practice physician”. Thus, the ST claim that referrals are attained from the same place where you are referred to was corrected and furthermore, several places where the referral may be attained from were listed. The improvements were counted in user match category with major (3) severity rating. The two omissions in KY1 TT contained information about cancelling an appointment and advice for consideration towards people with allergies. Their severity was estimated as minor (2) and major (3) and they were categorised as ST-TT integrity issues.

Despite of removing some of the ST officialese, there were still officialese in TY1 TT. In one TT sentence it was stated that “The hospital will book the appointment and send an invitation letter to your home address, [...]”. The same sentence continued with an additional subordinate clause where the letter sent by the hospital was “[...] giving the date and time and explaining where you should register”. The occasions of officialese exceeded three occasions so their severity rating was major (3).

4.4.2 KY2

The greatest number of issues and the highest severity rating in KY2 sample were in user match and grammar categories. Most of the grammar issues were related to lists which raised their severity to major (3) as there were several issues within a certain context. Individually estimated their severity would have been low. There were altogether four bullet point lists in KY2 TT of which two had only one item. Grammar issues were related to plural marker, capitalisation, punctuation, and list formation issues such as parallelism and list introduction. Albin (1998: 120–122) states that in parallel style every item on the list is in the same grammatical form and phrase because the use of key words helps readers with low literacy skills to better grasp the contents. Huckin and Olsen (1991: 428–430) state that a correct use of formal features increases the readability of lists for non-native speakers of English. They (ibid. 428–430) further specify that especially with selective

readers correct formal clues help the readers to quickly navigate to the parts that are interesting.

Without additional explications the two occasions of informal abbreviation “24/7” were allocated to cognitive load category with minor (2) severity rating. Helping the reader to connect the Finnish word for emergency with an embedded picture and icon in the text both displaying the Finnish word for emergency was considered a useful addition as it is unlikely that there is English signposting on the location and therefore it might help those who do not speak Finnish to find the premises on arrival. The combination was marked as a minor (2) user match issue. Other issues included in user match category was additional information regarding opening hours and instructions for non-urgent booking and an advisory phone number for further information. The phone number in the TT replaced the three external links in the ST covering similar issues. Another two user match issues that were marked as minor (2) severity were two lists which, although they only had one item each, contained additional information partly relating to the omitted ST links.

The following example 8 shows a shift from the ST passive to active addressing in the TT.

(8) **ST:** [...] kannattaa ottaa lista käytössä olevista lääkkeistä ja Kela-kortti.

BT: [...] it is worth bringing list of medicines that are in use and Kela-Card.

TT: [...] you should bring a list of the medicines you are taking and your Sickness Insurance Card (SII Card/Kela Card).

The three additional you-pronouns increased the sentence length and made the register untypically colloquial for the target language genre. Replacing the two first words with the politeness indicator “please” would have expressed politeness in a manner typical for the target language genre. The verb “should” may have caused a slight shift towards imperative but eventually it was considered an occasion of tentative language use and therefore a user match with cosmetic (1) effect. Moreover, the TT reader is additionally reminded to bring their SII card which was marked as another minor (2) user match issue. One minor (2) genre conventions issue was officialese with an institutional actor in a TT clause where “[...] emergency clinics treat 100–200 patients [...]”.

The references to emergency department were inconsistent in KY2 TT. The two main headings were “Emergency Department (A&E)” followed by the secondary subheading “Emergency Services”. In the following text also the word “clinic” was used. The word “department” only appeared once in the first main heading but the words “clinic” and “services” were used interchangeably, whereas in the KY2 ST only one word was used consistently. The TT variation gave an impression that there may be more than one location while only one address was provided. Referring to various specialities within the emergency department as “clinics” could have increased the clarity of the references. However, as there were no further explanations, the inconsistent terminology was marked as major (3) consistency issue. Other issues in KY2 TT were two occasions of complicated sentence structures which reduced the conciseness of the text. They were categorised as cognitive load issues with minor (2) severity. The additional abbreviation “A&E” without a further explanation was counted as a matter-of-taste (0) issue in cognitive load category because as cryptic as it may be to non-native English speakers, it may also have been added for further clarification to the benefit of native English readers.

4.5 OYS Catchment Area

The OYS catchment area material was from Pohjois-Pohjanmaa (PP) hospital district website. At the time of collection, only one suitable text with corresponding English counterpart was found for the analysis, the informative “As a patient”. The ST had one external link and the TT had none. The two available language options were Finnish and English. OYS material was a mixture of quite formal (thus, shall) and informal register. The most prominent feature was shifts from ST passive to active addressing in the TT with the help of subject pronoun “you”. Combining subject pronoun “you” with instructions was problematic because it made the TT language appear unnecessary terse or peremptory at times. Although the severity of grammar issues was estimated low, the lack of reader consideration gave the document an unfinished impression. Other usability issues in OYS material were with clarity and officialese. The total number of issues in OYS material and the range of their severity ratings in each category are displayed in the following Table 7.

Table 7. OYS catchment area results

Category	OYS (inf.)	severity
Grammar	6	1,2
ST-TT integrity	3	1, 3
Cognitive load	2	2,3
Consistency	2	1
Genre conventions	9	2,3
User match	-1	3
Total	22/21	1-3

The OYS TT started with an additional paragraph “Triage” in which the assessment system for urgency of care was explained. The paragraph did not have an equivalent or any reference to it in the ST so its usability was not analysed. The additional information was, however, counted as major (3) user match issue. Genre conventions category had the most number of issues, followed by grammar category. The most prominent feature was a shift in register between the ST and the TT when addressing the reader. There were occasions of tentative language use, but none in connection with direct instructions. With six grammar issues the grammar category was second to genre conventions in OYS material. Grammar issues were related to punctuation, prepositions, capitalisation and verb aspect. Their severity varied from cosmetic (1) to minor (2). Variation between very formal and informal register was marked in consistency category with cosmetic (1) severity rating. Cognitive load issues reduced clarity at times. They were related to word choice and sentence structure (list introduction).

Although imperative clauses enhance the importance of the message as well as ensure its deliverance, Torkkola et al. (2002: 7, 37–38) accentuate that personal addressing does not mean the use of direct imperative in patient instructions because it restricts the autonomy of the patient which consequently reduces also the engagement to care. Instead, explanations and reasoning are used to endorse cooperation (Torkkola et al. 2002: 38). In English language the combination of subject pronoun “you” and imperative is rarely used because the subject pronoun “you” strengthens the effect of imperative and may appear colloquial or offensive depending on the context (CED 2019). The effect is reinforced when it is not

alleviated by courtesy such as additional politeness indicator “please”, conditional or other tentative language (CED 2019). In the first TT paragraph the ST declarative passive had changed to active addressing with subject pronoun “you” in the TT, resulting to a clause with two alternate interpretations, colloquial or imperative as displayed in the following example 9.

- (9) **ST:** Päivystykseen ilmoittaudutaan vastaanotossa vuoronumeron mukaisessa järjestyksessä.

BT: At the Emergency department reception the signing in proceeds in turns indicated by a queue number.

TT: You sign in at the Emergency Department reception as indicated by your queueing number.

The register of the TT sentence could be interpreted as colloquial. An alternate interpretation is imperative with a slightly offensive tenor. In verbal interaction colloquial language might be a suitable option if alleviated by friendly gestures. However, in written text colloquial language does not comply with the TT genre conventions and addressing with subject pronoun “you” without any politeness indicators breaches the universal politeness code. The slightly offensive tenor could have been alleviated by combining the first subjective pronoun “you” with tentative language or by changing it to a politeness indicator “please”. This was counted as major (3) ST–TT integrity issue due to the shift in tenor. Other ST–TT integrity issues included omissions and smaller shifts in meaning. They were rated as cosmetic (1) in ST-TT integrity category.

There were altogether five shifts from the ST’s passive to active voice in the TT. In some of the shifts the subject pronoun “you” was used. With no additional politeness indicators, each combination was classified as major (3) issue in genre conventions category. Maintaining similar tenor in both texts would have ensured equal addressing of the readers in both texts. Another genre conventions issue was with officialese. There were three occasions where the actor of a sentence was an institution. They were marked as minor (2) genre conventions issues.

5 EQUALITY AND ONLINE PATIENT INFORMATION

After the usability analysis of regional samples, in this chapter the results are discussed in relation to the research problems; whether English online patient information is equally usable in different regions of Finland and whether the provision of information is equally efficient both in Finnish and English online patient information. The answers to the additional question regarding differences in usability of the two text types were displayed in the previous chapter at the beginning of each catchment area results. The hypothesis that the usability of operative texts is higher than in informative texts was confirmed because in all regions with two samples the usability of operative text was higher than the usability of informative text. As the numbers of each catchment area were discussed in the previous chapter, now the focus is on the total numbers of each catchment area. They provide slightly more substantial base for the following observations than the regional samples individually. The total number of issues found from each catchment area and some other additional features are displayed in the Table 8 (p. 86).

The horizontal row in table 8 shows the total number of issues in each catchment area and the total number of each category is in the far right vertical column. The first number in the total issues row is the sum of issues from the first five categories in each catchment area and the second number (in brackets) is the outcome after the user match issues were reduced from the first number. The bottom row displays the mean average (MA) of issues per word ratio. The mean average was counted by dividing the total word count with the total number of issues (the first number in the row of total issues). It shows how many problem-free words are between issues. Consequently, the higher the number is the less issues there were. In brackets is shown the MA after the reduction of user match issues from the total number of issues. The decimals are rounded off. Even when the issues were not all on word level, the MA rate shows in a glance the issue to word ratio without the bias caused by difference in word count and the fact that OYS catchment area only had one sample. Therefore, higher MA rate indicates higher usability and vice versa. .

Table 8. The combined results

Category	HYKS	TYKS	TAYS	KYS	OYS	Total
Grammar	23	7	6	11	6	53
ST-TT integrity	16	2	6	3	3	30
Cognitive load	7	14	7	4	2	34
Consistency	2	–	–	1	2	5
Genre convent.	11	10	7	4	9	41
User match	–6	–12	–13	–14	–1	–46
Total issues (– user match)	59 (53)	33 (21)	26 (13)	23 (9)	22 (21)	163 (117)
TT word count	661	802	710	663	261	3097
ST word count	428	474	448	361	192	1903
MA: word count/issues (–user match)	11.2 (12.5)	24.3 (38.2)	27.3 (54.6)	28.8 (73.7)	11.9 (12.4)	19.0 (26.5)

The word count tends to generally increase in translation (Munday 2012: 302–303). In TYKS and KYS catchment area samples the word count nearly doubled whereas with the other three samples the increase was approximately one third. In KYS TT additional explications increased the word count as some of the missing ST links had been written open in the TT. Other possible causes for the word count variation include translator's individual style and differences in space restrictions between hospitals although the webpage context means that all are subject to space restrictions to some extent.

The MA of the total word count in the whole material was 19. The range varied from 11.2 to 28.8. The range is wider after the reduction of user match issues. TYKS, KYS and TAYS catchment area results stayed above the average whereas the results from HYKS and OYS catchment areas remained below it. The three catchment areas above the average MA rate held also nearly all (39) of the total (46) user match issues. As OYS catchment area sample only had one (informative) text, the material from HYKS catchment area had the lowest TT word count and lowest usability rating. The large difference between the highest and lowest usability indicates that regional variation in the usability of English online patient information does exist. However, it is word bearing in mind the

small sample size and that with a different sample consistency the results may vary somewhat.

As all initially collected issues were subject to further estimation of their severity also the results should be considered in regards to the severity ratings. The highest, critical, severity rating (4) was reserved exclusively to issues that directly affect patient safety. No issues with critical severity were found as could be expected from material that has already been published online. When comparing the total number of issues in each category, the greatest number of issues were to be found in grammar category. The distribution of grammar issues was uneven and 34 out of the total of 53 grammar issues were in HYKS or KYS material. However, grammar issues with major severity rating were found from both HYKS samples and from the operative KY2. While grammar issues were abundant in the material, in other samples their severity was generally low with little effect to usability.

The next category with high number of issues was user match with 46 issues, followed by genre conventions category with 41 issues. The user match category caused the most distinctive division as KYS, TYKS and TAYS catchment area material all had over ten issues leaving HYKS with six issues and OYS with one. Some of the user match issues found from KYS, TYKS and TAYS material included additional features such as politeness indicators and explications, additional language options and external links and all user match issues with major severity rating were found from TYKS, KYS and TAYS samples. Unlike user match issues, genre conventions issues were reasonably evenly distributed. The amount of genre conventions issues varied from 4 to 11 between the catchment areas. However, apart from TAYS catchment area most samples had grade three severity issues in genre conventions category. The prominence of genre typical issues such as institutional language and officialese increased the numbers and severity of issues in this category. Variation between formal and informal register was also recurrent finding in this category.

In ST–TT integrity category shifts in meaning, omissions and ST interference were observed on word, sentence and paragraph level. Some of these shifts led to ambiguities in

the TT thus increasing the cognitive load of the reader. Therefore, also some of the cognitive load issues included ambiguous word and phrase choices. Other features in cognitive load category were heavy sentence structures which were often a result of combining two ST sentences into one in the TT. When looking at the number of issues and the severity rating, apart from KYS material all samples had major cognitive load issues, and, apart from TYKS, also ST–TT integrity issues. Consistency category had the least number of issues, a total of five issues.

The equality of online patient information turned out to be a many-faceted question. Suojanen et al. (2015: 49, 57) related the textual element accessibility to measures imposed by government and other legislative bodies who by means of regulation and guidelines ensure equal access for everyone. Comparative analysis was used to find interlingual differences between the ST and TT readers and thus found items were allocated to the ST–TT integrity category. ST–TT integrity category was related to accessibility as it measured the differences between source and target text. Like Hanhinen and Martikka (2014: 7), who noted differences between municipalities in response to migrants' health service needs and the ease of access to services, the results of my analysis indicated both regional variation and inequalities in the provision of information between the two languages.

The access to patient information between Finnish and English readers was deemed unequal for the following reasons. The amount of information for those who rely on English language patient information was limited compared to Finnish patient information. The readers of Finnish patient information had access to more details and to a wider range of supplementary information mainly in the form of external links of which the majority was provided only in Finnish. The clarity of the provided information was more profound in Finnish material and although both texts contained some undesirable genre typical features and some of them were removed from the English translations, the source texts were generally more coherent than the target texts. The terminology was consistently used in both the source and target texts, but some of the phrases in the English target were unconventional for the genre. Moreover, the degree of formality was more consistent in the Finnish source text and there was less variation in the used register, whereas in the English

patient information there were few occasions when the addressing of the reader was bordering offensive. Moreover, the English material had more ambiguities and there were few occasions where the shifts in the translated clause or sentence were so severe that even with the source text at hand it was difficult to deduce what the intended meaning was.

When looking at the results from the textual elements point of view, based on the number of issues in each catchment area, consistency with language variation, terminology and phraseology supported comprehensibility in all samples. However, in some regions, comprehensibility was reduced by severe cognitive load and grammar issues. KYS catchment area excluded, there were severe comprehensibility issues in four catchment area results although the reasons varied regionally from grammar issues to word choice and sentence or paragraph reordering. In some samples, institutional language and incongruities in genre-typical expressions reduced readability. The two textual elements comprehensibility and readability are related to the reader. In TAYS samples the user consideration was highlighted and in KYS catchment area samples the readability was good, whereas the operative TY2 was very accessible. Although the number of issues in genre conventions and cognitive load categories reduced comprehensibility and readability, there were some very comprehensible samples too, such as KY1, HY2 and OYS.

6. CONCLUSIONS

The aim of this study was to find whether English online patient information is equally usable in different regions of Finland and whether there are differences between the English and Finnish online patient information. The material consisted of regional samples of English online patient information texts and the corresponding Finnish source texts. The analysis methods included comparative approach and modified heuristic evaluation with the related severity rating. The comparative approach was used alongside the usability analysis to find interlingual differences. After collection, categorisation and analysis of the issues found from the English language material, the results were contrasted regionally to find variation. Similarly, the results of the two text types were contrasted to test the hypothesis that operative texts samples have higher usability than the informative ones.

Hospital website may be the first point of contact with the Finnish healthcare system and as such their role is significant. The presentation of English patient information on Finnish hospital websites varied and was at times accessible, comprehensible and user friendly. However, on many occasion comprehensibility, accessibility and readability were compromised. The results indicated regional variation in the usability of English online patient information and differences between Finnish and English patient information. There was also variation in accessibility and provision of additional information between the two languages. The Finnish patient information was more coherent and concise, it had less ambiguities and the readers were addressed more consistently in an appropriate register and tenor than the TT readers. With some small changes the usability of English online patient information on Finnish public hospital websites could be improved. Paying attention to genre typical expressions, register and tenor and avoiding ambiguities and colloquial expressions would have improved the readability, comprehensibility and accessibility of the samples in this study.

HYKS catchment area results excluded, there seemed to be some correlation with high usability and areas with high percentage of foreign residents. It raised a question whether language issues might be one of the reasons for phenomenon noted by Rasinkangas (2013:

135); the tendency of foreign residents to gravitate towards larger population centers despite of the decentralization policy. It may also mean that the hospitals are responding to the requirements of the inhabitants in their district. As noted in the preliminary material search, there seemed to be more English patient information on larger hospital websites compared to rural health centers, although it seemed that in some peripheral websites the patient information was already in the process of being translated to English.

The samples do not nor were they meant to represent the overall usability of any particular hospital or catchment area. Instead, they represent the variety in the available online patient information within Finland in different regions, hospitals, districts and subject areas. The small sample size meant that the results of the regional samples were individually considering fairly insignificant. However, the interlingual comparison utilised the whole material, giving the results a bit more weight as to be indicative at least. While drawing any definite conclusions based on such a small sample would be futile, I could not help but wonder the possible underlying cause(s) for variation. Some of the differences might be due to regional idiosyncrasies and the dominant position of Finnish as a national language. While some of the found features seemed typical for translated texts (see Munday 2012:178–182) and others seemed to be connected to either the commissioner (institution), context (healthcare/institutional) or translator (professional/inhouse), some of the found issues made me contemplate the possibility of existence of structural discrimination.

Differences in regional usability could also be attributed, besides the choice of material or sample size, to the aptitudes of the researcher. A non-native English speaker is likely to have blind spots regarding the language norms and as Albin (1998: 117) pointed out the background in nursing may cause a somewhat biased view of the subject. Other possible causes for variety includes the material, its shelf life so to speak. Torkkola et al. (2002: 25) noted the changing nature of patient instructions and how they continuously need updating as the hospital policies and patients' requirements change. The material I searched from Lapland region did not fit the selection criteria at the time of collection and OYS catchment area sample was so recently published that some of the final touches may still have been ongoing at the time of sample collection, whereas the abundance of patient

information material in HYKS catchment area exceeded the quantity of material found from any other hospital website. Maintaining such a large database up to date can be problematic. Moreover, the informative material from HYKS catchment area was slightly different. The subject was surgical specialty instead of hospital introduction as in the other regions as it was chosen to supplement the shortage of material. The reason for not choosing it in the first place was its different subject matter, neither emergency nor hospital introduction, and as in many other excluded documents, the number of additions and omission in ST–TT integrity category indicated that the English text was possibly on its way to start an independent life separate from the Finnish source text. During the preliminary material search I noted that some hospitals had opted for separate documentation altogether with a content especially customised for foreign residents. However, the possible reasons for variation are, although captivating to speculate, fortunately outside the scope of this thesis.

Qualitative analysis and modified usability heuristics turned out to be an efficient combination as heuristics helped in organising the material and severity rating in identifying the central issues. The four textual elements proved to be useful at the end when the results were brought together. However, the analysis was not without problems. Due to the overlapping issues categorising was a difficult and very time-consuming task. Especially when I as the sole estimator took the liberty to ignore the time limitations to replenish some of the lost reliability. Returning to the material from slightly different angles (textual, phrasal, lexical) repetitively was productive, even if the progress was so slow that the benefits of computer assisted corpus studies became fairly evident. The resolution to the problem centeredness of heuristics, the user match category, was in the end very useful indeed since it proved to be the clearest indicator of the divide between the usability of different samples.

The different usability of operative and informative texts indicated hierarchy between them. Similarly, there appeared to be hierarchy between Finnish and English online patient information. A lack of nationwide guidelines and means to aid the staff to meet their obligation to respond to the growing number of minority language speakers linguistic and cultural needs seems to have led to the use of English as *lingua franca* on hospital

websites in Finland. The question whether English alone can adequately cover the needs of people with varying linguistic and cultural backgrounds is well worth considering especially now in the brink of the health and social services reform with plans to incorporate healthcare and new technology.

The aspect missing from this thesis was the user's experience and therefore the results of previous studies were investigated. Although it is debatable how comparable different genres are, Elberkennou (2008: 3, 80–82) noted that the presentation of information with symptom descriptions is more impersonal in Finnish than English. Similarly, in my more popularised material, the degree of formality fluctuated more in the English TTs than in the Finnish STs. Moreover, similar to the results of Stenroos (2013: 66), in this study the results related to the two textual elements, readability and comprehensibility, indicated a lack of user focus even when the user match issues countered the effect at times. However, contrary to the results of this thesis, Stenroos (2013: 68) noticed also inconsistent use of terminology in Vaasa Hospital's in-house translations.

Problems related to language and access to healthcare services in Finland with people of foreign origins seems not to be a recent, but ongoing issue. However, according to the Finnish Government Report (2017:43), complains to Parliamentary Ombudsman and the Chancellor of Justice regarding oversight of rights of the linguistic minorities are rare⁹. Parallel to the results of Hahinen and Martikka (2014: 7–8) and Kuusio et al. (2020), the results of this study indicate that in online patient information the response to foreign residents' healthcare needs does not equal with that of the majority population. Hanhinen and Martikka (2014: 7–8) noted that especially the elderly, refugees, asylum seekers and people with psychic illnesses experience difficulties in learning new languages and in access to health and social services. Based on the previous research it seemed (see Kuusio et al. 2016; Hanhinen & Martikka 2014; FinMonik Research 2020) that those who really need information and health services may be underrepresented in the surveys due to their old age, lack of language skills or health condition when compared to the healthy working

⁹ With the exception of Swedish speaking minority. In the report the speculation regarding the reasons for low number of appeals include refusal and unawareness of the right to appeal.

age population who are computer literate and speak at least one of the widely used languages (e.g., English, Chinese, Russian, Spanish). Therefore, further research on the subject could include survey where the focus is not on the majority language speakers but on the vulnerable minority language speakers who need healthcare services the most, but face problems in accessing them. Other approaches could include a longitudinal study of patient's language preferences or a study where the healthcare professionals' point of view of the matter is pursued. A discourse analysis could be used to explore the structural aspects of equality more in-depth.

Equal access to health services proved out to be slightly thorny and somewhat political question as the reviewed strategies and guidelines appeared to concern mainly permanent residents, certain nationalities and established minorities. As Castles et al. (2014: 291–292) noted, bilingual policies may lead to limited recognition of some minority languages. With the annual quota of refugees, following through with measures and policies that support all parties involved in linguistic and cultural issues in public services could be beneficial. As Castles et al. pointed out (2014: 80–82), creating legal channels and incorporation policies that avoid marginalisation is beneficial for both the receiving nation and migrants.

There is still room for improvement, especially on a global scale patient information is considered to pose a challenge for translators of medical texts as for example Albin (1998: 117) noted and the discussion is still ongoing. This was the situation in spring 2019, sometime in future the results of a similar study could already be very different. In the future, equality and inclusivity may also comprise responding to the needs of varying number of non-domestic minority language speakers who use healthcare and other public services. As I am writing this, the Finnish Yle TV News (20.11.2020) broadcasts that due to the increased corona infection rates amongst the immigrant population, language options and ways to provide of information will be increased in HYKS catchment area to reach also other language speakers. Moreover, it seems that after a good decade the Finnish health and social services reform may also be finally coming to a close.

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¹⁰ The unofficial English translations of Ministry of Social Affairs and Health are not legally binding. In the law source references both English and Finnish names of the decree are displayed to facilitate also finding of the original Finnish reference. In the text both the chapter and the section numbers are shown.

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