

# Introduction

## Mapping new horizons in audio description research

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This volume is dedicated to recent developments in research on audio description (AD), the practice of translating images into words that is closely associated with the crucial role audiovisual content and media, and digital technologies, play in today's world. Starting as a volunteer practice to help blind and partially sighted people enjoy theatre productions (Pfanstiehl & Pfanstiehl, 1985; Described and Captioned Media Program, 2012), AD has gradually developed into a professional practice dedicated to making visual content and audiovisual products as well as artistic artefacts and performances accessible to those with visual impairment. Commercially produced AD is available in many countries now and broadcast quotas for programmes offering AD are rising due to legislative efforts aimed at meeting internationally recognised accessibility standards (United Nations, 2006) in relation to media access.

As an academic discipline, the study of AD is mostly situated within the field of translation studies, where—following Jakobson's (1959) distinction between *interlingual*, *intra lingual* and *intersemiotic* translation—AD is conceptualised as a modality of intersemiotic translation in which images or visual elements of audiovisual material (and occasionally sounds that are incomprehensible without seeing the associated visuals) are translated into verbal descriptions (Figure 0.1). In order to make sense of the audiovisual source, audio describers use their ability to combine the different elements of the audiovisual narrative (e.g. visuals, dialogue and/or narration, sound effects, song lyrics, musical scores) into a coherent story in their mind (Braun, 2011, 2016; Vandaele, 2012). Subsequently, they decide which of the visual elements and non-identifiable sound effects are crucial for understanding the story, before verbalising the information conveyed by these elements with the aim of enabling blind audiences to create a similarly coherent story.

Some of the previous AD research has focused specifically on the intermodal nature of AD and has highlighted how the richness of the visual mode and—in relation to audiovisual material—the time restrictions imposed by the need for the descriptions to fit into hiatuses in the soundtrack make information selection and verbalisation in AD highly complex (Braun, 2011, 2016; Fresno *et al.*, 2016; Vandaele, 2012). Other AD research has centred on the linguistic realisation of different aspects of the description (e.g. Jiménez Hurtado, 2007

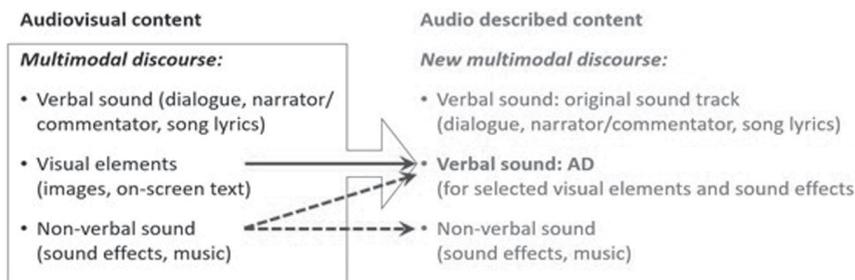


Figure 0.1 AD of audiovisual content as intersemiotic translation.

and Salway, 2007 on lexical choices; Zabrocka and Jankowska, 2016 on co-speech gestures; Hirvonen, 2012 and Hirvonen and Tiittula, 2012 on visual and verbal representations of space in audio description; Hirvonen, 2013a on linguistic perspectivation strategies for filmic point of view; Hirvonen 2013b on similarities between visual and linguistic representations). A related area that has received attention more recently is AD style. In contrast to the classic position of AD practice, which was to ‘describe just what you see’, research suggests that narrative approaches which focus more holistically on the story that is told are more effective (Bardini, 2016, 2017; Kruger, 2010; Mälzer-Semlinger, 2012; Ramos Caro, 2016). A case in point in this discussion are emotions, where the traditional practice is to avoid describing emotions while reception research has shown positive effects of conveying emotions in AD (Bardini, 2017; Ramos Caro, 2016). Other research has focused on adapting the AD style and strategies to a given audiovisual genre (Davila-Montes and Orero, 2016 for adverts; Udo and Fels, 2009 for theatre; Orero, 2011 for children; Mangiron and Zhang, 2016 and Walczak and Fryer 2017 for games and other virtual reality environments).

The translation studies approach to AD has thus drawn on and extended key notions traditionally applied to the interlingual (and intralingual) mediation of verbal or multimodal text, including ‘interpretation’, ‘equivalence’ and ‘rewriting’, and has foregrounded the interpretive elements present in all mediation activities. An ongoing conundrum in this research is the ‘objectivity’ debate, i.e. the question to what extent AD can and should be objective, given that visual content often leaves much room for interpretation, with meaning being in the eye of the beholder (Fryer, 2016; Mazur and Chmiel, 2012; Remael *et al.*, 2014). Whilst this debate has at times taken a prescriptive stance, arguing that subjectivity in AD should be minimised, several points in relation to this debate are noteworthy.

On one hand, audiences often demand ‘objective’ AD (e.g. Lopez *et al.*, 2018). However, they may know little about how AD is created and about the difficulties associated with achieving objectivity. Televisual AD is part of the

post-production process; the audio describer does not normally have access to the director and his/her artistic intentions. Like any other recipient, the describer is therefore left to his/her interpretation of the audiovisual content in question. The nature of human meaning-making is such that a degree of subjectivity in the interpretation process is inevitable in AD and other mediation/transfer activities. Thus, there will always be more than one acceptable solution, and this is further complicated by the fact that blindness is not a homogeneous condition and hence there is a demand for personalisation of audiovisual content within this community. On the other hand, recent studies suggest that an element of subjectivity may, in fact, be desirable, for example, to convey emotions (Ramos Caro, 2016), to aid character identification (Wilken and Kruger, 2016), and to increase the recipients' feeling of 'presence' or immersion (Walczak and Fryer, 2017).

However, whilst AD reception research has sought to understand the preferences of the visually impaired community as a whole, the social context of consuming films and TV programmes, i.e. the interaction between sighted and visually impaired (VI) audiences, has only recently received attention in the research community (Jankowska, 2017). Research investigating the personalisation of AD delivery reveals a variety of approaches, including individual and multiple natural voices to represent different speakers (Braun and Orero, 2010), and experiments with synthetic voices. With regard to using speech synthesis, reception research suggests that synthetic voices are acceptable to visually impaired audiences although natural voices are generally preferred (Fernández-Torné and Matamala 2015; Szarkowska 2011; Szarkowska and Jankowska, 2012; Walczak and Szarkowska, 2012).

Although complemented by other perspectives, notably universal design (Story *et al.*, 1998; Udo and Fels, 2009, 2010) and accessibility (EDeAN, 2009; Greco, 2016), the translation studies lens has largely remained the dominant paradigm for research into AD. Along with the growing body of individual papers cited above, the two most recent edited volumes on AD, Maszerowska *et al.* (2014) and Matamala and Orero (2016), testify to this, whilst also demonstrating how research in AD has gradually broadened to encompass the areas outlined above as well as novel perspectives.

The volume edited by Maszerowska *et al.* (2014) originated in the European ADLAB project. It takes a bottom-up approach to reflecting on AD practice by using one film – *Inglourious Basterds* (2009) – to illustrate a number of issues from the perspective of an international team of audio description experts. The volume has a multidisciplinary outlook, drawing from film studies, translation studies, psychology, cultural studies, linguistics and semiotics, and focuses on addressing typical AD issues from a fresh perspective. Chapter topics include audio introductions; film structure and cohesive narrative; spatio-temporal settings of narrative fiction (narratological approach) and audience mental modelling; describing cinematographic features; text on screen; AD within the context of integrating intra- and extra-diegetic sound; character naming; cultural referencing and AD; facial expressions and

gestures. The volume presented by Matamala and Orero combines political overview with emerging areas of research, and exploration of AD production methods and applications. Its topics include human rights and media accessibility; research on cognitive accessibility, prioritisation of information, and description of gestures cutting across different audiovisual genres; and an update on major AD research projects such as ADLAB, DTV4ALL, ALST, AD Press Illustrations Project and the Open Art Project.

At the same time, audiovisual technologies have evolved as part of the rapid digital transformation of society, considerably reshaping not only the broadcasting and media landscape but also the offerings of museums and art exhibitions, and the nature of many live performances. Concurrent developments in broadband technology and media platforms led to the arrival of 'Web 2.0' with the advent of user-generated content and the seemingly relentless proliferation of social media.

Whilst AD has established itself as a practice and service which facilitates access to audiovisual content and art, the production and delivery of AD, which involves the preparation of an AD script, its voicing and the integration of the voiced descriptions into the original audiovisual material (or its live delivery to an audience), relies heavily on human resource. As a result, AD is currently expensive to produce. At the same time, applications of AD which engage new audiences (e.g. language learners, individuals with additional cognitive needs, multi-taskers, educators) and increase exploitation of audio described material would make commercial sense. Apart from financial considerations, the recent increase in user-generated AV content creates an additional challenge for media access, which is still to be fully embraced. Thus, the investigation of novel methods of creating AD that can reduce costs and broaden access without compromising quality is an economically and socially important area for research (Braun and Starr, 2019).

The growing demand for AD and the increasing opportunities for its production and delivery through the use of different technologies but also the emergence of technologies such as 3D video, which require novel approaches to AD, raise new questions about how AD can be efficiently produced and distributed, and who could benefit from such a service. In response to this, different technologies have emerged to support both the creation of AD and its delivery to the end user, and AD has begun to embrace newcomers in the media landscape such as virtual and immersive environments. In a similar vein, AD has been used as a tool to engage different types of audiences in audiovisual material. As a result of these developments, and facilitated by the very same digital transformation, we are witnessing the dawn of a new era in AD research: 'Audio Description 2.0'.

Concomitant with the burgeoning of digital media platforms, institutional funders are increasingly underwriting research projects which challenge the boundaries of audio description in a digital world. Recent examples of this nature include projects employing AD for applications as varied as video

retrieval, immersive technological experiences and enhanced cognitive accessibility. Innovative methodologies and technological solutions, which far exceed the ambitions of AD's earliest proponents, sit at the heart of this pioneering work, offering stakeholders the opportunity to reimagine AD for the digital age. Such a seismic shift in the advancement of AD promises to pave the way for a proliferation of new platforms and services, offering groundbreaking solutions for content delivery and retrieval to different audiences.

Technological and methodological innovations and the pace of AD research generally, particularly in light of a growing trend towards inter- and transdisciplinarity, suggest that there is scope for a more contemporary survey of the AD research landscape. In this volume, which draws on research currently conducted in different countries, we aim to offer a fresh perspective and commentary on the work currently being undertaken internationally in the growing field of AD, focusing on research that is situated at the forefront of the developments outlined above.

The current volume consists of three sections. The first part discusses key concepts in relation to new developments in AD such as immersion, presence and engagement, and provides an example of their application to creating AD in a museum or heritage environment. As is the case with all chapters in this volume, both of the above chapters also make reference to methodological innovation. Taking Braun's pledge for more research into 'audience expectations with regard to type and amount of information in the descriptions' (2008: 8–9) as their point of departure, Fryer and Walczak argue in Chapter 1 that such audience research requires a measure of AD experience that can address the diversity of blind and partially sighted audiences. They show how quantitative measures of audience experience and immersion such as the ITC Sense of Presence Inventory (ITC-SOPI) (Lessiter *et al.*, 2001), which were developed and validated for the online gaming industry and virtual reality environments, can be adopted for use in AD research with only minor modification. Furthermore, drawing on the 'perceptual illusion of non-mediation' (Lombard and Ditton, 1997: 7), a classic definition of 'presence' and a multi-construct concept embracing the psychological sense of immersion in any mediated environment, the authors outline presence measures for use with AD audiences and discuss their pros and cons, including overlaps and differentiation between concepts of engagement, immersion and enjoyment. In addition, presence measures are discussed in relation to concepts in mainstream translation studies such as *skopos* and the invisibility of the translator. The chapter concludes by discussing future uses of the presence concept in AD research, highlighting that new audience experiences require adaptive AD approaches in order to make these experiences accessible to blind and partially sighted audiences.

Chapter 2, by Taylor and Perego, considers AD applied to museum contexts, architectural structures and famous landmarks in order to discuss

new approaches to accessibility for blind and partially sighted audiences, based on research currently conducted in the European ADLAB PRO (2016) project. Their point of departure is the observation that modern museum environments differ greatly from their precursors, and that AD has to be shaped to accommodate the hands-on approach and the hybrid nature of many contemporary exhibition spaces. One focal point in Taylor and Perego's chapter is the use of digital technology, especially the introduction of digital end-user devices to engage audiences with a museum's offerings. The research draws on museum research and visitor studies frameworks to discuss not only how museums can facilitate access to artefacts through AD but also how this can be supported by consideration of mobility needs within and outside museum buildings. The chapter thus discusses advances in traditional methods of AD in relation to museums and architectural artefacts but also explores novel methods which, for example, exploit the sense of touch, smell and sound. This is linked to the concept of presence, as discussed by Fryer and Walczak. In line with the aims of the ADLAB PRO (2016) project to funnel the research into creating a training course for prospective museum describers, the final part of this chapter outlines the course structure and explains how it was derived from the insights gained in the project.

The second part of the volume focuses on new audiences. The contributions in this part of the volume demonstrate how methodological advances in creating AD have led to the development and investigation of different functional varieties of AD, including Easy-to-Read varieties and varieties for cognitively diverse audiences. In Chapter 3 Bernabé and Orero focus on Easy-to-Read AD to extend the use of AD to people with reading difficulties and intellectual disabilities. The authors characterise 'Easy-to-Read' as a functional variety of a national language that has gained momentum in recent years to facilitate the creation of easy-to-understand texts for people with learning difficulties and low reading skills, those with low literacy, and also the elderly, immigrants, refugees or tourists. The authors argue that 'Easy-to-Read' can in principle be exploited in the AD production process, as AD, regardless of whether it is delivered live or as part of a recorded production, is normally scripted. In their chapter, the authors discuss the process of creating easy-to-understand AD and its associated challenges. In addition, hybrid approaches to accessibility services are explored, which include 'Easy-to-Read' as well as other services such as 'Clean Audio', based on improvements of the audio channel on which AD is delivered, and technologies that can be personalised such as fast delivery or synthetic speech. Building on an audience research approach to trialling new methodologies, in Chapter 4 Bardini considers variations in AD style (traditional, cinematic and narrative) for the purposes of understanding and engaging with content as a film consumer. She explores the impact of these diverging styles on efficacy in conveying sentiment and artistic intent, with particular impact afforded to the more interpretive modalities.

In Chapter 5, Starr and Braun then discuss an approach to repurposing AD to assist emotion recognition in autistic children. The authors emphasise

the key role played by visual and auditory affective markers—including facial expressions, gestures, body language, verbal prosody and musical scoring—in creating emotional engagement with audiovisual material. Arguing that unless there is a measured and conscious investment in the emotional currency of a film narrative on the part of the viewer, the entertainment value may be compromised, the authors highlight alexithymic individuals, who encounter difficulties in recognising, accessing and interpreting emotions, as a group facing an increased risk of overlooking these salient aspects of film narrative, especially where atypical cognitive frameworks such as autism, or psychological and pathological disorders such as post-traumatic stress syndrome or aphasia, are present. Against this backdrop, Starr and Braun present a study that tested the application of AD for the purpose of delivering emotion-centric information to individuals experiencing emotion recognition difficulties (ERDs). Rather than adopt standard AD techniques designed to meet the needs of blind and partially sighted audiences, an entirely new and *bespoke* style of AD focusing on the description of emotions was created. Working within a functionalist framework, two modalities of this type of AD, emotion labelling and emotion contextualisation, were subsequently trialled with high-functioning autistic children displaying symptoms of ERDs. This chapter focuses on the methods applied to creating and testing this new style of AD, reaching beyond the standard concept of AD, and opening up the potential for AD to become a bespoke service for a wide range of cognitive applications in the future.

The third part is devoted to discussing the impact of emerging technologies on the creation and production of AD. This includes a chapter discussing new approaches to AD in response to the emergence of new media environments such as 3D immersive TV, the latest trends in mainstreaming AD by developing adaptive end-user technologies for its delivery and approaches to automating the production of AD. Chapter 6, by Hughes, Orero and Rai, explores the first systematic effort to create AD for 360-degree TV, based on research currently conducted in the EU-funded H2020 Immersive Accessibility (ImAc) project (2017). The broad objective of this project is to define the requirements for accessibility services within immersive media environments such as 360-degree video, and to explore how these accessibility services can be integrated within immersive media. The chapter presents the initial experiences of blind and partially sighted AD users when interacting with audio described 360-degree content, based on observations and feedback gathered in a focus group discussion. The authors highlight two key findings. The first is the need to consider the differences between the traditional curated linear approach where the viewer consumes the content that the director wishes to show on the screen, and a non-linear approach where the viewer has control over the content and can choose their own path by interacting with the environment. The second is to explore how using audio could enhance the immersive experience and address issues surrounding the creation of a fully accessible interface for 360-degree content.

In Chapter 7, Jankoswka focuses on the use of technology to facilitate mainstreaming AD. Her chapter presents the results of a study carried out within the AudioMovie project, funded by the Polish National Centre for Research and Development, which aims to facilitate mainstreaming accessibility and has developed and tested a mobile app that allows users to play alternative audio tracks (AD and audio subtitles) in cinemas and at home. The app automatically synchronises the selected alternative audio track with the main audio track of the film. This chapter reports on the field study that was carried out to test the app in three cinemas in Poland. The study used a mixed-method design combining quantitative (survey) and qualitative (focus groups) methods. The findings show that the app met with the approval of the respondents, with over 60 per cent of the 58 blind and partially sighted survey respondents stating that the app was easy to use, and most focus group participants expressing an interest in using the app after the completion of the research. The chapter also comments on results obtained from users with other disabilities who participated in the test, including participants with dyslexia, participants with intellectual disabilities and senior citizens. The results obtained from these users suggest that the access services offered in the app are useful to these groups, thus creating synergies with Starr and Braun's findings in relation to AD users with emotion recognition difficulties.

The final chapter in this part of the volume, Chapter 8 by Braun, Starr and Laaksonen, reports on the first systematic initiative to create (semi-)automatic AD for audiovisual material. This initiative is part of the EU-funded H2020 project 'Methods for Managing Audiovisual Data: Combining Automatic Efficiency with Human Accuracy' (MeMAD). The project has its origins in the recent surge of interest in methods for describing audiovisual content, be it for the purposes of automatic image search and retrieval, for advanced visual storytelling, or as a result of an increasing demand in AD following changes in national and European broadcasting legislation to meet the needs of blind and partially sighted audiences. Although the computer vision and natural language processing communities have intensified research into the automatic generation of descriptions, even the automatic description of still images remains challenging in terms of accuracy, completeness and robustness (Husain and Bober, 2016). Descriptions of moving images and visual storytelling pose additional challenges linked to temporality, including co-referencing (Rohrbach *et al.*, 2017) and other features of narrative continuity (Huang *et al.*, 2016). This chapter reports on a study that conducts a systematic comparison of human- and machine-generated descriptions of audiovisual content, with the aim of identifying key characteristics and patterns of manually and automatically produced descriptions, and evaluating each method. The focus of the chapter is on the methodological framework for this comparison, drawing on corpus-based and discourse-based approaches, and on a preliminary evaluation of the two methods (human- and machine-generated). The broader aim of this work is to advance current understanding

of multimodal content description and to contribute to enhancing content description services and technologies.

We wish to say a final word about our colleague David Vialard (Texas Tech University), who showed great enthusiasm for this volume and was working on his contribution to it shortly before his tragic and untimely death last year. David had a passion for writing and composition, seeking to turn AD ‘on its head’ and employ image-to-word techniques to improve creativity in writing within a classroom setting. He considered the translation of image to text inherent in AD as a rich resource for educating students to be responsible and ethical readers, writers and designers of written communication. David appreciated that engaging in the composition and analysis of AD provides an opportunity for students to develop critical modalities of visual literacy, close reading, language analysis and interpretation, regardless of dis/ability. He also believed that composition offers AD a rhetorical perspective that engenders inclusive and thoughtful design and that the intersection of writing studies and AD into a fused pedagogy has the potential to provide insights into each discipline. David’s work in this field will be greatly missed, not least by ourselves, since we had selfishly very much looked forward to reading his contribution to this work. It is our sincere hope that David’s research mantle will now be taken up by colleagues within the AD community and his valuable contribution used as a foundation for future research in the field of creative writing.

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