From Translation Studies and audiovisual translation to media accessibility

Some research trends

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Recent developments in Translation Studies and translation practice have not only led to a profusion of approaches, but also to the development of new text forms and translation modes. Media Accessibility, particularly audio description (AD) and subtitling for the deaf and hard-of-hearing (SDH), is an example of such a 'new' mode. SDH has been evolving quickly in recent decades and new developments such as interlingual SDH and live subtitling with speech recognition bring it closer to established forms of translation and interpreting. On the one hand, interlingual SDH reintroduces Jakobson's (1959) 'translation proper' while the use of speech recognition has led to the creation of a hybrid form that has affinities with both subtitling and interpreting. Audio description, for its part, cannot even be fitted into Jakobson's 'intersemiotic translation' model since it involves translation from images into words. Research into AD is especially interesting since it rallies methods from adjacent disciplines, much in the same way that Holmes ([1972] 1988) described TS when it was a fledgling discipline. In 2008, Braun set out a research agenda for AD and the wealth of topics and research approaches dealt with in her article illustrate the immense complexity of this field and the work still to be done. Although AD and SDH research have developed at different paces and are concerned with different topics, converging trends do appear. Particularly the role of technology and the concept of multimodality seem to be key issues. This article aims to give an overview of current research trends in both these areas. It illustrates the possibilities of technology-driven research – particularly popular in SDH and live-subtitling research – while at the same time underlining the value of individual, human-driven approaches, which are still the main 'modus operandi' in the younger discipline of AD where much basic research is still required.

Keywords: Translation Studies, audiovisual translation, media accessibility, subtitling for the deaf and hard-of-hearing, audio description

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1. Introduction

Translation Studies (TS) has gone through many turns since Holmes presented his seminal outline on "The Name and Nature of Translation Studies" in 1972. Today the 'technological turn' appears to be dominant in TS, but research foci and their related research methods and questions are, to a large extent, accumulative phenomena. This accruement of approaches goes hand in hand with an increasing number of variables, mostly connected to digitization and the proliferation of target readers or audiences with different requirements. One central feature of this evolution is the 'explosion' of the boundaries of text (written and/or spoken) and the related ongoing development of new text forms and (their) translation modes.

Consequently, defining what is and is not a form of translation has become a more futile enterprise than ever. Even defining TS concepts appears to have become a major challenge because of the frequent interdisciplinary approach to many translation-related phenomena. The technological turn seems to have exacerbated this. Technology has turned citizens into netizens, and readers of texts and translated texts into producers of texts and translated texts – for instance, through crowdsourcing (O'Hagan 2012). At the same time, economic motives are not the only driving force behind these crowdsourcing processes. The use of both quicker and cheaper technological applications also plays a role and these, too, sometimes impact negatively on quality. Nevertheless, many positive developments are also evident. New technologies and human-driven approaches to translation challenges are also being used for the promotion of human rights – including the rights of people with disabilities. Examples of this can be found in the areas of language learning (see, e.g., the Clipflair project at www.clipflair.net), the promotion of literacy, and narrowcasting for specific groups. The list of positive outcomes of the technological impact on these areas is probably just as long, but opinions on the matter differ (Cronin 2013).

Two positive outcomes in the form of 'new' text types dating from the second half of the twentieth century that concern us here promote the rights of people with disabilities and constitute a fitting illustration of the accumulation of approaches and variables in TS and AVT outlined above – subtitling for the deaf and hard-of-hearing (SDH) and audio description (AD) for the blind and visually impaired. SDH and especially AD are the research domains at the centre of the present article.

Subtitling for the deaf and hard-of-hearing has existed since the advent of Teletext or Ceefax (i.e., the 1970s) and research into this translation mode has progressed both quantitatively and qualitatively at different paces in the various countries of Europe and on other continents in the past decade and since the survey drawn up by Remael in 2007. However, today's variety of approaches is still linked

to differences in long-standing traditions (such as dubbing versus subtitling). It is also connected to varying national legislation and funding, and often depends on whether the translation is destined for DVD, television, the internet, hand-held devices or other media. The list of reasons for the variation is almost endless.

A similar degree of fragmentation applies to AD. It is to a large extent caused by the same variables and linked to the different stages of development with regard to AD services in different countries or regions. Even if AD is gradually becoming a standard access service in many European countries and elsewhere, much still remains to be done. AD for television and film is obviously the most widespread mode, but access services are slowly finding their way into other areas as well, such as the theatre, opera and sports events, to name just a few. The implementation of legislation and the development of guidelines are closely following practice, and most European countries today have some kind of regulation for the provision of AD as well as local guidelines, even if these differ greatly (see the European ADLAB project at www.adlab-project.eu; Maszerowska, Matamala and Orero 2014).

Research is developing in interaction with all these trends, and a few key developments are considered below. However, given the limited scope of this article, we will focus on the more recent developments in SDH research today (as compared to Remael 2007) while giving a comprehensive account of research trends in the younger of the two disciplines, AD.

2. Subtitling for the deaf and hard-of-hearing

The terminological quibble between Europe (which speaks of subtitling for the deaf and hard-of-hearing) and the USA, Canada and Australia (which speak of 'captioning' for this target group, and use 'subtitling' only for interlingual translation), has not really been resolved and may have an effect on short and long-term developments in subtitle research and development. This is because the issue is not a purely terminological one: in Australia, the USA and Canada captioning is verbatim and this kind of intralingual subtitling allows for greater flexibility in the application of, for instance, speech-to-text technology than edited SDH, since there is little need for rewriting or text reduction which constitutes additional processing. This is an important aspect because, notwithstanding all the variations in the ways in which subtitles for the deaf and hard-of-hearing or captions are produced at present, it is clear that this translation mode is here to stay. Furthermore, as the number of audiovisual productions and the variety of different devices for watching them continue to grow, so too will the demand for SDH continue to rise – even if we do not reckon with rising quotas imposed through government regulations, which may not be developing at the same pace everywhere.

The audiovisual translation industry is therefore looking to academia and also to technology for the development of (new) cost-cutting options that may enable it to meet the demand for the above-mentioned accessibility services at a reduced cost. This has resulted in the establishment of various large EU-funded projects. SUMAT, for instance, focused on interlingual standard subtitling and has investigated the possibility of using machine translation and post-editing for subtitling (http://cordis.europa.eu/project/rcn/191741_en.html). SAVAS aimed to develop automated intralingual subtitling application scenarios, using speech recognition technology (http://www.fp7-savas.eu/savas_project). Such projects always involve a consortium: partners from the industry that can supply the enormous amounts of real-life big data required for the development of any form of machine-based or aided translation, software developers, and university departments involved in computational linguistics and related areas, among others. The advantage of such projects is that larger corpora and several parties collaborate on innovative approaches.[1] Another consequence may be that the outcome of such research and technology will determine the type of subtitling users will receive, for instance, verbatim captioning rather than edited subtitling, because – as indicated above – editing involves an additional processing step.

Still, more small-scale research in SDH is underway, witness the many PhDs into various aspects of SDH. In addition, the themes of publications from earlier decades are continuing to be researched, often from different angles, reflecting the varying uses being made of subtitling referred to above. This is borne out by a comparison of existing publications and themes discussed at the Media for All conference in Dubrovnik in 2013. The most recurring themes are: nation-bound studies into local practices, SDH for children (including didactic angles), training requirements in SDH, expanding target audiences for SDH, layout and formal characteristics of the translation mode (including icons and punctuation), quality control, linguistic issues such as cohesion and explicitation, the challenges of interlingual SDH and live subtitling through speech recognition (see http://mediaforall5.dhap.hr/ and Pereira and Arnáiz Uzquiza 2010 for a comprehensive bibliography).

One notable development is the research progress in live subtitling with speech recognition for intralingual subtitling. It has managed to pinpoint the challenges for respoken subtitles (Romero-Fresco 2011; Van Waes et al. 2013; Remael et al.

1. The regrettable side of such developments, according to some scholars who have now become more 'traditional' researchers in the humanities, is that such approaches prohibit the development of basic and smaller-scale research. The reason for this resides partly with developments within academia, where scholars are under increased pressure to procure major international projects that generate income for their institutions.

2014) and has offered solutions in terms of subtitle lay-out (based on reception research with eye-tracking research) that have been taken up by the industry in the UK (Romero-Fresco 2009). Further, it has produced a software-based and manageable quality control system that is now being promoted by OfCom, the independent regulator and competition authority for the UK communications industries (see the NERStar website at http://www.speedchill.com/nerstar/index.php/publications.html). The research results of projects like SAVAS, mentioned above, will no doubt also contribute to the production of automated or semi-automated live subtitles. Having said that, interlingual (as opposed to intralingual) live subtitling still presents a major challenge for technology-based solutions.

Interlingual live subtitling (for the deaf and hard-of-hearing and for other audiences) is an area that remains relatively under-researched,[2] although demand is increasing exponentially, especially in those parts of the world traditionally known as 'subtitling countries.' The affinities of interlingual live subtitling and simultaneous interpreting were already discussed by van der Veer (2007), who points out that the combination of live performance with simultaneous interpreting making use of speech technology constitutes the challenge. Verbatim intralingual live subtitling can be produced automatically today without the intervention of human translators, at least in controlled environments without interfering background noise (see the ITU website at http://www.itu.int/en/ITU-T/focusgroups/ava/Pages/default.aspx, for contacts). Consequently, the practice might be commercialised soon enough. Interlingual live subtitling is another matter, however. Moreover, the development of research in this domain is not without problems either. One difficulty encountered by the team working on intralingual live interpreting at the University of Antwerp (Van Waes et al. 2013; Remael et al. 2014), wishing to extend their research to interlingual live subtitling, and, in particular, to a study of the cognitive load involved, was the lack of real-life material available from the university's main research partner, the Flemish public broadcaster VRT. The production of (slightly) edited interlingual live subtitles lies outside the scope of machine translation so far, since little to no time is available for the degree of post-editing that would be needed (taking into consideration the results of the EU-funded SUMAT project on pre-prepared subtitling; see, for instance, Bywood et al. 2013). Research on live interlingual subtitling is also outside the scope of automatic intralingual captioning since automatic text reduction (which is feasible) would, again, have to be combined with machine translation producing edited interlingual subtitles.

2. There is a one-day symposium series devoted to live subtitling in general. The fifth symposium of this series, entitled "Respeaking, Live-Subtitling and Accessibility," took place at the Università degli Studi Internazionali di Roma on 12 June 2015.

In brief, the different needs in the domain of SDH/captioning in various regions, the diversification of users as well as technological advances are impacting on both practice and research in different ways while producing variants on existing SDH/captioning solutions. Sometimes the scope of the research required seems to lie beyond the capacities of individual researchers. In addition, universities require external funding, so an increasing number of larger projects involving multiple parties are evolving. Such technology-based research addresses the need to produce more translations in less time and at less cost and it is producing significant results, at least in these terms. However, technology also has its limitations, as the case of interlingual live subtitling has shown; time will determine which areas of practice and research will remain more human-driven.

3. Audio Description

Many of the above issues are pertinent to AD as well, although this translation mode is in an earlier research stage, which influences research themes and the type of research conducted. AD, too, emerged under the (growing) influence of narrowcasting and technological advances. Therefore, it is at the forefront of TS and AVT research, much like the more technology-driven developments in subtitling. At the same time, however, AD is a practice and a field of study that is struggling in its transition to a fully fledged discipline. Compared to subtitling/SDH, developments in this domain are slower on all fronts: less legislation is in place to dictate quotas, less pressure is exerted by users, less development of technological solutions is emerging for the study and production of AD beyond that of recording and broadcasting with synthetic computer voices. Basic research providing insight into how AD actually works is moving slowly. In 2008, Braun set out a comprehensive research agenda for AD. The wealth of topics and research methods covered in her article illustrates the plethora of approaches and the increasing number of variables that impact on AD research.

However, a quick glance at the research conducted since Braun's 2008 outline shows that the basic research themes – what, when and how to describe – remain the focus of most research even today. These themes are approached from a range of different disciplines. Firstly, basic principles from Narratology and Relevance Theory have been used to investigate why certain information needs to be prioritised in AD, an issue that research is only beginning to tackle today (Vercauteren 2012; Vandaele 2012). Secondly, Film Studies is being consulted to address a few particularly thorny issues regarding how visual versus verbal signs create meaning (Hirvonen 2013a and 2013b). This in turn relates to the characteristic debate on the degree of interpretation that might be acceptable in AD with regard to facial

expressions and emotions for instance (Igareda 2011) or film techniques (Orero 2012). Another pertinent research question in this context is how sound and music function in AD (see Igareda 2012 for the latter, as well as Remael 2012b and Fryer 2010 for sound and AD). Furthermore, (Text) Linguistics and Discourse Analysis have contributed to the analysis of the lexico-grammatical features of AD in different languages and cultures (Salway 2007; Arma 2012; Reviers et al. 2015). These studies with a linguistic focus have demonstrated that a 'language of AD' with specific lexico-grammatical features related to the narrative function of the text does indeed exist. A combined cultural-linguistic approach can be found in the Pear Tree Project (Mazur and Chmiel 2012), which aims to uncover the influence of varying audiovisual traditions on the reception and production of AD. Finally, while most research in the field focuses on AD for fiction film and television, as these are the most popular genres, other AD modalities gain more attention and require the introduction of even more disciplines, such as opera and theatre studies (e.g., Weaver 2010 and Cabeza-Cáceres 2010 for opera; Holland 2009 and Reviers 2012 for theatre) and museology (e.g., Neves 2012 for AD of visual arts).

A consequence of this interdisciplinary or multidisciplinary approach seems to be the fragmented and heterogeneous nature of AD research, which still fails to create the tight and coherent body of literature required for a mature discipline. However, in current publications two aspects frequently recur: the importance of reception research and multimodality. This could be interpreted as an attempt to streamline research approaches on the one hand, thus making results more compatible, and also as a step in identifying primary research questions on the other hand, leading to a clearer focus. As in the case of SDH, the role of technology and quantitative research in these developments is significant.

Several scholars (e.g., Braun 2008; Remael 2012a) have highlighted the importance of reception studies. Many of the (often preliminary) conclusions reached by current studies need to be tested with blind and visually impaired audiences to confirm their validity and create a better understanding of what is effective and what is not. However, there are methodological challenges, as discussed by Chmiel and Mazur (2012), such as low participant rates and the influence of memory on responses. Moreover, the test focus has shifted: where initially only user preference was tested, researchers have identified the need to test comprehension and engagement empirically as well (e.g., Fryer and Freeman 2012).

Furthermore, while many scholars paid lip service only to multimodality in the past, today the multimodal nature of all texts is recognised and reckoned with more often (O'Sullivan 2013; Kaindl 2013). Indeed the boundaries of text have 'exploded' and texts are now seen as forms of communication employing one or more of four modes: visual non-verbal, visual verbal, aural non-verbal, aural

verbal (Zabalbeascoa 2008). Nevertheless, TS has struggled at times to incorporate multimodality in theories of translation (O'Sullivan 2013), especially with regard to finding an adequate and critical vocabulary/terminology. The same is true for AVT research (see the ongoing terminological discussions around SDH). More specifically, scholars have raised the concern that a lack of a consistent (translation-oriented) framework prevails for the analysis of multimodal texts and that too often the verbal aspects of AVT are highlighted at the expense of the visual non-verbal and aural non-verbal aspects (e.g., Gambier 2013). So it seems that the multimodal nature of the text is simply not taken into account sufficiently in theoretical approaches and research designs within AVT.

In this context, and specifically in relation to AD, Orero (2012) points out that, strange as it may seem, little attention has been devoted to how audiovisual texts such as films are understood or 'read' by the viewer. There seems to be no unambiguous way to interpret signs in films, since images work at multiple levels and interact in a complex way with sound and dialogue, which is why AD especially would benefit from a closer and less superficial reading of audiovisual materials than the current AD guidelines suggest (Orero 2012). What is more, little is known about the multimodal functioning of the target text either, that is, how the audience uses AD in interaction with music, sound and dialogue to (re)create a coherent message (see Braun 2011 on coherence). In other words, it appears that AD research is in need of an integrated approach, in which, for instance, insights from Film Studies, Multimodality Theory and Linguistics are combined in order to enhance the understanding of the construction of multimodal meaning in AD (see, e.g., Hirvonen 2013b). The realisation of such an approach, however, raises multiple conceptual, practical as well as technological challenges (see also Taylor in the present issue on Multimodality).

Finally, technology might offer solutions for the problem of the study of multimodality and help the field move beyond research based on individual case studies. Technology facilitates the processing of large amounts of real-life data in corpora, following the example of SDH research as described above, and promotes detailed mark-up and annotation for automatic and in-depth statistical analyses. Especially the development of multimodal corpora, also a topic in subtitling research, seems to open up exciting new avenues for research into AD (e.g., Hurtado Jimenez and Soler Gallego 2013 for the TRACCE project and Freddi and Pavesi 2009 for the Pavia Film Corpus), though there are some drawbacks since corpus compilation and annotation are extremely time-consuming and real-life material is sometimes hard to come by due to copyright issues. Innovative techniques can provide valuable new *types* of data. Eye-tracking techniques (used, e.g., in research testing lay-out preferences in SDH) can corroborate findings based on Narratology and Relevance Theory with regard to content prioritisation for AD. This technique

has already been used to gain more insight into how viewers use visual cues to construct a narrative in audiovisual products (Kruger 2012), or to assess the importance of visual details (Orero and Vilaro 2012).

Technology is also changing the face of AD practice, albeit on a smaller scale compared to the technological developments in SDH practice sketched above. New technologies are being used to facilitate access to AD services – such as the use of mobile devices for the distribution of AD (see, e.g., the Earcatch project: http://earcatch.nl/). Parallel to developments in SDH, the industry is turning to technology to try and make the production of AD more cost-efficient. Examples are the application of text-to-speech (TTS) technologies for voicing ADs and for creating audio subtitles (AST). AST is especially relevant for subtitling countries as a viable method for making multilingual and foreign products accessible (see Szarkowska 2011 and Szarkowska and Jankowska 2012 for more on TTS, and Braun and Orero 2010, Remael 2012a and Remael and Reviers 2015 for more on AST).

Another area of research, gaining specific interest from the industry, is the translation of ADs from one language into another (Remael and Vercauteren 2010). The exploration of the possibilities of machine translation for AD has only recently been initiated (see the ALST project; Matamala 2016). All these domains are waiting for more systematic development and scientific exploration.

4. Concluding remarks

Continuous developments in text types and translation modes, such as the ones described above, blur the borders between what is traditionally considered (audiovisual) translation and media accessibility. They reintroduce Jakobson's 'translation proper' within intersemiotic translation as SDH is developed interlingually as well as intralingually and AD is combined with audio-subtitling for multilingual or foreign language productions. Even if the trends and research foci in AD and SDH research are quite different, as illustrated above, convergences are also evident, especially with regard to the increasingly prominent role of technology in AVT research, which in turn seems to favour more large-scale projects and is changing researcher profiles. SDH research has shown that purely technology-driven approaches yield very interesting results but can have their limitations in terms of concrete applicability without human intervention. As technology-driven approaches are only being introduced into AD research as we write, focusing on the requirements for human-machine interaction in research designs from their inception may well be advised, especially in view of the semiotically complex production of AD. Consequently, increased insight and approaches that promote interaction between human-driven and technology-driven solutions deserve high

priority. Such developments would make the most of technological advances, including the management of big data, thereby counterbalancing and supplementing the more fragmented research based on case studies still prominent in both SDH and AD today. These studies in turn are able to yield research questions that could be explored effectively on a larger scale. Another role that technology can play is to help integrate multimodality into research methods for both SDH and AD, for instance, through the design of computer interfaces that facilitate the study of semiotic interaction and cohesion (see, e.g., Reviers [forthcoming]).[3]

To conclude, this outline illustrates the need for more integrated research approaches that successfully mobilise different disciplines and combine technology-based applied research methods with more basic research, which remains valuable for young disciplines such as AD and SDH. Moreover, it highlights the benefits of close cooperation between industry and academia for all parties, including users of media accessibility services.

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