Game localization
A critical overview and implications for audiovisual translation

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Introduction

In his study on Nintendo games, Altice (2015: 3) asserts that ‘translation takes place between circuits, codes, and cathode rays just as it does between human actors’. This statement sets the tone for this chapter, which examines game localization as a relatively new practice and research domain in relation to audiovisual translation (AVT). Game localization cannot be discussed without considering the technological dimension of games as digital media. As a major digital entertainment sector in the twenty-first century, the video game industry has become a competitive global business with significant revenues drawn from international markets (Chandler and Deming 2012). Behind the global expansion of the game industry lies game localization, which plays a key role in distributing digital games in markets beyond the country of origin of the product (O’Hagan and Mangiron 2013). Digital games can be considered specialized software and therefore game localization has much in common with software localization: it involves technical, cultural and linguistic adjustments to the original software. Yet, there are aspects that are unique to the former, arising from the specific characteristics of games as digital interactive entertainment. Modern games are high-tech multimedia products with a non-linear structure, comprising different types of assets (i.e. the different components of a game), including full-fledged movies (known as cut-scenes in the industry), which commonly form part of today’s mainstream console games. Furthermore, video games still occupy a contested space (Egenfeldt-Nielsen et al. 2013) in public perception, often associated with crime and violence, compared to other established art forms. All games are subject to age ratings that are country-specific and may also be subject to censorship. Game localization deals with artefacts which are not only technically complex but also culturally challenging. In addition, in contrast to utilitarian business software, games seek user engagement, which extends to users’ affective responses (Juul 2005). In particular, high-budget ‘AAA’ console games offer user entertainment tailored for specific key target markets with the localized game aiming to pass as if it was originally made for the given market. Such requirements sometimes warrant extended leeway being applied during the localization process, with the end justifying the means. But game localization, understood as a set of industrial processes applied to the digital
medium, also involves restrictions, as discussed later in this article. In this way, the underly-
ing technological nature and socio-cultural contexts of games give rise to both freedom and constraints, shaping a dynamic and unique translation practice.

Despite the persistent reluctance of society to fully embrace games and gaming as a respectable activity, some game studies scholars consider that video games have become pervasive enough to constitute a ‘social norm’ (Juul 2010). Indeed, games are today played by family members across broad age groups and by both sexes (ESA 2017) and are designed to cater for all tastes and preferences. Accordingly, modern games are more varied and playable on different platforms. Furthermore, certain properties of game design that aim to engage users can now also be observed in ‘serious games’ which are developed with specific didactic purposes in mind. Their application in the military and, increasingly, in education fields aims to exploit the concept of gamification, whereby game design elements provide an effective mechanism to enhance learner engagement in a given task (Gee 2003).

The game industry stands at the cutting edge of technology, which is applied in different ways in both game hardware and software. Among recent trends promoted by the infrastructural shift to Web 2.0 are the growth of a user-centred, participatory culture and the building of user communities. The game industry has long embraced user ‘co-creation’ (Dovey and Kennedy 2006) by deliberately allowing user input to be incorporated into a game. For example, the widespread practice known as ‘modding’ refers to game users modifying a game to their liking, while ‘emergent play’ designates the discovery by end users of a new way of playing a game, unintended by the designer—the latter often involving the exploitation of technical glitches in the software (O’Hagan and Mangiron 2013). Similarly, fan translators have emerged among the most highly engaged users of video games: fan translators take localization into their own hands, as part of what is known as ‘ROM hacking’, a process in which tech savvy gamers gain access to the game’s Read Only Memory (ROM) files (Muñoz-Sánchez 2009). Once ROM files are obtained, the language of the ROM data can be changed by fan translators through small programs known as ‘patches’ in a practice known as ‘translation hacking’ (ibid.). Furthermore, fan participation has been extended through crowdfunding, with some fans offering free localization of their chosen games (Tomala 2014). These practices in turn can be linked to fan translation, one of the most hotly debated topics in AVT research (Pérez-González 2014).

Seeking to locate game localization in the context of AVT research, this chapter provides a critical overview of game localization as a practice and a concept. The next section outlines the historical development of game localization practices, followed by a description of their key features. After covering the fundamentals of game localization, the chapter outlines a research agenda for the field. It then moves on to examine various game localization research methodologies, most of which remain under-developed. By way of conclusion, the article brings into focus the impact of technological advances, against the background of the broader technologization of translation, as a meaningful anchor point to frame game localization.

For the purposes of this chapter, the terms ‘video games’ and ‘digital games’ are used interchangeably. For further discussion on the terminology and definition of video games in the context of game localization research, readers are referred to O’Hagan and Mangiron (2013: 63–66).

**Historical background**

Digital games reportedly had their origin in the USA, where the game industry was first developed in the early 1970s, at a time when it was dominated by the game company Atari.
In the mid-1980s, Japanese companies entered the American market and a number of major milestones followed suit, including the demise of Atari and the release of the Nintendo Entertainment System (NES). Both countries remain to date among the world’s biggest game producing and consuming nations, although the make-up of the game industry is in a state of flux. For example, Korea and China are becoming increasingly important, especially in the area of online games.

In contrast to the well-chronicled history of video games, the history of game localization is hazy, especially in the academic literature—which might be regarded as indicative of the limited interest in localization in game studies. From a game industry perspective, Hasegawa (2009) divides the historical development of game localization into different stages: early phase (prior to mid-80s); growth phase (to mid-90s); development phase (to late 90s); maturing phase (2000 to 2005) and advanced phase (after 2005).

In broad terms, both practitioners and researchers of game localization agree that it was only in 2000 that game localization began to be streamlined into a systematic industrial process (O’Hagan and Mangiron 2013). It is worth highlighting that game localization was initially developed independently of software localization. For example, the industry body, Software Publishers Association (SPA), initially represented primarily the interests of business software publishers, with game publishers being relatively marginalized (Kent 2001: 469). This foregrounds the separate paths followed by the otherwise closely associated practices of software and game localization. The former came into existence with the advent of personal computers in the 1980s, prompting the need for the computer industry to distribute mainly US-made software in international markets (Esselink 2000). The term ‘localization’ was introduced to designate the process whereby a given digital product or content is made available for the target region by translating and adapting it in the local language and conventions (Esselink, ibid.). As well as translating texts for the user interface of software applications and adapting country-specific formats such as date, time and currency, it was also necessary to enable software itself to process user input in the user’s language, which required the involvement of software engineers. The idea behind game localization is similar, yet with some differences, as explained below.

In the early days, the amount of text being used within games that required translation tended to be relatively small. This, combined with a lack of awareness in the game industry of the need for professional input, was the main reason why professional translators were not involved in game localization. For example, it was common for Nintendo games to be first translated by Japanese game engineers from Japanese into English, and then to be edited by an English native speaker (Uemura et al. 2013: 171). Furthermore, it was commonly assumed that any game that happened to be successful in its home country was likely to appeal to other markets, regardless of translation availability and quality (Kohler 2005). During the 1980s and into the 1990s, the practice evolved largely on a trial and error basis; although this often resulted in poor translations, it was not always necessarily detrimental for sales (Kohler, ibid.). The correlation between the localization quality and game sales has never been clear-cut (O’Hagan and Mangiron 2004) and this remains the case today. Over and above the lack of professional input, other earlier stumbling blocks which affected translation included the game technology itself, in the form of limitations in memory and processing capacities of the game console hardware (Altice 2015). Such constraints often led to the need to drastically reduce the amount of the target text in English, at times as much as halving it, as recalled by English translators of Japanese games working at the time (e.g. Ted Woolsey, cited in Kohler 2005: 226). This very point marks one of the fundamental differences between localization and other types of translation which are not bound by the constraints of an electronic medium.

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Many games were being localized by the mid-1990s, but the quality of localization continued to be inconsistent. It was then that games began to evolve from being heavily text-based, and hence without graphics, to include full-fledged multimedia elements. It was also a time when computer-synthesized voices were the mainstay, in contrast to today’s mainstream games which are usually voiced by humans. The use of human voice led to audio localization, involving re-voicing by professional actors into the target language. Its evolution over time shows the extent to which the development of games and their localization have been dictated by technology (Altice 2015); pragmatic solutions have been sought to tackle technological limitations while exploiting growing capability—from arcade games to 16-bit consoles, CD-Rom and DVD to today’s game systems that comprise high-spec computers.

Game localization has also given rise to unique cultural issues that have to be addressed in translation. Prior to the establishment of age ratings boards—e.g. the US Entertainment Software Ratings Board (ESRB)—in 1994, issues relating to age suitability of game content as well as to cultural sensitivity in different regions were brought into focus during the localization process. This is demonstrated by the strict self-regulatory process enforced by Nintendo of America on NES games. Their ‘NES Game Standards Policy’ covered a broad range of rules to address any aspects that could be considered potentially unsuitable for the target users or offensive in the target market, including violence, sexual innuendo, nudity and religious references (O’Hagan and Mangiron 2013: 225). These internal rules, which were strictly applied to NES games localized from Japanese to be sold in the North American region, exemplify the self-regulation and self-censorship exercised at the time by game companies, largely in response to the public perception of games as less savoury entertainment unsuitable for minors (Sheff 1993). Such self-restraint has been largely replaced and formalized today by territory-specific age ratings boards established in key regions such as North America, Europe and Japan, with Germany, Australia and China imposing particularly strict regulations (Chandler and Deming 2012: 35–42).

One of the unique features typically attributed to digital games, in contrast to productivity software, is that games are designed to expand users’ imagination, thus exceeding the utilitarian goal of the latter (Uemura et al. 2013). This foregrounds the ‘affective’ dimension that arises from intense user engagement in the game medium and, concomitantly, the importance of handling cultural issues during the localization process in such a way that games are able to cross national borders. Crucially, the increased use of audiovisual content and sophisticated multimedia story-telling has led to the creation of games that sometimes raise complex cultural issues. These may include a wide spectrum of issues such as sexuality, religion and political views, which differ across cultures. As a result, ‘culturalization’ has emerged as a significant mechanism both in the practice and research of game localization to address factors contributing to ‘intercultural dissonance’ (Edwards 2012: 25). Edwards considers culturalization to be the solution to problems associated with ‘geographics’, a term used in game development to refer to the location of the player (Novak 2012: 95). This focus highlights the impact of the broad cultural dimensions affecting the player’s response to the game, as is further elaborated below.

Into the 2000s, as games continued to grow in complexity and timelines continued to shrink to enable the simultaneous shipment (‘sim-ship’) of the original and the localized games, previous ad hoc approaches to localization became unsustainable. This led to the systematization of game localization with an increasing use of computer-based tools to facilitate the process. Just as the software localization became a well-established industrial process through various initiatives launched by the industry, the game industry began to promote a better awareness of localization issues. This is demonstrated by the establishment of the
Game localization

Game Localization Special Interest Group in 2008 under the umbrella of the International Game Developers Conference (GDC) series, which ultimately led to the compilation of Best Practices for Game Localization (Honeywood and Fung 2012). It is now acknowledged by the software localization sector, through the adoption of the acronym GILT (Globalization, Internationalization, Localization and Translation), that considerations of localization should take place during the game development phase. GILT puts the traditionally downstream activities of localization and translation upstream as part of the whole globalization process, and encourages an integrated approach to the development of a product that has translation in mind from the start. In this way, game localization practices have become gradually approached in a more stable and systematic manner (Hasegawa 2009), with the concept of internationalization increasingly at the heart of this new model (Chandler and Deming 2012). The next section discusses what game localization practices actually entail.

Game localization in practice

The key concept behind localization is ‘locale’, whose original meaning was a ‘small area’ or ‘vicinity’, but in this field has come to designate the combination of ‘region, language and character encoding’ (Esselink 2000: 1). For example, Simplified Chinese must be used for Mainland China, whereas Traditional Chinese is used for Hong Kong and Taiwan, each of which, in turn, must be represented and mapped by correct character sets and encoding systems (a process that, in the case of non-Roman scripts such as Chinese, Japanese and Korean has become easier after the adoption of the international standard Unicode). The concept of locale allows the version of the product to be tailored for a specific region in the relevant language variety as well as linked to other information associated with the target locality, such as date formats, units of currency and so forth (O’Hagan and Mangiron 2013: 88). The more recent definition of locale includes information on cultural, technical and geographical conventions beyond languages (European Quality Standard EN 1508, cited in Jiménez-Crespo 2013: 12–13). This highlights the inherent characteristic of localization as operating at the intersection between language, culture and digital medium.

Another key concept developed in the localization industry is the afore-mentioned framework captured by the acronym GILT. In particular, the internationalization process has become essential to efficiently enable the one-to-many distribution of an electronic product (Pym 2010). It is increasingly applied to game localization, as part of the globalization processes and strategies required to release a game product in various markets. From a technical perspective, game localization is closely linked to game development, as illustrated in the expression ‘localization-friendly game development’ (Chandler and Deming 2012)—which essentially points back to internationalization.

In a localization context, internationalization means to prepare a given product or content to be localization-ready to avoid costly retrofitting. Chandler and Deming (ibid.: 4–8), for example, maintain that well-internationalized games are relatively easy to localize. Internationalization involves technical considerations such as developing a game’s code base to support all the intended target languages, and separating translatable elements from the software code. This allows for an easy extraction and re-integration of the software strings (texts) once they have been translated. Other internationalization considerations include (i) making allowance for text expansions to avoid target text being cut off (commonly known as ‘truncations’) if the space allocated on screen, based on the space required by the source language, is insufficient; and (ii) some cultural aspects involving non-verbal elements, such as the suitability of icons, graphics or the layout. In sum, the process of
internationalization is designed to ensure that no major changes will be required during the subsequent localization process for a specific target market.

Similar to software localization, there are in-house and outsourcing models which determine the subsequent workflow. Also, localization may be based on either a post-gold model—where a localized version is released after the elapse of a certain period of time from the release of the original game—or on sim-ship. Most major AAA games and their various locales are now sim-shipped or distributed with shorter intervals, following the release of the original games. Historically, Japanese games tended to be released using a post-gold model. However, as illustrated in the cases of major Japanese publishers such as Nintendo and Square Enix, a sim-ship model is being increasingly used (O’Hagan and Mangiron 2013). The actual localization work process differs according to the model used, but typically localization begins by extracting assets (i.e. elements in the game) that are subject to translation and preparing them for localization as part of ‘localization kits’—which ideally include clear instructions and sufficient context for the fragmented texts. Once relevant assets are translated, they need to be compiled back into the software and tested, as is also the case in the context of software localization. This testing is essential to ensure that a localized product functions as expected (functional testing) and also to verify that a given translation fits the context (linguistic testing). The latter is necessary due to the fact that translators typically work on extracted strings from software which are often provided without a context. This creates a major challenge for translators, which is further compounded by the non-linear structure of games and the fact that translators are not able to access the finished game in sim-ship environments. The problem is further exacerbated if translators are not familiar with games in general (Dietz 2006).

To understand the broader context of game production, including localized games, it is worth highlighting the specific make-up of the game industry. It consists of game developers, game publishers who often finance the game development and, in the case of console games, console manufacturers—i.e. Nintendo, Microsoft and Sony. The decision-making process concerning game localization reflects these industry structures and the hierarchy of the key actors. For example, publishers are typically in the most powerful position and determine which regions are to be served by localized versions; what degree of localization (i.e. full versus partial) should be put in place for each locale; and what release timeframe (sim-ship versus post-gold) will be adopted. The localization process for console games is linked to the console manufacturer through the mandatory process of ‘submission’ of games, whereby the relevant game manufacturer verifies localized games according to pre-published criteria. This procedure aims to ensure that the localized games load and play properly on the given platform through adherence to the manufacturer-approved use of key terminology, among other things—hence the critical demonstration of translation as an embedded element in a technical system. Furthermore, insofar as games are commercial and highly competitive products, it is often the publisher (and its marketing department) who makes certain localization-related decisions from a strategic business perspective. Other business decisions pertain to the legal obligations relating to licensing agreements, something particularly important in the case of transmedia franchise titles where games are made based on movies (e.g. Star Wars), TV series (e.g. Simpsons), books (e.g. Harry Potter) or comics (e.g. Watchmen). Game localization practices are ultimately shaped by the business interests of the game industry, and the degree of discretion bestowed on the localizers will depend on corporate interests. In recent years, however, these industry-driven processes are being affected by developments such as crowdfunding, including free localization by communities of fan users.
Compared to productivity software, games tend to have a greater variety of assets. These include in-game text assets, art assets (such as text in images), audio and cinematic assets, printed assets (manuals and packaging in addition to marketing and legal documents) and other collateral (associated assets such as web materials, TV commercials etc). Furthermore, video games incorporate a broad range of genres, including action adventure games, role playing games (RPG), First Person Shooter (FPS), sports games, and hybrid games (a mixture of different genres), to give but some examples—a diversity that has important implications, as it would require a certain degree of subject specialization on the part of the translator. For example, unauthentic use of terminology in specialized games, such as the flight simulation ones, is likely to break the suspension of disbelief for any user who is familiar with the domain (Dietz 2006). From this perspective, translating games can be similar to translating technical texts featuring subject-specific terminology. The same would apply, for instance, in games revolving around sports, music, cooking or military combat scenarios. Some RPG games are narrative-driven and may require skills akin to those of literary translators; some dialogues, for example, might have to be translated in a specific style and register, whether contemporary or archaic.

Due to the great variety of games that are now being produced, it is increasingly difficult to discuss game translation strategies in terms of one common translation approach (Fernández Costales 2012). The sheer variety of games and diverse approaches used in game localization seems to have delayed the adoption by the game localization sector of computer-aided translation (CAT) tools—compared with the ubiquity of these technologies in the field of software localization practices. However, today their use is on the increase. This includes tools that are specifically developed in-house with game localization in mind, and machine translation (MT) applications are also on the horizon (O’Hagan and Mangiron 2013: 142–146).

Depending on the size and importance of the target market, games may be fully localized—in which case the cinematic audio asset will be dubbed (a process referred to as ‘voice-over’ or VO in game localization) as well as subtitled—or partly localized—i.e. only subtitled (Chandler and Deming 2012: 9–10). While the application of these language transfer modes places game localization under the umbrella AVT, game localization does not generally follow AVT norms (Mangiron and O’Hagan 2006). For example, interlingual subtitles used in game cut-scenes are usually translated verbatim, with little consideration for legibility on screen or the recipient’s reading speed. In most mainstream games, VO is performed by professional voice actors; each speaking part will normally be recorded separately, rather than in actual interaction with other game characters. Both subtitle and dubbing scripts tend to be organized according to each game character, which results in a certain de-contextualization that can sometimes prove detrimental to high quality translation. This approach to the translation of the cinematic asset in games signals that such assets (and their translation) are not normally regarded as the main feature or reason why gamers are attracted to the particular game. Gamers are often eager to focus on the actual interactive gameplay action, so non-interactive cut-scenes are normally perceived as not particularly engaging (Egenfeldt-Nielsen et al. 2013). The way in which VO is handled in video games is arguably indicative of the secondary importance that cinematics has for many gamers (Newman 2004). Nevertheless, full localization is becoming ever more common as a mechanism to enhance gamer immersion (Schliem 2012).

**Current and future debates**

While game localization research is beginning to mature, the field is far from well-established, and many gaps are yet to be filled in the theorization of this dynamic practice. In *Introducing...*
Translation Studies: Theories and Applications Munday positioned ‘video game translation’ under new media and translation, marking it as one of the important developments derived from technological progress. In particular, he identifies this practice as a ‘site for transcreation’ (Munday 2016: 286–287), highlighting the creative dimension of the practice. Mangiron and O’Hagan (2006) first made use of this term to conceptualize game translation as the transfer of the gameplay ‘experience’ from the source to the target text. In their discussion of the translation of some weapon names and the use of regional accents in VO for cut-scenes in the major Japanese RPG Final Fantasy series, Mangiron and O’Hagan illustrated how translators focused on recreating ‘the overall gameplay experience’ (*ibid.:* 15), while retaining the ‘look and feel’ of the game. For example, the original naming of a sword called ‘花鳥風月’ [a classical Chinese idiom literally meaning ‘flower, birds, winds and moon’ that generally refers to the beauty of nature] was translated as ‘Painkiller’ in the North American version of the game. This was justified by the translator on the basis of the weapon’s powerful qualities—indeed, characters using the ‘Painkiller’ had a major advantage, as they could skip painful grinds and earn points more quickly. Importantly, the translation of the weapon’s name also manages to convey a touch of ironic humour (see Alex O. Smith, cited in O’Hagan and Mangiron 2013: 191, for an in-depth discussion). As is also the case in AVT contexts, humour in game localization is often an important element that serves various functions—not least relieving tension—and calls for creative solutions (Mangiron 2010).

The applicability of transcreation in game localization has been explored by a number of authors. For example, Bernal-Merino (2006) has observed how, in contemporary contexts, the concept is now used by a new generation of translation companies that aim to ‘distance themselves from traditional translation firms’. In this emerging context, transcreation foregrounds the creativity involved in translation, and positions itself as a value-added service (*ibid.:* 32). In keeping with this development, the localization sector uses the term transcreation to describe some game localization strategies involving a transformative approach (e.g. Wood *et al.* 2010). For his part, Fernández Costales (2012) discussed examples of transcreation strategies in Spanish translations of games originally released in English, and analyzed such strategies in terms of the genre each game belongs to. Fernández Costales found evidence of transcreation strategies being deployed more often in text-heavy RPGs and adventure games, although the link between the game genre and the specific strategies was found to be somewhat tenuous. By contrast, drawing on auteurism theory, Pettini (2015) discovered that a creative emphasis was not always the translator’s preferred strategy. Interestingly, translators resorted to a literal approach in those cases where the signature style of a high-profile game designer was discernible. Pedersen (2014), on the other hand, conducted a meta-analysis of the concept of transcreation in the context of advertising and marketing translation—although he also covered other areas such as localization, internationalization and adaptation—in search of a clear definition of the concept. Pedersen’s study revealed that the concept lent itself to various interpretations and concluded that the term transcreation primarily serves to draw attention to a range of characteristics that, while inherent to translation, are not explicit in the term ‘translation’. On the whole, in the context of game localization, the use of the term transcreation is associated with the ludic dimension of the game and the importance of preserving the ‘gameplay experience’; furthermore, it is to be considered in relation to culturalization.

Culturalization refers to a broad range of operations in game localization covering verbal as well as non-verbal transformations of game elements during the localization process. It can verge on censorship, typically self-censorship, by the publishers of the games themselves.
The Western release of the Japanese game *Fire Emblem Fates* (Nintendo 2015) is a case in point. Immediately after its distribution in Japan, a major controversy erupted on social media platforms, mainly among Western gamers outside Japan, because of a scene depicting a drink being spiked with a ‘magic powder’. The drink in question was meant to serve as a cure for a female soldier character who wished to overcome her nervousness when meeting attractive female characters. The debate concerned the potentially homophobic intention of this aspect of the plot as well as what some regarded as the promotion of a form of anti-social behaviour such as drugging. The intensity of the debate, which began before the official localized versions were released, prompted fans to post versions of the Japanese original scene on social media with their own translation. The ensuing controversy forced Nintendo to issue an announcement to fans, explaining how they would handle the said scene during the localization process, and noting that the offending scene would be localized ‘to make it appropriate for [each] particular territory’ (cited in Sato 2016). When the localized US version eventually came out, the scene in question had been largely recontextualized.

It is relevant to point out that not all bilingual fans agreed on the interpretation of the scene, with some of them pleading not to change the original content in subsequent localized versions (Kain 2016). The interpretation of certain aspects of a game typically requires a broad understanding of relevant cultural and social aspects of the country where the game originates, in addition to gaming knowledge. For example, sexually ambivalent characters, who often feature in Japanese games, are not normally intended to make statements on sexuality; likewise, the presence of magic potions is fairly common in fantasy games aimed at young children. Ultimately, the issue at stake in the previous example was the company’s response to users, which led to the adoption of self-censorship on the part of the publisher. Significantly, this case illustrates the challenging milieu in which game localizers and game publishers find themselves in the era of social media, where word about games may spread rapidly across the world even before the official localized versions have been released. It also shows how, in this context, localizers and publishers run the risk of alienating long-standing fans, particularly if the final decision on the localization strategy adopted in each case appears to be dictated by the most vocal users—who may not always represent *bona fide* fans. This suggests that the availability of multiple communication channels and the heightened visibility of game users may act as a two-edged sword in colouring the reception of localized games.

As game localization research matures, there will be more studies exploring the transformative nature of translation, as encapsulated in the concept of transcreation. Game localization is often accounted for in functionalist terms, i.e. as driven by the ultimate purpose (*skopos*) of the game—that is, entertaining the end-user. This resonates with the ‘user-centered translation’ (UCT) approach proposed by Suojanen et al. (2015), which makes explicit the widely tacit assumption that translators are familiar with the potential users of the translation (*ibid.*: 144). Positioned at the intersection between usability studies and human-computer interaction (HCI), UCT can make a significant contribution to the study of modern video games as immersive digital environments.

Furthermore, UCT implies a shift in the focus of translation quality assessment (TQA) towards users’ perspectives—in keeping with the long-perceived need for reception studies in AVT research (Gambier 2009). TQA is a complex matter in the context of video game localization, where even major translation blunders can be tolerated (see Kohler 2005 for examples) as long as the core game experience is maintained in the eyes of the end users; however, in some cases, one misplaced word can prompt the recall of a localized game—as illustrated in O’Hagan and Mangiron 2013: 178). Game fans are diverse, as is often evident
in their response to elements pertaining to the socio-cultural context of the game. Insofar as games are affective media fostering the users’ emotional engagement, it would be justifiable for translators to aim squarely at users modelled around the ‘personas’ or ‘implied readers’ they have in mind when translating (Suojanen et al. 2015). A UCT-based approach with formative user feedback may therefore play an important role in recreating software-mediated cultural experiences (O’Hagan 2015). In particular, such an approach will help resist the ad hoc adoption of self-censoring decisions that tamper with the game experience delivered in the localized versions of the game.

Game localization is a dynamically evolving practice driven by the needs of the game industry and the users’ demands. As has been elaborated on, this scenario enhances the relevance of a UCT-based approach to game translator training (Mangiron 2006, Granell 2011, Bernal-Merino 2014). Research on game localization is helping to identify the competences that the industry is demanding from game localizers, whether they take the form of personal traits and skills, subject-specific knowledge or professional self-awareness (e.g. O’Hagan and Mangiron 2013: 243–275). The development of training opportunities will also enable the integration of CAT tools in this area of professional practice, as explained below.

Common research methods

Game localization is a site of research whose impetus comes from practices that have evolved in response to market demands. As an area of translation firmly grounded in industry practices, initial descriptive studies drawing on practitioner insights have provided a solid platform to launch this area of research in translation studies (see Mangiron 2017 for an overview of game localization research). Sources such as industry reports and fan discussion forums continue to provide access to insider and user information which may otherwise be difficult to obtain. These sources help researchers gain an understanding of the ‘how’ and ‘what’ questions concerning the practice. However, more in-depth research seeking detailed answers to the ‘why’ question may require the collection of additional primary data.

In terms of methodological innovation, game localization lags behind the cognate field of AVT, which has witnessed major developments in recent years. Confined within the product-oriented paradigm, case studies focused on translation strategies dominate the literature in the field (e.g. Mangiron and O’Hagan 2006, Fernández Costales 2012, Mangiron et al. 2014). There are also studies focused on practitioners, whether they are based on small samples of interviews (e.g. Jayemanne 2009) or a more extensive ethnographic study (e.g. Mandiberg 2015). Mandiberg conducted in-person interviews with 40 localization industry personnel working in different roles in the US, Holland and Japan over the period 2010–2013. Frustratingly, Mandiberg’s attempt at conducting workplace observations was hampered by non-disclosure agreement clauses—a challenging factor in game localization research (O’Hagan and Mangiron 2013), in contrast with the increasing number of workplace-based studies now being conducted in other areas of translation (e.g. Ehrensberger-Dow and Massey 2014).

The need for empirically based reception studies has been stressed by scholars in AVT for some time (e.g. Gambier 2003) and this plea has resulted in an increasing number of viewer studies, for example, using eye tracking (e.g. Caffrey 2009, Kruger and Faans 2014). Given the particularly strong interest in users within the field of game localization, eye tracking has become a fast-developing research method. For example, in the area of accessibility of cut-scenes in localized games, Mangiron (2016) used eye tracking to test reception of same-language subtitles by deaf and hard of hearing players vis-à-vis their hearing counterparts. This study involved the manipulation of the subtitles and associated elements to throw light
on the differences in visual attention by participating subjects, as measured by fixation durations. The study found that, when long two-line subtitles were displayed, deaf and hard of hearing subjects showed a significantly longer fixation duration, indicating that subtitle reading represented a greater cognitive load for them. By combining the data with a pre-test questionnaire, Mangiron was able to suggest a set of preliminary guidelines for game companies to consider subtitling approaches geared for better accessibility.

As far as research methods seeking to obtain game player data are concerned, O’Hagan and Mangiron (2013: 312–318) and O’Hagan (2016) reported on an explorative study on player experience. The study involved native speakers of English, German and Japanese playing a game in its original English version and its respective German and Japanese locales. The study experimented with a number of data streams, including eye-tracking, galvanic skin response and heart rates as well as facial expressions, combining them with subject interviews and play trajectories. Even though it was conceived as a pilot study, it served to point to an emerging research method deploying a range of user biometric data. As technological tools such as portable mobile sensors continue to improve, an empirical player experience approach has scope to provide objective data, and hence complement subjective data gathered through player interviewers and surveys.

The influence of technology on game localization

The ever-growing number of studies on the impact of technology on translation and the translation industry undertaken in recent years has widened the scope of research within the field of translation studies, and paved the way for the emergence of new research foci, including the conceptualization of translation as human-computer interaction (O’Brien 2012). In light of these advances, investigating the impact of technology on game localization is bound to provide a significant stimulus to the development of the field as an area of scholarly enquiry. However, there is very little research available on the use of CAT tools, and their impact on the localization process and the finished game products. Primarily, this is because, unlike other localization sectors, the use of CAT tools such as translation memory and terminology management systems on an enterprise-wide level is a relatively recent development in game localization. Leaving CAT tools aside, other in-house tools are currently being developed to cater for the specific needs of the sector. These include applications (i) enabling the accurate tracking of multiple story lines; (ii) providing translators with fuller contexts for the translation of movie scripts through the use of screenshots as a solution to the recurrent lack of context for these game components; and (iii) facilitating a consistent management of terminology within a game and across game series. The ubiquity of non-disclosure agreement clauses in the video game industry is likely to continue hindering workplace-based research, but it is hoped that the growing recognition of the benefits derived from this type of research will eventually outweigh closed attitudes within this competitive industry, particularly from well-established game companies. Indeed, independent (‘indie’) game companies are generally more open to facilitate workplace-based research and thrash out new ideas for collaboration. This may allow the researcher to access user data collected in-house, for example, to develop and apply a UCT approach. Similarly, the ever more popular video streaming sites such as ‘Twitch TV’, that contain gameplay trajectory clips with added commentary by gamers, may provide new research data—as long as the ethical issues involved in the use of such data can be cleared.

More recently, the industry has been drawing on the concept of brain-machine interface to develop new experimental games where brain waves directly interact with the game, giving rise to neurogaming. As demonstrated in the Digital Games Research Association
Conference held in May 2015 (DiGRA 2015), UK filmmaker Karen Palmer has been exploring the use of wearable sensors to design new interactive narratives using the brain-machine interface concept. In her Syncself and Syncself2 video installations, the game is over when the player’s sensor device detects loss of concentration. Similarly, her more recent work such as Riot (Palmer, n.d.) allows the player emotion to drive the game in real time through facial recognition software and AI. Such directions of interactive storytelling build on biofeedback games in which the individual gamer’s physiological response is fed back into the game system in real time (e.g. Dekker and Champion 2007).

Further developments are being driven by the use of head-mounted virtual reality (VR) units to increase players’ sense of immersion in the game world. According to the ESA report (ESA 2017: 9), 63% of the most frequent gamers are already familiar with VR and this technology is expected to redefine the gaming experience. PlayStation VR is the first VR headset designed to work with a specific game console, and Microsoft has released HoloLens to promote augmented reality (AR) applications using holographic images (The Year of VR 2016). Significantly, VR technology is likely to make important contributions in terms of enhancing accessibility, for example, by delivering an immersive playing experience to users with certain physical disabilities. The last two areas of study are turning game localization research into a multi-disciplinary area of study, further contributing to the broadening of the research basis and opportunities for innovation, both within game localization and AVT.

Conclusion

Research on game localization is inherently linked to AVT scholarship and has the potential to serve as a catalyst pushing the boundaries of current translation studies research. In the process of game localization, translation takes place within an interactive digital medium which is dynamically pushing towards further enhanced user engagement: through VR units, game players enter the immersive multimodal environment to experience the virtual world. This is likely to add further complexity to any potential application of a UCT approach to the study of game localization, although some elements of the immersive experience may not be directly related to localization issues.

This chapter has shown that game localization has widened the remit of translation concepts to focus on the user experience of a game world that demands all-encompassing culturalization. Yet, there needs to be a balance between preserving the original gameplay experience and taking steps to harness the voices from the heterogeneous user base. Indeed, one of the most unpredictable yet potentially significant developments regarding game users concerns the evolution of user communities around activities such as fan translation and translation crowdsourcing in the ever more participatory and collaborative digital landscape. Collecting big data from such communities will likely help researchers gain a fresh understanding of user behaviour and preferences concerning game localization strategies. However, access to user data entails the caveat of research ethics concerning data privacy and disclosure. These are some of the key challenges shared with AVT researchers who are attempting to make sense of dynamic and changing contexts of practice and research.

Further reading

aspects of game localization from a practitioner’s perspective. Each chapter of the book contains an interview with industry experts and is an informative source bringing into light the practical dimension of game localization.

Dovey, J. and H. W. Kennedy (2006) *Game Cultures: Computer Games as New Media*, Berkshire: Open University Press | This is a well thought-through introduction to many dimensions of game culture with a detailed analysis of its complexity. While localization is not specifically discussed it provides a relevant background for game localization researchers who are particularly interested in cultural aspects of this process.


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