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# Usability of Translated Menus in Finnish Video Game Localizations: A Heuristic Evaluation

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**Asiasanat:** käytettävyys, lokalisaatio, videopelit, käyttäjäkeskeinen kääntäminen, heuristinen arviointi

Tässä tutkielmassa sovelletaan heuristista käytettävyysarviointia kolmen suomennetun videopelin valikkoihin. Pelit ovat The Last of Us: Remastered, Hellblade: Senua's Sacrifice (säteenseurantapäivitystä edeltävä PC-versio) ja Watch\_Dogs (PC-versio). Tutkielmalla on kaksi tavoitetta: etsiä käytettävyysongelmia ja niiden mahdollisia toistuvuuksia useammasta suomennetusta pelistä ja selvittää, miten hyvin Suojasen ym. (2015) esittelemät käyttäjäkeskeisen kääntämisen (User-Centered Translation: UCT) heuristiikat soveltuvat videopelikäännösten arviointiin.

Videopelien ja tietokonegrafiikan lingua franca on englanti, eikä suomennettuja videopelejä ole läheskään niin paljon kuin esim. saksaksi käännettyjä. Monet täysi-ikäiset suomalaiset pelaavatkin pelejä pakon sanelemana ainoastaan englanniksi. Onkin olemassa kokonaisia peligenrejä ilman ainuttakaan virallisesti suomennettua peliä. Tutkitut pelit voivat tuoda esiin, minkälaista kieltä ja minkälaisia mahdollisia virheitä pelisuomennoksista löytyy.

Noudatteleeko käytetty terminologia itse pelaajien käyttämää termistöä? Onko peleissä tulkintakelvottomia käännöslainoja tai uudissanoja, jotka jättävät kokoneenkin pelaajan ymmälleen?

Käytettävyystutkimus syntyi ihmisen ja tietokoneen vuorovaikutuksen tutkimuksesta, ja vaikka käytettävyys onkin käännösalalla suhteellisen uusi käsite, ovat se ja käännösten jo tutkittu

laadunarviointi samalla asialla. Käytettävyyсарviointi pyrkii tekemään tuotteen käytöstä mahdollisimman tehokasta ja nautinnollista. UCT-heuristiikat soveltunevat hyvin pelikäännösten laadunarviointiin.

Tutkimuksessa kävi ilmi, että käännösten käytettävyys oli pääosin hyvällä tolalla. Videopelien ja tietokonegrafiikan suomenkielinen termistö vaatisi kuitenkin standardisointia. Paikoittain vakiintunutkin termi loisti käännöksessä poissaolollaan. Joitain termejä ei myöskään käytetty johdonmukaisesti eri pelien välillä. Osa käytettävyysongelmista selittyy asiakkaiden omilla termivaatimuksilla ja tyylioppailla. On myös mahdollista, että joiltain kääntäjiltä puuttuu teknisen termistön tietämystä, mikä mahdollistaisi tarkemmat ja toimivammat käännökset.

UCT-heuristiikat soveltuivat hyvin videopelikäännösten arviointiin, vaikka osa heuristiikoista jätettiin käyttämättä. Tarkoituksenmukaisesti sovellettuna pelikäännökset voivat hyötyä käyttäjakeskeisen kääntämisen opeista.

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This study applies heuristic usability evaluation to the translated, Finnish-language menus of three video games, *The Last of Us: Remastered*, *Hellblade: Senua's Sacrifice* (PC version pre-raytracing patch), and *Watch\_Dogs* (PC version). The study has two main goals. First, to discover both potential usability issues in translated Finnish video game menus as well as possible patterns in these issues across multiple games. Second, to see how well the usability heuristics for User-Centered Translation (UCT), established by Suojanen et al. (2015), can be applied to video game translations.

The lingua franca of video games and computer graphics is English, and in smaller countries like Finland we do not receive nearly the same numbers of game translations as, say, Germany does. This means that many adult gamers play their games exclusively in English as translations simply do not exist. Indeed, entire game genres exist without official Finnish translations. The games examined in this study can reveal what type of language use and possible shortcomings translated games aimed at adults may contain. Does the language follow the terminology established by users? Are there incomprehensible translation loans or neologisms that leave even an experienced gamer nonplussed?

The origins of usability studies lie in Human-Computer Interaction, and while usability is still deemed a fairly new concept in translation, HCI research goes hand-in-hand with Quality Assessment previously established for translations. Usability assessment attempts to make a

product's use as effective, efficient, and satisfying as possible; the UCT heuristics seem well poised for assessing video game translations.

The results showed that the translations were mostly usable, but it was also deemed that Finnish gaming and computer graphics terminology is in need of standardization, as even some established Finnish terms failed to appear in places they were expected. Inconsistencies were also present across the three games. Some usability issues in the translations can be attributed to client specifications and style guides. It is also possible that some translators lack in technology-related competencies for producing best possible translations of video games, or at least their more technical areas.

As for how well the UCT heuristics worked for the assessment of video game translations, some had to be omitted but the ones that were selected served their purpose well. Video game translations in general can benefit from the UCT model if it is applied in an appropriate manner.

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# 1 Introduction

This study looks at the usability of video games' settings menus that have been translated into Finnish. The main goals are to examine the usability of video game settings menus translated into Finnish and how well a set of heuristics designed for usability evaluation can be implemented in examining this type of data. A further aim of the present study is to highlight possible errors and inconsistencies in Finnish video game menu terminology appearing in video games themselves.

While the terminology of computer hardware, coding, and utility software has been fairly well established in the Finnish language for decades (with the first ontological project for IT terminology beginning in 1966 and culminating in the publication of the first dictionary in 1967 (Järvi, 1999)), the lack of Finnish translations of video games has made it difficult for more widely established (i.e., used by both gamers and games themselves) Finnish terminology for video games to emerge. A lot of the terminology used by Finnish gamers has been created by gamers themselves, with emphasis on anglicisms and lexical loans (for more on user-generated Finnish terminology of video games, see Ruottinen, 2017; for the same topic on a collectable card game, see Timonen, 2022). It could be argued that this user-generated terminology has been necessitated by the absence of Finnish in video games themselves, although as Timonen discovered, official translations do not always reflect term choices of actual users.

The topic of Finnish video game localizations was chosen as a result of very little research having been done concerning their usability. One recent study (Ihalainen, 2021) examining the usability of *Assassin's Creed IV: Black Flag* (Ubisoft, 2013) and its Finnish localization does exist, however. Furthermore, other localization studies have examined areas such as Finnish translations of



utility software (see Haapasalo & Jaatinen, 2001) and video game subtitles (see e.g., Taarluoto, 2011 and Hiltunen, 2019) as well as differences between a professional German translation and a Finnish fan-translation of a video game (Palomäki, 2015). With regard to applying usability testing methods to translations in general, this is a fairly recent phenomenon, with studies including ones conducted by Suokas (2014) and Yozgyur (2022).

Another key motivation for studying video game menus was that – as a very functional part of video games – their terminology (especially with regard to technical settings such as graphics, audio, and gameplay) and usability should be as uniform and as recognizable (i.e., intuitive; Kuutti, 2003: 13) to the user as possible across all games in order for the user to be able to navigate the menus as efficiently and as effortlessly as possible.

The target of evaluation will be any translated textual menu elements (i.e., any translated text strings; see section 3.2) within the settings menus: input prompts for the menus themselves, key bindings and explanations of in-game inputs and other control functions, audio settings, graphics setting etc.

In the following chapter, the framework of usability and its relation to translation will be introduced. The concepts of heuristics and heuristic evaluation will be discussed as well. In chapter 3, we will examine video game localization and its importance, what are its different levels and what are the requirements for and circumstances of its execution. Chapter 3 will also look at the current situation and visibility of Finnish video game localizations as well as some of the previous research that has been conducted regarding them. Chapter 4 will introduce the data and summarize the chosen study methodology. Chapter 5 comprises the analysis report, followed by a summary discussion on the findings and their possible ramifications in chapter 6.

## 2 Usability

In this section, we will discuss the concept of usability and how it relates to user interface design. We will then look at ways in which usability can be evaluated, followed by introductions of each heuristic and their application viability.

### 2.1 Defining Usability

As a specialized field, *usability research* originated as *usability engineering* from studies on Human-Computer Interaction (HCI) (Suojanen et al., 2015: 13).

Usability itself has a multitude of definitions that vary depending on the types of products or services that are being evaluated and what is emphasized in their usability. Suojanen et al. (ibid.) 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.” This definition is itself modified from the ISO definition (ibid: 14), which places more emphasis on “specified users”. As Suojanen et al. note (2015: 36), the ISO standard for usability has been criticized for its lack of mentioning satisfaction or enjoyability and, as a result, this makes the standard not very well suited for assessing entertainment products. Video games’ settings menus seem to occupy a space somewhere between instructive texts and entertainment products (see section 3.5).

Nielsen (1993: 26) presents a list of five key attributes to usability that – while not explicitly stating so – could be seen as placing focus on more complex systems with their emphasis on learnability and recurring use. Indeed, as Nielsen also notes, unnecessary complexity should be avoided when a system does not warrant it (ibid: 41–42).

Byrne (2012: 201) also offers a technically-focused definition for the usability of texts as: “When applied to texts, usability measures the extent to

which readers can read a text, understand its content and perform whatever task is required by the text quickly and accurately and the extent to which they find the experience difficult or easy.”

The text of video game menus is indeed very much focused on task execution and Byrne’s definition is quite apt. The user-centeredness introduced by Suojanen et al. bring the deeper user experience into consideration as well. These complementary definitions serve the current study well.

An adjacent concept to usability is utility. Utility places focus on *what* the user is able to do with a provided system while usability describes how *well* these tasks can be carried out by the user (Nielsen, 1993: 24–26). In game studies, affordances (i.e., what a game enables for the player to do) play a similar role to utility, and affordances have indeed been studied (see e.g., Sharritt, 2010), but the focus of this research appears to be largely on the affordances of game mechanics and in-game UIs (user interfaces). As accessibility options become more and more prevalent, there is some hope for the proliferation of research into options menus in general. In Nielsen’s wider system of Acceptability, usability and utility are adjacent to each other and form the larger concept of Usefulness (Nielsen, 1993: 25). Without dwelling too deep into Nielsen’s system, the current study will not consider utility (i.e., affordances) as forming any type of criteria for data evaluation; the emphasis in this study is not on what video game menus should contain, but on their translations and the usability of said translations.

Literature concerning usability studies has also focused on software design (see e.g., Nielsen, 1993; Byrne, 2006 etc.) but examinations on a more general level exist as well (see e.g., Kuutti, 2003). Expansion to other fields and shifts in focus have also occurred, hence the multitude of names associated with usability studies: Usability Engineering, Usability Research, User Experience Research (Suojanen et al., 2015: 13). In software development, User Experience

is often abbreviated to UX, and the software industry has employed what are known as UX Engineers, UX Developers, and UX Designers for several years.

## **2.2 Usability Evaluation**

There are two main circumstances wherein usability can be evaluated. These are *formative* and *summative* (Byrne, 2006: 177–178). Formative evaluation is conducted during the creation process of a product, and summative evaluation is carried out on a finished product. The current study is performed using finished products and is therefore a summative evaluation. Of course, with modern gaming platforms – which are nearly always online – pushing updates for already released software is an everyday occurrence; even summative evaluations can serve these “finished” products.

Usability testing itself can be performed in a variety of ways, but regardless of the evaluation method, it is preferred to conduct testing empirically (see e.g., Byrne, 2006: 179–181; Suojanen et al., 2012: 69–73; Nielsen, 1997). In Byrne’s classification, empirical testing comprises two main categories: testing which involves real users and testing which does not (Byrne, 2006: 180). There is preference to test using real users and heuristic evaluation is sometimes considered as something that should be used only in addition to user-testing (see e.g., Korvenranta, 2005; Nielsen, 2005).

The current study will nonetheless focus on heuristic evaluation to keep in line with its goals and scope. As the data used in this study is widely available (and also provided in Appendices A and B), it is not only possible but encouraged to conduct further studies with it. With the objects of study being user interfaces, different methods of user testing already employed in Translation Studies could be utilized with the games proper, methods such as eye-tracking, interviews, and written surveys. Indeed, O’Hagan and Mangiron

(2013: 312–318) have also called for additional empirical, user-based studies to be conducted on software localizations and audiovisual translations. On this, Suojanen et al. (2015: 27) further note that research on game localization (dubbed as Player Experience (PX) research) has the potential to connect Translation Studies and User Experience Research, and, as a result, also benefit audiovisual translation and other related fields.

## 2.3 Heuristics

The relevant usability evaluation method for the current study is heuristic evaluation, as this method was deemed the most appropriate for analyzing the collected data. In this section, an outline of heuristics will be provided. The application methodology will be described in chapter 4.

Heuristics are a type of checklist. While they are not commonly applied in translation, some research does exist (e.g., Suokas, 2014). More commonly, translation tends to employ other types of checklists, namely *quality checklists* and *style guides* (Suojanen et al., 2015: 77). In heuristic evaluation, the usability of a product is evaluated against a list of guidelines and rules (i.e., heuristics) to which the product in question must adhere (Kuutti, 2003: 47). In the early days of heuristic evaluation, these lists could comprise hundreds of rules, which did not make their application very practical, and more compact lists are indeed favored in contemporary heuristic usability evaluation (ibid.).

Heuristic evaluation can be performed at any stage of product development, which is why it has been widely used in iterative design processes. In these formative evaluations, a prototype is evaluated against a set of heuristics, after which shortcomings and problems that were discovered are addressed, which in turn leads into a new prototype that can be evaluated (Kuutti, 2003: 48).

Myriad heuristics exist for evaluating all kinds of different products, services, and interfaces. The ones relevant to the current study are the ones that relate to evaluating texts, and translations specifically. The basis for many of these lists are the usability heuristics established by Nielsen and Molich (1990). Many modified versions of this list exist, with some of them having been created by Nielsen himself. Using the so-called Nielsen's list as a base, Suojanen et al. (2015: 90) have created their own list of heuristics to evaluate the usability of translations (see Table 4 on page 46). These heuristics were in part created to serve the User-Centered Translation model, the focus of their eponymous book. These are also the heuristics which are employed in the current study.

As is often the case with heuristic evaluation, existing heuristics will need to be modified to better suit the material that is being evaluated (Korvenranta, 2005: 122). In chapter 4, each usability heuristic introduced by Suojanen et al. will be explored individually and their suitability for evaluating these particular data will be assessed.

Furthermore, heuristic evaluation usually involves a severity scale which is used to measure the extent that a found issue might affect usability. Nielsen (1993: 103) presents a sample scale as follows:

0 = this is not a usability problem at all

1 = cosmetic problem only – need not be fixed unless extra time is available on project

2 = minor usability problem – fixing this should be given low priority

3 = major usability problem – important to fix, so should be given high priority

4 = usability catastrophe – imperative to fix this before product can be released

Severity ratings are not always provided by those who report the usability problems themselves. For instance, problems found in user testing can be

separately rated by usability experts based only on descriptions of problems. With regard to expert evaluation, Nielsen (1993: 103) and others (see e.g., Kuutti, 2003; Sinkkonen et al., 2006) recommend that expert evaluation is conducted by multiple usability experts in order to establish a mean rating; relying only on a single evaluator's opinion is usually not enough to judge problems reliably. Although an obvious deficiency in the current study with the author being the only evaluator, it should be noted that the evaluation and severity ratings are supplemented by deeper analysis; more than brief descriptions of found problems and numbers for their severity are provided in this study. Furthermore, as a summative evaluation conducted by a third party, all reasoning for observed usability problems can be freely contested.

**Table 4:** The usability heuristics for User-Centered Translation (Suojanen et al., 2015: 90):

1 Match between translation and specification	Why is the translation needed and does it fulfil the requirements defined in the specification?
2 Match between translation and users	Who are the users of the translation and how do their characteristics affect translation solutions? Are there possibilities for supporting different kinds of users? Do the textual choices reflect the information needs of the users?
3 Match between translation and the real world	Is the translation aligned with its cultural context? Is cultural adaptation required?
4 Match between translation and genre	Does the translation match the conventions of the genre in question? Are the visual, auditory and other multimodal elements appropriate for the new context?
5 Consistency	Is the translation consistent in terms of style, terminology, phraseology and register?
6 Legibility and readability	Do the visual elements of the translation correspond to the reader's physiological capabilities and relevant cultural guidelines? Is the user guided through the translation by using appropriate signposting for the genre in question? Are the user's efforts of interpretation sufficiently minimized?
7 Cognitive load and efficiency	Is the translation well crafted enough to be easy to memorize and learnable – that is, clear and comprehensible? Do the users need guidance for using the translation and, if so, in which format?
8 Satisfaction	Does the translation produce a pleasurable and/or rewarding user experience?
9 Match between source and target texts	Has all relevant source material been translated? Is there unwanted linguistic or structural interference?
10 Error prevention	Have the potential risks of misunderstanding been minimized?

Who performs heuristic evaluation then? According to Kuutti (2003: 49), there are three types of evaluators. One is the layman, who has no experience or expertise in either usability evaluation or the product, and, on average, this type of evaluator usually discovers only 22% of possible usability problems. Another type of evaluator is the usability expert, who is familiar with usability evaluation, but not the product. This type of evaluator can nearly double the amount of discovered usability problems. The third evaluator type is the so-called *dual expert* who is familiar with both usability evaluation and the product.



In the next section, we will look at each heuristic more closely and assess if and how each one will be applied in the present study.

## **2.4 The UCT Heuristics**

The usability heuristics for User-Centered Translation were introduced in section 2.3 and they form the basis of the heuristics applied in the current study. This section presents all the heuristics in order, prefaced with their summaries as authored by Suojanen et al. (2015: 90; see also Table 4 on page 46). Each heuristic's application and how it relates to video games will be explained in more detail in their respective sections.

Some modifications were deemed necessary due to the fact that the current study is academic in nature and the assessment is not part of an actual translation assignment. While issues will be highlighted in the Analysis section, the expectation of improving the translations proper is not there. Indeed, some of the heuristics were excluded from the analysis entirely, and reasons for these exclusions will be explained in the sections of the respective heuristics.

### **2.4.1 Match between Translation and Specification**

Why is the translation needed and does it fulfil the requirements defined in the specification?

(Suojanen et al., 2015: 90)

As the analysis is performed summatively by a third party after publication (see also 'end-of-the-line' problem in Suojanen et al. 2015: 17–18), the first heuristic in the list cannot be applied in a manner that would make sense. There is no

access to a client-provided specification, for example, meaning that the first heuristic in the list becomes mostly moot. Although in the case of our only console game (TLoU in this case), it would be possible to check for some of the platform-specific terminology compliance, at least to a certain extent, by comparing TLoU's Finnish terminology against the PlayStation 4 console's own user manual<sup>1</sup>. However, this type of comparison would not be in any way a definitive specification check and most assuredly not in line with the first UCT heuristic in the absence of a proper client-provided specification. Similar comparisons would be impossible to conduct on the two other games as well, as the data was collected from their PC versions, and there simply does not exist a publicly available user manual of this type for PCs. Publishers who release games on PC most likely do have their own style guides and terminology glossaries for the PC versions of their games, but for internal use only.

An important part of specification when developing software for bespoke platforms is terminology (Roturier, 2015: 127). Platform holders in the technology space (not only Sony and Microsoft with their video game consoles, but also companies like Google and Apple with their Android and iOS platforms respectively) can be very particular when it comes to terminology that is specific to their respective platforms. For instance, the small sticks that are found on both PlayStation and Xbox controllers are always referred to with certain terms, which are *analog stick* for PlayStation, and *thumbstick* for Xbox. As part of brand-recognizability, companies want to make their products distinct by using terms specific to their hardware and software. As Chandler & Deming (2012: 81) note, software released on a bespoke platform is checked by the platform holder for terminological compliance during their approval processes. Naturally platform

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<sup>1</sup> PS4 user manuals are available digitally at <https://manuals.playstation.net/document/en/ps4/index.html> (English) and <https://manuals.playstation.net/document/fi/ps4/index.html> (Finnish).

holders also decide on the translations of these terms. Sometimes brand-recognizability is seen as important enough that something is left untranslated as well. This has been done with PlayStation's Trophy system (see also section 5.1.1). The word *trophy* is used as is in all languages, meaning that the pop-up notification "You have earned a trophy." is displayed in Finnish as "Olet ansainnut trophyn."

This is all referring to closed platforms such as video game consoles and specific storefronts. While Microsoft enforces terminology compliance on the Xbox platform, programs made for Windows are not subject to such rules (barring commercial software which the developer and/or publisher wishes to have specifically certified), as anyone can write a program for Windows and distribute it as they wish. While the Microsoft Style Guide does offer preferences and guidance for localization, it is not a requirement for localization companies to use the guide for programs running on Windows.

Furthermore, the explanation for the first heuristic does also present the question of why the translation is needed, to which a simple answer (much as with any localization of a video game) would be: "To serve Finnish gamers interested in these genres." The question of who these particular gamers are will be explored in section 2.4.2, but it should suffice to say that any translation is done in order to reach a wider audience, and in that sense the Finnish localizations of all three games fulfil their purpose.

To conclude on the first heuristic, compliance with terminology and other specifications are checked as part of any platform holders' own verification processes. These checks would serve a formative evaluation (see section 2.2). As the current study is a summative usability evaluation and there is no access to something like style guides that dictate client specification, the first heuristic in the list of UCT heuristics will not be applied in the analysis.

## 2.4.2 Match between Translation and Users

Who are the users of the translation and how do their characteristics affect translation solutions? Are there possibilities for supporting different kinds of users? Do the textual choices reflect the information needs of the users?

(Suojanen et al., 2015: 90)

To answer the first question posed in the heuristic, the age rating of the three games (PEGI 18) alone delimits the users to adults, and these users would be quite used to playing video games in English (see section 3.4). A hypothesis at this point could be made that the translations might contain some instances of not only translation loans, but also lexical loans (see section 3.6). Even a lexical loan would not necessarily constitute a usability issue, as the term would be recognizable to the target user. Some gaming-related terms, especially on the technical side, do not have commonly used Finnish equivalents with which Finnish gamers are familiar, but English terms are present in video game menus and in Finnish gamers' parlance as lexical and special loans. Because of this English dominance, some Finnish terms (especially less intuitive translation loans) in a translated game might be completely incomprehensible to a Finnish gamer who is used to the English terms. A specialized Finnish equivalent, then, should be either highly intuitive and transparent or "decodable" (see also Bédard, 1986: 92) as a loan translation. Because of the focus on function and purpose (skopos) in user-centeredness, non-translation is also a viable option (see also Vermeer, 1989).

Nielsen (1993: 124) also supports the idea of using terminology that users themselves are accustomed to using:

To speak the users' language does not always imply limiting the interface vocabulary to a small set of commonly used words. On the contrary, when the user population has its own specialized terminology for its domain, the interface had better use those specialized terms rather than more commonly used, but less precise, everyday language [Brooks 1993]. Even for the general population, specific, distinguishing words are better than bland words.

However, usage of these kinds of terms is very much contingent on video game translators having adopted a user-oriented model. One could hypothesize that the characteristics and information competences/needs of Finnish adult gamers are rarely reflected in the translation solutions of video games that are targeted towards this adult audience. The desire to serve as wide an audience as possible – video games are usually a commercial enterprise, after all – will most likely take priority over serving a game's target audience proper.

Some definitions of localization (see section 3) contain notions about expectations, which raises a relevant question. What are the linguistic expectations of Finnish gamers when they buy a video game? Some do not see a need for Finnish translations of video games, with some going even as far as thinking that video games should not be translated into Finnish at all (Jarva, 2017).

Regarding the target audience, a major aspect of user-recognizability of terms and other aspects of a UI is intuition. Rubin and Chisnell (2008: 4) describe intuition relating to usability in the following manner: “when a product

or service is truly usable, the user can do what he or she wants to do the way he or she expects to be able to do it, without hindrance, hesitation, or questions.” In addition to expectations, Kuutti also notes previous experience as fundamental to intuition, stating that when a user encounters a new product that resembles other products with which they have previously interacted, the new product is familiar to the user and they intuitively know how to use it (Kuutti, 2003: 13). Unfortunately, intuition is also very subjective, as something familiar to one user may be completely foreign to another (ibid.). Very few guarantees can therefore be given regarding the intuitiveness in the observed UIs and terminology. While a deficiency in the current study, this is an area that would greatly benefit from user-based testing. However, the delimitations of the data (target audience and genre) used in this study are there precisely for that reason: to provide some level of consistency to intuitiveness and related recognizability with regard to the target audience.

To conclude on the second heuristic, the match between translation and users, by the very nature of video games, can only occur successfully if the appropriate steps are taken during the game’s development, which is not always the case. The realities of video games as commercial products can also deter translators from using terminology that a game’s audience expects and is accustomed to, effectively creating a mismatch between a translation and its users.

### **2.4.3 Match between Translation and Real World**

Is the translation aligned with its cultural context? Is cultural adaptation required?

(Suojanen et al., 2015: 90)

As menus in video games are largely dedicated to the adjusting of technical and mechanical aspects of games, usually very little cultural adaptation is needed when translating them. What also speaks to the homogeneity of Western gaming audiences is the homogeneity of video game marketing. Same ad spots and trailers are usually presented to the entirety of Europe, or at least the Anglophone regions. Bearing in mind that relatively few games are translated into Nordic languages, many of the larger publishers likely see Northern Europe as belonging to the Anglophone audience.

Something that could be considered as cultural adaptation for video game menus is the switching of functions between the Cross and Circle buttons in Western and Asian releases of PlayStation games (see section 3.2), as well as changes in some on-screen icons between Windows and MacOS operating systems. Another possible scenario for adaptation is the use of periods and commas as decimal separators. As opposed to the English-speaking world's usage of the period, most countries in mainland Europe use the comma as the decimal separator. Where this may manifest in video game settings menus is in resolution scaling where a multiplier (1.2, 1.7, 2.0 etc.) is sometimes used in place or along with resolution numbers. The former symbol changes and the latter scaling options are not present in any of the three games examined in the current study, however.

Due to the reasons examined above, this heuristic will not be applied in the current study. However, the heuristic could very well be applied in studies looking at, for example, narrative elements of games or versions of games where the cultural divide is greater, such as Japanese-made games that have been localized for the West and vice versa. Several Japanese games over the years have been censored when they have been made available to foreign markets, with the cuts in content sometimes having gone as far as removing

entire narrative branches and gameplay sections. Another potential area of study would be ports of a single game on different platforms as the differences between control methods can vary greatly depending on the console the game is played on.

#### **2.4.4 Match between Translation and Genre**

Does the translation match the conventions of the genre in question? Are the visual, auditory and other multimodal elements appropriate for the new context?

(Suojanen et al., 2015: 90)

The fourth heuristic presents some issues as well. Because the amount of video games with Finnish localizations is not very high (see section 3.4), and with the delimitations of the current study, the material and its genre could be described as a niche of a niche. If Finnish localizations are not very numerous, then Finnish localizations of third-person action games targeted towards adults are even less so. What, then, would be the genre conventions against which the translations could be compared? As this study examines what appears to be a rather uncharted territory, an argument could be made that the genre is being defined (at least in part) by this study. Or perhaps it would be less presumptuous to say that the genre is being *sought* in this study.

While video game menus sometimes take different kinds of users into account through the more streamlined menu options and the Advanced Settings menus (see sections 3.5 and 2.4.2), it is usually the only way in which this happens. On both PC and consoles, an original English-language game that is targeted towards children may still contain in its Advanced Settings menus



terms like *anti-aliasing*, *screen-space ambient occlusion*, *dynamic range* etc., sometimes with no tooltips at all, making the task of adjusting some settings quite difficult for both children and those not familiar with these terms. A usability study of child-targeted games is called for here; is the terminology of English-language games so consistent that it presents usability issues to certain demographics? Is the terminological consistency across all English-language video game menus such that it forms a genre of its own? Of course, many of these potential usability issues can be alleviated with tooltips, which still can be there to serve the novice users. The consistent terminology in turn assures recognizability of terms for experienced users.

This similar type of consistency is what Finnish translations of video game menus should be striving for as well, as it would serve the users in a similar manner to their English-using counterparts. Because this study aims to discover the genre-specific terminological conventions of Finnish video game menu translations, the fourth heuristic will not be applied in the study. Rather, focus will be placed on Consistency, the next heuristic on the list.

#### **2.4.5 Consistency**

Is the translation consistent in terms of style, terminology, phraseology and register?

(Suojanen et al., 2015: 90)

In technical writing and translation, consistency is extremely important, and as Nielsen notes, also one of the most basic usability principles (1993: 132). While Nielsen is focused on usability design in a more general sense, the rules of consistent UI design apply to the linguistic aspects of UIs as well. Similar to a

button labeled “OK” always acting in a similar manner, reserving a singular term for a singular concept is one of the key aspects of an ideal term (Sager, 1990: 89–90), although in the real world, variance occurs constantly (Pasanen, 2009: 30).

Terminological consistency helps users understand different texts that deal with the same topic, from video games themselves to troubleshooting guides and even marketing material. Consistency also helps users in understanding each other; with video games and other technology-oriented fields, consistency helps with troubleshooting possible issues that a user might encounter, whether the issue is related to software or hardware. For instance, when encountering a technical problem, a user may be able to find an online forum post (and solution) regarding a similar problem on one of the myriad PC and gaming-related websites. This information will be more discoverable if the terminology regarding the problem is used consistently. Being able to use terminology that all other users are familiar with helps not only with communication but also with finding solutions.

For the purposes of the present study, this heuristic’s application will differ somewhat from how Suojanen et al. present it as. In this study, consistency will not only be evaluated within a single work (game) but with comparisons between the different games. This methodology was chosen because the vast majority of textual elements present in video game menus appear in a single game’s menus only once. This would lead to somewhat misinformed consistency rates approaching 100%. It was deemed more appropriate to gather an (admittedly limited) cross-section of terminological consistency within a certain game type.

In summary, consistency will be examined in a way that shows how well it occurs across the three games. As a delimitation, consistency will be studied by looking at translations that refer to identical *concepts*. The focus on concept

stems from the fact that, despite the subject matter’s technical nature, variance occurs even in the original English terminology, with a single concept being referred to with different terms or with slight alterations of a single term, which once again goes against Sager’s ideal terms (1990: 89–90). An example would be *vertical synchronization*, which appears as different abbreviations in different games: as *V-Sync* in *Hellblade*, and *Vsync* in *Watch\_Dogs*. In these instances of term variance, all English variants will be counted as a single item but all of them will still be noted as-is in the comparison list. Only the differences in the Finnish translations will be evaluated and discussed (see sample below).

Sample of the comparison list. With no option to toggle V-Sync (vertical synchronization), the column for *The Last of Us* is left blank. Note the bracketed abbreviations in the **EN** column. [Hb] stands for *Hellblade: Senua’s Sacrifice*, [WD] for *Watch\_Dogs*, and [TLoU] for *The Last of Us*. See Appendix B for the full list.

<b>EN</b>	<b>Hellblade FI</b>	<b>Watch_Dogs FI</b>	<b>The Last of Us FI</b>
V-Sync [Hb] / Vsync [WD]	V-synkronointi	Vsync	-

One caveat regarding this methodology is that comparisons can only be made between concepts that are present in more than one game. Even though all three games overlap in their gameplay genres, their settings menus are far from identical. Hardware utilization, control methods etc. can vary greatly between discrete games even if they were released on the same platform. In addition to discussing any notable instances in the analysis section, a complete list of these consistency comparisons is available in Appendix B.

As mentioned in the introduction, many technical terms relating to video games do not have established Finnish equivalents as so few games have been translated into Finnish. With this in mind, consistency also ties into cognitive load and efficiency in that in cases where an English term lacks an established equivalent and several possibilities exist, it may prove difficult for a translator whether to choose the more established but technical and opaque lexical-loan-

turned-special-loan, or the cumbersome, but perhaps more transparent, loan translation. It should also be noted that being an established equivalent does not make a term infallible, and Nielsen (1993: 90) also notes that flexibility should be maintained to avoid forcing bad design (or terminology in this case) upon users for the sole purpose of maintaining consistency.

#### **2.4.6 Legibility and Readability**

Do the visual elements of the translation correspond to the reader's physiological capabilities and relevant cultural guidelines? Is the user guided through the translation by using appropriate signposting for the genre in question? Are the user's efforts of interpretation sufficiently minimized?

(Suojanen et al., 2015: 90)

As far as their visual representation and possible special effects are concerned, there are nearly as many types of video game menus as there are video games. While video game menus do not have industry-wide standards per se, they tend to follow the gestalt principles (see section 3.5).

Layout, orientation, and size of menus rarely change significantly between different language versions of a single video game. Usually the most apparent visual change (aside from changes in character sets) occurs with languages that are read from right to left, such as Arabic. In most cases, with languages that use the same script (as how both English and Finnish use the Latin script), the same font is used for all languages.

With regard to things that may negatively affect legibility and readability, some games employ unconventional fonts, and some games also feature highly

stylized animations in their menus, with sweeping effects covering the entire screen when transitioning from one menu screen to the next. Examples of games like this include *Dishonored* (Bethesda Softworks, 2012) and *Persona 5* (Deep Silver, 2017).

Especially when playing older PC games on modern hardware, legibility is sometimes compromised due to modern high-resolution screens, especially on physically smaller screens. The size of text and icons in the menus and HUDs of older games are sometimes fixed, meaning that when these games are played in high resolutions that were not originally intended, the low-resolution menus and HUD elements can appear extremely small. That is, if they were not designed to scale across highly varied resolutions.

Aside from re-releases (often in the form of remasters or complete remakes), a video game receiving fixes for these types of issues is often left to the game's fan community which may provide modifications – or *mods* – for a game. For example, without community-created mods, *Deus Ex* (Eidos Interactive, 2000) cannot be played in resolutions above 1080p. Additionally, when played in 1440p, the game's HUD elements and their associated texts appear very small without UI scaling. Using the same community-created mod package that enables higher resolution rendering, the HUD can also be set to twice its original size (and even larger) while playing in 1440p resolution.

Although it should be noted that even modern games sometimes suffer from such small font sizes for HUDs and subtitles that some people may have trouble reading them from an otherwise comfortable viewing distance. In recent years, however, more and more game developers have started adding accessibility options to their games, such as adjustable font sizes for HUDs and subtitles, alternative color modes for the color-blind etc.

In the context of video game menus, the question regarding the user being guided through the translation can be tied to the layout of the menus.

While no set standards exist for the structure of video game menus, some gestalt norms of general UI design are usually followed. The Audio category usually has all the options that relate to sound, speaker setup etc. The Video section contains anything pertaining to the visual output of the game. Under Gameplay one usually finds the options to adjust difficulty, change which key/button executes which command etc. One inconsistency often found in video game menus is the location for subtitle options. Sometimes they can be found under Audio, as they relate to spoken dialogue. Sometimes they are placed under a separate Language or UI menu, or, more recently, Accessibility, where one may also find the option to adjust the size of the subtitles.

Possible issues with Finnish versions of games may arise from the fact that – much like in German – words in Finnish tend to be longer than their English equivalents, so any additional space, scalability, and text scrolling in menus and UIs are seen as more than welcome (Chandler & Deming, 2012: 133). Furthermore, translated text tends to be about 30% longer than the original (ibid.). Space limitations in menus and UIs may lead to either involuntary truncation (text being cut off) or bleeding (text crossing over its reserved space). If scalability and text scrolling options are not available, and in the absence of shorter alternatives, abbreviating words becomes the only possibility, which may increase the player's efforts of interpretation. Of course, the gaming and tech spaces are rife with abbreviations and initialisms, which can be seen as supporting the idea that adult gamers should not have too much trouble understanding the occasional abbreviation, especially in context.

## 2.4.7 Cognitive Load and Efficiency

Is the translation well crafted enough to be easy to memorize and learnable – that is, clear and comprehensible? Do the users need guidance for using the translation and, if so, in which format?

(Suojanen et al., 2015: 90)

One of the key ways to reduce cognitive load of a user of software is tooltips. They help in reducing the cognitive load placed on the user by having explanations of functions and features always readily available, meaning that the user does not have to memorize everything at once from, say, a separate user manual. Some games employ this design in their HUDs as well for context-sensitive button prompts by displaying what a button does at a given moment (Joyce, 2019). The presence and implementation of tooltips in the three games will be examined in more detail in the Analysis section.

With many gaming-related terms lacking commonly used Finnish equivalents, some terms (especially initialisms) may actually be easier to parse when left untranslated, especially in cases where there are no tooltips to provide contextual information. With only a single term at their disposal, a user searching for the English term online could be more likely to find answers to a problem than if they were to search for the term's Finnish equivalent (or one possible equivalent of many due to the lack of set terminology). Modern technology does help here, as search engines usually provide the ability to display results in languages that differ from the one that was used to write the search query, meaning that a user could search for an English term but tell the search engine to display on Finnish results, which could help the user in finding discussions and explanations about the term in Finnish.

As noted, technology-related issues are often discussed online with their English terms, providing a measure of standardization in lieu of established Finnish terms. However, more information may still be available in other parts of the Internet in Finnish, but written using a different term, which would result in a rather unfortunate situation where information makes itself unavailable due to the lack of standardized Finnish terminology.

Translating (and abbreviating in cases of very long terms) could lead to Finnish terms that are either unintuitive or completely opaque, resulting in terms that are incomprehensible to both experienced and novice users. With modern games, developers often strive to contain all the necessary information within games themselves. Advising the user to consult a printed manual or a readme file is something that modern games do quite rarely. With this in mind, when an oversight occurs and all the necessary information is not found within the game and there is no manual or readme file to consult, the user will have to find the information somewhere else, which can further exacerbate the usability issue: the user must search for the information, retain it, and apply it, all of which places a cognitive load on the user. Instances of this will also be counted for in the analysis.

#### **2.4.8 Satisfaction**

Does the translation produce a pleasurable and/or rewarding user experience?

(Suojanen et al., 2015: 90)

Because satisfaction is a highly subjective metric, it is not always easy to determine what would constitute a pleasurable or rewarding user experience in



the context of video game menus and their translations. Aspects that might effect success in this heuristic for video game menus are feedback for the menu browsing experience and accuracy of the translation.

With regard to feedback, visual and auditory effects can also be applied to video game menus, not only to the games proper. Sound effects, responsiveness, and animations can be used to make browsing menus more pleasurable. Even something simple like the tone of a sound effect that plays when scrolling through different options is something that may affect user satisfaction. Conversely, slow response times (i.e., input lag) and sound effects that the user finds annoying may have a negative effect on the user experience.

Sample feedback is a concept has been used for audio settings menus for decades; in many video games and utility programs, when a volume slider for a particular type of audio (sound effects, spoken dialogue, music etc.) is adjusted, a sample clip is played using the chosen volume level in order to let the user hear how loud that particular volume level will be. Some games go even as far as allowing volume adjustment for individual characters, an option especially common in visual novels, where listening to character dialogue is at the center of the experience.

As for the satisfaction stemming from the translation of a video game menu, accuracy could be the most critical metric here. That a setting communicates its purpose clearly and accurately is crucial to a satisfying experience. When a setting is present in a menu, its function should be immediately obvious, and its adjustment should not leave the user doubting.

### 2.4.9 Match between Source and Target Texts

Has all relevant source material been translated? Is there unwanted linguistic or structural interference?

(Suojanen et al., 2015: 90)

For a definition, **source language interference** has been described as “a projection of unwanted features from one language to the other” (Hansen, 2008: 279). The operative word here being *unwanted*, as direct lexical loans – or perhaps *lexical transfers* – may still work as valid translation choices. However, a notable caveat here is that even within the context of video games, what some users may consider interference, others may see as natural expression. In such a source-language-driven text type as video games, what is considered interference can be subjective at best and contentious at worst. Therefore, source language interference must be regarded on a case-by-case basis. Furthermore, and to address a deficiency in this methodology, the average user’s familiarity with each term is by no means a constant and only educated assessments can be made.

### 2.4.10 Error Prevention

Have the potential risks of misunderstanding been minimized?

(Suojanen et al., 2015: 90)

In the context of video game menus, error prevention can be taken into account on several levels. With regard to their translations, error prevention

can begin during the original program's design stages with internationalization. A translated version may also provide additional information and explanations that the original language version does not, provided that such additions are possible for the localized versions. Another part of error prevention is Quality Assurance (QA) for the localized versions in the form of linguistic testing. As with the functional aspects of software, linguistic testing can comprise several rounds of testing (Chandler & Deming, 2012: 237) and linguistic bugs are fixed in order of severity (ibid: 245). With no access to development documentation, however, it is impossible to determine if and what manner of steps were taken during the three games' development for this type of error prevention.

Furthermore, no additional information is provided in any of the translations that were examined in this study, as the translations follow the source language originals very closely in terms of content. Error prevention in all three games only goes as far as it does in the original English versions.

On a more general user-centered design level, clearly marked exits and so-called *undo* options, as well as the ability to revert back to previous system states should also be options that are included in all possible systems (Nielsen, 1993: 138). While not error prevention per se, systems should be designed with the idea that users will most assuredly make errors and ensuring easy ways of going back from these errors should be a basic principle in any system's design (ibid.).

With console games, going back to previous menus and *undo* options usually take the form of a system-wide *back* button that is used in a similar manner in all games and software released on a given platform. This would be the Circle button for PlayStation and the B button on Xbox. The Circle and B buttons are also located in identical positions with relation to other face buttons on each console's controller, this being the rightmost face button on both platforms. With PC games that usually support keyboards as well, the *back*

function is usually relegated to either the Escape or Backspace key, sometimes both. Separate on-screen buttons for this function may also be provided for when a mouse is being used. Another option often seen in video game menus is the *Restore Defaults* option with which an entire set of options can be restored back to their default values.

Error prevention is a difficult heuristic to assess as a separate heuristic for a summative study. Other heuristics already cover most possible aspects relating to errors, and the information regarding error prevention that took place during the games' localizations is not publicly available. The three games examined in this study also do not present any changes in UI layouts or sectioning of menus between different language versions. Because of the above reasons, Error Prevention is not included in the heuristics employed in this study.

### 3 Video Game Localization

With regard to the translation of software, whether it be utility software designed for practical and creative work, or entertainment software such as video games, translation is but one part of a larger whole known as localization. Localization “entails adapting a product to the linguistic and cultural expectations of the target locale” (Hartley, 2009: 107). Furthermore, the localization of something as multimodal as video games deals with several other fields as well, as noted by Esselink (2000: 4) who states that “Translation is only one of the activities in localization; in addition to translation, a localization project includes many other tasks such as project management, software engineering [i.e., coding; see section 3.2], testing, and desktop publishing.” While there is clearly a lot more to software localization than simply translation, the current study focuses on translation to keep in line with its aim and scope.

Because video game menus are a part of the software itself, most video game localizations that are translated to any extent have had their settings menus translated as well. It is somewhat difficult to classify what type of text settings menus are as they differ from all other texts found in video games. They do not exist in the fictional worlds of games (i.e., they are not *diegetic texts*), but their usage can affect one’s enjoyment of a game. They are not manuals either, as their function is not to tell the player how to play the game. Settings menus could be seen as a combination of informative and instructive texts that enable entertainment. They usually contain information about the options they present. Sometimes they present guidance on suitable settings for specific hardware configurations as well. One could say that the overall purpose of settings menus is to make a game as playable (or *usable*) to the player as possible.

Because menus in video games serve this very functionalist purpose, usability evaluation and user-centered translation (UCT) were deemed as suitable frameworks in which to study their translations. The application of usability research on translation was conceived originally from functionalist translation theory which focused on the *skopos* (purpose) and *function* (Schäffner, 1998: 2) of translations as well as on the users of translations. Functionalist theory in turn is largely based on the skopos theory, originated by Hans Vermeer (1989). As functionalist theory places emphasis on the purpose and function of translations, the study of translations' usability and UCT can be seen as natural extensions of this theory (Suojanen et al., 2015: 1-3).

Because this study examines particular localizations from a usability perspective, it is important to understand what localization and usability are. In this section we have looked at localization's definition. In the next section, we will examine the scope that localization can take. Sections 3.3 and 3.4 will examine the relation of video games to Finland and the proliferation of Finnish game localizations respectively. In section 3.5, a more detailed look at video game settings menus, followed by an examination of previous research done into Finnish video game localizations in section 3.6.

### **3.1 Localization and Its Extent**

One crucial thing to bear in mind when it comes to the localizations of video games is the extent to which localization is performed. O'Hagan and Mangiron (2013) introduce two levels of localization: *full localization* and *partial localization*. According to them, a full localization "involves translating all assets of a video game, including the audio files and cinematic scenes, which are re-voiced" (ibid: 7). The *Ratchet & Clank* as well as the *LittleBigPlanet* series have both seen games with full Finnish localizations. Both series are targeted

towards younger audiences (all the main entries in both series have a PEGI rating of 7) and both can be considered as flagship titles on the PlayStation platforms (both series are published by the platform holder itself), so their receiving the full localization treatment is understandable. Not all the games in these series have been localized into Finnish, however, such as the earliest entries of *Ratchet & Clank* on the PlayStation 2 home console.

The other type of localization, the partial localization, “involves translating all text-only assets but preserving the original soundtrack of a game, i.e., without re-voicing in the target language” (O’Hagan and Mangiron, 2013: 9). This would include translating the texts in menus and UIs, as well as the subtitles. It would be prudent to have partial localization also include video games that only have translated subtitles for voice lines or only translated menus and UIs (user interfaces) but not both. An example of this type of partial localization would be the Finnish localization of *Assassin’s Creed 3* (Ubisoft, 2012), which only includes Finnish subtitles for voice lines and no translations for UI elements, menus, or diegetic texts. This is the case for other Nordic languages available in the game as well. Furthermore, unlike this original release, the subsequent re-release, entitled *Assassin’s Creed 3 Remaster* (Ubisoft, 2019), has no support whatsoever for Finnish or any other Nordic languages.

Another type of partial localization is the ‘box and docs’ localization. Here, only the game box and the accompanying documentation (i.e., the game manual) are translated (O’Hagan and Mangiron, 2013, 142.). During the last two decades, however, printed game manuals have all but disappeared and very few publishers ship physical copies of games on any platform with manuals as it is far less costly to have all the necessary documentation contained in the game itself, either as guides within menus or as in-game tutorials that familiarize the player with the game’s mechanics. It is quite common these days to find only a small slip of paper with legally mandated health warnings inside a game box.

Localizations in the 'box and docs' category were actually quite common in the Nordic countries (possibly other smaller markets as well) during the 1980s and 1990s, an observation shared by Dietz (2006: 125), who adds that "complete localization and simultaneous or near-simultaneous launch of several language versions have now become much more prevalent." Regarding Dietz's mention of "complete localization," this is referring to the EFIGS (English, French, Italian, German, and Spanish) space, where complete localizations are much more common than in smaller languages. But on the whole, the situation where a video game receives *only* a box and docs localization has become quite rare.

An important preparatory process for accommodating localization is the concept of internationalization, a specific stage in software design wherein steps are taken during development to make the software easier to localize (Esselink, 2003: 68). As an overview of developments in internationalization, game engines and other development tools are becoming more suited to supporting translation and a wider range of languages, making internationalization ever easier. Translation software is becoming more robust and easier to use as well. With these developments in mind, it is no surprise that increasing numbers of languages are seeing video game translations.

Despite the growing numbers of Finnish game localizations, specific publications dealing with guidance for translation and localization of software into Finnish are very few in number (literature regarding software localization in general is readily available, however). A rare exception here is the *Microsoft Finnish Style Guide* (Microsoft Corporation, 2017), which is publicly available. This style guide is "intended for the localization professional working on localized products that run on a Microsoft platform" (ibid. 4). There are also a number of prescriptive publications for video game localization (see O'Hagan & Mangiron, 2013; Bernal-Merino, 2015; Chandler & Deming, 2012), with some of them



taking into consideration languages other than English and Japanese, two of the most dominant languages in the video game localization. With the rise of peripheral languages for video games, this study also aims to be a part of ongoing efforts to increase both the number and the quality of Finnish video game localizations. On a final note, the *Microsoft Finnish Style Guide* (as well all its other language versions) does present interesting avenues for possible localization research for studies focusing on software made for Windows.

### **3.2 Peculiarities of Video Game Localization**

Tying the interactivity of video games to their subject matter (i.e., game mechanics to narrative elements) can be an extremely challenging task regardless of the game's genre. When a multimodal product like this needs to be made usable by a completely different audience (in terms of language and culture at least) a highly varied set of skills is required. In this section we will consider some of the skills and caveats of video game localization.

While the localization of video games might not differ from the localization of traditional software to a great extent, video game localization still presents its own challenges. This sentiment is also pointed out by game localizer Riikka Karhila (Timonen, 2018: 10) who adds that even though the process of game localization is virtually identical to software localization, the end product in game localization can differ from the original to a significant extent. The statement is somewhat vague but presumably Karhila is referring to the liberties that game localizers sometimes have to take in order for things like allusions and idioms make sense in the target language. Karhila also mentions the need of game translations to be of high quality so as to not break the player's immersion. Indeed, certain types of video games often strive to have

their UIs be as non-intrusive and as “invisible” as possible in order to have the player achieve maximum immersion.

One could argue that video game UI design and its goal of immersion tie to the fundamentals of product design, specifically to user-centered design (UCD), where product designers consider the user from the very beginning. A poorly designed or poorly localized UI in a video game may cause issues even for an experienced player. Dray and Siegel (2006: 283) raise this point as well on a more detailed account of designing a UI for a printer, a case in which they encountered “the very common situation in which navigation in an interface require[d] an understanding of the underlying architecture of the software or other technical factors.” A situation like this is very much not desired for UI design in video games (This is where simulators and other *serious games* differ from video games in design; realism can take priority over intuitive design).

*Information retrieval* may not be specific to game localization, but it is one of the core skills of a translator. As no individual can know absolutely everything, and few translators are skilled experts in every field that their STs (source texts i.e., the original texts that are being translated) deal with, a translator needs to be skilled in looking up and confirming definitions for words with which they are not familiar. Sometimes this can be a time-consuming process, such as when a particular word or term does not have a commonly used equivalent in another language, or when there are several seemingly equivalent options, all with slightly different nuances. Chasing the optimal choice may involve varied steps such as several lookups of synonyms, near synonyms, consulting the client, consulting an expert, accessing a database that requires a paid license to use etc.

*Coding* is not always associated with translation. Even in the case of video games and utility software, their translations are often done onto a simple spreadsheet, which the developer can apply to the software that is being

localized. In an explanation of the process, Heimburg (2006, 139) specifically refers to MMORPGs (Massively Multiplayer Online Role-Playing Games; games where many players play at the same time in one expansive world), but this process is very similar for translating other types of games as well:

The text of a localized MMORPG is stored in the form of “strings.” In programming terms, a string is text that is stored and manipulated as a group. A string might be a sentence, a paragraph, or just a single word — it can be any amount of text. The size and contents of a string depend on its context, function and meaning. For instance, the string for a button label might consist of a single word, such as “OK,” whereas the string for a subtitle in a cutscene might be a long speech by a game character. Every bit of text in a localized game is stored as strings of one size or another. These strings are stored in tables for translation. A “string table” is a collection of strings in some format that both the translators and the programmers agree upon.

An agreed-upon format for a string table can be a standard spreadsheet format where the source language strings are placed in one column and their translations into an adjacent column (see Table 1 on page 37). This modularity of video games also means that some parts need to be translated only once. One example of this would be a text box that appears every time the player finds an item in the game world. The standard text in this box could be formatted as “You found [item name]!” Here, the “You found” part would only need to be translated once as it would be contained as a singular text string in a string table with other similar messages. Names of items and pieces of equipment would also have their own dedicated string tables. An item could be something such as a “Potion”. A string table for equipment could include

“Standard Long Sword”. Combinations of these text strings can be called from those string tables and displayed in text boxes when needed to form sentences such as “You found Potion!” or “Your Standard Long Sword broke!” Translations of those text strings can also be called and displayed according to the game’s language setting. This modularity can also be used for things like character names (see Table 2 on page 38).

**Table 1.** Part of a dialogue string table for *Nekopara: Catboys Paradise* with character names on the left, original Japanese dialogue in the middle, and Finnish translations on the right. The tables were originally provided in monochrome. To make it easier to keep track of whose line is being translated, I gave each character their own background color.

ディル	「ローリエさん、セージさん！ フェンネルさん達が帰ってきたよ！」	Laurier! Sage! Fennel ja emäntä ovat palanneet!
ローリエ	「やっとか」	Heilläpäs kesti.
セージ	「二人とも、お帰り！」	Tervetuloa takaisin!
フェンネル	「皆さん……。もしかして、私達のことを待っていたんですか？」	Hyvää iltaa itse kull... Meitäkö te täällä olette odotelleet?
ディル	「う、うん。フェンネルさんがいないし、彼女の姿もなかったから……。やっぱり一緒に出かけてたんだね」	Jo-joo. Kun te molemmat kerran katositte jonnekin... Olisi pitänyt arvata, että olitte lähteneet ulos yhdessä.
ローリエ	「抜け駆けはいただけないな」	Anteeksiantamatonta tällainen varaslähtö.
セージ	「次は俺達も誘ってくれ！」	Teidän pitää ens kerralla ottaa meidätki jäljyyn!

**Table 2.** The character names in *Nekopara: Catboys Paradise* were included in a separate string table. These names appear on the top part of dialogue boxes to show which character is currently speaking.

Japanese	English	Finnish
ディル	Dill	Dill
フェンネル	Fennel	Fennel
ローリエ	Laurier	Laurier
セージ	Sage	Sage
お父さん	Father	Isä
ショップ店員	Clerk	Myyjä
待ち合わせの男性	Dating Guy	Treffityyppi
古本を売っている男	Bookseller	Kirjamyymjä
雑誌記者の男性	Reporter	Toimittaja
若い男性	Young Man	Nuori mies
男の子	Boy	Poika
道に迷っている男性	Lost Guy	Eksynyt mies
露天商の男	Stallholder	Kojunpitäjä
和カフェの店員	Cafe Staff	Kahvilan työntekijä
全員	Everyone	Kaikki
3匹	All Three	Kaikki kolme

The modularity of game translation can have some negative effects as well, however. Because certain types of strings (character names, items names, skill names, dialogue in in-engine cutscenes, dialogue in pre-rendered cutscenes etc.) can be spread out in discrete string tables, it can be very difficult for a translator to keep up with the context of specific translations. How fragmented strings are is highly dependent on the game, however. As illustrated in Table 1, a translation string table for a visual novel where there are no choices to be made can be completely linear. *Nekopara: Catboys Paradise* (Sekai Project, 2021) only comprises six string tables: a list of character names, the introduction sequence, and the four character-specific storylines. Something like an MMORPG could have hundreds or thousands of string tables.

Translating a game's text is not always as simple as this, however. Sometimes more work is required, especially in cases where a localized version of a game does not use the same game engine (a development environment used to create video games) as the original game. Today, the need to change

game engines for localization or even for porting a game to another platform is quite uncommon. Most modern engines support a wide variety of different scripts and character encodings (i.e., they can render and display a vast array of characters and letters from different languages; see also Chandler & Deming, 2012: 5) as well as development for different system architectures (e.g., the game engine Unity can be used to develop games for smartphones, home consoles, and PCs, all of which may be based on different system architectures). A modern game engine is not, however, a silver bullet that removes all issues in software localization. Bass (2006: 75) also points to text wrapping, line breaks, and font sizing as things that may present issues even with modern tools.

*Artistic* skills are required when something that is not in text format needs to be changed, such as a logo on a shop sign (Chandler & Deming, 2012: 145). As a hypothetical example, in an original Japanese version of a video game there could be a bakery with a sign that says パン屋 (*panya* = bakery) on it. If such alterations are part of the game's localization project (which they rarely are), an artist would have to make different versions of the sign to fit all the target languages. A more common solution is to retain the art asset's original form and to give the player the ability to look at shop signs (or posters or anything with text on it) with a button prompt that brings up a text box containing whatever the sign, poster, etc. might say. The contents of this text box are then translated in localization, thus avoiding the costly and time-consuming re-workings of textures.

There is of course an argument to be made against translating certain diegetic textual elements (i.e., elements that exist in the game's world), especially in games that are set in the real world. It can negatively affect immersion if there are road signs in California written in Finnish (Timonen, 2018: 10) or if a game's entire setting (i.e., where the game takes place) is

changed for different markets as it would take away from the game's flavor and context (Chandler & Deming, 2012: 309).

Graphical re-workings do occur sometimes, but these are usually the result of censorship, mandated either by regional laws (such as depictions of extreme violence and gore or certain types of sexual content) or by platform holders (such as Sony mandating changes to PlayStation versions of games due to company-specific policies). One could of course argue that censorship is also a part of video game localization. As Jarva (2017: 9) notes: "While these types of solutions fall under localization, they are not part of the actual translation process, but they should be taken into account so that a game's translation is consistent with other parts of its localization."

An example of censorship causing inconsistencies can be found in the Japanese version of *Red Dead Redemption 2* (Rockstar Games, 2018). As part of an optional side quest, the player can happen upon a murder scene under a rail bridge, with a dismembered torso hanging by ropes from the rail bridge's posts. The head of the victim is stuck to another post and the limbs are scattered nearby. It is supposed to be a single victim that the player finds. In the Japanese release of the game, however, the aforementioned torso retains all of its limbs, with the other limbs present in the area as well, giving the impression that there are multiple victims, creating an inconsistency within the side quest. Dismemberment and some other extreme depictions of violence are often censored in Japanese releases. This has been known to happen even with games developed and published by Japanese companies, such as *Resident Evil 7: Biohazard* (Capcom, 2017) and the remake of *Resident Evil 2* (Capcom, 2019). In the Japanese releases of these games, dismemberment and some of the more extreme depictions of violence were toned down as compared to the games' Western releases.

With regard to cultural as well as legal guidelines, in the past, when countries like Germany and the United Kingdom were stricter with video game content, games with graphic depictions of violence, such as *Carmageddon* (Sales Curve Interactive, 1997), had to have blood removed or changed to a different color. This also meant that some games that had the option for the player to disable blood effects of their own volition had to have these options removed, as displaying blood at all was not allowed. A more recent example of legally mandated censorship can be found in *Cyberpunk 2077* (CD Projekt, 2020), which allows the player to choose genitals for their character. These options – as well as displaying nipples on feminine body types – were removed in the game’s Japanese console releases due to CERO (Computer Entertainment Rating Organization), the age rater for video games in Japan, not allowing nudity in console games. These are just some examples of how not only cultural but also legal guidelines may affect options that are given to the player in video games and their menus.

Sometimes, however, localization may provide ways to improve the usability of a game. An example of this is the international release of *Judgment* (Sega, 2019). The game has two different fighting styles that the main character can use and switch between during gameplay. These were named as ‘waltz’ (円舞) and ‘flash’ (一閃) in the original Japanese release (named *Judge Eyes*). The currently selected fighting style is displayed with the kanji characters on the screen during combat. These would probably have been difficult to differentiate for international audiences, so in the international release the fighting styles were re-named. ‘Waltz’ became ‘crane’ and ‘flash’ became ‘tiger’ and their on-screen indicator icons were changed from the kanji characters to stylized pictures of the aforementioned animals.

Conversely, retaining original source language terms can also serve usability. Non-translation can be considered as following the skopos theory as it



permits non-translation to serve the purpose of a translation. As Suojanen et al. (2015: 41) summarize: “**Skopos theory** is indeed a theory of *action*, and the translation is seen as one potential outcome of **translational action** (parallel to, e.g. paraphrase, summary or an entirely new text, or even nontranslation).” (Emphasis original.)

In non-translation, an original source language (SL) term is used in the target language (TL) text. In what could be described as similar to *appositive translation* (adding descriptors to something specific to the source culture to make it easier for TL readers to understand) a SL term is used *in addition* to the TL in the translation. While this is a rare occurrence, an example can be found in the graphics settings menus of the Finnish localization of *Portal 2* (Valve, 2011). The English term *pop-in* is used in the Finnish translation as a type of apposition in case the player is more familiar with the term in its English form (see Table 3).

**Table 3.** The Finnish translation of *Portal 2* has retained the English *pop-in*, likely to clarify the meaning of the described phenomenon for those more familiar with the English term.

English	Finnish
<p><b>Effect Detail</b> Effect Detail controls the complexity of certain visual effects in the game as well as the draw-distance. Decreasing the effect detail may improve performance but will also increase model pop-in artifacts.</p>	<p><b>Tehosteiden tarkkuus</b> Tehosteiden laatu kontrolloi tiettyjen visuaalisten tehosteiden laatua sekä piirtoetäisyyttä. Tehosteiden laadun alentaminen saattaa parantaa suorituskkyä mutta lisää kohteiden ilmestymishäiriöitä (pop-in).</p>

To continue regarding pictures, pictograms, and symbols, they can be quite useful, but they can present the occasional problem as they, much like any natural language, are not universal. A symbol may carry specific meaning in one culture and no meaning in another culture, or the symbol’s meaning may be completely different in the other culture. On the lack of meaning, Dietz (2006: 128) describes a situation in translating a flight simulation game where a

symbol was used for a clickable icon, the function of which was to return to the main menu. This icon symbol was in the form of a baseball home plate, which would be quite recognizable to American players, but which carried little meaning to German players. Lack of time allotted for the localization resulted in the icon not being changed for the German version of the game. Esselink (2000: 26) notes a similar issue from when Mac OS was first brought to the European market: many European users interpreted the Trashcan icon as a mailbox.

Regarding the different meanings of symbols, an example related to video games would be the uses of circles and crosses in different parts of the world. Nielsen (1993: 241) describes an example of this for Japan, where a cross (batsu) is normally used to denote 'no' or 'wrong' and a circle (maru) is used for 'yes' or 'correct'. This has undoubtedly caused confusion with Japanese people using localized computer software where there are checkboxes for activating different types of functions; crosses are often used in the West to mark something as being activated in a computer program (although contemporary usage seems to have shifted to prefer checkmarks instead). This different use of crosses and circles extends to video games as well, especially on the PlayStation consoles, where the face buttons of the controller contain a cross button and a circle button. In the Asian versions of the PlayStation 4 console and the ones preceding it, these *face buttons* are used in the Japanese way, but in the West the functions of these buttons are reversed to have the cross button be the selection or confirmation button, while the circle button carries the *back* or *cancel* function. For the current-generation PlayStation 5 console, Sony had the roles of crosses and circles reversed for the console's Asian versions to follow the Western standard, a contentious decision to be sure, and which goes against the ideas of intuitiveness and familiarity as described by Kuutti (2003: 13).

### 3.3 Video Games and Finland

Despite the perceived lack of Finnish in the video game space, the landscape of video games made in Finland is quite vibrant. There have indeed been some video games, both translated and original creations, in Finnish throughout the decades. There is even variance in the genres of original creations, some notable examples including the action game *Uuno Turhapuro muuttaa maalle* (AmerSoft, 1986), based on the movie of the same name and released for the Commodore 64. There is also a point-n-click adventure *Muukalaisten yö* (GameTek, 1996), released for MS-DOS. *Muukalaisten yö*, remarkably for the time, was also released internationally in English as *Alien Incident*.

Indeed, game development in Finland has a long and varied history. So much so that an entire book on this history has been published. Entitled *Sinivalkoinen pelikirja* (English translation available as *Play Finland: history of the Finnish video game industry*) and authored by Juho Kuorikoski (2014), the book chronicles Finnish video games and their developers quite exhaustively.

Indeed, supplementary Finnish texts regarding video games are probably more plentiful than actual Finnish translations of video games. In the 1980s and 1990s, translated game manuals often accompanied games released for the Nintendo Entertainment System, possibly due to the system being targeted toward younger audiences. Notably, the quality of these translations may not always have been up to par (regarding this and gamers' views on Finnish translations of video games, see Jarva, 2017).

Another related point regarding Nintendo and peripheral languages is that while the company served the Nordic gamers with the translated game manuals in the 1980s and 1990s, in recent years their efforts in this area have fallen behind compared to other console manufacturers and game publishers. This applies to both Nintendo's hardware as well as first-party games (i.e.,

games published by platform holders themselves). Sony and Microsoft have offered full Nordic translations of their console operating systems for several years by this point, Sony since the seventh generation with the PlayStation 3 and Microsoft since the eighth generation with the Xbox One. In contrast, even Nintendo's current console offering, the Nintendo Switch, does not provide the option to choose any of the Nordic languages for its operating system. Furthermore, the other two console manufacturers have provided Nordic translations for many of their first-party games, also for several years by this point.

Aside from game manuals, video game magazines written in Finnish have also existed for decades, with one of the longest-running gaming magazines in the world being *Pelit*, which has been published since 1992 all the way to present day. While *Pelit* has always been an original Finnish publication, there have been some gaming magazines, partly or completely translated from other languages, such as the Finnish versions of *Super Power* and *PC Gamer*, neither of which are no longer in publication.

Of course, with the proliferation of the internet, and much in line with other news media, gaming news outlets have mostly moved online and much of this online coverage is done by youtubers and streamers (Finnish ones too), but traditional websites still persist. For Finnish, these include sites like *V2* and *Pelaaja*, which is also a print magazine. The popular gaming site *IGN* also had a Finnish version at one point, but this site has since been turned into a single English language site for all Nordic countries. Furthermore, and also relating to media coverage moving online, access to games is also a part of this online shift. All modern game consoles are able to connect online, and each has its own online storefront where games can be bought and downloaded directly to the console.

Many of these online storefronts are available in Finnish. Sony's PlayStation Store, Microsoft's Xbox storefront as well as Steam, Uplay, and Origin on PC are all available in Finnish. Sometimes this actually presents an interesting situation where a storefront and a game's description on its product page have been translated into Finnish, but the game itself (and none of its user documentation) has not. It appears that some of these storefronts also have different approaches to translating product descriptions. Some of them rely on the game's publisher to provide the product description in all relevant languages, with English usually being the default language that is used for all those languages that do not have their own translated version.

What about the games themselves? In recent years, more and more games are being translated into smaller languages, not only by fan translators, but by professionals as well. Some notable examples of official Finnish translations include some games in series such as Assassin's Creed, Far Cry, God of War, Halo, Ratchet & Clank, and The Last of Us. Of course, Electronic Arts has been localizing their licensed games (the NHL series as well as movie tie-in games like Harry Potter) and The Sims series into Finnish since the series' inception in 2000.

Overall, being a Finnish gamer does not seem to entail massive hurdles in the modern day. However, the barrier of entry, especially into the more involved "hard core" gaming is the English language. This still holds true today to some extent, as some of the most popular game series have never been officially translated into any of the languages spoken in the Nordic countries. Games in several notable series such as Call of Duty, Final Fantasy, Grand Theft Auto, Super Mario, Metal Gear, Pokémon, Sonic, and The Legend of Zelda have never been officially translated into Finnish.

Of course, being able to understand the language used in any given video game is not necessarily a prerequisite to being able to play and enjoy said video

game. A lot depends on the game's linguistic complexity or the extent to which the game focuses on its narrative elements. Fluency in English might not be necessary for playing a shmup (short for *shoot-'em-up*), where the gameplay usually consists of dodging enemies and their bullets while using one's own weaponry to return fire. Other examples would include platformers and certain types of puzzle games where navigating through a game's levels is often the main objective.

On a final note, with regard to Finland and video games as a whole, even games made by Finnish game studios have not always been translated into Finnish. For instance, none of the games developed by Remedy (one of the most prolific Finnish game studios, behind titles such as *Alan Wake*, *Control*, and *Max Payne*) have Finnish language options. Similarly, only some of the games developed by Frozenbyte, another prolific Finnish studio, support Finnish.

### **3.4 Finnish Video Game Localizations and Their Visibility**

How prolific are Finnish video game localizations then? This can be looked at from several points of view. First, there is the availability question. How many games are actually available in Finnish? Second, does the professional video games media make mentions of video games being available in Finnish? Third, are gamers themselves aware of games being available in Finnish? This section will discuss all three of the above points.

Unfortunately, none of the digital download stores for home consoles have the option to search games by their language options, not even in stores that have the supported languages listed on games' product pages. On PC, however, Steam offers this functionality. On February 11, 2021, Steam had 49,968 items classed as 'game' available in Finland (some games on Steam are

not available in all regions, so these numbers may differ between regions). Of these games, 48,356 have English, 12,149 have German, and only 1,309 have Finnish language options. In the most dominant digital storefront for PC games, approximately 2.62% of the available games support Finnish in some capacity.

Moreover, even this percentage of 2.62 comes with two caveats. First, listing games on Steam by language does not show which elements of the games are available in said language. This information is available on the individual product pages, however, which list the available languages for audio, subtitles, and interface. Second, the number of 1,309 Finnish-supported games also includes 559 games in the 'puzzle' category and quite many games in this category have no (or very little) verbal or textual elements, which means that by default they are listed as supporting all languages available on Steam. On a final note, these numbers also include games with sexual content, which is a separate visibility filter on Steam and many of the aforementioned puzzle games are also pornographic in nature. With these caveats in mind, the effective percentage of games supporting Finnish on Steam could be closer to 1.00%~1.50%.

Furthermore, even though only one (albeit the dominant) storefront on the PC was examined here, the numbers may very well apply to console games as well. PC and console gaming have been converging for the past several years and multi-platform releases of AAA titles (read: triple A; games with large marketing budgets and high production values) have also become the norm. Porting games to different platforms has also become easier than ever. Both current-generation PlayStation and Xbox consoles are built on the x86 architecture that PCs also utilize, and two of the currently most widely used game engines, Unreal and Unity, support developing games for all three major consoles, PC, and mobile platforms.

As far as sheer numbers are concerned, Finnish localizations are quite far from the mainstream in video game publishing. The size of a game's budget usually (but certainly not always) correlates with how many languages it supports, which makes sense. A game with a large budget should reach as wide an audience as possible to recoup its costs. Finnish localizations seem to be more common for AAA titles, and the same applies to other peripheral languages as well. Although this should not be taken as a generalization that only AAA games are localized into Finnish, as even one of the games used in the current study, *Hellblade*, has been described as a AA (double-A) title, having been both developed and published by an independent game studio whose games are usually brought to market by a bigger publisher. Other notable independent releases with Finnish localizations include titles such as *Prison Architect* (Introversion Software, 2015) and *Subnautica* (Unknown Worlds Entertainment, 2018).

With availability covered, what about media coverage? A cursory glance at printed Finnish video game magazines *Pelit* and *Pelaaja* revealed that out of eight reviews of games with Finnish language options, only two reviews mention the fact that these language options exist.<sup>2</sup> It is very possible that the perceived importance of Finnish language options for gamers above a certain age is not very high from the video game reviewers' perspective. In gaming, reviews play an essential role in informing consumers about games and, despite their increasing numbers, the existence of Finnish language options for video games do not seem to be a priority for the Finnish video games media.

In order to keep the data consistent, similar delimitations were applied to this cursory glance as were to the current study proper. First, the PEGI ratings for all the games in question (PEGI stands for Pan-European Game Information;

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<sup>2</sup> Reviews from both *Pelit* and *Pelaaja* for the following games: *Assassin's Creed IV: Black Flag* (2013), *Beyond: Two Souls* (2013), *The Last of Us* (2013), and *Watch\_Dogs* (2014).



it is an organization which aims to “help European parents make informed decisions on buying computer games.” The number on a PEGI rating refers to minimum recommended age for the player (PEGI, 2021)). All the reviews looked at were for games aimed at more mature audiences, with PEGI ratings of 16 (*Beyond: Two Souls*) and 18 (the rest). Furthermore, and as a noteworthy observation, the two reviews mentioning the Finnish language options were both published in the *Pelit* magazine and written by the same reviewer. Although the sample size here was quite small the “two out of eight” result could be seen as an indicator of attitudes existing in the reviewer space, attitudes which reflect the audience as well (see section 3.6 on Jarva’s findings).

Of course, the situation with professional media mentioning Finnish language options may very well be different for video games that are targeted at younger audiences. This could prove itself an interesting avenue for further research. The same could be said of Finnish video games media in general, as there appears to be very little (if any) existing research. However, the point being illustrated here is that unless the physical game box or the game’s product description in an online store mentions the Finnish language options, a Finnish gamer might not even be aware of the fact that they could play the game in Finnish if they so desired.

This leads into the final question about Finnish video game localizations’ visibility, which concerns gamers themselves. Are gamers aware of Finnish language options in video games? In short, this does appear to be the case. Iiris Jarva (2017) conducted a survey study concerning Finnish gamers’ opinions and views on Finnish video game translations. While not a specific question in the survey, the visibility of Finnish video game translations is mentioned. Jarva states the following:

With all of this in mind, it appears that respondents are fairly well aware of the different elements in video games that can be translated.

Respondents also appear to be able to critique video game translations on the different levels of localization. Definite conclusions on the proliferation of Finnish video game translation cannot really be drawn, however, because an active gamer might have played hundreds of different games, only one of which contains translated menus, which they have noted in the survey. The data does show, however, that Finnish translations are fairly visible, even if their relative numbers may be low.

(Jarva, 2017: 38; translation by JO)

### **3.5 Video Game Menus**

The main purpose of video games (not including serious games) is entertainment, but the purpose of settings menus is more functional, serving as a way of making the entertainment more usable/enjoyable by providing functionality that makes a game perform, look, and sound better and be more immersive. The ability to customize one's gameplay experience and the game's performance has existed for decades by this point. The myriad options available in modern video games can certainly leave a novice user perplexed, especially when it comes to the more technical options and terminology. In fact, what Hackos (2002: 273, cited in Suojanen et al. 2015: 37) suggests about presenting different kinds of content to users of different levels is something that, when the suggestion was made, had already become a standard in video games by that point.

Menus for adjusting graphical settings for games – especially on the PC – typically present the user initially with simplified options where only a few

general selections are available for overall graphical quality. These presets are typically labeled High, Normal/Medium, and Low or the like, although finer granularity is often available with additional presets such as Very High and Very Low. Choosing a preset automatically sets the levels of different graphical effects to the corresponding general level. For a user who knows very little about PC hardware and graphics terminology these options may be sufficient; if a game runs poorly on the High graphics preset, increasing performance is as simple as switching a single all-encompassing setting to Medium. Less-informed users may also not care very much about how well a game runs if performance issues are not severe enough to have a major effect on their experience with the game.

Another option sometimes seen in graphics menus for PC games is *Automatic Detection*. This setting allows a game to automatically detect what hardware the computer contains and to adjust graphics settings as high as possible while maintaining acceptable performance. Of course, with Automatic Detection, “acceptable performance” is whatever the game’s developer has decided beforehand. In gaming, acceptable performance is a very subjective metric, and it is indeed the hallmark of the PC as a platform; users can determine for themselves the balance between graphical fidelity (how nice the game looks) and performance (how well the game runs). Modern console games have also started to offer these preset-type options, usually labeled as something like Fidelity Mode, which prioritizes graphical effects and resolution to make a game look nice, and Performance Mode, which prioritizes high framerates for responsive and smooth gameplay experience. While only developer-set presets, giving these two (and sometimes more) choices to users shows the more user-oriented direction that console gaming has taken in recent years.

On the PC, however, the vast array of adjustable graphics settings also accounts for the other end of the user spectrum: the users who want to make more detailed adjustments. For them, settings menus often contain a sub-menu entitled Advanced Settings where different aspects of graphics rendering can be customized further. Here is also where the majority of common-equivalent-lacking Finnish terms can be found.

In addition to graphics, menus for audio, HUD, controls, accessibility etc., can contain similar sections for fine-tuning their respective settings. This type of interface-tiering is an example of supporting different kinds of users. However, and with regard to translation, without offering different translation versions for a single language, it is quite difficult for a video game's translation to take different types of users into account if the original version has no functionality for it. For example, if the original game has no tooltips to explain its menu options, its subsequent translations will likely have none either. As far as the narrative elements of a video game are concerned, a localized Japanese game could offer the option for the player to enable English dubbing with captions that follow said dubbing, with the alternative being the original Japanese audio with its own set of English subtitles, made especially for the Japanese audio track.

The game *Judgment* (Sega, 2018) is a very rare example of a video game that contains two different sets of subtitles for one language. Usually, if a Japanese video game offers the options for English and Japanese voices, only one set of English subtitles exists: the one which was made to follow the English voice track. While not the focus of the current study, suffice it to say that the differences between subtitling and dubbing are significant enough for usability issues to arise from this common practice. One only has to look to another medium to see this. Movies played in theaters sometimes offer viewings of either a dubbed version or one with original audio and translated subtitles, and

obviously the translated subtitles are not simply captions for the dubbed version's audio track, as this would cause their readability to suffer immensely. They are two separate translations, made to serve different mediums (audio and text) and different kinds of users. However, at least with some video games, the issues of assumed reading speed are eliminated if dialogue only advances from one line to the next with player input.

For a final point regarding different kinds of users, even if a user is not familiar with certain technical terms, video game menus can offer details and explanations of adjustable options in the form of pop-up tooltips or separate information sections within the menu screens themselves. Pop-up tooltips can often be found in utility software on the PC, where they function similarly to PC games: moving the cursor over a setting brings up a text box next to the cursor with further information regarding that setting. In console games, where freely moving cursors are not that common, a separate space is sometimes reserved on the menu screen and this space is used to display the tooltip text for an option that is currently being highlighted. More recently in graphics settings menus, sample pictures are also sometimes used in order to visually convey to the user what a particular setting does. Some games have started offering even more information, such as how much video memory is used when certain settings are enabled.

Our last, but crucial, point regarding video game menus is space. As O'Hagan (2015: 754) notes, a translation needs to fit the pre-allocated space on the screen. In the past, this did indeed present a hurdle for software localization due to a number of reasons: memory limitations, low screen resolutions, and character rendering support. In the here and now, however, abundant memory, high-resolution screens, and the existence of Unicode have allowed for menus to scale text size automatically and to render all possible character sets. However, it is extremely rare to see different text sizes within a

single menu screen, most likely because this would have a negative impact on visual consistency and thus readability. A feature that one is more likely to come across is text scrolling, where a text string, longer than its reserved space, is made to scroll in this reserved space, similar in operation to some road signs or advertising marquees. An example of this can be found in the in-game item crafting menus of *The Last of Us* where the text string “HOLD X TO CREATE” appears as “KOKOA PITÄMÄLLÄ X PAINETTUNA” in Finnish. The Finnish requires more space than is available within the constraints of the menu. The text string is thus made to scroll in the available space in order to show it in its entirety.

For a final note regarding space, while currently not at the premiums it used to be, and despite the possibilities afforded by modern advances, space should still be used with thought and deliberation. There definitely exists a functional medium between extreme minimalism where, hypothetically, all adjustable functions of a program have been spread out into their own, separate menu screens versus a maximalist approach where all functions of a program have been crammed into a single screen (a non-hypothetical example of this would be some of the very first tracker programs which were used for making music on computers). Things that relate closely to each other should be grouped together so as not to break established gestalt principles (Kuutti, 2003: 27–28).

With regard to their classification, menu texts in video games fall somewhere between entertainment and utility, being utility-focused themselves but serving a game’s playability (i.e., entertainment) factor, and essentially the usability of a video game. The closest comparison to video game menu texts would be technical documents which Suojanen et al. (2015: 30) describe as texts that are not read for entertainment but for a certain purpose when interacting with a system, and thus the text acts as a bridge when an individual and a system interact. From this we can conclude that the usability of a text serves the

usability of a system, the two forming a chain wherein every link has to be strong enough to support the user without fail.

The main reason for the existence of settings menus is to make a video game more playable as there is a lot of variance in player preferences and hardware. It should be noted, however, that playability itself is a highly subjective concept. Different people value different things when it comes to playability: some prefer higher graphical fidelity and more elaborate graphical effects over performance and high framerates. As mentioned earlier in this section, these options have started to become available in console games as well, although mostly as the aforementioned Performance and Fidelity presets. It is very possible that some developers will start opening up their games' adjustable settings to console players even more. This makes it crucial for players to be able to understand the technical terminology related to these games.

### **3.6 Research into Finnish Video Game Localizations**

We discussed some numbers and availability of video games translated to Finnish in section 3.4. The numbers discussed introduce a significant point regarding user expectations in terms of video game translations. As the vast majority of video games on Steam are not available in Finnish, it would follow that most video games played by Finnish gamers on PC are not Finnish localizations either. Therefore, it would be reasonable to assume that Finnish gamers are quite used to playing their games in English.

With the expectations of Finnish gamers in mind, we will now look at some of the previous research conducted into Finnish video game localization. Although this type of research may not be the most prolific academic field, some previous studies do indeed exist. This section will provide brief overviews

regarding some of these studies. The first study relates to the terminology of an adjacent field to video games and should provide more understanding of what the linguistic landscape of Finnish gaming is.

Graphics are one of the central aspects of video games, and it has been noted that, much like with gaming in Finland, the lingua franca of the 3D graphics industry in Finland is also English. In his BBA thesis, Janne Joensuu (2016) conducted terminological work with Finnish 3D graphics terminology. As with Finnish gamers, code-switching (inserting words or entire phrases from one language into conversation conducted in another language) appears to be very common with both students and professionals in the field of 3D graphics. Joensuu had deemed that the overwhelming prevalence of English in the 3D graphics field has a negative effect when teaching or creating study materials because the industry's specialist vocabulary, as well as its tools (i.e., software for graphics creation), only exist in English (ibid., 1). The aim of the study was to collect and unify Finnish 3D graphics terminology, which, upon examination, could also be helpful for the "permeated by English" vocabulary of Finnish video gaming.

Computer graphics technology (both hardware and software) advances at such a rapid pace that even enthusiast gamers can have trouble keeping up with not only the latest but also older technologies and terms referring to them. On the one hand, different types of technology implementations having their own names makes sense if there is an appreciable difference between them. For instance, many video games offer different types of anti-aliasing (which aims to reduce jagged edges on 3D objects) from which to choose. The most common of these are SSAA (supersampling anti-aliasing), MSAA (multisampling anti-aliasing), SMAA (sub-pixel morphological anti-aliasing), FXAA (fast approximate anti-aliasing), and TAA (temporal anti-aliasing) (Roach, 2022). All these methods of anti-aliasing differ in their implementation as well as cost



(cost in terms of required computational power) to warrant their different names.

On the other hand, individual companies (whether hardware manufacturers or game development studios) having their own, proprietary brand names for some technologies can make it needlessly difficult for a gamer to remain current with contemporary terms. One example of this would be VRR (variable refresh rate), a technology with which a computer monitor or a TV can adjust its refresh rate dynamically in order to reduce tearing artifacts when displaying frames that are rendered in real time (such as with video games). VRR is commonly referred to by three different names, which are Adaptive Sync (by VESA), FreeSync (by AMD), and G-Sync (by NVIDIA).

Tuukka Taarluoto (2011) studied the Finnish subtitles in the cutscenes of *Uncharted 2: Among Thieves* (Sony Computer Entertainment, 2009). Taarluoto found that the Finnish subtitles deviate from common subtitling norms that are used in Finnish AV subtitling for TV and movies. The most notable deviations were found in the areas of summarizing content, timings, and visual synchronization. The subtitles were very content-faithful to the spoken dialogue with very few omissions, which in turn led to several instances of lines not having enough screen time, which had a negative effect on readability. The subtitles did not follow the rhythm of camera cuts either, another recommended subtitling norm (Av-kääntäjät.fi, 2020: 7). It is quite likely that a localizer rarely (if ever) has the ability to change subtitle timings for cutscenes, which are set during the game's development process, and which are made to follow the original audio track. Whether or not the translator(s) even knew the times reserved for each subtitle is not clear, not in this case nor in the industry in general but judging from how the Finnish subtitles in *Uncharted 2* often pass by too fast, the time constraints may not have been shared with the translator(s). Or they were indeed, but content-faithfulness may have been

prioritized over readability. As noted, the subtitles in *Uncharted 2* do not summarize content.

Mira Hiltunen's MA thesis (2019) also examined Finnish video game subtitles, this time for *Horizon: Zero Dawn* (Sony Interactive Entertainment<sup>3</sup>, 2017). The goal of the study was largely the same as with Taarluoto's, that is, to see if the Finnish subtitles in the video game follow the subtitling norms established for TV and movies. The results further confirmed Taarluoto's findings. The Finnish subtitles in *Horizon: Zero Dawn* deviate from TV and movie norms in several ways: more characters per line, more display time per subtitle, and faster assumed reading speed. The game also includes name tags for characters in its subtitles, which add to the overall length of the subtitles. These name tags cannot be turned off.

Another study in Finnish video game localization was done by Kaisu Palomäki (2015) and it examined differences between a Finnish fan-translation and the professional German translation of *Cid Meier's Civilization IV* (2K Games, 2005). Any notable differences were limited to issues with grammar and misspelling, and in this regard the Finnish fan-translation had more errors. On a technical level, however, the fan-translation proved to be better, as the professional German translation contained two changes, which could potentially prevent the player from progressing in the game. These changes were not present in the Finnish fan-translation. Generally, both translations did, however, show similar levels of cultural awareness and creativity, even if some source language influence from English was observed. This manifested as some instances of non-idiomatic language use in both translations.

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<sup>3</sup> On April 1st, 2016, Sony Computer Entertainment (SCE), together with some other PlayStation-related sections of Sony, were re-branded and consolidated into Sony Interactive Entertainment (SIE). Therefore first-party PlayStation titles released before this date count as having been published by SCE, with subsequent titles falling under SIE.

Relating to gamers' expectations, Iiris Jarva (2017) conducted a survey study on Finnish gamers' general views on Finnish video game localizations. Results of the survey showed that most respondents did not consider translating video games into Finnish as necessary for themselves. Finnish translations were mostly considered necessary for games that are targeted towards children. Respondents also seemed to give more attention to any negative aspects of Finnish translations which they had come across. However, the survey's open-ended questions received similar amounts of both positive and negative comments. Furthermore, and in line with previous research on game localizations, contextual translation errors had also been observed by some respondents. Additionally, – and a relevant point to the current study – respondents very rarely noted issues relating to space constraints in menus and HUDs. Given how long words in Finnish can sometimes be, one might have expected this to be a more common of an issue, especially since translation can increase the original text's length from the typical 30% on the sentence level to over 100% on the single word level (Esselink, 2000: 26).

Jarva's study has further relevance to the current study as usability issues are also mentioned in a few comments. Some respondents in the study noted that translated instructions have sometimes felt foreign and that they have had problems in understanding what exactly the game wants them to do. Two respondents noted that especially translations of words referring to specific buttons or keys are sometimes difficult to understand. As a highly relevant point to the current study, three respondents noted menus in their comments. One respondent wrote the following: "I can't browse the menus as intuitively or as fast as I usually do. When you're used to browsing menus in English, you have to stop and actually read the Finnish ones since just glancing at them isn't enough" (Jarva, 2017: 55; translation by JO).

Jarva notes (ibid.) that in cases like these, the translations are not necessarily wrong or otherwise lacking, but the player's previous experiences have affected their expectations regarding the menus and how they should work. The fact that some Finnish gamers are simply not accustomed to Finnish menus in video games could possibly lead to usability issues, which could further be compounded by variance in the Finnish terminology due to lack of standardization.

Regarding expectations and what Finnish gamers are accustomed to, responses in Jarva's study also included a comment about how in one game *experience points* were translated as *kokemuspisteet*. The translation is technically correct, but the respondent felt that this very direct translation loan (wherein individual words are replaced directly with target language equivalents) was quite clumsy, as the respondent was more used to saying *expa* (Jarva, 2017: 61). To elaborate, *expa* is a special loan derived from the English term *experience points*, the common abbreviation of which is *EXP*. In Finnish gamers' parlance, this abbreviation has been adopted as a lexical loan (i.e., taken as is from another language) from English and then turned into a special loan with a vowel suffix (Itkonen & Maamies, 2007: 41–42), taking the form of *expa*. A vowel suffix is a common occurrence when Finnish adopts foreign nouns as it makes it easier to inflect in accordance with Finnish grammar (Hiidenmaa, 2003: 95) In this instance, the letter-by-letter reading of the original *EXP* is also transformed into reading the Finnish equivalent as a single word. Another, perhaps more common example of the same phenomenon would be *GPS* (Global Positioning System), which is sometimes referred to as *gepsi* in Finnish.

This example of a translation using *kokemuspisteet* and a user preferring *expa* may be an indicator that genre conventions that have been established among Finnish gamers might not match the ideas that game translators have

regarding how to translate video games into Finnish; there appears to be some level of disconnect between translators and gamers (although the disconnect could also exist between game publishers and gamers as well, depending on the level of control that a given publisher exerts on their games' translations). Because many of the conventions of the user terminology exist among Finnish gamers themselves (see Ruottinen, 2017), the importance of translators knowing the audience and their preferred terms becomes more important than ever. This term creation usually has heavy emphasis on English loan words as a result of the language's prevalence in gaming as a whole. Because of this, the Finnish translations that seek to avoid anglicisms could present issues for experienced users because they are not the words Finnish gamers use.

As anecdotal as the *kokemuspisteet vs. expa* example is, it presents an idea that a video game could be translated into Finnish using the terminology of Finnish gamers themselves, terminology that would (where appropriate) consist of lexical loans, special loans, or even entire phrases of non-translations. Currently, a translation like this does not appear to exist, and it would certainly prove an interesting object of study for both user reception as well as for linguistic analysis.

In fact, Japanese game developers have taken this type of route. The difference here being that their games are original Japanese creations and not translations. In many Japanese games – created by and for Japanese people – lexical English loans can be found throughout. In something like a role-playing game (RPG), it is quite common to find English terms written phonetically in the Japanese katakana script, terms such as ニューゲーム (*nyû gêmu* = new game), スキル (*sukiru* = skill), ファイア (*faia* = fire), ボタン (*botan* = button) etc. The extent of this phenomenon is such that even if a game takes place in a fantasy world with medieval or feudal-like setting, finding modern English loans like the above in a game's menus and dialogue is expected rather than shunned.

Games in the *Final Fantasy* (Square Enix) and *Tales of* (Bandai Namco) series would be examples of this. Of course, there are also Japanese games that deliberately forgo using English loans as they would not fit a specific historical setting and the feel of a game. An example of this would be *Sekiro* (From Software, 2019), which takes place during Japan's very real historical sengoku period, but which still contains many fantastical elements such as magical items and demonic creatures from the country's folklore.

Of course, translators do not make all the decisions regarding terminology and sometimes companies' internal guidelines and style guides can go against actual gamers' terminology as well. Unfortunately, and as also noted by Suojanen et al. (2014: 87), companies rarely make their style guides public. The previously mentioned style guides for the different versions of Windows are indeed a rare exception.

The last relevant study to be introduced was conducted by Sami Haapasalo and Hannu Jaatinen (2001). They studied the Finnish localization of *Microsoft Word 2000* (Microsoft, 1999). As the subject of the study was utility software, usability also factored greatly into their findings. They discovered that in most areas the usability of the software had been maintained in Finnish. In some areas, however, it was deemed that usability had actually improved as a result of very well-thought-out translations. Haapasalo and Jaatinen (2001: 78) came to the conclusion that in software localization it is better to form terminology from the ground up using what is available in the target language, rather than try to form equivalents from the source text. They note the following:

Nevertheless, in software localization, the source text can be – or in fact, should be – given only a secondary importance as the skopos theory suggests. As the analysis of the research material illustrated, the most

transparent equivalents were achieved by not following the source text too closely, but instead, paying attention to the functions that lie beneath the menu commands. It could also be argued that the original version of the software is not a source text, but just a supportive tool providing guidelines for the localizer about the limitations of the user interface, such as text length restrictions and the overall appearance of the application.

Haapasalo & Jaatinen (2001: 78)

The findings are indeed in line with user-centeredness (and, by extension, functional translation theories) which give translators permission to deviate from source text content and form as necessary (Suojanen et al., 2015: 41). With relation to video games, however, these ideas should not be taken and applied as-is and without question to all aspects of their localization, mainly the narrative and diegetic (i.e., in-game) aspects. After all, fiction has its own stipulations for translation. But the presented ideas do fit quite well for settings menus of video games, which arguably share many features with utility software which mostly rely on discrete textual elements, lists, and hierarchical navigation structures between different views, windows, and screens.

On a final note, non-academic, critical analysis for the technical aspects of video games does exist in the form of some video game reviews and also as bespoke technology analyses conducted by specialist groups such as Digital Foundry ([www.digitalfoundry.net](http://www.digitalfoundry.net)). Although this type of critique usually focuses on fidelity and performance of video games, attention is sometimes given to usability of settings menus and also their affordances, especially in cases where settings menus do not function in expected ways or when they lack some standard options that are expected to be present.

## 4 Data and Methods

The material for this study was taken from Finnish translations of three video games: one on the PlayStation 4 (PS4) home console and two on Windows PC (hereafter simply PC). The three games provided a suitable amount of data for a study of this scale. For reasons discussed in chapter 2, there are very few functional differences between modern games on different platforms when it comes to their localizations. Therefore, platform variance should have minimal effect on the results of the analysis. In fact, one may argue that this has worked in favor of the current study; what video games on PC usually provide are more robust options menus than their console counterparts. On PC, there are usually more possibilities to adjust different types of settings, such as graphical fidelity and effects as well as key bindings for the chosen control method. The two PC games used in this study also support gamepad controllers, as well as the usual keyboard-and-mouse (KBM) combination. The PC games' settings menus did indeed provide a lot of relevant data for this study. To provide an overview of the data, first, a look at where the data came from. Then, some delimiting factors behind the selected data sources.

### 4.1 Data

The data for this study was collected from three games, which are *The Last of Us Remastered* (PS4 version, developed by Naughty Dog and published by Sony Interactive Entertainment in 2014), *Hellblade: Senua's Sacrifice* (PC version, developed and published by Ninja Theory in 2017), and *Watch\_Dogs* (PC version, developed and published by Ubisoft in 2014). Hereafter, the games will be referred to as *Hellblade*, *TLoU*, and *WD* respectively. The Finnish localization



for all three games is a partial localization, with translated menus, HUDs, and subtitles. Finally, the source language of all three games is English.

All of the above games have a PEGI age rating of 18, so they are all targeted toward adult gamers. This has been a deliberate choice to ensure consistency in the data as it would stand to reason that games with similar age ratings could provide observable patterns. Furthermore, in order to distance the games from each other in terms of developers and localizers, all three games have been developed by different studios and brought to market by different publishers. After all, the aim was to examine an overview of Finnish menu translations in video games targeted at a specific audience. In terms of genre, all three games also belong to the “third-person action-adventure” genre. This means the following: the player sees the game world from behind the player character (via a third-person view); the player character can be controlled freely to permit exploration of the game world (the level of freedom in exploration varies per game, however); events in the game occur in real time, requiring the player to time their actions in order to succeed in their goals.

These attempts at providing a representative sample of a certain type of game are not perfect, however, since the companies or individuals responsible for the localizations of these games are not always listed in the games’ credits. Game studios and publishers may sometimes use the same freelance localizers or Language Service Providers for their games. For instance, Ubisoft, the publisher of *Watch\_Dogs*, has published several PEGI 18 rated games that have been localized into Finnish and it is very possible that some of them have been translated by the same people. This also remains a possibility for the other two games examined in this study, even though they are all published by different companies.

Another delimiting factor for this study is that all games are officially translated. Fan-translations were not included (for differences between professional vs. fan-translations of video games, see Palomäki, 2015).

As for the reason for choosing games with similar age ratings, this also plays a role in data consistency. Games targeted towards adults are expected to be played by adults, and therefore the target audience would already be familiar with video games available in both English and Finnish. In light of this, there should be no need to consider whether or not the Finnish terminology is understandable to children. This means that possibly unintuitive loan translations (direct word-for-word translations) or even direct lexical loans (effectively non-translations) would not necessarily constitute usability issues, especially for such terms that have no established Finnish equivalents; the main focus of the study is on usability and understandability after all.

The data was collected by browsing the games' menus and taking screenshots of sections where there are translated textual menu elements. After this, the source texts and their translations were transcribed into spreadsheets (see appendices A and B). From here, the usability of these textual items was analyzed in accordance with methods described in section 4.2. Noteworthy instances in the data will be discussed in more detail in chapter 5.

The data for this study comprises all textual elements in the main menus of all three games. Overall, there were 105 instances in TLoU, 80 in Hellblade<sup>4</sup>, and 185 in WD, making the total number of instances 370. Redundant instances within a single game are only counted once. Examples of these include text strings that appear on every menu screen by default (*Back, Return, Confirm*, etc.) as well as strings that indicate a toggle option (*On, Off*). These are items that,

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<sup>4</sup> Hellblade has since received an update that added some accessibility and graphics options to the game. The menu items for these options have not been included in the current study.

due to the modular nature of game localization, have most likely been translated only once as well (see section 3.2).

## **4.2 Summary of Heuristics and Severity Scale**

Due to their large number, as well as the modification of some, this section will provide a more compact summary list of all the heuristics employed in this study. This section can also serve as a reference point for those wanting to cross-reference the analyzed data with the individual heuristics. The full data list as well as the severity classifications for each instance are included in Appendix A. The comparison list for the Consistency heuristic can be found in Appendix B.

As described in the individual heuristics' sections, from the ones introduced by Suojanen et. al (2015), the current study utilizes the following heuristics in the analysis:

- 1. Match between translation and users
- 2. Consistency
- 3. Legibility and readability
- 4. Cognitive load and efficiency
- 5. Satisfaction
- 6. Match between source and target texts

Severity ratings were discussed in section 2.3. Using the sample scale provided by Nielsen, a scale that better suits the current study can be formulated. To reiterate, Nielsen's sample scale reads as follows:

0 = this is not a usability problem at all

1 = cosmetic problem only – need not be fixed unless extra time is available on project

2 = minor usability problem – fixing this should be given low priority

3 = major usability problem – important to fix, so should be given high priority

4 = usability catastrophe – imperative to fix this before product can be released

(Nielsen, 1993: 103)

For the purposes of the current study, this five-point scale can be reduced to a three-point scale. Because the data comprises only text, non-problems (0) and cosmetic problems (1) in Nielsen's scale can be combined. Together, these will form a new rating of 1 in our scale. This rating would include cases where there are no usability issues or where alternative words, syntax, or grammar could have been used. This would also include misspellings of words that do not alter their meaning and are easily decipherable in context.

Nielsen's minor problem rating (2) can be adopted as the new 2 for our scale. This tier would include non-standard terminology, grammar, and syntax which can be difficult to parse but which can still be deciphered. Tier 3 can also be adopted as is. This would include the most egregious errors, such as terminology, grammar, and syntax that is misleading or which otherwise presents the user with information that is inaccurate. The present study being a summative evaluation, tier 4 will not be applied.

With regard to the original tier 4 in the sample scale, it is difficult to imagine a situation where the lack of quality in a video game's menu translation would constitute a catastrophic usability issue. There could, hypothetically, be misleading information of such severity that the user ends up misusing a setting, which could cause a game to become unplayable. Something like this is nearly unheard of, however, as even if a game's performance drops to completely unplayable levels (perhaps due to graphics settings too ambitious for the hardware), it is usually still possible to access a game's menus and change settings again. In an even more severe – and even more theoretical – case, a game could become completely unable to run, requiring complete deletion and re-installation.

In the 1980s and 1990s, when physical copy-protection measures were prominent, there was at least a possibility of catastrophic translation errors for physical copy-protection measures (such as a code wheel or a code table). In their original releases, games such as *The Secret of Monkey Island* (LucasArts, 1990) and its sequel, *Monkey Island 2: LeChuck's Revenge* (LucasArts, 1991), both contained a code wheel, the use of which was required to run the game. The player would have to go through the image-deciphering process every time the game was started. With these types of measures, there was the possibility that a translation error in these types of code wheels or their instructions would render the code wheels unusable and the game unplayable.

As discussed in section 3.6, the official German translation of *Sid Meier's Civilization IV* contained some changes/errors that had the potential to cause a player to be unable to complete the game. Something like this would also constitute a major/catastrophic usability issue in the translations.

While video games can certainly have a plethora of technical problems (unintentional soft-locks, hard crashes, freezes, save corruption, memory leaks etc.), these usually arise from poorly optimized code, driver issues, or hardware

incompatibilities; cases where the fault is very unlikely to lie in the translation of a game or its settings menus.

Technical issues that could arise from poor translation are not impossible, however. Audio settings in a video game could present a scenario where there is no sound output from a game, and with audio being an integral part of many video games, a game without sound could certainly be classed as unplayable, especially if the game uses auditory cues to signal something critical to the player and there is no visual effect to accompany the cue. There could be a situation where critical sound settings have been mislabeled or mistranslated in localization, which could cause chosen settings to produce no sound from a game. This could be described as a major/catastrophic usability problem in the translation of settings menus as well.

With the above descriptions in mind, the severity scale for usability issues employed in this study reads as follows:

1. Cosmetic or a non-problem
2. Minor usability problem
3. Major usability problem

Chapter 5 will present the analysis of the data, followed by a summary discussion regarding the results in chapter 6.

## 5 Analysis

In this section the data is analyzed with each sub-section introducing any noteworthy highlights pertaining to its particular heuristic. Where appropriate, each heuristic will examine each game individually. Furthermore, for the purposes of this study and to serve readability, the discussed menu items from TLoU are capitalized following the standard rules of titles in English and Finnish. Most menu items in TLoU are written fully capitalized in the game proper. They can be found in this form in Appendix A.

### 5.1 Match between Translation and Users

All three translations contain some instances of terminology that do not match common usage when an established equivalent would be available, although in most cases where this occurs, the meanings are still decipherable.

#### 5.1.1 The Last of Us

The first possible usability issue that The Last of Us presents in its menus is *Lähitaisteluvihjeet* (*Melee Prompts*<sup>5</sup>). In Finnish, the latter part of this compound word, *vihjeet* (plural of *vihje*, meaning *hint* or *tip*), can be misconstrued as referring to some additional tips or tricks that can be performed in melee combat, but the option simply toggles the display of possible button inputs for melee combat when the respective melee action can be performed.

For instance, when the player sneaks behind an enemy, the button command for a strangling maneuver appears once the player is close enough

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<sup>5</sup> In video games, contrary to its more common meaning, the word *melee* refers to any type of non-ranged combat, not only to unarmed combat.

to perform this action. Thus, the player is prompted for actions when they are possible. In the context of computers, the word *prompt* does have a commonly used Finnish equivalent, this being *kehote*, which is used in the manner described above, to tell a user when an action is possible and what button/key to use for said action. The use of *vihje* for *prompt* has the potential to cause confusion, especially in an action game where real-time combat – both ranged and melee – plays a central role.

An item with the potential of causing confusion among players in both English and Finnish is *Show Tag Popups*, translated as *Näytä ilmoitukset*. What this option toggles is the display of notifications for when the player completes certain “challenges”. These challenges can include killing a certain number of enemies by shooting them in the head or crafting a certain number of a particular item (medical kits, improvised knives etc.). Completing these challenges earns the player points which can be used to unlock extra content such as concept art of the game’s environments and characters.

It should also be mentioned that these challenges are different from the PlayStation platform’s Trophy system, which is a platform-specific achievement system that is tied to a user’s PlayStation Network account. The challenges referred to here are contained to the game, TLoU, itself. In English, this type of system is often referred to as something like “in-game achievements” or “in-game challenges”. Some in-game achievements may have the same requirements as platform-specific achievements (or Trophies in this case) as well.

Both English (*Show Tag Popups*) and Finnish (*Näytä Ilmoitukset*) versions of the term can present issues for users, the English one because it is non-standard and the Finnish *Näytä Ilmoitukset* because it is simply too broad as a concept. The Finnish can be back-translated as “Show Notifications”, and this presents the issue of the user having no idea what notifications are being



toggled. No tooltip is present for this option either. Because of this, the setting could be confused with any number of notifications that can be presented on the PlayStation platforms, such as notifications for the aforementioned Trophy system. There is a wide range of notifications for other things as well, for new system updates; for when a controller's battery is running low; for when a user's friend comes online on their own PlayStation console etc. Although it is an established practice on PlayStation consoles that Trophy notifications and other "system level" notifications are controlled through the consoles' bespoke settings menus and not from within games themselves, this option may still confuse the user, especially if they are a new user on the platform.

The first definite usability issue is introduced with the translation of *Show HUD*, which has turned into *Näytä pelinäköymä* in Finnish. This can be back-translated as "Show Game View" or "Show Gameplay View". In common usage, *pelinäköymä* refers to the view in the game in which the gameplay happens. In the case of TLoU, the gameplay view is the 3<sup>rd</sup> person view from behind the player character's back and this view is where the character can be controlled for exploration and combat. Of course, if one were to turn off this gameplay view, then nothing would be displayed on the screen during gameplay. The Finnish translation has a very high chance of being misinterpreted by the user.

In the context of video games, the term HUD (Heads-Up Display) refers to the informational elements that are visible in the gameplay view, things such as health bars, ammo counters, minimaps, on-screen waypoints etc. Barring the use of the English abbreviation, *heads-up display* does not have a common translated Finnish equivalent for video games. For the term's aviation-related Finnish equivalents, two alternatives exist. The first being *kypäränäyttö* (lit. helmet display), which is also listed as a keyword in the National Library of Finland's Doria repository. The second, broader alternative is *heijastusnäyttö* (lit.

reflection display), which many Finnish retailers of aftermarket car parts appear to use for HUD systems that can be installed into cars.

With the way these two terms are constructed, both of them are too specific to be used as terms for video game HUDs. The first one contains the word *kypärä* (Eng. helmet), referring to the display's mounting mechanism. The second term contains the word *heijastus* (Eng. reflection) which refers to the way HUDs made for vehicles and aircraft work. Video game HUDs are not reflections and helmets are rarely used in the same manner as in aviation. Although Virtual Reality (VR) gaming and related VR headsets have become more common in recent years, VR headsets do not employ HUDs in the same way as helmets in aviation do, as VR headsets contain screens that are viewed directly by the user. In this sense, the aforementioned *kypäränäyttö* (helmet display) could be used as an equivalent for *VR headset*, but certainly not as an equivalent to *HUD* in a video game.

It appears that existing equivalents from other fields do not provide a suitable alternative for *HUD* in video game usage. As is often the case with foreign abbreviations, using *HUD* as is would not be out of the question (something that the Finnish translation of *Subnautica* actually does) and in the instance of *TLoU*, the target audience should be familiar with the abbreviation. Of course, this still leaves a terminological gap for the unabbreviated *heads-up display* in Finnish gaming terminology, with one possible option offered here as *pelinäkömänn tietoelementit* (Eng. gameplay view informational elements). Due to the term's length compared to the English abbreviation, this translation's use would be limited to instances where there is enough space to display it, which may not be possible in all menus. An appositive translation could also read as *Pelinäkömann tietoelementit (HUD)*. Here, the *HUD* in parentheses would work similarly to how the English *pop-in* was used in the Finnish translation of *Portal 2* (see section 3.2) i.e., as something similar to an apposition to assist the

Finnish gamer in understanding the Finnish term in case they are more familiar with the English one. Another possibility would be to transform *HUD* into a special loan with a vowel suffix i.e., *hudi*, similar to how *experience points* is sometimes referred to as *expa* (see section 3.6). *Hudi* may indeed be the most used equivalent among Finnish gamers.

As for what may lie behind the decision to translate *HUD* as *Pelinäkymä*, it is possible that the game's Finnish translator(s) may have considered HUD elements as something that gives a video game its "game-like" feel, which might have led to the idea that a view which includes these HUD elements can be thought of as a "game view". Indeed, and as the presence of this setting suggests, sometimes players like to disable all possible HUD elements in order to get as fully immersed into a game as possible. The presence of these game-like elements on the screen can be seen as distracting and as a constant reminder that the player is indeed playing a video game.

A further possible usability issue is presented by *Vasen ja oikea sauva*, translation of *Left and Right Stick*, referring to the analog sticks on PlayStation controllers. The issue lies with the last part, *Stick*, which has been translated as *sauva*, meaning *rod* in Finnish. As discussed briefly in section 2.4.1, the usage of *sauva* in Finnish is not a choice made by the game's developers or translator(s) but is rather a part of platform-specific Finnish terminology for PlayStation, to which the software must adhere. However, even if *sauva* is effectively set in stone by the platform holder, that does not necessarily make it a good term.

The issue is that the word *sauva* does very little to evoke the idea that it is supposed to represent: the small sticks on video game controllers that are most often used for player character and camera movement. In Finnish, these sticks are usually referred to as *tatti* due to their mushroom-like shape. The Finnish word *tatti* refers to the Boletaceae family of mushrooms, often used for any mushroom belonging to this family and sometimes as a generic term for

mushroom in general. The word *tatti* is very descriptive, providing the general shape of the small stick, sometimes used as a compound in the form of *analogitatti* (analog stick). Unfortunately, the game does not use the word *analog* with *stick* to make it more explicit. Simply referring to the sticks with *sauva* may leave the user perplexed as to what the “rods” in question are. In Finland, the distant North of long cold periods, the word *sauva* evokes thoughts of cross-country skiing and related skiing poles (*suksisauva*).

### 5.1.2 Hellblade: Senua’s Sacrifice

In Hellblade’s settings menus, the translation choice for *Resolution* as *Tarkkuus* is somewhat interesting with regard to transparency, decipherability, and proliferation. The term stands somewhere in the middle of possible extremes. On the more transparent end, there is the nearly obsolete but decipherable *erottelykyky* and its variants (*erotuskyky*, *erottelutarkkuus* etc.). On the more commonly used but perhaps more “technical-sounding” and opaque end, there is *resoluutio*, which is arguably the more commonly used equivalent in actual Finnish parlance. What helps a user in understanding the setting is its context. The adjustable values for the setting comprise common screen resolutions, such as 1920x1080. Like most UI elements, video game options and their adjustable values do not exist in a vacuum, and proximity is used to guide the user’s gaze and help with navigation as per UI design principles wherein grouping things together (whether by shape, proximity, or sectioning) plays a key role in identifying items that relate to each other (Kuutti, 2003: 27–28; Harley, 2020).

Furthermore, the tooltip for *Resolution* and other graphics settings in Hellblade note that the setting *affects VRAM usage*. *VRAM* stands for *Video Random Access Memory*; in the abbreviation, the *V* is usually pronounced as a

separate letter and *RAM* as one word. In common Finnish parlance, the pronunciation of *VRAM* turns into *veerammi*, reflecting the English abbreviation's pronunciation. In the tooltip for *Resolution*, The Finnish translation of *VRAM* is noteworthy as it is referred to as *VRAM-muisti*, which uses the word *muisti* (Eng. memory) redundantly. This results in a back-translation of *\*VRAM-memory\**, where *M* already stands for *memory*. While this type of redundancy stands in contrast to Sager's fifth ideal (1990: 89), the chosen Finnish term can still be comprehended. Similar redundancies can be found in other Finnish terms of foreign origin, such as with the common abbreviation of *compact disc*, *CD*, which in Finnish is often referred to as *CD-levy*, the word *levy* meaning *disc*, resulting in a back-translation of *\*CD-disc\**. To conclude on this instance, because *VRAM* (as well as *RAM*) is one of the key concepts in video gaming hardware, the target audience can be expected to be familiar with both the term's English abbreviation as well as the basic function of the object to which it refers.

Even some of the English terminology in *Hellblade's* menus is somewhat unconventional, and they could prove difficult to parse for English-speaking users that are only familiar with the more common alternatives. An example of this would be *View Effects*, translated as a translation loan into *Näkymätehosteet*. Even the function of the setting is somewhat unconventional as it appears to control both *screen space reflections* (*SSR*) as well as particle effects, which are usually listed as discrete settings. Combining them under a single setting does have logic to it, however, as both effects are what are known as "post-processed effects". In computer graphics, post-processed effects are rendered (i.e., drawn) "on top" of the view area, i.e., only into spaces where the "camera" is pointing (Unity Technologies, 2017) to save system resources.

As noted, *View Effects* is somewhat rare as a term even in English. The option is accompanied by a tooltip, however, and it explains the setting's function in more detail, allowing English-speaking users unfamiliar with this

variation of the term to understand it. *View Effects*, or indeed *screen space effects*, does not have an established Finnish equivalent but the employed *Näkymätehosteet* could be a viable option as it is transparent in communicating its function. The term could also lend itself well to derivatives (SSR, for example, could be translated into *näkymäheijastukset*). A more literal, but perhaps also more cumbersome, alternative to *näkymätehosteet* could be *näyttötilatehosteet*.

The reason for using *View Effects* may stem from the game developers' desire to simplify the settings menu by combining two settings into one instead of having separate settings for SSR and particle effects. To conclude, *Näkymätehosteet* is quite descriptive as a term and the tooltip does tell the user what visible aspects of the game this setting controls.

Another translation that poses a usability issue in *Hellblade* is found in the Controls menu. The command *Melee Attack* has taken the form of *Taisteluisku* in Finnish, which can be back-translated as *combat strike*. The Finnish term could indeed refer to any type of offensive action and is too broad in meaning. The context of the Controls menu does alleviate possible confusion to some extent, however, as all the actions related to combat are listed under *Combat Controls (Taisteluohjaus)*. On the other hand, having a term like *combat strike* listed among other offensive actions may lead the player to think that perhaps the other offensive actions are, in fact, not related directly to combat but to something else. The other actions listed are *Fast Strike (Nopea isku)* and *Heavy Strike (Voimaisku)*. The game is indeed a third-person action game, many of which often contain puzzles and other non-combat gameplay elements and mechanics. Striking things other than enemies is not out of the question.

Furthermore, the use of *Melee Attack* even in the original English can also be somewhat confusing because of the way the word *melee* tends to be used in the context of video games (see section 5.1.1) This usage is also demonstrated in both *TLoU* and *WD* where *melee* refers to all close-ranged attacks, be it

punching, strangling, or stabbing. This usage of *melee* in gaming contexts has also been deemed prolific and established enough to warrant its own entry on Wikipedia<sup>6</sup>. Indeed, even a term like *melee weapon* in video games commonly refers to any non-ranged weapon.

On the other hand, one may argue that Hellblade's use of *melee* is clear enough because it is used in addition to the other types of attacks, which do indeed employ weapons. The game has no ranged combat of any kind, although this is not stated explicitly anywhere in the menus and the names of the other attacks – *Fast Strike* and *Heavy Strike* – contain no indications whether they are ranged or close-ranged attacks. In Hellblade, however, pressing the *Melee Attack* button makes the player character perform an unarmed attack, such as a kick. Furthermore, the mere presence of the *Melee Attack* command tells an English-speaking player that the other offensive actions will most likely happen with weapons, as otherwise there would be no need for a separate command for a melee type attack to exist. This is not the case with the Finnish term, however, as *Taisteluisku* could be used as an umbrella term for all offensive actions, both armed and unarmed, ranged and close-ranged. To conclude, both *Melee Strike* and *Taisteluisku* can present issues for users of either Finnish or English.

Lastly, the setting *Mouse Sensitivity* in Hellblade has not been translated and it has been transferred into the Finnish translation as is. While this was marked only as a minor usability issue (2) in this heuristic due to target audience considerations, this is very likely an error in the localization process (see section 5.6).

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<sup>6</sup> [https://en.wikipedia.org/wiki/Melee\\_\(video\\_games\)](https://en.wikipedia.org/wiki/Melee_(video_games))

### 5.1.3 Watch\_Dogs

The first instance of a usability issue found in WD is the translation of *Anti-Aliasing* (commonly abbreviated to AA in English), which appears as *Vääristymien korjaus* in Finnish. The chosen translation presents two main issues: it is not the established equivalent and its meaning is too broad.

*Anti-aliasing* is one of the rare graphics terms that has an established equivalent in Finnish. *Reunanpehmennys* (lit. edge smoothing) describes the visual effect quite aptly, as this is the main purpose of it: to make jagged edges on 3D objects appear smoother. The translation found in WD, *Vääristymien korjaus*, back-translates as 'distortion correction' which is much broader in meaning and may thus cause a user to misunderstand its meaning. There are several different types of distortions to be found in computer graphics (texture warping, mesh noise, ghosting, tearing etc.) and the chosen Finnish translation makes no reference as to which distortion is being referred to in this instance.

What aids in understanding the AA setting is context once again. The selectable options of the different types of AA implementations (*FXAA*, *SMAA*, *Temporal SMAA*, and *MSAA*) have not been translated, but to the presumed user they will most likely suffice and make the setting's function clear. The different AA implementations and their abbreviations do not have common equivalents in Finnish, but the abbreviations ought to be at least somewhat familiar to most adult gamers as they can be found in most modern games' settings menus.

Another graphics term with possible issues in WD is *Ambient Occlusion* (AO), which has been translated as *Valon käyttäytyminen*. Coincidentally, Joensuu (2016: 21) used AO as an example in forming Finnish equivalents for 3D graphics terminology. The conclusion was that, in the case of ambient occlusion, direct loan translation (*ympäristön tukkeuma*) did not satisfy any standard of a good term. Preferrable alternatives included terms such as a



special loan in the form of *ambientti okklusio* as well as *ympäristövarjostus* (lit. ambient shading). The logic in the latter term's formation is that ambient occlusion simulates shade in places where ambient light's access has been occluded, therefore creating shadowy areas. The term's translation in WD applies similar logic, as *Valon käyttäytyminen* back-translates to 'behavior of light'. Thus, the Finnish term attempts to describe the effect's function.

The problem with the chosen *Valon käyttäytyminen* is that ambient occlusion does not entail everything that relates to the simulation of light. The literal 'behavior of light' can potentially make the user think that, but AO is only one part of a larger whole, much like Screen Space Reflections, which only simulates light's reflective properties. The suggested *ympäristövarjostus* from Joensuu (ibid.) would more clearly communicate AO's function. Similar to the different options for anti-aliasing, the available implementations of AO (MHBAO and HBAO) do not have common Finnish equivalents, and these have been left untranslated. The English abbreviations can still serve the intended user, however.

Further relating to effects that simulate different aspects of light, the setting labeled *Shader* in WD has been translated as *Varjostin* which is an established equivalent, but to which a more fitting alternative could also be *sävytin* which more widely reflects all the functionalities related to shaders (or shader programs) in computer graphics (Joensuu, 2016: 7). In the context of video game menus, the chosen *Varjostin* also has the potential to be confused with settings relating to shadows which are also found in WD's menus. The *Shadows* (fin. *Varjot*) setting in video games does not relate to shading textures on objects or environments like shaders do, however, but to shadows cast by objects. Shadows can usually be turned completely off, or their quality can be toggled between settings like low, normal, and high.

Perhaps the most interesting usability issue present in WD's menus is the translation of *Auto Detect*, which is an option that automatically detects the computer's hardware and adjusts the game's graphics settings accordingly. In Finnish, this option has been turned to *Automaattipaljastus*. The Finnish could be back-translated as 'automatic reveal'. The translation is both problematic as well as interesting. For its problems, seeing an option labelled 'auto reveal' somewhere like a game's graphics menu has a high probability of confusing players; what is there to reveal to the player regarding graphics settings? Nothing, as that is not what the option does. The option does not reveal the computer's hardware to the user either. One may expect the option to present a list of performance-critical components and their specifications, but the option simply adjusts the graphical settings to appropriate values based on detected hardware in the computer. An option such as this would usually be labeled as *Havaitse automaattisesti*, *Aseta automaattisesti*, or perhaps *Automaattiasetukset*.

As for what is interesting about *Automaattipaljastus*, this may be an example of a situation where the abundance of context has steered the translation into an erroneous direction. The story and gameplay in WD deal with hacking other characters' phones, computers etc. as well as infiltrating different locations and remaining unseen (although a more straightforward run-and-gun style of play is also possible). This hacking and stealth-based gameplay may have led to the "automatic reveal" translation. The option may have been interpreted as relating to the game's game mechanics and not the hardware that resides within the player's computer. A mechanic entitled "automatic reveal" would indeed not be out of place in a game like this; perhaps not *source language interference* but rather *context interference*.

It is of course not known what type of sectioning and categorization were used for the game's translation files, meaning that the context wherein *Auto*

*Detect* was presented to the translator(s) is unknown. It is still very possible that the wider context of the game's gameplay mechanics and narrative themes affected this particular setting's translation.

## 5.2 Consistency

This section will focus largely on evaluating consistency across the three games. The full list of collected instances can be found in Appendix B<sup>7</sup>. As there is very little repetition within a single game, there are next to no consistency issues to be found within a single game as well; this is the reason that consistency evaluation was done across the three games and not within a single game. Before the game-to-game comparisons, however, a general observation regarding the data, an exception in one of Hellblade's menu options, and a brief discussion regarding terminological overlap in video games.

As noted in section 2.4.5, not all the same settings are present in the menus of all three games. This applies especially to the console game TLoU, which contains the smallest number of adjustable settings, but the overlap of options available in the two PC games – Hellblade and WD – is not complete either. WD has the most robust settings menus of all three games, allowing the player to change more graphical settings and button mappings than Hellblade does. Despite its smallest number of settings, TLoU has the most options for audio settings, going as far as allowing the player to tell the game their speakers' physical orientations (azimuths) for an optimal soundscape.

The translation choice in Hellblade for *Affects VRAM usage* was discussed in section 5.1.2. Aside from the redundancy element in the Finnish *Vaikuttaa*

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<sup>7</sup> Looking at the compiled list, one may note that Hellblade's menus do not contain a language selection option, and this may seem puzzling as the game clearly supports several languages. This is because in the PC version of Hellblade, language selection happens via a separate executable (a usability issue of its own) and is therefore not found within the menus of the game proper.

*VRAM-muistin käyttöön*, the translation also presents a consistency issue. The inconsistency appears in the tooltip for the *View Effects* setting. Tooltips for some other settings also contain a note about VRAM usage, the sentence being identical in all these other tooltips, but the tooltip for *View Effects* reads in Finnish as *Vaikuttaa VRAM-käyttöön*, which has omitted the redundant *muisti*. While not a notable issue for other heuristics, an issue of consistency, nonetheless. Here, the deviation from all the other tooltips mentioning VRAM usage may lead some users into thinking that *VRAM-muistin käyttö* and *VRAM-käyttö* are two different things. Conversely, in the context of a graphics settings menu, with all the other options present, equally possible is the conclusion that the two variants do indeed refer to the same concept. The RAM that usually relates to game graphics is that of the Video variety, after all.

The exception that was found in the data is the English term *Focus* which is shared between Hellblade (Fin. *Keskity*) and WD (Fin. *Fokus*). In both games, this is a separate mode with its own key/button binding. Note, however, that only the term is shared. The function of the Focus system is different in the two games. In Hellblade, pressing the Focus key/button makes the player character focus on a rune to memorize it, which causes the rune's outline to remain on the screen. This outline can then be superimposed on top of something else where it is required. In WD, however, Focus is an ability that slows down the passage of time, but the effect does not slow down camera movement, which means that while everything else in the game moves in slow motion, the player can aim their weapon or hacking abilities with the same speed as normal, allowing for super-human reaction time.

While not necessarily a usability issue and only present in English, it is important to highlight this type of terminological overlap as it is quite common in video games. Many games have identical gameplay mechanics and systems, but they are sometimes referred to with different terms. WD's Focus with its

slow-motion shooting is nearly identical to Bullet Time from *Max Payne* (Gathering of Developers, 2001), the game that popularized the mechanic.

The opposite of the above scenario can also be true, as was demonstrated with *Hellblade* and *WD*; two different gameplay systems or mechanics with identical names, but the two systems have no significant similarities between them. Of course, any number of combinations of these two scenarios are also possible: a system with its own name in one game may be replicated (with or without the same name) in another game, but with additional elements, or with some elements removed as compared to the original system etc.

In fact, one of *TLoU*'s gameplay mechanics is somewhat similar to *Hellblade*'s Focus system. In *TLoU*, the player character can concentrate in order to listen to the sounds in the surrounding environment more intently. To the player in the real world, this translates to being able to see enemies through walls. In both *Hellblade* and *TLoU*, the player character has this focus-like ability, although the target of the focus in *TLoU*'s game world is auditory rather than visual as it is in *Hellblade*. *TLoU*'s mechanic could easily have been named Focus as well, but it has been entitled *Listen Mode* (Fin. *Kuuntelutila*).

An appropriate place to begin with game-to-game consistency comparison would be instances where terminological consistency is absolute across all three games. For the purposes of the current study, absolute terminological consistency simply means that a term that is used across multiple games is identical in both structure and meaning. For the present study, capitalization is not counted as affecting this consistency. In total, there were 55 menu items that were present in more than one game and 23 of these were present in all three games. There were 7 instances of absolute consistency in items that were found in all three games. These were *Jatka* (*Continue*), *Helppo* (*Easy*), *Vaikea* (*Hard*), *Tekstitys* (*Subtitles*), *Pois* (*Off*), *Päällä* (*On*), and *Asetukset* (*Options*). The

percentage of absolute consistency for the concepts shared across the three games is 30.4%.

Out of the 55 shared items, 32 were shared between up to two games. Of these 32, absolute consistency was found in 14 items. These were *Tekijät* (*Credits*), *Näyttö* (*Display*), *Pelaaminen* (*Gameplay*), *Matala* (*Low*), *Korkea* (*High*), *Käytä* (*Interact*), *Liiku taaksepäin* (*Move Backward(s)*), *Liiku eteenpäin* (*Move Forward*), *Valokuvatila* (*Photo Mode*), *Juoksu päälle/pois* (*Run Toggle / Toggle Sprinting*), *Varjot* (*Shadows*), *Tekstuurit* (*Textures*), *Juokse* (*Run / Sprint*), and *[ENTER] Vahvista* (*[ENTER] Confirm*). The percentage of absolute consistency for the two-game-comparison is 43.8%.

The numbers are at least encouraging, showing that there definitely are established equivalents in Finnish gaming terminology that are used consistently. A further study of similar comparisons with more recent games could prove fruitful in showing potential progress in terminological consistency for Finnish video game translations.

### **5.3 Legibility and Readability**

With regard to legibility and readability, the menu texts in all three games contain very little in terms of possible usability issues. None of the games utilize an exotic or difficult-to-read font in their menus and special effects (visual or auditory) do not obstruct the menus. That is of course not to say that no possible issues are present. TLoU presents an interesting typographical choice by the developers that will be discussed first in section 5.3.1. Hellblade and WD do contain a few minor instances that may constitute legibility and readability issues as well. These will be examined in sections 5.3.2 and 5.3.3.

For some general comments regarding the three games, the fonts used in all three games' menus are fairly standard sans serif fonts, and they should not

present readability issues to the average user. None of the three games present any notable instances where navigating their menus is difficult due to non-standard sectioning or confusing layouts either.

### **5.3.1 The Last of Us**

While TLoU is the only game out of the three whose menus appear to be at least technically flawless (i.e., no misspellings were found), the game's menus may present issues for some users as most of the game's menu text is fully capitalized. Capitalized text is more difficult to read than lower case text because lower case letters have more variance between them and are therefore easier to recognize (Sinkkonen et al., 2006: 124). For reference, the data list in Appendix A follows the examined games' capitalizations as they appear in the games proper.

Of course, items present in video game menus usually contain only a few words and relatively little time is spent reading them, meaning that the user will most likely have no chance of experiencing any type of fatigue as a result of things such as hard-to-read fonts, for example. However, this only applies to the shorter, more technical menus that are the subject of the current study; many games also feature diegetic texts (notes, emails, books, etc.) which can span multiple pages. With these types of texts, special attention should be given to their readability to avoid user fatigue. Menu items, on the other hand, are similar to titles and headings as they are usually presented as point-by-point lists. Indeed, while most of TLoU's menu items are fully capitalized, many sub-options and tooltips do follow the standard rules of capitalization, which serves the lengthier explanations' readability. As referenced earlier (ibid.), there is a clear reason why it is quite rare to find a piece of software (utility software especially) where all menu and UI texts are fully capitalized.

### 5.3.2 Hellblade: Senua's Sacrifice

As mentioned in the introductory section for this part of the analysis (5.3), the menus in Hellblade and WD have a few instances of possible usability issues in the area of legibility and readability.

The tooltip for *Jälkikäsittely* (*Postprocessing*) contains a minor misspelling in Finnish with the word *asetta* having been written as *aesta* [sic]. Further, the very-likely-unintentional non-translation of *Mouse Sensitivity* would very clearly present a usability issue in legibility and readability as the language is incorrect, even if the untranslated English is without error.

Additionally, in the *General Controls* section, the Finnish key commands for *Move Forward*, *Move Backwards*, *Change Target Left*, and *Change Target Right* appear as *LiikuEteenpäin*, *LiikuTaaksepäin*, *VaihdaKohdeVasemmalle*, and *VaihdaKohdeOikealle* respectively. The spaces between the words have been omitted and – quite curiously – in all four instances all words begin with a capital letter. All other options in the game's menus follow Finnish capitalization conventions of titles and headings where only the first letter of the first word is capitalized.

This capitalization of initials makes one wonder whether the lack of spaces is intentional or not. The uncharacteristic capitalization indicates that the spaces may have been omitted on purpose and the capitalization may be present in order to help the reader distinguish individual words more easily. At the very least, the reason for omitting spaces should not be space restrictions as there are other, longer text strings present in the game's menus and even in the same menu screen. For instance, the key binding labelled *Strafe Left* appears correctly in Finnish as *Sivuaskella vasemmalle*. This string not only takes more space, but it also contains more characters than *LiikuEteenpäin* (*Move Forward*).



### 5.3.3 Watch\_Dogs

Only one misspelling was discovered in WD's Finnish menus. This appears in the tooltip for *Ystävien tulitus salauksenpurussa* (*Friendly Fire Decryption*). The first sentence of the tooltip begins as "*Ystävien tulitus salauksenpurussa on pois käytössä oletuksena, [...]*" where the word *käytössä* has been inflected incorrectly. In the correct relative case, the word would appear as *käytöstä*.

There are some other observations to be made regarding WD's menus. One of these is a stylistic choice where the titles of dialog boxes begin with an underscore before the first letter of the title. The term 'dialog box' refers to the small windows in Graphical User Interfaces (GUI) that often appear as warnings or when a critical action needs to be confirmed. In WD, the underscores in dialog box titles are present in both English and Finnish. An example of this can be seen when quitting the game; in the main menu, choosing the option *Quit to Desktop* (Fin. *Poistu työpöydälle*) prompts a dialog box to appear asking for confirmation. The title of the dialog box appears as *\_Warning!* (Fin. *\_Varoitus!*) and the text in the dialog box proper asks "*Are you sure you want to quit to desktop?*" (Fin. *Haluatko varmasti lopettaa ja siirtyä työpöydälle?*).

Much like in the stylized version of the game's name, the dialog box underscores in Watch\_Dogs are an immersion-enhancing artifact, very deliberately chosen due to the game's story and gameplay heavily involving computers and hacking. The story behind the underscore is that older operating and file systems of computers could not handle spaces in filenames and underscores were often used in their stead, making the underscore nearly synonymous with computing. Even today, URLs (i.e., web addresses like [www.uef.fi](http://www.uef.fi)) cannot contain spaces and they are often manually replaced with underscores (URL encoding can automatically replace spaces with the plus (+) sign or the combination %20 as well). While the use of underscores in WD's

dialog box titles does not follow either English or Finnish grammar, its effect on readability is quite minimal as the usage is only tied to singular titles in instances that are designed to call attention to themselves.

The last observation in WD's menus relating to legibility and readability has to do not with text but the background used for the game's menus. Instead of static images (as used in Hellblade's sub-menus) or a static camera shot with a low level of action (as used in TLoU and Hellblade's main menu screen), the background in WD's menus is a trailer-like video that shows snippets of some of the game's characters and situations. The video is interspersed with different types of visual effects comprising geometric shapes as well as simulations of glitches in digital video (artifacting, ghosting, etc.). This relatively high-action content that has been placed alongside the game's menus has the potential to affect readability by drawing attention away from the menu items themselves as the human eye is naturally attracted to moving objects and flickering lights on the periphery of vision (Kuutti, 2003: 26).

#### **5.4 Cognitive Load and Efficiency**

Very few cases relating to cognitive load and efficiency were discovered in the three games. All the games examined have in their menus some form of tooltips, explanations of a setting that is currently being highlighted.

Tooltips are not, however, always utilized for all options in the examined games, which may lead to issues with cognitive load and efficiency. Overall, logical UI design and established conventions can be seen in all the games' menus as well: identical commands are usually placed in the same place on all screens (often appearing as legends noting things such as pressing the Escape key will bring the user back to the previous menu screen) (Nielsen, 1993: 132) and space and size are used in ways that help in navigating the menus, with

items that relate to each other being contained in a single screen or grouped together in ways that communicate their relations to each other, following the gestalt principles of usability (Kuutti, 2003: 27–28).

In Hellblade, the non-translation of *Mouse Sensitivity* was already discussed in the previous section and aside from the legibility issue presented by a wrong language, the error also brings about issues relating to cognitive load as the player will now have to decipher another language, perhaps not the most challenging English one might come across in a video game menu, but the instance remains untranslated regardless.

In WD, the different options of anti-aliasing (AA) have been left untranslated and *Anti-Aliasing* itself has been mistranslated as *Vääristymien korjaus*, the common Finnish term being *reunanpehmennys* (see section 5.1.3). What alleviates the usability issue here is the context of the option. The presence of the various AA implementations can lead the user to understanding what *Vääristymien korjaus* actually means here. As is customary, the AA implementations are also listed in order of how expensive (in terms of required computational power) they are, which also helps an unfamiliar user to make adjustments if a chosen implementation impacts the game's performance too severely. While no tooltip explaining the different AA implementations is present, there is a tooltip noting the amount of VRAM that a chosen AA method requires.

Similar to AA, the translation of *Ambient Occlusion* (AO) as *Valon käyttäytyminen* was also discussed in section 5.1.3. The inaccurate translation may cause undue cognitive load on the user due to the option not being described in a way that communicates its workings. As with the AA instance, the presence of the different implementations of AO may help the user in understanding what the setting actually is. The different AO implementations are also listed in order of how expensive they are.

The final instance relevant to this heuristic is the tooltip for *Äänet ja kieli* (*Audio and Language*), which in English reads as *Modify game language (Main menu only), toggle subtitles, set autoplay music in vehicle and adjust volume settings*. In Finnish, the tooltip appears as *Muuta pelin kieltä (vain päävalikko), ota tekstitys käyttöön tai pois, säädä musiikin automaattista soittamista ajoneuvossa ja säädä äänenvoimakkuuden asetuksia*. The tooltip's intention is to tell the player that the game's *Written language* (which covers the HUD and other in-game text) can only be changed when there is no game instance running. If the player starts a new game or loads a previously saved game and then presses Escape to enter the settings menu, the game's (UI-related) language cannot be changed. In the tooltip, "Main menu" refers to the menu that appears when the game is launched. This may cause confusion with some players as the menu that appears when pressing Escape in the middle of playing the game is effectively the same menu as the "Main menu".

Furthermore, the wording in "Main menu only" can also be interpreted as meaning that only the main menu's language can be changed. This is a less severe short-coming, however, as entering the *Audio and Language* menu itself immediately reveals all the different language options that can be changed. Curiously, other language options for WD (subtitles and spoken dialogue) can be changed when a game instance is running. The inability to change the UI language mid-game may be a limitation in the game engine.

## 5.5 Satisfaction

Very little can be said in detail about the satisfaction aspect of a video game menus' translated versions. The experience of navigating game menus relies on much more than just text. Auditory feedback, transitions between different options and screens, responsiveness, speed, sample images and audio clips etc.

The user may be guided through all these things via a menu's translation, but the translation is rarely in and of itself the thing that makes navigating menus and toggling options pleasurable. Some may find it irritating when a UI produces sound effects for all possible inputs (WD). Some menus' soundscapes are more subdued (TLoU and Hellblade) while others are (increasingly rarely) completely silent. Satisfaction is so highly tied to personality that a heuristic evaluation may not be best suited for assessing this aspect of translated video game menus. Usability testing with multiple test subjects and a controlled environment would serve satisfaction assessment more.

Of course, it could be argued that satisfaction can be affected by any usability issue. Translation errors and convoluted expressions can have a negative effect on user satisfaction. Although all the menus succeed in fulfilling their task for the most part, none of the menu translations in the three games examined are without fault and any of the usability issues found in the translations could decrease satisfaction. The one instance in all three games that could very likely have a negative effect on satisfaction is the translation of *HUD* in TLoU, which appears as *Pelinäkymä* in Finnish. While there is logic to the translation, its misleading nature is such that a Finnish player is extremely unlikely to understand the intended meaning behind the setting, as evidenced by the fact that the translation required measured analysis to infer the logic behind it (see section 5.1.1). Despite the translator's best intentions, the translation has a high chance of being misinterpreted and knowledge of the option's effect becomes reliant on toggling it on and off in order to see what its actual effect is.

## 5.6 Match between source and target texts

There are only a few instances in the three games that constitute usability issues with Match between Source and Target Texts. With regard to all relevant text having been translated, *Hellblade* presents the most notable instance with *Mouse Sensitivity*. This setting has gone completely untranslated and appears in English when the game's language is set to Finnish. What makes this unintentional non-translation interesting is that the same issue is found in other languages as well, possibly all languages that the game supports.

In addition to Finnish, the non-translation was also observed in Swedish and Japanese. This indicates that for some reason the *Mouse Sensitivity* option was likely not included in the translation files that were sent out to the game's translators. It may be that the translations' quality assurance was also done using the translation files and not actual playable game code, which would explain how the non-translation has made its way into the release version. This single menu item presented in the Latin script is especially noticeable in Japanese among all the other settings written in the kana and kanji scripts.

In addition to the traditional Easy, Normal, and Hard difficulty selections, *Hellblade* also employs a separate dynamic difficulty option which adapts the game's combat difficulty to the player's performance automatically. In English, this difficulty is denoted as *Auto*, a common abbreviation of *automatic*. In Finnish, however, the option is also labeled as *Auto*, which does not follow Finnish conventions for abbreviations, and should instead be written as 'Autom.'. Considering the word length of the other difficulties (*Helppo*, *Normaali*, and *Vaikea*), the proper Finnish abbreviation could have fit in the reserved space. This may be an instance of source language interference, which has caused the English *Auto* to have been transferred into the Finnish translation as is.

As stated, whether something is intentional or not does indeed matter; the untranslated options for anti-aliasing and ambient occlusion in WD are very clearly intentional. With no established Finnish equivalents, the WD translation places trust on the intended user in being able to understand what the different options are. At the very least, there is the expectation that the audience knows how to find out more about said options should they wish to do so.

As for source language interference in WD, the game presents a case of this with the aforementioned *Vääristymien korjaus* (*Anti-Aliasing*) where the word ‘aliasing’ has been directly translated into ‘vääristymä’ (*distortion* being another possibility). Aliasing does indeed refer to distortions in digital signaling, meaning that on a conceptual level *Vääristymien korjaus* (lit. aliasing/distortion correction) is not entirely erroneous, but as discussed in section 5.1.3, the term is simply too broad to communicate its meaning.

Additionally, the translation of *Shader* in WD presents another term where English may have affected the Finnish translation, with *Shader* turning into *Varjostus*, which would back-translate into ‘shading’. It should be noted, however, that the English word ‘shade’ does indeed translate into ‘varjo’, and ‘shader’ is often translated into ‘varjostin’ (Joensuu, 2016: 6; see also the Finnish translation of the Steam desktop client<sup>8</sup>).

In computer graphics, ‘shaders’ refer to specific sets of programs or executable code that determine how objects and effects appear. Shaders determine not only luminance (amount of light i.e., shade) for individual pixels or objects, but also their (shades of) color, reflectiveness, transparency etc. (Joensuu, 2016: 6–7). Despite the proliferation of ‘varjostin’, preference should

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<sup>8</sup> The Finnish translation of Steam (arguably the most prolific video game distribution platform for PC) also uses ‘varjostin’ for ‘shader’. The caveat for the term choice in Steam is that the platform’s translations are at least partly crowd-sourced, meaning that it is nearly impossible to tell what type of education or background its translators have.

be on using 'sävytin' instead, as it communicates the function of 'shader' more aptly (ibid.).

There is one final aspect where the chosen *Varjostus* fails as a good term: it can potentially be confused with a very common *Varjot* (*Shadows*) option, which is actually present in the same menu screen in WD. This setting most commonly determines the complexity and resolution of shadows that are cast by characters and objects. *Shadows* should not be confused with *Ambient Occlusion* (*Ympäristövarjostus*; see section 5.1.3), however. Due to their implementation differences in most rendering pipelines when applied as discrete effects, *Shadows* and *Ambient Occlusion* can usually be adjusted separately.

As a final note regarding source language interference, in terms of grammar or syntax, nothing notable was discovered across the three games.



## 6 Conclusion

The purpose of this study was to evaluate the usability of translated video game menus using heuristics developed for assessing translations. A secondary objective was to see how well the heuristics developed for User-Centered Translation would work in assessing video game translations.

With regard to the translations themselves, the applied heuristic evaluation revealed that for the vast majority of instances the Finnish translations were indeed usable. The largest representations of usability issues were found in consistency and the translations not using the language of the users themselves. Regarding the latter, the instances of non-user terminology could indicate that there exists a rift between translators and users where translators are not necessarily as familiar with gaming and graphics terminology as they should be. There is, however, indications of taking into account the competencies of the intended audience with some usage of English abbreviations. Some instances of non-user terminology can be attributed to client specification as well.

The observed consistency issues speak to the wider issue of many gaming and graphics terms lacking established Finnish equivalents, an underlying issue in itself brought about by the lack of translated games. For a wider issue such as this, it is difficult to say who is in the best position to steer the language into a more standardized direction. Should game translators communicate more openly with users and each other to establish terminology that is fit for purpose and meets user needs? Could Finnish game developers and computer graphics artists contribute to this type of work as creators? There appears to be a need for systematic work in order to establish a common tongue between users and translators.

During the course of the study, it became clear that, as a whole, the list developed by Suojanen et al. is too broad to work effectively for evaluating video game translations. This is evidenced by the fact that several heuristics had to be omitted from the study due to the heuristics not matching the content of video games (Match between translation and genre) or their translational context (Match between translation and real world). Others (Match between translation and specification) are simply not intended for evaluations conducted by a third party and are meant for translators – and possibly clients – themselves.

For some of the heuristics (such as Satisfaction), a usability study with test subjects would work more optimally. Furthermore, even with the employed heuristics there were several instances of redundancy to be found as well, as the same instances were highlighted in multiple heuristics. Of course, one problematic aspect causing usability issues on several different levels is no surprise. A tightly closed lid on a glass jar can be frustrating to open due to the required physical exertion, but it also carries a chance of the jar being dropped and shattered while it is being opened.

This study also demonstrated that using the employed heuristics as a base, a more specialized set of heuristics for video game translations can be developed, and this was indeed done for the purposes of this study. Perhaps an even more refined set of heuristics could better take into account the limits and possibilities afforded by translations of video games. Future studies could more effectively consider the modular nature of video games where different levels of information are presented to audiences of different languages. Something like this would require finding the right video games, however, as these types of usability considerations and differences between language versions are rather rare on the more technical side of video game translations.

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## Appendix A: Data List

Data evaluated in the study is presented in the table below with their assessed severity ratings (see section 4.2). Consistency and Satisfaction are not included in this main list, the former as the comparison list can be found in Appendix B, and the latter because Satisfaction was evaluated on a more general level and not on an item-by-item basis.

EN	FI	1. TT & Users	3. Lgbt & Readblt	4. CgnLd & Effcncy	5. ST vs. TT
[Items in brackets denote tooltip text for the item above]					
<b>THE LAST OF US</b>					
PRESS ANY BUTTON	PAINA JOTAIN NÄPPÄINTÄ	1	1	1	1
BACK	TAKAISIN	1	1	1	1
THE LAST OF US	THE LAST OF US	1	1	1	1
[Play the main story of The Last of Us.]	[Pelaa The Last of Us -päätarina.]	1	1	1	1
- CONTINUE [+ CHAPTER NAME]	- JATKA [+ LUVUN NIMI]	1	1	1	1
- CONTINUE NEW GAME PLUS	- JATKA UUSI PELI+	1	1	1	1
- NEW GAME	- UUSI PELI	1	1	1	1
-- EASY	-- HELPPO	1	1	1	1
-- NORMAL	-- NORMAALI	1	1	1	1
-- HARD	-- VAIKEA	1	1	1	1
-- SURVIVOR	-- SELVIYTYJÄ	1	1	1	1
-- GROUNDED	-- SÄÄLIMÄTÖN	1	1	1	1
- CHAPTERS	- LUVUT	1	1	1	1
- LOAD GAME	- LATAA PELI	1	1	1	1
- BONUSES	- BONUKSET	1	1	1	1
LEFT BEHIND	LEFT BEHIND	1	1	1	1
[Play a side-story set during the events of The Last of Us.]	[Pelaa sivujuoni, joka tapahtuu samanaikaisesti The Last of Us -pelin päätarinan kanssa.]	1	1	1	1
[WARNING: Recommended only for players who have completed the main story.]	[VAROITUS: Suositellaan vain pelaajille, jotka ovat jo pelanneet päätarinan.]	1	1	1	1
FACTIONS MP	RYHMITTYMÄT (MONINPELI)	1	1	1	1
[Choose a faction and compete against other players online for supplies to grow your clan.]	[Valitse ryhmittymä ja kerää klaaniasi kasvattavia tarvikkeita pelaamalla muita pelaajia vastaan verkkotaisteluissa.]	1	1	1	1
OPTION	ASETUKSET	1	1	1	1



- GAME	- PELAAMINEN	1	1	1	1
-- DIFFICULTY	-- VAIKEUSTASO	1	1	1	1
-- SUBTITLES	-- TEKSTITYYS	1	1	1	1
--- On	--- Päällä	1	1	1	1
--- Off	--- Pois	1	1	1	1
-- GAME HINTS	-- PELIVINKIT	1	1	1	1
-- STRATEGIC TIPS	-- STRATEGIAVIHJEET	1	1	1	1
-- TUTORIAL HINTS	-- OPASTUSVINKIT	1	1	1	1
-- GORE	-- VERI	1	1	1	1
-- LISTEN MODE	-- KUUNTELUTILA	1	1	1	1
-- MELEE PROMPTS	-- LÄHITAISTELUVIHJEET	2	1	1	1
-- SHOW TAG POPUPS	-- NÄYTÄ ILMOITUKSET	2	1	1	1
-- SHOW RETICLE	-- NÄYTÄ TÄHTÄIN	1	1	1	1
-- SHOW HUD	-- NÄYTÄ PELINÄKYMÄ	3	1	1	1
-- PHOTO MODE (L3)	-- VALOKUVATILA (L3)	1	1	1	1
- CONTROLS	- OHJAUS	1	1	1	1
-- AIMING	-- TÄHTÄYS	1	1	1	1
-- SENSITIVITY	-- HERKKYYS	1	1	1	1
-- HORIZONTAL	-- VAAKASUUNTAINEN	1	1	1	1
--- Normal	--- Normaali	1	1	1	1
--- Flipped	--- Käännetty	1	1	1	1
-- VERTICAL	-- PYSTYSUUNTAINEN	1	1	1	1
-- CAMERA	-- KAMERA	1	1	1	1
-- MAPPINGS	-- MÄÄRITYKSET	1	1	1	1
-- AIM AND FIRE	-- TÄHTÄÄ JA AMMU	1	1	1	1
--- L2 AND R2	--- L2 JA R2	1	1	1	1
--- L1 AND R1	--- L1 JA R1	1	1	1	1
-- LEFT AND RIGHT STICK	-- VASEN JA OIKEA SAUVA	2	1	1	1
-- RESET DEFAULTS	-- PALAUTA OLETUSARVOT	1	1	1	1
- DISPLAY	- NÄYTTÖ	1	1	1	1
-- Adjust the brightness until all coloured segments appear from very dark to very bright.	-- Säädä kirkkautta, kunnes kaikki väriosiot erittäin tummista erittäin kirkkaisiin näkyvät.	1	1	1	1
-- BRIGHTNESS	-- KIRKKAUS	1	1	1	1
-- PS4™PRO ENHANCEMENTS	-- PS4™PRO PARANNUKSET	1	1	1	1
--- Screen Resolution	--- Näytön tarkkuus	1	1	1	1
[Enables higher-resolution video modes and/or higher quality graphical effects on PS4™Pro.]	[Mahdollistaa korkeamman tarkkuuden videotilat ja/tai laadukkaammat graafiset erikoistehosteet PS4™Pro:lla.]	1	1	1	1
-- LOCK AT 30 FRAMES PER SECOND	-- LUKITSE 30 FPS -NOPEUTEEN	1	1	1	1

-- ENABLE HDR (requires HDR TV)	-- OTA HDR KÄYTTÖÖN (edellyttää HDR-TV:tä)	1	1	1	1
- AUDIO	- ÄÄNET	1	1	1	1
-- VOLUMES	-- ÄÄNENVOIMAKKUUDET	1	1	1	1
--- AUDIO VOLUMES	--- AUDION ÄÄNENVOIMAKKUUS	1	1	1	1
--- EFFECTS	--- TEHOSTEET	1	1	1	1
--- MUSIC	--- MUSIIKKI	1	1	1	1
--- DIALOGUE	--- DIALOGI	1	1	1	1
--- MOVIES	--- VIDEOT	1	1	1	1
--- CHAT	--- CHAT	1	1	1	1
-- OUTPUT	-- LÄHTÖ	1	1	1	1
--- AUDIO OUTPUT	--- AUDIOLÄHTÖ	1	1	1	1
--- PREFERENCES	--- ASETUKSET	1	1	1	1
--- DEVICE	--- LAITE	1	1	1	1
[Select the most appropriate device to optimize other 'Auto' audio settings for the best listening experience.]	[Optimoi muut automaattiset audioasetukset parasta kuuntelukokemusta varten valitsemalla parhaiten omaasi vastaava laite.]	1	1	1	1
---- Auto	---- Automaattinen	1	1	1	1
---- Television	---- Televisio	1	1	1	1
---- Home Theater	---- Kotiteatteri	1	1	1	1
---- Studio Reference	---- Studiotaso	1	1	1	1
---- Stereo Headphones	---- Stereokuulokkeet	1	1	1	1
--- CHANNELS	--- KANAVAT	1	1	1	1
[Select the output channel configuration that best matches your output device.]	[Valitse lähtölaitetta parhaiten vastaava lähtökanavakokoonpano.]	1	1	1	1
---- 2.0ch	---- 2.0	1	1	1	1
--- CENTER CHANNEL	--- KESKIKANAVA	1	1	1	1
[Select the center channel configuration. Note: This only applies to surround output modes.]	[Valitse keskikanavakokoonpano. Huomautus: tämä asetus koskee vain surround-lähtötiloja.]	1	1	1	1
---- Dialogue	---- Dialogi	1	1	1	1
---- Dialogue + Effects	---- Dialogi+tehosteet	1	1	1	1
--- DYNAMIC RANGE	--- DYNAAMINEN ALUE	1	1	1	1

[Wider dynamic ranges have more volume increase between quiet and loud sounds; narrow dynamic ranges have less.]	[Mitä laajempi dynaaminen alue on, sitä suurempi on ero hiljaisten ja kovien äänten äänenvoimakkuuksien välillä. Kapealla dynaamisella alueella ero on pienempi.]	1	1	1	1
---- Maximum	---- Laajin	1	1	1	1
---- Wide	---- Laaja	1	1	1	1
---- Medium	---- Keskialueet	1	1	1	1
---- Narrow	---- Kapea	1	1	1	1
---- Midnight	---- Keskiyö	1	1	1	1
--- CONTROLLER	--- OHJAIN	1	1	1	1
[Select 'Disabled' to redirect controller audio to the main output. This is automatic if headphones are in use.]	[Valitse Pois käytöstä, jos haluat ohjata ohjaimen audion päälähtöön. Tämä tapahtuu automaattisesti, jos kuulokkeet ovat käytössä.]	1	1	1	1
---- Enabled	---- Käytössä	1	1	1	1
---- Disabled	---- Pois käytöstä	1	1	1	1
--- STEREO SPEAKER AZIMUTHS	--- STEREOKAIUTTIMIEN ATSIMUUTIT	1	1	1	1
--- STEREO HEADPHONES AZIMUTHS	--- STEREOKUULOKKEIDEN ATSIMUUTIT	1	1	1	1
--- FRONT	--- EDESSÄ	1	1	1	1
[Configure azimuths to match your personal listening environment for the best sound localization.]	[Määrittämällä atsimuutit voit sovittaa audion oman kuunteluympäristösi mukaiseksi, jotta saat parhaan äänten tilavaikutelman.]	1	1	1	1
- LANGUAGE	- KIELI	1	1	1	1
-- TEXT	-- TEKSTI	1	1	1	1
-- SUBTITLES	-- TEKSTITYS	1	1	1	1
-- DIALOGUE	-- DIALOGI	1	1	1	1
- CREDITS	- TEKIJÄT	1	1	1	1
DOWNLOADABLES	LADATTAVAT	1	1	1	1
<b>Hellblade</b>					
Continue	Jatka	1	1	1	1
Start New Game	Aloita uusi peli	1	1	1	1
Options	Asetukset	1	1	1	1
- Graphics	Grafiikka	1	1	1	1

-- Resolution	Tarkkuus	2	1	1	1
[Set the screen resolution. A higher resolution will result in a sharper image. Affects VRAM usage.]	[Aseta näyttötarkkuus. Suurella tarkkuudella kuva on terävämpi. Vaikuttaa VRAM-muistin käyttöön.]	1	1	1	1
-- Display Mode	Näyttötila	1	1	1	1
[Set the display mode. Borderless Windowed allows for quicker switching in and out of the game window than Fullscreen, but slightly decreases performance.]	[Aseta näyttötila. Reunaton ikkuna sallii nopeamman siirtymisen peli-ikkunaan ja siitä pois kuin koko ruudun tila, mutta pelin suorituskyky heikkenee hieman.]	1	1	1	1
--- Fullscreen	Koko ruutu	1	1	1	1
--- Windowed Fullscreen	Koko ruutu ikkunassa	1	1	1	1
--- Windowed	Ikkuna	1	1	1	1
-- Quality	Laatu	1	1	1	1
[Set the overall preset of graphics quality. You can change specific settings below.]	[Valitse grafiikan laadun yleisasetus. Yksittäisiä asetuksia voi muuttaa alla.]	1	1	1	1
--- Low	Matala	1	1	1	1
--- Medium	Kohtalainen	1	1	1	1
--- High	Korkea	1	1	1	1
--- Very High	Erittäin korkea	1	1	1	1
--- Custom	Mukautettu	1	1	1	1
-- Foliage	Lehvästö	1	1	1	1
[Set the density and draw distance of foliage. Higher settings will make the foliage thicker and visible at greater distances. Slightly affects VRAM usage.]	[Aseta lehvästön tiheys ja piirtoetäisyys. Suurella asetuksella lehvästö on tiheämpi ja näkyy kauempaa. Vaikuttaa hieman VRAM-käyttöön.]	1	1	1	1
-- Postprocessing	Jälkikäsittely	1	1	1	1
[Set the quality of image postprocessing. Higher settings will result in better-looking filtering of the final image.]	[Aesta[*] kuvan jälkikäsittelyn laatu. Suurella asetuksella lopullisen kuvan suodatus näyttää paremmalta.]	*1	2	1	1
-- Shadows	Varjot	1	1	1	1
[Set the quality of shadows. Higher settings will result in more detailed and softer shadows. Affects VRAM usage.]	[Aseta varjojen laatu. Suurella asetuksella varjot ovat yksityiskohtaisempia ja pehmeämpiä. Vaikuttaa VRAM-muistin käyttöön.]	1	1	1	1

-- Textures	Tekstuurit	1	1	1	1
[Set the allowed memory size of textures and texture filtering quality. Higher settings will result in more detailed textures at greater distances. Affects VRAM usage.]	[Aseta tekstuurien sallittu koko ja tekstuurisuodatuksen laatu. Suurella asetuksella kaukana olevat tekstuurit ovat yksityiskohtaisempia. Vaikuttaa VRAM-muistin käyttöön.]	1	1	1	1
-- View Distance	Näyttöetäisyys	1	1	1	1
[Set the general draw distance of objects. Higher settings will result in more objects being displayed at farther distances.]	[Aseta kohteiden yleinen piirtoetäisyys. Suurella asetuksella näytetään enemmän esineitä kauempana.]	1	1	1	1
-- View Effects	Näkymätehosteet	1	1	1	1
[Set the quality of special effects. Higher settings will result in better quality of particle lights and reflections. Slightly affects VRAM usage.]	[Aseta erikoistehosteiden laatu. Suurella asetuksella partikkelivalojen ja heijastusten laatu on parempi. Vaikuttaa hieman VRAM-käyttöön.]	1	1	1	1
-- V-Sync	V-synkronointi	1	1	1	1
[Toggle vertical synchronisation.]	[Ota pystysynkronisaatio päälle/pois.]	1	1	1	1
--- On	Päällä	1	1	1	1
--- Off	Pois	1	1	1	1
[ESCAPE] Back	[ESCAPE] Palaa	1	1	1	1
[BACKSPACE] Revert Changes	[BACKSPACE] Palauta muutokset	1	1	1	1
[ENTER] Apply	[ENTER] Käytä	1	1	1	1
Revert changed settings?	Palautetaanko muutetut asetukset?	1	1	1	1
You have not applied the changed settings. Are you sure you want to leave this menu?	Et ole ottanut muutettuja asetuksia käyttöön. Haluatko varmasti poistua tästä valikosta?	1	1	1	1
- Gamma	Gamma	1	1	1	1
-- Adjust the brightness until the image below is barely visible.	Säädä kirkkautta, kunnes alla oleva kuva erottuu juuri ja juuri.	1	1	1	1
- Controls	Ohjaus	1	1	1	1
-- Run Toggle	Juoksu päälle/pois	1	1	1	1
-- Invert Camera Y Axis	Käänteinen kuvakulman Y-akseli	1	1	1	1

-- Vibration	Värinä	1	1	1	1
-- Mouse Sensitivity	Mouse Sensitivity [*]	2	1	3	3
-- General Controls	Yleiset ohjaimet	2	1	1	1
--- Move Forward	LiikuEteenpäin	1	2	2	1
--- Move Backwards	LiikuTaaksepäin	1	2	2	1
--- Strafe Left	Sivuaskella vasemmalle	1	1	1	1
--- Strage Right	Sivuaskella oikealle	1	1	1	1
--- Focus	Keskity	1	1	1	1
--- Interact	Käytä	1	1	1	1
--- Run	Juokse	1	1	1	1
-- Combat Controls	Taisteluohjaus	1	1	1	1
--- Fast Strike	Nopea isku	1	1	1	1
--- Heavy Strike	Voimaisku	1	1	1	1
--- Melee Attack	Taisteluisku	2	1	1	1
--- Evade	Väistä	1	1	1	1
--- Block	Torju	1	1	1	1
--- Change Target Left	VaihdaKohdeVasemmalle	1	2	2	1
--- Change Targer Right	VaihdaKohdeOikealle	1	2	2	1
[BACKSPACE] Reset to defaults	[BACKSPACE] Palauta oletusarvoihin	1	1	1	1
- Audio	Äänet	1	1	1	1
-- Master	Pää	1	1	1	1
-- Music	Musiikki	1	1	1	1
-- SFX	Erikoistehosteet	1	1	1	1
-- Voices	Puhe	1	1	1	1
-- Menus	Valikot	1	1	1	1
-- Subtitles	Tekstitys	1	1	1	1
- Combat Difficulty	Taistelun vaikeus	1	1	1	1
-- Easy	Helppo	1	1	1	1
-- Normal	Normaali	1	1	1	1
-- Hard	Vaikea	1	1	1	1
-- Auto	Auto	2	1	1	1
- Photo Mode	Valokuvatila	1	1	1	1
Hellblade Feature	Hellblade-dokumentti	1	1	1	1
Quit	Lopeta	1	1	1	1
- Quit Game?	Lopetetaanko peli?	1	1	1	1
- Are you sure you want to quit the game?	Haluatko varmasti lopettaa pelin?	1	1	1	1
[ENTER] Confirm	[ENTER] Vahvista	1	1	1	1
<b>Watch_Dogs</b>					
Continue	Jatka	1	1	1	1
New Game	Uusi peli	1	1	1	1

[_ Warning! Creating a new game will overwrite your last saved game. Do you wish to continue?]	[_ Varoitus! Uuden pelin aloittaminen kirjoittaa edellisen pelitallenteesi päälle. Haluatko jatkaa?]	1	1	1	1
[ENTER] CONFIRM	[ENTER] VAHVISTA	1	1	1	1
[ESC] CANCEL	[ESC] PERU	1	1	1	1
Options	Asetukset	1	1	1	1
[Back]	[Palaa]	1	1	1	1
- Display	Näyttö	1	1	1	1
[Adjust resolution, refresh rate and other display settings.]	[Muokkaa näytön tarkkuutta, virkistystaajuutta ja muita näytön asetuksia.]	1	1	1	1
-- Resolution	Resoluutio	1	1	1	1
-- Refresh Rate	Virkistystaajuus	1	1	1	1
-- Aspect Ratio	Kuvasuhde	1	1	1	1
-- Window Mode	Ikkunatila	1	1	1	1
--- Windowed	Ikkunoitu	1	1	1	1
--- Borderless	Rajaton	2	1	1	1
--- Fullscreen	Koko näyttö	1	1	1	1
-- VSync	VSycn	1	1	1	1
--- 1 frame	1 kuva	1	1	1	1
--- 2 frames	2 kuvaa	1	1	1	1
-- GPU Max Buffered Frames	Grafiikkaprosessorin muistamien kuvien enimmäismäärä	1	1	1	1
-- Textures	Tekstuurit	1	1	1	1
--- Medium	Keskitaso	1	1	1	1
--- High	Korkea	1	1	1	1
[Video memory required: 2 GB]	[Videomuistia tarvitaan: 2 Gt]	1	1	1	1
--- Ultra	Äärimmäinen	1	1	1	1
[Video memory required: 3 GB]	[Videomuistia tarvitaan: 3 Gt]	1	1	1	1
-- Anti-Aliasing	Vääritymien korjaus	3	1	3	3
--- FXAA	FXAA	1	1	2	1
--- SMAA	SMAA	1	1	2	1
--- Temporal SMAA	Temporal SMAA	1	1	2	1
--- MSAA 2x	MSAA 2x	1	1	2	1
--- MSAA 4x	MSAA 4x	1	1	2	1
--- MSAA 8x	MSAA 8x	1	1	2	1
[Video memory required: 2 GB]	[Videomuistia tarvitaan: 2 Gt]	1	1	1	1
-- Widescreen Letterbox	Laajakuvamuokkaus	1	1	1	1
--- Off	Pois	1	1	1	1
--- On	Päällä	1	1	1	1

[Apply]	[Käytä]	1	1	1	1
- Graphics Quality	Grafiikan laatu	1	1	1	1
[Adjust graphics quality and performance.]	[Muokkaa grafiikan laatua ja suorituskykyä.]	1	1	1	1
-- Overall Quality	Kokonaislaatu	1	1	1	1
--- Custom	Muokattu	1	1	1	1
--- Low	Matala	1	1	1	1
--- Medium	Keskitaso	1	1	1	1
--- High	Korkea	1	1	1	1
--- Ultra	Äärimäinen	1	1	1	1
-- Level of Detail	Yksityiskohtaisuuden taso	1	1	1	1
-- Shadows	Varjot	1	1	1	1
-- Reflections	Heijastukset	1	1	1	1
-- Ambient Occlusion	Valon käyttäytyminen	2	1	2	1
--- MHBAO	MHBAO	1	1	2	1
--- HBAO+ Low	HBAO+ Matala	1	1	2	1
--- HBAO+ High	HBAO+ Korkea	1	1	2	1
-- Motion Blur	Liikkeen sumennus	1	1	1	1
-- Depth of Field	Syvyystvaikutelma	1	1	1	1
-- Water	Vesi	1	1	1	1
-- Shader	Varjostus	2	1	1	3
-- Auto Detect	Automaattipaljastus	3	1	2	1
- Gameplay	Pelaaminen	1	1	1	1
[Modify game difficulty and aiming assistance settings.]	[Muuta pelin vaikeustasoa ja tähtäysavustuksen asetuksia.]	1	1	1	1
-- Difficulty Level	Vaikeustaso	1	1	1	1
--- Easy	Helppo	1	1	1	1
--- Normal	Tavallinen	1	1	1	1
--- Hard	Vaikea	1	1	1	1
--- Realistic	Realistinen	1	1	1	1
-- Controller Aim Assist	Ohjaimen tähtäysavustus	1	1	1	1
--- Minimal	Minimaalinen	1	1	1	1
--- Default	Oletus	1	1	1	1
--- Strong	Suuri	1	1	1	1
- Online	Verkossa	2	1	1	1
[Modify online session preferences, voice chat and invasion settings.]	[Muuta verkkoistunnon asetuksia sekä ääni-chatin ja tunkeutumisen asetuksia.]	1	1	1	1
-- Online Invasions	Tunkeutumiset verkossa	1	1	1	1



[Allowing Online Invasions will let people occasionally enter your game to engage in an Online Hacking or Online Tailing contracts. Invasions happen between contracts, they do not interfere with your mission progress.]	[Jos sallit tunkeutumiset verkossa, muut pelaajat voivat toisinaan tulla peliisi suorittamaan Hakkerointi verkossa- tai Varjostus verkossa -toimeksiantoa. Tunkeutumiset tapahtuvat toimeksiantojen välissä eivätkä ne haittaa tehtäväsi edistymistä.]	1	1	1	1
-- Friend Invasions	Ystävien tunkeutumiset	1	1	1	1
[Allowing Friend Invasions will let your friends occasionally enter your game to engage in an Online Hacking or Online Tailing contract. These invasions have not [*] impact on your notoriety, happen between contracts and do not interfere with your mission progress.]	[Jos sallit ystävien tunkeutumiset, ystävät voivat toisinaan tulla peliisi suorittamaan Hakkerointi verkossa- tai Varjostus verkossa -toimeksiantoa. Nämä tunkeutumiset eivät vaikuta pahamaineisuuteesi, ne tapahtuvat toimeksiantojen välissä eivätkä ne haittaa tehtäviesi edistymistä.]	1	1	1	1
-- Adversarial Free Roam	Vastakkainen vapaa kuljeskelu	2	1	1	1
[Adversarial Free Roam is disabled by default when entering Online Free Roam. If two or more players have Adversarial Free Roam enabled they will see each other as enemies and can kill one another. If you disable Adversarial Free Roam, other player will not be able to kill you.]	[Vastakkainen vapaa kuljeskelu on poissa käytöstä oletuksena, kun siirrytään Vapaaseen kuljeskeluun verkossa. Jos kahdella tai useammalla pelaajalla on Vastakkainen vapaa kuljeskelu käytössä, he näkevät toisensa vihollisina ja voivat tappa toisensa. Jos otat Vastakkaisen vapaan kuljeskelun pois käytöstä, toiset pelaajat eivät voi tappa sinua.]	1	1	1	1
-- Voice Chat	Ääni-chat	1	1	1	1
-- Voice Chat Volume	Ääni-chatin äänenvoimakkuus	1	1	1	1
-- Friendly Fire Decryption	Ystävien tulitus salauksenpurussa	2	1	1	1

[Friendly Fire Decryption is disabled by default when entering Online Decryption. If two or more fixers on the same team have Friendly Fire Decryption enabled they will risk injuring or killing one another - watch where you aim.]	[Ystävien tulitus salauksenpurussa on pois käytössä [*] oletuksena, kun siirrytään Salauksenpurkuun verkossa. Jos kahdella tai useammalla saman joukkueen fiksaajalla on Ystävien tulitus salauksenpurussa käytössä, he saattavat haavoittaa tai tappaa toisensa. Tähdätkää tarkasti.]	1	2	1	1
- Controls	Ohjaaminen	1	1	1	1
[Modify controller and keyboard/mouse options.]	[Muuta ohjaimen ja näppäimistön/hiiren asetuksia.]	1	1	1	1
-- Controller	Ohjain	1	1	1	1
--- Control Scheme	Ohjausmalli	1	1	1	1
---- Default	Oletus	1	1	1	1
---- Left-Handed 1	Vasenkätinen 1	1	1	1	1
---- Left-Handed 2	Vasenkätinen 2	1	1	1	1
---- Left-Handed 3	Vasenkätinen 3	1	1	1	1
[ON FOOT]	[JALKAISIN]	1	1	1	1
[VEHICLE]	[AJOVEUVO]	1	1	1	1
--- Invert X axis	Käänteinen X-akseli	1	1	1	1
--- Invert Y axis	Käänteinen Y-akseli	1	1	1	1
--- Look sensitivity	Katsomisen herkkyyys	1	1	1	1
--- Vibration	Värähtely	1	1	1	1
-- Keyboard/Mouse	Näppäimistö/hiiri	1	1	1	1
--- Customize Controls	Muokkaa ohjauskomentoja	1	1	1	1
---- General	Yleinen	1	1	1	1
---- Primary	Näppäin 1	1	1	1	1
---- Alternate	Näppäin 2	1	1	1	1
---- Hack	Hakkeroi	1	1	1	1
---- Interact	Käytä	1	1	1	1
---- Profiler	Profiloija	1	1	1	1
---- Focus	Fokus	1	1	1	1
---- Smartphone	Älypuhelin	1	1	1	1
---- Map	Kartta	1	1	1	1
---- Contextual Waypoint	Tilannekohtainen reittipiste	1	1	1	1
---- Inventory	Varusteet	1	1	1	1
---- Equip Assault	Käytä: Rynnäkkökivääri	1	1	1	1
---- Equip Pistol	Käytä: Pistooli	1	1	1	1
---- Equip Shotgun	Käytä: Haulikko	1	1	1	1
---- Equip Special	Käytä: Erikoisase	1	1	1	1

---- Cycle Projectiles/Tools	Vaihda heittoasetta/välinettä	1	1	1	1
---- Throw Projectile / Use Tool	Heitä ase / käytä välinettä	1	1	1	1
---- Start/Stop Playlist	Soittolista päälle/pois	1	1	1	1
---- Skip Song	Ohita kappale	1	1	1	1
---- On foot	Jalan	1	1	1	1
---- Move Forward	Liiku eteenpäin	1	1	1	1
---- Move Backward	Liiku taaksepäin	1	1	1	1
---- Move Left	Liiku vasemmalle	1	1	1	1
---- Move Right	Liiku oikealle	1	1	1	1
---- Stroll	Käyskentele	1	1	1	1
---- Sprint	Juokse	1	1	1	1
---- Climb	Kiipeä	1	1	1	1
---- Enter Cover	Mene suojaan	1	1	1	1
---- Exit Cover	Poistu suojasta	1	1	1	1
---- Draw/Holster Weapon	Vedä ase / laita ase pois	1	1	1	1
---- Aim	Tähtää	1	1	1	1
---- Shoot	Ammu	1	1	1	1
---- Reload	Lataa	1	1	1	1
---- Melee	Lähitaistelu	1	1	1	1
---- In vehicle	Ajoneuvossa	1	1	1	1
---- Accelerate	Kiihdytä	1	1	1	1
---- Brake/Reverse	Jarru/pakki	1	1	1	1
---- Steer Left	Ohjaa vasemmalle	1	1	1	1
---- Steer Right	Ohjaa oikealle	1	1	1	1
---- Handbrake	Käsijarru	1	1	1	1
---- Hide in Car	Piiloudu autoon	1	1	1	1
---- Camera	Kamera	1	1	1	1
---- Look Back	Katso taakse	1	1	1	1
---- Honk	Äänitorvi	1	1	1	1
---- Default	Oletus	1	1	1	1
--- Invert X axis	Käänteinen X-akseli	1	1	1	1
--- Invert Y axis	Käänteinen Y-akseli	1	1	1	1
--- Look Sensitivity X	Katsomisen herkkyys X	1	1	1	1
--- Look Sensitivity Y	Katsomisen herkkyys Y	1	1	1	1
--- Toggle sprinting	Juoksu päälle/pois	1	1	1	1
--- Toggle walking	Kävely päälle/pois	1	1	1	1
--- Menu Mouse Sensitivity	Hiiren herkkyys valikoissa	1	1	1	1
- Audio and Language	Äänet ja kieli	1	1	1	1

[Modify game language (Main menu only), toggle subtitles, set autoplay music in vehicle and adjust volume settings.]	[Muuta pelin kieltä (vain päävalikko), ota tekstitys käyttöön tai pois, säädä musiikin automaattista soittamista ajoneuvossa ja säädä äänenvoimakkuuden asetuksia.]	1	1	2	1
-- Written Language	Kirjoitettu kieli	1	1	1	1
-- Subtitles	Tekstitys	1	1	1	1
-- Autoplay Music in Car	Automaattinen musiikki autossa	1	1	1	1
-- Music Volume	Musiikin äänenvoimakkuus	1	1	1	1
-- Songs Volume	Kappaleiden voimakkuus	1	1	1	1
-- SFX Volume	Tehosteiden äänenvoimakkuus	1	1	1	1
-- Voice Volume	Puheen äänenvoimakkuus	1	1	1	1
- Calibration	Kalibrointi	1	1	1	1
[Adjust brightness value for the game.]	[Säädä pelin kirkkauden asetuksia.]	1	1	1	1
-- Brightness	Kirkkaus	1	1	1	1
-- Move the slider until the logo is just barely visible.	Liikuta liukuvalitsinta, kunnes logo näkyy vain juuri ja juuri.	1	1	1	1
Credit	Tekijät	1	1	1	1
- BACK	PALAA	1	1	1	1
- FAST FORWARD	KELAUS ETEENPÄIN	1	1	1	1
- REWIND	KELAUS TAAKSEPÄIN	1	1	1	1
- PAUSE	TAUKO	1	1	1	1
Uplay	Uplay	1	1	1	1
Additional Content	Lisäsisältö	1	1	1	1
- Redeem Code	Lunasta koodi	1	1	1	1
-- _Connecting...	_Yhdistetään...	1	1	1	1
-- Please wait while we connect you to the Ubisoft servers.	Ole hyvä ja odota, kun yhdistämme sinut Ubisoftin palvelimille.	1	1	1	1
-- CANCEL	PERU	1	1	1	1
-- _Error!	_Virhe!	1	1	1	1
-- The Ubisoft service is not available. Please try again later.	Ubisoft-palvelu ei ole tällä hetkellä käytettävissä. Yritä myöhemmin uudelleen.	1	1	1	1
-- OK	OK	1	1	1	1
- Acquired Content	Hankittu sisältö	1	1	1	1
-- _ Acquired Content	_Hankittu sisältö	1	1	1	1

-- You have no acquired content. Go to the online store or enter a redeem code to acquire new content.	Sinulla ei ole sisältöä hankittuna. Mene verkkokauppaan tai syötä lunastuskoodi hankkiaksesi uutta sisältöä.	1	1	1	1
Quit to Desktop	Poistu työpöydälle	1	1	1	1
-_Warning!	_Varoitus!	1	1	1	1
- Are you sure you want to quit to desktop?	Haluatko varmasti lopettaa ja siirtyä työpöydälle?	1	1	1	1
<b>367 instances</b>					

## Appendix B: Consistency Comparison List

This list was compiled to compare the terminological consistency across the three games' menus. The **EN** column contains the original items in English with the appropriate game's name abbreviated in brackets ([hb] for HellBlade: Senua's Sacrifice, [wd] for Watch\_Dogs, and [tlou] for The Last of Us). Notes in red were added for clarification and to better manage the items in list form.

EN	Hellblade FI	Watch_Dogs FI	The Last of Us
Audio [hb] / Audio and Language [wd] / AUDIO [tlou]	Äänet	Äänet ja kieli	ÄÄNET
Auto	Auto		Automaattinen
<b>AXES</b> Invert Camera Y Axis [hb] / Invert Y axis [wd] / VERTICAL (Normal/Flipped) [tlou]	Käänteinen kuvakulman Y-akseli	Käänteinen Y-akseli	PYSTYSYUNTAINEN (Normaali/Käännetty)
<b>AXES</b> Invert X axis [wd] / HORIZONTAL (Normal/Flipped) [tlou]		Käänteinen kuvakulman X-akseli	VAKASUUNTAINEN (Normaali/Käännetty)
Back	Palaa	Palaa	TAKAISIN
Gamma [hb] / Brightness [wd] / BRIGHTNESS [tlou]	Gamma	Kirkkaus	KIRKKAUS
Continue [hb/wd] / CONTINUE [+CHAPTER NAME] [tlou]	Jatka	Jatka	JATKA [+ LUVUN NIMI]
Controls	Ohjaus	Ohjaaminen	OHJAUS
Credit [wd] / CREDITS [tlou]		Tekijät	TEKIJÄT
<b>D0</b> Combat Difficulty [hb] / Difficulty Level [wd] / DIFFICULTY [tlou]	Taistelun vaikeus	Vaikeustaso	VAIKEUSTASO
<b>D1</b> Easy [Diff. Setting]	Helppo	Helppo	HELPPO
<b>D2</b> Normal [Diff. Setting]	Normaali	Tavallinen	NORMAALI
<b>D3</b> Hard [Diff. Setting]	Vaikea	Vaikea	VAIKEA
<b>D4</b> Realistic [wd] / SURVIVOR [tlou]		Realistinen	SELVIITYTÄ
<b>Disp.</b> Display [wd] / DISPLAY [tlou]		Näyttö	NÄYTTÖ
<b>Disp.</b> Display Mode [hb] / Window Mode [wd]	Näyttötila	Ikkunatila	
<b>Disp.</b> Fullscreen	Koko ruutu	Koko näyttö	
<b>Disp.</b> Windowed	Ikkuna	Ikkunoitu	
<b>Disp.</b> Windowed Fullscreen [hb] / Borderless [wd]	Koko ruutu ikkunassa	Rajaton	
<b>DLC</b> Acquired Content [wd] / DOWNLOADABLES [tlou]		Hankittu sisältö	LADATTAVAT
Focus [hb/wd] LISTEN MODE [tlou <b>CONC. DIFF.</b> )]	Keskity	Fokus	KUUNTELUTILA
Gameplay [wd] / GAME [tlou]		Pelaaminen	PELAAMINEN

<b>GFX 0</b> Custom	Mukautettu	Muokattu	
<b>GFX 1</b> Low [ <b>GFX Setting</b> ]	Matala	Matala	
<b>GFX 2</b> Medium [ <b>GFX Setting</b> ]	Kohtalainen	Keskitaso	
<b>GFX 3</b> High [ <b>GFX Setting</b> ]	Korkea	Korkea	
<b>GFX 4</b> Very High [hb] / Ultra [wd]	Erittäin korkea	Äärimmäinen	
<b>GFX Menu</b> Graphics [hb] / Graphics Quality [wd]	Grafiikka	Grafiikan laatu	
<b>GFX Preset</b> Quality [hb] / Overall Quality [wd]	Laatu	Kokonaislaatu	
<b>GFX VRAM</b> (Slightly) Affects VRAM usage [hb] / Video memory required: (x) GB [wd]	Vaiuttaa (hieman) VRAM(-muistin käyttöön) / (- käyttöön)	Videomuistia tarvitaan: (x) Gt	
Interact	Käytä	Käytä	
<b>Lang</b> Audio and Language [wd] / LANGUAGE [tlou]		Äänet ja kieli	KIELI
<b>LangSub</b> Subtitles [hb/wd] / SUBTITLES [tlou]	Tekstitys	Tekstitys	TEKSTITYS
<b>LangUI</b> Menus [hb](ON/OFF) / Written Language [wd] / TEXT [tlou]	Valikot	Kirjoitettu kieli	TEKSTI
Look Sensitivity X/Y [wd] / SENSITIVITY		Katsomisen herkkyyys X/Y	HERKKYYS
Melee Attack [hb] / Melee [wd] / MELEE PROMPTS [tlou] <b>CONC. DIFF.</b>	Taisteluisku	Lähitaistelu	LÄHITAISTELUVIHJEET
Move Backwards [hb] / Move Backward [wd]	LiikuTaaksepäin	Liiku taaksepäin	
Move Forward	LiikuEteenpäin	Liiku eteenpäin	
<b>N</b> Start New Game [hb] / New Game [wd/tlou]	Aloita uusi peli	Uusi peli	UUSI PELI
Off	Pois	Pois	Pois
On	Päällä	Päällä	Päällä
Options [hb/wd] / OPTION [tlou]	Asetukset	Asetukset	ASETUKSET
Photo Mode [hb] / PHOTO MODE (L3) [tlou]	Valokuvatila		VALOKUVATILA (L3)
<b>Res</b> [BACKSPACE] Reset to defaults [hb] / Default [wd] / RESET DEFAULTS [tlou]	[BACKSPACE] Palauta oletusarvoihin	Oletus	PALAUTA OLETUSARVOT
Resolution [hb/wd] / Screen Resolution [tlou]	Tarkkuus	Resoluutio	Näytön tarkkuus
Run Toggle [hb] / Toggle Sprinting [wd]	Juoksu päälle/pois	Juoksu päälle/pois	
Shadows	Varjot	Varjot	
Textures	Tekstuurit	Tekstuurit	
Vibration	Värinä	Värähtely	
<b>Vol</b> Music [hb/tlou] / Music Volume [wd]	Musiikki	Musiikin äänenvoimakkuus	MUSIIKKI

Vol SFX [hb] / SFX Volume [wd] / EFFECTS [tlou]	Erikoistehosteet	Tehosteiden äänenvoimakkuus	TEHOSTEET
Vol Voices [hb] / Voice Volume [wd] / DIALOGUE [tlou]	Puhe	Puheen äänenvoimakkuus	DIALOGI
V-Sync [hb] / Vsync [wd]	V-synkronointi	Vsync	
Run [hb] / Sprint [wd]	Juokse	Juokse	
[ENTER] Confirm [hb] / [ENTER] CONFIRM	[ENTER] Vahvista	[ENTER] VAHVISTA	