Audio describing films: A first look into the description process

Anna Jankowska, Jagiellonian University in Kraków

ABSTRACT

This article uses the data gathered in an experiment carried out to investigate audio description decision-making processes to analyse the scripting process of audio description for films. As part of the study, describers from Poland and Spain prepared audio description for ten clips from Polish and Spanish films. Data was collected through a multi-method approach, which included keylogging, think-aloud verbalisations, screen and face recording. Results, based on a qualitative analysis of screen and face recordings and think-aloud protocols, show that the audio description scripting process resembles operations involved in both writing and translating, and may be divided into three main processes (pre-drafting, drafting and post-drafting) and seven intertwining subprocesses (understanding, planning, searching, generating text, revising, reviewing, and cueing).

KEYWORDS

Translation process research, audiovisual translation, media accessibility, audio description process research, think-aloud protocols, screen recording.

1. Introduction

Audio description (AD) is a modality of audiovisual translation (AVT) which provides an intersemiotic translation by describing images through words. While this is the most commonly used definition, the term audio description can also describe a set of theoretical approaches, a media accessibility service, a product and also a process (Greco 2016; Szarkowska 2011). This is reflected in AD research that ventures into all four of the above-mentioned areas. Out of those four main research avenues, the AD process has been by far the least explored, which stands in a stark contrast to research carried out within the Translation Process Research (TPR) framework.

In this article I analyse data gathered in a study carried out within the ”ADDit!” project. While the primary objective of this study was to investigate the audio description decision-making process, I use the gathered data to map the external process of the film describer and attempt to develop a film description process model comparable to those developed for writing and translation. By the external process of the describer I mean the observable procedures or steps which describers perform while drafting an AD script as opposed to the cognitive decision-making processes which happen inside the so-called “black-box” or, in other words, inside the describers’ heads. Following the distinction between a translation act and a translation event made by Chesterman (2015: 156-157), I discuss what I call an audio description act, i.e., the process of description which begins from the moment the describer begins to “read” the source text and ends when the describer decides that further corrections are no longer necessary.

2. Translation Process Research

TPR essentially "seeks to answer one basic question: by what observable and presumed mental processes do translators arrive at their translations?" (Jakobsen 2017: 21). However, as Jakobsen himself notices, "in research there is a place for the microscope as well as for the telescope" (2017: 40). And while initially TPR tended to look through the microscope, supposedly considering the translation process to be "a product of a self-contained and self-sufficient mind" (Muñoz Martín 2016: 11), with time, the TPR community adopted a broader perspective. Working within the extended models of cognition, TPR has expanded its scope from the narrow focus on mental processes and now looks into how translation performance is influenced by environmental, ergonomic, psychosocial, personal and emotional factors (Jakobsen 2017: 40). Researchers have looked into the interaction of translators with e.g., workplaces (e.g., Ehrensberger-Dow 2017; Ehrensberger-Dow and Massey 2014; Ehrensberger-Dow and O'Brien 2015), technology (e.g., Christensen 2011; O'Brien 2012) and other people (Risku *et al.* 2016; Risku and Dickinson 2017), including the audience (e.g., Kruger and Kruger 2017; Muñoz Martín 2016), since "production involves the cognitive representation of perceived potential reception, which affects decision-making as the translator addresses an implied reader" (Massey and Jud 2020: 362). Factors such as expertise (e.g., Orrego-Carmona *et al.* 2018), directionality (e.g., Whyatt 2018), emotions (e.g., Rojo *et al*. 2014; Rojo and Ramos Caro 2016; Rojo 2017a) and creativity (Rojo 2017b) are also studied within the TPR framework.

As one might expect, the broad scope of the discipline involves a wide range of research methods drawing from psychology, corpus linguistics, psycholinguistics, anthropology, neuroscience, and writing research (Göpferich and Jääskeläinen 2009; O'Brien 2013). The methods used in TPR have been classified according to different typologies, e.g., how the data is collected or data type (Göpferich and Jääskeläinen 2009; Krings 2005). Krings (2005) proposes a two-fold classification of TPR methods. First, he distinguishes between two basic types of research methods: *on-line* methods, carried out parallel to the translation process, and *off-line* methods administered after completion of the translation process (2005: 347). The off-line methods are further divided into product analysis and verbal data elicitation and the on-line methods into behavioural and psychophysiological observations, and verbal data elicitation. Figure 1 presents TPR methods classified according to the twofold proposal put forward by Krings (2005) but including the classification proposed by Göpferich and Jääskeläinen (2009) and recent developments in TPR methodology as discussed by López Rojo and Korpal (2020) who examine the use of psychophysiological measures in TPR.

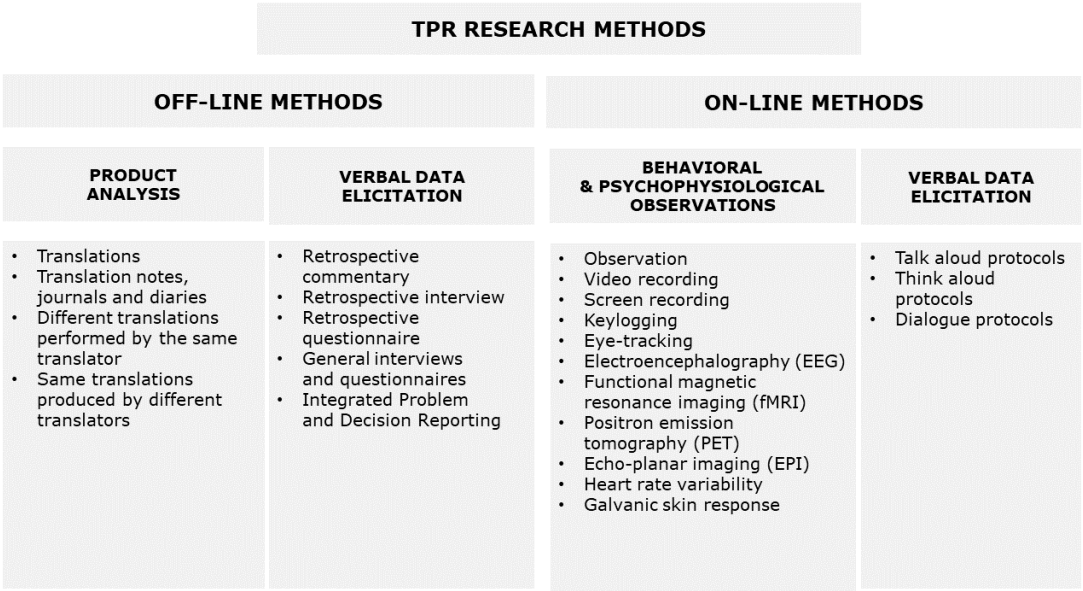

Figure 1. TPR research methods

Various TPR methods have been discussed at length (for a detailed discussion see e.g., Göpferich and Jääskeläinen 2009; Jakobsen 2017; Krings 2005), including an extensive analysis of their respective strengths and weaknesses. For a description and review of methods used in this study see Methodology (section 5.4) and Limitations (section 7).

3. Translation process models

One important TPR research avenue is modelling[1] the translation process by mapping the different phases[2] it involves.

One of the first attempts at modelling the general translation process within empirical TPR, considered to be the seminal work for the discipline, was a think-aloud protocol (TAP) study carried out by Krings (1986). It was followed by other TAP studies (e.g., Jääskeläinen 1999; Norberg 2003) sometimes combined with other methods, such as keylogging, screen recording and observation (e.g., Angelone 2010; Englund Dimitrova 2005; Lauffer 2002) or followed a different experimental design, i.e. keylogging combined with retrospection (Hansen 2003) or eye-tracking (Dragsted and Carl 2013).

General models proposed within TPR are dominated by three-phase models that involve pre-drafting, drafting and post-drafting usually associated with planning, drafting and revision (see Table 1 for an overview).

Krings (1986)	Jääskeläinen (1999)	Hansen (2003)	Lauffer (2002)	Jakobsen (2003)	Englund Dimitrova (2005)	Angelone (2010)	Dragsted and Carl (2013)
Vorlauf [Pre-processing]	Pre-writing	Preparation	Understanding and reasoning	Pre-drafting	Pre-writing	Comprehension	Orientation
Hauptlauf [Main processing]	Writing	Writing	Searching	Drafting	Writing	Transfer	Drafting
Nachlauf [Post-processing]	Post-writing	Revision	Revising	Post-drafting	Post-writing	Production	Revision

Table 1. Overview of three-phase translation process models

Process modelling has also been pursued in Writing Studies (WR) where a similar battery of methodologies has been applied — e.g., TAP (Hayes and Flower 1980; Penningroth and Rosenberg 1995), TAP combined with screen recording (Levy and Ransdell 1995) or keylogging (Levy and Ransdell 1994) as well as the triple task technique (Fidalgo *et al.* 2015; Kellogg 1986, 2001; Limpo and Alves 2018). Here too, most current models agree that writing entails three cognitive processes: planning, translating, and revising (see Table 2 for an overview).

Hayes and Flower (1980)	Kellogg (1986)	Levy and Ransdell (1994)	Hayes (1996)	Kellog (2001)	Limpo and Alves (2018)
Planning	Formulation	Planning	Reflecion	Planning	Planning
Translating	Execution	Text Generating	Text-production	Translating	Translating
Reviewing	Monitoring	Revising and Reviewing	Text interpretation	Reviewing	Revising

Table 2. Overview of three-phase general writing process models

While few studies compare writing and translation processes, recently researchers have called for bridging the gap between these two areas (e.g., Dam-Jensen and Heine 2013; Risku *et al*. 2016) since the planning, drafting and revision phases have been identified in both the translation process and the writing process. Dam-Jensen and Heine (2013:90) propose to include writing, translation, and adaptation under an umbrella category of text production understood as a process leading to text.

4. Audio description scripting process and process research

On the macro level, or in other words on the level of an AD event, the process of preparing audio description for films starts with the decision of the client to include AD in their product and ends when a final mix of the additional track is inserted into the film or, if reception is included in the process, when the audiences watch the film and interact with the AD. This process involves several agents, e.g., service providers, project managers, describers, proof-readers, voice-talents, sound engineers, etc.

An AD act, however, is much more intimate. Currently, there are three distinct workflows in AD script drafting: (1) it can be written by a single describer; (2) it can be prepared by a team of describers and consultants who collaborate simultaneously (Benecke 2004: 79-80) or (3) it can be created through an interlingual human translation of existing scripts (Jankowska 2015; Jankowska *et al*. 2017; Matamala 2006). Scripting by a single describer seems to be currently the most common solution.

Upon starting to draft an AD script, describers are advised to watch the film first without the image and then again with the image (Chmiel and Mazur 2014; Żórawska *et al.* 2011). This is supposed to help them map the scenes that need description. But as reported by describers, this practice is rare, due to time pressure, and describers usually watch the film with image and sound on (Agata Psiuk and Anita Fidyka in personal communication, 20 May 2020). On the other hand, describers often describe "on the go", without watching the entire material first (Anna Błaziak and Karolina Woicka in personal communication, 22 June 2020).

Scripting is performed in a text editor with the film opened in a separate player or in AD software with an option to reproduce the film, write and cue the script as well as to record it. Some describers use subtitling software to write and cue their scripts. While there are various strategies and approaches to scripting AD (Remael *et al.* 2015; Snyder 2010; Szymańska and Strzymiński 2010), there is one guideline they all have in common — standard audio description, as opposed to extended audio description, needs to fit between the dialogues and the important elements of the original soundtrack.

Once the script is ready, it is sometimes proofread by other describers and/or blind consultants. Then it is recorded and mixed. Depending on national traditions, scripts are recorded by professional voice-talents (e.g., Poland or Spain) or by the describers themselves (e.g., the UK and the US). Scripts can also be voiced by text-to-speech software (Fernández Torné and Matamala 2015; Szarkowska 2011; Walczak 2017).

When it comes to research, the stages of the AD event – from contacting the client to the mixing stage – have been described in considerable detail (e.g., Benecke 2004; Chmiel and Mazur 2014; Jankowska 2015). However, very little is still known about the AD act. So far there have only been three studies (Holsanova 2019a, 2019b; Mazur 2017; Posadas Rodríguez 2010) tackling the issue of the describer process. Mazur (2017) and Holsanova (2019a and 2019b) used process research methodology and looked at the process; however, their main goal was not to map the process per se. Mazur's (2017) study was carried out within the ADLAB Project and its main goal was to identify Audio Description Crisis Points (ADCP) in order to create AD guidelines. In a quasi-TAP study, project partners recorded problematic issues and explained the solutions they adopted while describing five clips from *Inglourious Basterds* (dir. Q. Tarantino, 2009). Going beyond AD for films, Holasnova (2019a and 2019b) carried out a TAP experiment in which a describer was asked to describe complex images and visualisations of a popular scientific journal and their interpretative process of meaning-making was monitored. However, the main goal was to map the skills and competences needed to perform the task.

The only study to actually look into the describer process was carried out by Posadas Rodríguez (2010), who, based on her personal experience of scripting AD to *Memoirs of a Geisha* (dir. R. Marshall, 2004), examined the AD process from the acceptance of the assignment to the recording of the script and on the one hand describes the process and on the other suggests the approach describers should take. Posadas Rodríguez (2010: 198) proposes five audio description stages further divided into several substages (see Table 3). Two out of five stages are associated directly with scripting, i.e., *reception and viewing* and *production*.

AD production stages and substages
1. Contacting the client
2. Reception and viewing stages: problem identification and documentation
3. Production stages
3.1 Establishing goals
3.2 Predictions and extrapolations
3.3 Planning the tasks
3.4 Problem solving and decision making
3.5 Building strategies
3.6 Implementing the tasks
4. Review and control stages
4.1 Reception of corrected text
4.2 Error assessment
5. Recording stage

Table 3. Audio description production stages and substages by Posadas Rodríguez (2010: 198)

According to Posadas Rodríguez (2010: 199-200), in the *reception and viewing* stages, describers concentrate on a close viewing of the film and detect problems (e.g., cultural references). She also advises the describers to search for information about the film and compile a corpus of "representative and necessary, relevant and reliable" (Posadas Rodríguez 2010: 200) parallel texts (e.g., the novel on which the film was based; information on the source culture). The AD script is created in the *production stages* that start with a substage of *establishing of goals* during which the describer decides on the number of days needed for the assignment and how the AD will support the audiovisual storyline of films (Posadas Rodríguez 2010: 200-201). In the *predictions and extrapolations* substage, describers resort to their previous knowledge to uncover possible description strategies (Posadas Rodríguez 2010: 201-202). In *planning the tasks* describers draw up a plan of action, carefully consider the scenes and the time available (Posadas Rodríguez 2010: 202-203). In the *problem solving and decision making* substage describers make decisions and implement strategies regarding the problems identified during the viewing (Posadas Rodríguez 2010: 202-207). Posadas Rodríguez (2010: 208-209) sees *review and control* stages as associated

with an external review of the script by client and describer who use the revisions to improve their future performance.

5. Overview of the current study

As already mentioned, the data analysed in this article was gathered within a larger study on transfer of cultural references in audio description. The main aim of the experiment was to see how the describers deal with cultural references and what decision-making process leads them to adopt certain solutions. With this goal in mind an experiment was carried out in which describers from Poland and Spain prepared AD for Polish and Spanish films. The study was conducted using a mixed-method approach, which included keylogging, think aloud verbalisations as well as screen and face recording. The original aim of the study is reflected in the materials used for the experiment as well as in the methodology adopted. The limitations that this experimental setup has on the analysis presented in this article are discussed in detail in Limitations (section 7).

5.1. Participants

A total of sixteen describers were asked to take part in the experiment: nine Polish and seven Spanish. Two Spanish and two Polish describers dropped out of the experiment, thus this article analyses data obtained from seven Polish and five Spanish describers.

In Poland, the describers were recruited from amongst the collaborators of two NGOs providing access services, the Seventh Sense Foundation and the *Katarynka* Foundation, as well as from a pool of free-lance describers through personal contacts. In Spain, describers were contacted through the mailing list moderated by the Spanish Association of Audiovisual Translation and Adaptation (ATRAE), personal emails sent to the describers listed on the ATRAE website, LinkedIn messages as well as through personal contacts. Prior to the experiment, all participants received information about the project and signed an informed consent form. All data collected during the study have been anonymised. Participants received financial remuneration for taking part in the experiment.

5.2. Description task and materials

Each describer was asked to prepare descriptions for ten film clips: five containing references to Polish source-culture and five with references to Spanish source-culture. Clips were selected from a pool of eleven clips, extracted from six Polish and three Spanish films (see Table 4) and were a narratively coherent sequence of scenes. Each clip was approximately one minute long.

No	Film title	Duration
0	*Dlaczego nie!* (*Why not!*) 13	1 min 7 sec
1	*Anioł w Krakowie* (*Angel in Krakow*)	1 min 6 sec
2	*Żółty szalik* (*Yellow scarf*)	1 min 1 sec
3	*Wesele* (*The Wedding*)	1 min 10 sec
4	*Barbórka* (*St. Barbara's Day*)	1 min 6 sec
5	*Biała sukienka* (*White dress*)	1 min 16 sec
6	*Vicky, Cristina, Barcelona*[3]	1 min 10 sec
7	*Ocho apellidos catalanes* (*Spanish Affair 2*)	1 min 1 sec
8	*Dieta mediterránea (Mediterranean Food)*	1 min 3 sec
9	*18 Comidas* (18 *Meals*)	1 min 6 sec
10	*Ocho apellidos catalanes* (*Spanish Affair 2*)	0 min 58 sec

Table 4. Clips used in the experiment

To avoid additional variables, the clips were presented without sound. This way, in all clips, describers had a comparable amount of time to insert audio description[4]. Since in some clips it was evident that the characters were talking, describers were instructed to disregard any dialogue and behave as if the characters were not talking.

5.3. Experimental procedure

In order to recreate an ecologically valid setting, the participants worked individually on their personal computers. Participants were free to decide where and when they would work, the only requirement being an established Internet connection to be able to work with the recording software (see section 5.4 for more information on methodology). They could also decide whether they would describe all clips at once or if they preferred to divide the workload into sessions. They were also able to choose the order of clips to be described; however, since the clips were numbered from 1 to 10, all describers worked in this order. Due to InputLog requirements, participants were asked to work in the Microsoft Windows environment and to draft their descriptions in Microsoft Word. They were allowed to use the Internet.

Prior to the experiment, all participants received information regarding the procedure and detailed instructions on how to install and run the recording software. They were also informed that in the case of any doubts or problems they could contact the researcher in charge of the experiment via email, phone or Skype and were given appropriate contact information.

Before the experiment the procedure was piloted with an additional experienced describer.

5.4. Methodology

A mixed-method approach was applied to collect both quantitative and qualitative data. This was achieved through the following online methods:

a) Keylogging is an unobtrusive online data gathering method which registers all keyboard and mouse activity (i.e., including delete, insert, cut-and-paste operations) and gives access to temporal progression (i.e., time spent on task, typing speed, number and duration of pauses) which are considered to be indicators of cognitive effort (Whyatt 2018: 99). In this study I used one of the freely available programs, namely the InputLog (https://www.inputlog.net/). The data was recorded remotely.

b) Screen recording is an unobtrusive online data gathering method which allows access to what happens on the screen. It is said to be particularly useful to monitor the translator's online research activity (Göpferich and Jääskeläinen 2009: 173). In this study screen recording was done remotely through Lookback (https://lookback.io/) – a web-based user experience software.

c) Face recording is an unobtrusive online data gathering method giving access to the participant's face and actions (Göpferich and Jääskeläinen 2009: 173). In this study, face recording was performed remotely through webcams and Lookback.

d) Think-aloud protocol (TAP) is an online data gathering method in which a person involved in a given activity is asked to verbalise their thoughts which are then recorded, transcribed and finally coded (Jakobsen 2017: 24-28; Sun *et al*. 2020: 133). While initially TAP was the primary TPR method used to study the translator's cognitive processes, its popularity diminished with the emergence of new technologies (e.g., keylogging, eye-tracking) and among concerns about its validity (Jakobsen 2017: 24; Sun *et al.* 2020:133). One of the main concerns, particularly important in the context of process modelling, is TAP's reactivity, that is to say, the impact it may have on the translation process especially when it comes to temporal factors (task and phase duration) and cognitive effort (Sun *et al.* 2020: 133-135). However, it is important to remember that claims that TAPs significantly influence the translation process lack empirical evidence (Sun, 2011) and might result from misconceptions regarding both the empirical findings and the concept of the "course or structure of cognitive processes" (Sun *et al.* 2020: 134). According to Sun *et al*. (2020: 134), the fact that the use of TAPs might slow down the process (Krings 2001: 279; Jakobsen 2003: 69) or make the translator process the translation in smaller segments (Jakobsen 2003: 69) does not mean that the structure of the process is changed, because "if a person follows the same path as usual, we would say their path (or course) is unchanged, even when they walk more slowly and take smaller steps than usual" (Sun *et al*. 2020: 134). Recording of think

aloud verbalisations in the present study was done remotely through Lookback.

5.5. Data analysis

As already mentioned, the data analysed in this article was collected in an experiment aiming at investigating the decision-making process of describers faced with cultural references. This is reflected in the choice of research methodology, especially the TAP method, which is not ideal for studying the scripting process because of its potential reactivity. Given this limitation, this article reports on partial results of the study based on the screen and face recordings and TAP data. While it is tempting to also analyse the keylogging data to see how the temporal resources are assigned to different scripting subprocesses it is very probable that this data could be influenced by TAPs — research conducted by Krings (2001: 279) and Jakobsen (2003: 69) shows that TAPs might slow down the translation process by up to 30%.

However, there is one more reason why this article relies exclusively on the qualitative data. This is one of the first articles on process research in AD. It is very important to give a detailed account of the AD scripting process — its different stages and subprocesses. A quantitative analysis is however a natural next step in this research avenue.

Videos from the experimental sessions (with the total duration of 120 h) were downloaded from Lookback, transcribed, and coded in Dedoose, a cross-platform application developed for mixed model research. Codes were set up based on the writing process and subprocess categories proposed by Levy and Ransdell (1994) and the translation process strategies put forward by Lauffer (2002). Facial recordings served as supporting evidence to better map the different subprocesses, e.g., some describers made pauses to drink or left their workplace without providing verbal information.

Video 1 illustrates the material gathered in the experiment. It was recorded by the author of this article to ensure anonymity of the study participants.

https://youtu.be/rIAzjCMoMdc
Video 1. Sample recording obtained during the experiment

Figure 2, 3 and 4[5] below show the computer screen layout during the experiment.

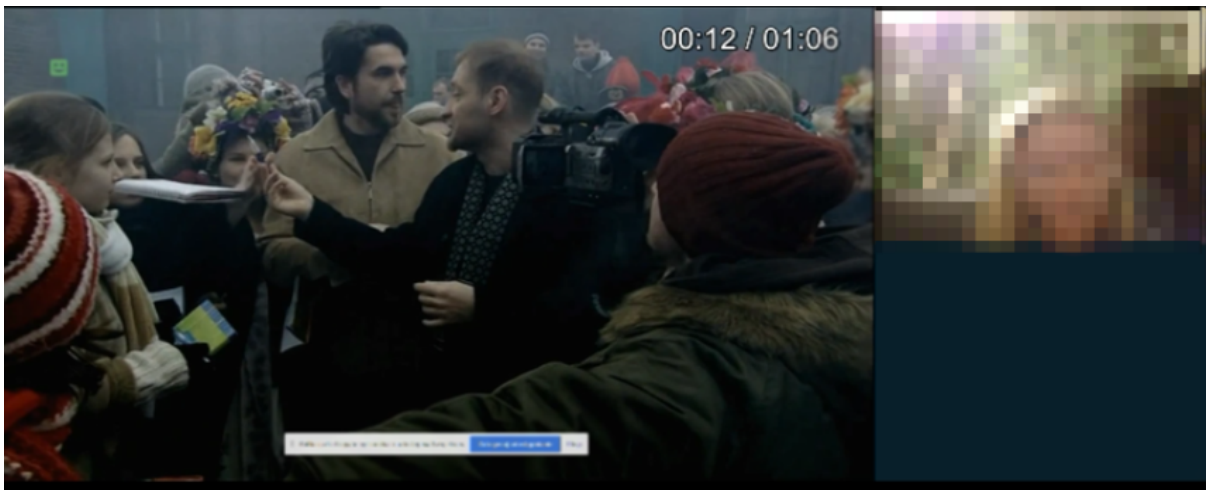

Figure 2. Screen setup during film watching

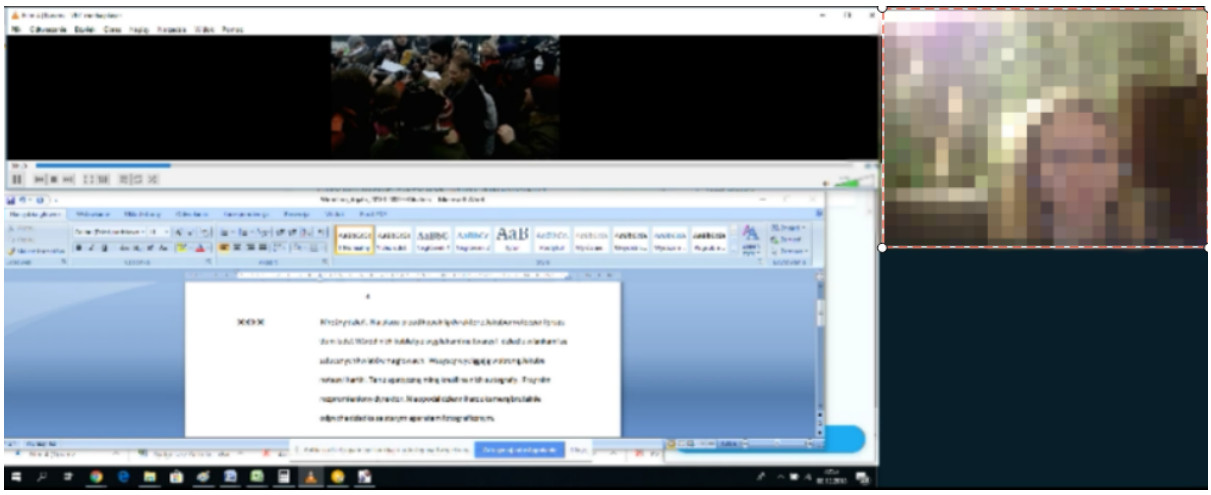

Figure 3. Screen setup during script drafting

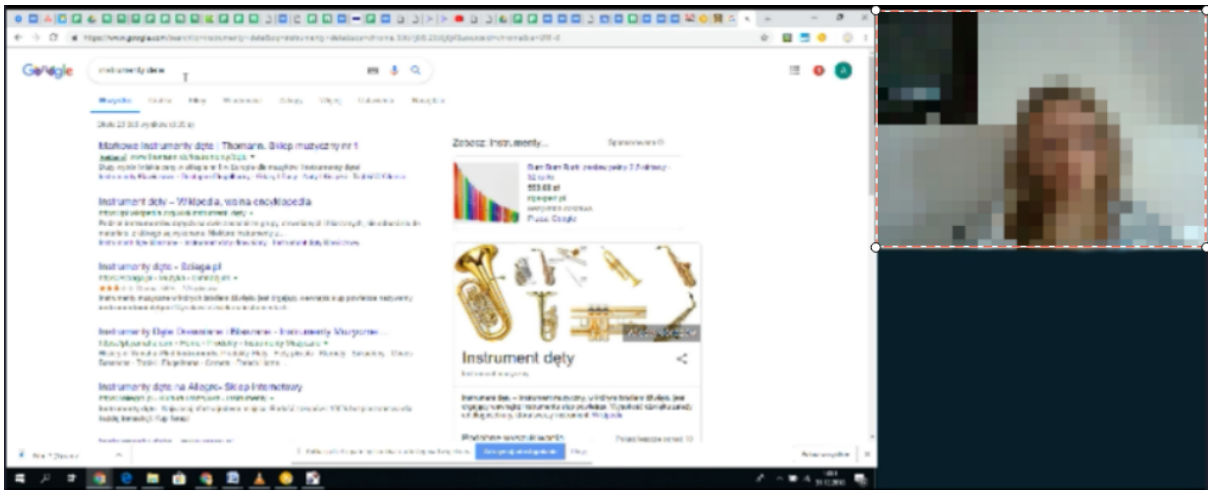

Figure 4. Screen setup during searching for information

6. Results

6.1. Script production process

Based on the observation of participants in this sample, I discovered that while performing the tasks, describers went through three phases which can be labelled following the terminology used in translation and writing process research: pre-drafting, drafting and post-drafting. Within them describers performed different tasks that can be categorised as seven subprocesses (see Table 5 below) that draw on writing subprocesses proposed by Levy and Ransdell (1994) and on translation strategies proposed by Lauffer (2002). Given the characteristics of AD, an additional subprocess of cueing has been added.

Subprocess	**Definition**
Understanding	Becoming familiar with the video
Planning	Planning future content
Searching	Searching for information, words, pronunciation, etc.
Generating text	Selecting words and constructing sentences
Reviewing	Second or subsequent reading of the script
Revising	Making adjustments and/or editing errors
Cueing	Calculating the time needed for AD voicing

Table 5. Proposed AD scripting phases and strategies

I also found that, similar to writing and translation processes, these processes and subprocesses were not clear-cut, as they overlapped throughout the scripting process. They were also not linear since describers moved freely between them until the final text was created (see Figure 5). In the initial phase, describers acquainted themselves with the source text (i.e., the image), searched for information and planned. This was followed by the drafting stage in which they intertwined the subprocesses of understanding, planning, generating text, revision, review, and cueing. Most describers went through a post-drafting phase in which they performed the final cueing of the script.

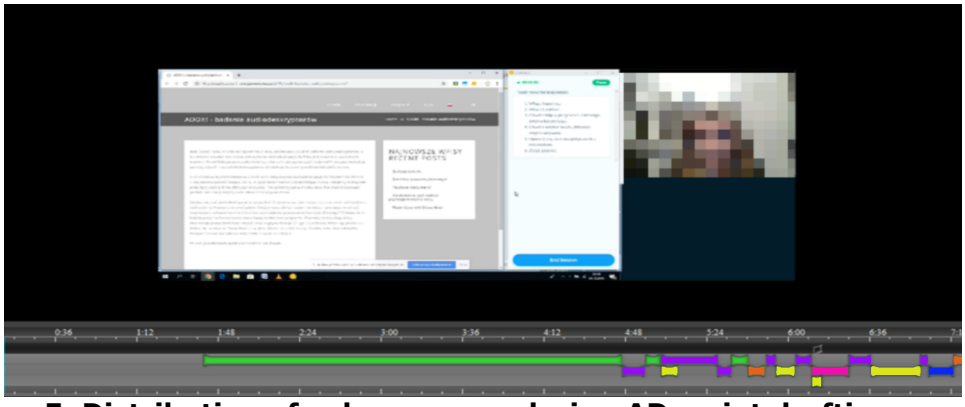

Figure 5. Distribution of subprocesses during AD script drafting: green – understanding; purple – planning; yellow – generating text; orange – cueing; magenta – review; blue – revision[6]

In the following subsections, AD scripting subprocesses are discussed in detail. Most of the subprocesses are illustrated with excerpts from the screen captures recorded during the experiment and with think-aloud transcriptions. To guarantee the anonymity of the participants, the face-capture has been removed from the video, any on-screen information revealing the identity of the participant (e.g., browser tabs displaying email addresses or social media profiles) has been blurred and the audio has been altered. Since participants comment and write either in Polish or Spanish, the English translations of their utterances are provided. Some Polish describers used Spanish words while commenting on the Spanish clips and vice versa some Spanish describers used Polish words when commenting on the Polish clips — in those cases Polish and Spanish words were not translated into English.

6.1.1. Understanding

The understanding part of the AD scripting process consists in becoming familiar with the source text, which in the case of AD is the video material. In most cases describers started the AD scripting process by watching the entire clip at least once before taking any further actions. However, a clear pattern was not observed — none of the describers watched all the clips nor proceeded to script without watching any of the clips. At this stage many of them commented on the issues that they envisaged as potentially difficult (see Examples 1 and 2).

This seems like it will be a little easier to audio describe because there is not much movement so there is more time to describe them in a still scene. Although now I see a lot of food and dishes, and I don't know what they are.

Example 1. Describer SP05 commenting in the understanding process

Okay, so the difficulty here is that there are a lot of pieces of puzzle, snapshots. They are very short. So, we have many different locations.

Example 2. Describer PL07 commenting in the understanding process

However, the understanding process was not limited to the pre-drafting phase. Describers returned to the video many times while scripting, both when proceeding to describe a new take or scene (Example 3) and while doing it (Example 4). In particularly confusing moments, some of them used the zoom feature to see details of the picture (see Example 5).

https://youtu.be/g65y3MZda8M
Example 3. Describer PL01 returning to the video before describing a subsequent scene

https://youtu.be/axPlTUpmm0Y
Example 4. Describer SP04 returning to the video while describing a scene

https://youtu.be/1P5xJYY8pOQ
Example 5. Describer PL07 using zoom

6.1.2. Planning

Planning occurred both in the pre-drafting and drafting phases. We observed two types of planning behaviours — none of them was exclusive to a describer or process. Describers planned either a global approach to their descriptions or attempted to describe the video ad hoc, while watching the clip or scene. The latter often happened during the second viewing of the entire clip or subsequent viewings of a scene.

Example 6 shows a describer making plans about a global approach to their description — before scripting they contemplate the message that the film is trying to convey ("What do we want to show in this film?") and what is worth describing ("This scene […] was funny. It would also be worth describing").

What do we want to show in this film? That seems important to me. You can't see too many emotions here. **I think that it might be more important to write something more about Krakow, since it is a film set in Krakow**. **Anyway, this scene with the birds that sat on him is funny. It would also be worth describing**. Okay, I'll watch again.

Example 6. Describer PL01 planning a global approach: https://youtu.be/iGasLi_l3Fs

Example 7 illustrates the second planning behaviour: an ad hoc description. This clip is quite peculiar as it shows the traditional Polish Christmas Eve supper. While watching the clip, and before scripting, a Spanish describer recognizes location ("Zakopane") and names ("Beetroot soup with pierogi") and describes some of the visual cues ("Old, wrinkled, stained hands"). Interestingly, they also seem to consider the use of description strategies appropriate for the Spanish audience ("And what will we call this? Cake? A Christmas dessert").

Zakopane! No? A host. A host. **Old, wrinkled, stained hands**. They pray. **Beetroot soup with pierogi**. What? What? I've got no fucking idea. Pudding. Argh. Cabbage with mushrooms. And this is peach in syrup. Or apple in syrup. **And what will we call this? Cake? A Christmas dessert.**

Example 7. Describer SP01 describing the video while watching: https://youtu.be/VMij4W3GRdc

6.1.3. Searching

In the searching stage, describers looked for information (e.g., words, cultural references pronunciation of foreign words, synonyms, etc.), using a variety of resources available on the Internet, e.g., Google, Google images, Wikipedia, thematic sites, dictionaries, and pronunciation dictionaries.

Describers looked for words on three occasions: to look up a word they did not know, to make sure the word they used is correct, and to look for

synonyms; for that purpose, they relied on online dictionaries (e.g., *Real Academia Española*) or simply used a search engine to see if a given word is used and how frequently.

In Example 8 one of the Spanish describers is searching for information regarding one of the Polish Christmas Eve traditions: sharing a wafer before the supper. They find a description of Polish traditions in Spanish, but they are unsure what the Spanish word *oblea (*'a wafer'*)* means and whether it is commonly understood. They resort to Google to check if the word is used.

A wafer. Wafer pieces. **But a wafer, a wafer? I don't know if it's a word that I don't know. Or is that a word that not many people know**. Or everyone knows it and I don't understand it. Let's see, man, I understand that it's about the dough. Unleavened bread. Maybe wafer is understood. Although I don't know what it is but better than... A white wafer perhaps

Example 8. Describer SP04 looking up a word: https://youtu.be/BplfK74kzI4

In Example 9 a describer wants to use the Spanish expression *ribetes dorados* ('golden trim') to describe the decoration on tableware. As they seem uncertain of this word choice, they first look the word up in Google and then in an on-line dictionary to find that it can be only used for clothing.

Ceramic tableware ... With ... tri… Trim. Trimmed. Trim. Trim. Trim. **Golden trim**. Right. Golden trim. **But a trim is just ... What is a trim?** We'll see. Let's see if it applies to ceramics. It says. Tape or analogous thing that adorns and reinforces the edge of a dress or footwear. **Okay, no. It is only for clothes**. We are going to put curlicue. I like curlicue.

Example 9. Describer SP01 checking a word: https://youtu.be/E0gsyrx5EaE

In Example 10 the describer is looking for the right word to describe the emotion of one of the characters; as they do not seem to find it, they search for synonyms in Google and in an online dictionary of synonyms.

Sofia's father… watches them **happy, content, ecstatic**. Ecstatic. That is very English. **Synonyms of ecstatic**. It is not ... Excited. Satisfied.

Example 10. Describer SP04 looking for a synonym:
https://youtu.be/8OkrL9BDrf8

Some describers, when using a foreign word, opted for checking its pronunciation to be able to transcribe the word for voice talents. Example 11 shows a Spanish describer who is browsing through YouTube to check the pronunciation of a Polish word *barszcz* ('borscht') – a beetroot soup traditionally served for Christmas Eve in Poland.

https://youtu.be/G-002CpcA8o
Example 11. Describer SP02 checking pronunciation

When it comes to cultural references, describers seemed to adopt two distinct approaches to searching. Some of them searched for information

right after the initial viewing(s) of the clip to gain a general idea (e.g., of Polish Christmas, Barcelona tourist sites, etc.), while others searched "on the go" as the cultural references appeared. In both cases, describers used Google to search and browse through dedicated websites, Google Images and Wikipedia. In Example 12, a Spanish describer browses through Google Images to identify the traditional Polish Christmas Eve dishes they have seen in the clip. Later they follow the links of the images to websites that provide names and descriptions of the dishes.

I will search the internet. Typical Christmas Eve dinners in Poland. Typical Polish Christmas food. **I will put it in images**. **Let's see if anything looks familiar**. Let's see. **Here is the soup**. **Here is cake. This seems to be the mushroom stew. I don't think they are mushrooms but at least I'll find out what it is**. And here is this.

Example 12. Describer SP05 using Google Images:
https://youtu.be/t3-6w1KyV0c

In Example 13, a Polish describer browses through websites and Wikipedia to discover that one of the visual cues – a human tower – is in fact a cultural reference and then looks for its name (Catalan *castell*) and pronunciation.

I do not know if this is a tradition or if it is an idea they just had. Tower of people. So, yes. Okay, so these belts are also for a reason, I see. Whoever stands there doesn't interest me. Okay. However, what this belt is called, I do not know. I can write that he wraps a black belt around himself. A glossary of terms, nice. This might be useful. Well, it won't be useful after all. **I will check how to pronounce this word. Castelles. Castelles. Castelles**. Okay.

Example 13. Describer PL05 browsing websites and Wikipedia:
https://youtu.be/naprcPy5-hw

What is interesting, on occasions, describers also looked up on-screen text. In Example 14, as the main characters enter a square, a large sign in Catalan (*Benvinguts a la Republica de Catalunya,* in English 'Welcome to the Catalan Republic') is displayed on one of the buildings. The describer decides to use an online machine translation tool to translate the foreign language sign into Polish to understand whether it is important for the plot.

First, let's see what is written here. **Let's try translating in the Google translator**. All right, "Welcome to the Republic of Catalonia". We already know what is written. Let's check for sure if it is a Catalan flag.

Example 14. Describer PL08 looking up on-screen text:
https://youtu.be/RoZWQqPQct4

6.1.4. Writing

All the clips used in the experiments were about one minute long. While this might not seem like a lot, describers did not generate the script to the entire clip at once. Instead, they divided the work into smaller units — e.g., a part of a phrase, a phrase, or a paragraph — each preceded by repetitive viewing of the video to better understand its content. This behaviour is illustrated by Example 15, where a describer divides the work into segments which roughly follow shot changes within the clip.

https://youtu.be/zslH6xwOxNg
Example 15. Describer PL02 generating text and watching the video

Example 15 also shows that the AD scripting process occurs in a recursive loop where the different sub-processes — in this particular case understanding, planning, generating text and revision — intertwine. Example 16 additionally shows how reviewing and cueing are incorporated into the scripting process as the describer reads the written passage with the video paused, and then plays the video, reads the script out loud to make sure it fits within the available time frame and finally modifies the suggested time codes.

https://youtu.be/w95kaJ-jjdk
Example 16. Describer PL06 pausing writing to cue the script

6.1.5. Revising

Like in the case of other stages, revision occurred many times during the AD scripting process. Revisions were performed both immediately as the describers typed (see Example 17) and later when reviewing complete sentences, paragraphs, and the entire script (see Example 18).

https://youtu.be/COUVC6C49eU
Example 17. Describer PL06 revising while producing text

https://youtu.be/X9VSHPhK-eI
Example 18. Describer PL01 revising during review

Revision strategies included correcting superficial errors (e.g., spelling, punctuation, grammar, and syntax), making meaningful changes (e.g., word/term choice, change of content and strategy, improving the overall flow of the text) and deleting previously created content.

6.1.6. Reviewing

In the reviewing stage, describers performed various readings of the previously generated text to assess the overall flow of the text (see Example 19). This was very often performed directly before planning future content or generating text.

https://youtu.be/ic0U0jtMJHY
Example 19. Describer PL01 reviewing the script

6.1.7. Cueing

Audio description should follow the onscreen action as closely as possible although, if necessary, a slight advance or delay is acceptable. At the same time the script should read well, that is to say it should not be hurried nor read at an incomprehensible rate (Independent Television Commission 2000; Snyder 2010). Therefore, a crucial part of the describer's job is to assure the appropriate length and cueing of the script.

All participating describers recognized this issue. There seemed to be two strategies when it came to controlling the length of the description. Most describers opted for reading the script aloud simultaneously with the clip. Reading was done both during scripting (see Example 20), as the describers finished selected parts of the text, and once the script was completed (see Example 21).

https://youtu.be/kGkXe6ZIYgs
Example 20. Describer PL06 reading the script (during scripting)

https://youtu.be/T7WX6lLeJs8
Example 21. Describer PL07 final reading the script (final reading)

One of the describers used a different strategy; instead of reading, they calculated the character per second (CPS) ratio by dividing the length of the clip in seconds and the total number of characters (see Example 22). Based on that they decided to shorten or not parts of the script. This can be explained by the fact that some describers work in audio description or subtitling software, where reading speed can be set and controlled in CPS.

https://youtu.be/yyQ6okvj0Uc
Example 22. Describer SP05 calculating the length of the script

7. Limitations

As already mentioned, the data analysed in this article was obtained in a study the main goal of which was to investigate how describers deal with cultural references. Since the experimental design was tailored to the purpose of this particular study, the choice of materials, working environment, participants and methodology were not ideal to analyse the audio description process; this has influenced the outcome of the analysis presented in this article. Below I discuss the limitations of the study.

a) Materials

The materials used in the experiment lack ecological validity in at least two ways: clips were presented without sound and had a very limited

duration (ca. 1 minute). Both of these features could have affected the scripting process.

Firstly, again, it is sometimes advised (e.g., Chmiel and Mazur 2014; Żórawska *et al*. 2011) that in order to better detect where audio description is needed, describers should, prior to scripting, listen to the soundtrack of the film without the image. Since I presented the clips without sound, it was impossible to verify whether the describes in fact followed this recommendation.

Secondly, since audio description in films needs to fit in the time available between dialogues and sound effects, by removing sound I also removed some of the typical constraints the describers face. However, and as evidenced by the data collected, describers still needed to cue the script. Since AD should mirror visual cues as closely as possible and my materials had a limited running time, the describers needed to make sure the script could follow the image and fit within the available time.

Thirdly, while the length of the clips used does not necessarily make them ecologically invalid — since AD can be scripted to short materials such as trailers, spots etc. — their limited length made it impossible to observe how the scripting process unfolds over a longer period of time. In this experiment describers worked linearly; they described each clip from the beginning to the end. However, if given longer films, describers could opt for, e.g., skipping what they might see as more difficult parts of the film and returning to them later.

b) Participants

When it comes to the participants, two kinds of limitations need to be considered. First of all, the participants recruited in Poland were, for the most part, collaborators of the Seventh Sense Foundation and they received similar training. Because of this they may have shared a similar workflow. Secondly, the participants recruited for the experiment had different educational backgrounds (translators vs. non-translators) and professional experience (experienced vs. novice). Thirdly, they came from two different countries (Poland vs. Spain). A quantitative analysis of data is needed to see if and how these variables affect the AD scripting process.

c) Methodology

While I made an effort to create conditions in which taking part in the experiment would seem as 'natural' as possible (e.g., allowing the participants to work from the place of their choice, to use their own devices and to set up the schedule), it is doubtful that the very fact of being recorded eluded them. This was reflected in some participants

addressing me directly in their comments, knowing that I would see the recording.

More importantly, the TAP method used in this experiment could have interfered with the individual process of each describer. On the other hand, while TAP seems more suitable for monitoring the decision-making process than for mapping the process as such, in my study TAP allowed better insight into the details of the AD subprocesses. TAP data revealed the two distinct behaviours during the planning subprocess (planning of a global approach vs. ad hoc description) and, crucially, it allowed me to distinguish between planning and reviewing, which in keylogging or screen recording would come through as pauses in activity that would be difficult to tell apart.

d) Working environment

Due to the Input Log requirements, the participants were asked to write their scripts in Microsoft Word and preview the clips in a player of their choice. This was a typical working environment only for some of the describers. Others declared that they usually script their ADs in different programs, e.g., subtitling software or dedicated audio description tools. Using this particular setup might have affected the performance of some participants in at least two ways. First of all, working with unfamiliar software might have caused some inconvenience and could have impacted work fluidity. Secondly and most importantly from the point of view of this analysis, cueing behaviour might have been impacted. Subtitling and audio description editors offer an automatic CPS ratio count. It can be assumed that, if working with specialised software, some describers would rely on its cueing feature and would not read the text out loud to see if it fits in the available time frame (see Example 22).

8. Discussion and conclusions

In this explorative study, which to the best of my knowledge is the first empirical study of the audio description process, I looked into the process of AD scripting. Based on the observation of participants in this sample, the AD scripting process may be divided into three phases: pre-drafting, drafting, and post-drafting. This confirms that audio description scripting process, similar to writing and translation, can be framed under the supra-category of text production suggested by Dam-Jensen and Heine (2013). I also found out that audio description script production involves seven subprocesses: understanding, planning, generating text, searching, reviewing, revising and cueing, and that similar to writing and translation processes, these phases and subprocesses overlap and are not linear since describers move freely between them until the final text is created. Interestingly, while different subprocesses intertwine, in all cases the script was drafted in a linear manner; the describers started from the first

scene of the clip and then moved forward until the last one. This behaviour is typical of translation; in writing, non-linear strategies are common, e.g., writing an introduction after the main body of the text (Englund Dimitrova 2005: 136).

The study reported in this article has many limitations, mainly because the data analysed was gathered in an experiment aiming at studying the decision-making process rather than the scripting process. Despite these limitations, the findings of the present study open a number of research avenues. First of all, large-scale experiments on audio description scripting process, with adequate methodology and materials are needed in order to determine the generalisability of the present findings. Second, it might be fruitful to establish how describers allocate their resources to specific phases and subprocesses and to map differences depending on a describer's proficiency, educational background, and description task, e.g., different film genres or source cultures. Third, since AD script creation involves more than one workflow, it would be very useful to compare the process of interlingual translation with intersemiotic translation. Fourth, it would be interesting to compare AD scripting to writing and translation processes. To date, there have been relatively few comparative studies of writing and translation, but some of the studies point to the fact that writing and translation differ in the complexity of the planning phase (Risku *et al.* 2016: 51) or in how they interact with the pre-existing text since translation depends directly on the source text while writing relies on pre-existing texts and sources in a much more indirect way (Dam-Jensen and Heine 2013: 90). Fifth, following recent developments in writing and translation process research, it would be interesting to look into the contextual features of the audio description event and in particular into how the text producer interacts with technology, other people and the physical environment (Dam-Jensen and Heine 2013). Also, following the arguments from translation and writing process scholars (e.g., Dam-Jensen and Heine 2009; Massey and Ehrensberger-Dow 2011), it would be interesting and beneficial to apply process tools in AD teaching to raise awareness, encourage reflection and give insight into description behaviour and patterns. Moving away from AD specific issues, further experimental process research on AD could also contribute to the ongoing TPR debate on the use of TAPs in process research. Last but not least, as far as I am aware, while facial recording is mentioned as one of TPR methods (Göpferich and Jääskeläinen 2009) it has so far not been used in TPR research. I believe it could be a valuable observational method, giving insight into participants' emotional state that can be analysed using e.g., AI solutions for facial analysis.

Acknowledgements

First and foremost I would like to thank the describers who agreed to take part in this experiment — for their time, patience and openness. I would

also like to thank the reviewers of this paper for their invaluable advice which I tried to take in as much as possible to make this paper all it can be, for inspiration for future use of the data already gathered and for showing me possible new research endeavours. I would also like to thank Gary Massey for his consultation on TPR, which has helped me a lot in moments of doubts and to Łucja Biel for her through revision of the paper and commitment to quality publishing.

This work has been supported by the Polish Ministry of Science and Higher Education (1311/MOB/IV/2015/0) under the Mobility Plus funding scheme.

References

- **Angelone, Erik** (2010). "Uncertainty, uncertainty management and metacognitive problem solving in the translation task." Gergory M. Shreve and Erik Angelone (eds) (2010). *Translation and Cognition*. Amsterdam/Philadelphia: John Benjamins, 17-40.

- **Becker, Anne** (2006). "A review of writing model research based on cognitive processes." Alice Horning and Anne Becker (eds) (2006). *Revision: History, Theory, and Practice*. West Lafayette, Indiana: Parlor Press & The WAC Clearinghouse, 25-49.

- **Benecke, Bernd** (2004). "Audio-Description." *Meta* 49(1), 78-80.

- **Chesterman, Amdrew** (2015). "Models of what processes?" Maureen Ehrensberger-Dow *et al*. (eds) (2015). *Describing Cognitive Processes in Translation. Acts and events*. Amsterdam/Philadelphia: John Benjamins, 7-20.

- **Chmiel, Agnieszka and Iwona Mazur** (2014). *Audiodeskrypcja*. Poznań: Wydział Anglistyki im. Adama Mickiewicza w Poznaniu.

- **Christensen, Tina** (2011). "Studies on the mental processes in translation memory-assisted translation: The state of the art." *trans-kom* 4(2), 137-160.

- **Dam-Jensen, Helle and Carmen Heine** (2009). "Process research methods and their application in the didactics of text production and translation: Shedding light on the use of research methods in the university classroom." *trans-kom* 2(1), 1-25.

- **Dam-Jensen, Helle and Carmen Heine** (2013). "Writting and transslation process research: Bridging the gap." *Journal of Writing Research* 5(1), 89-101.

- **Dragsted, Barbara and Michael Carl** (2013). "Towards a classification of translator profiles based on eye-tracking and keylogging data." *Journal of Writing Research* 5(1), 133-158.

- **Ehrensberger-Dow, Maureen** (2017). "An ergonomic perspective of translation." John W. Schwieter and Aline Ferreira (eds) (2017). *The Handbook of Translation and Cognition*. Hoboken: Wiley Blackwell, 332-349.

- **Ehrensberger-Dow, Maureen and Gary Massey** (2014). "Cognitive ergonomic issues in professional translation." John W. Schwieter and Aline Ferreira (eds) (2014). *The Development of Translation Competence: Theories and Methodologies from Psycholinguistics and Cognitive Science*. Cambridge: Cambridge Scholars Publishing, 58-86.

- **Ehrensberger-Dow, Maureen and Sharon O'Brien** (2015). "Ergonomics of the translation workplace." *Translation Spaces* 4(1), 98-118.

- **Englund Dimitrova, Brigitta** (2005). *Expertise and Explicitation in the Translation Process*. Amsterdam/Philadelphia: John Benjamins.

- **Fernández Torné, Anna and Anna Matamala** (2015). "Text-to-speech vs. human voiced audio descriptions: A reception study in films dubbed into Catalan." *The Journal of Specialised Translation* 24, 61-88.

- **Fidalgo, Raquel, Torrance, Mark, Rijlaarsdam, Gert, van den Bergh, Huub and Maria Lourdes Álvarez** (2015). "Strategy-focused writing instruction: Just observing and reflecting on a model benefits 6th grade students." *Contemporary Educational Psychology* 41, 37-50.

- **Göpferich, Susanne and Riitta Jääskeläinen** (2009). "Process research into the development of translation competence: Where are we, and where do we need to go?" *Across Languages and Cultures* 10(2), 169-191.

- **Greco, Gian Maria** (2016). "On accessibility as a human right, with an application to media accessibility." Anna Matamala and Pilar Orero (eds) (2016). *Researching Audio Description New Approaches*. London: Palgrave Macmillan, 11-34.

- **Hansen, Gyde** (2003). "Controlling the process : Theoretical and methodological reflections on research into translation processes." Fabio Alves (ed.) (2003). *Triangulating Translation: Perspectives in process oriented research*. Amsterdam/Philadelphia: John Benjamins, 25-42.

- **Hayes, John Richard** (1996). "A new framework for understanding cognition and affect in writing." Michael Levy and Sarah Randsdell (eds) (1996). *The Science of Writing: Theories, Methods, Individual Differences, and Applications*. Mahwah, New Jersey: Lawrence Erbaum Associates, 1-27.

- **Hayes, John Richard and Linda Flower** (1980). "Identifying the organization of writing processes." Lee W. Gregg and Erwin R. Steinberg (eds) (1980). *Cognitive Processes in Writing*. London: Routledge, 3-30.

- **Holsanova, Jana** (2019a). "Making popular science accessible. Uncovering AD skills and competences." Paper presented at *Media for All 8* (University of Stockholm, 17-19 June 2019).

- **Holsanova, Jana** (2019b). "Uncovering scientific and multimodal literacy through audio description." *Journal of Visual Literacy* 39(3-4), 132-148.

- **Independent Television Commission** (2000). *ITC Guidance On Standards for Audio Description*. http://audiodescription.co.uk/uploads/general/itcguide_sds_audio_desc_word3.pdf (consulted 11.05.2021).

- **Jakobsen, Arnt Lykke** (2003). "Effects of think aloud on translation speed, revision, and segmentation." Fabio Alves (ed.) (2003). *Triangulating Translation: Perspectives in process oriented research*. Amsterdam/Philadelphia: John Benjamins, 69-95.

- **Jakobsen, Arnt Lykke** (2017). "Translation process research." John W. Schwieter and Aline Ferreira (eds) (2017). *The Handbook of Translation and Cognition*. Hoboken: Wiley Blackwell, 19-49.

- **Jankowska, Anna** (2015). *Translating Audio Description Scripts Translation as a New Strategy of Creating Audio Description*. Frankfurt am Mein: Peter Lang.

- **Jankowska, Anna, Milc, Michał and Louise Fryer** (2017). "Translating audio description scripts … into English." *Skase. Journal of Translation and Interpretation* 10(2), 2-16.

- **Jääskeläinen, Riitta** (1999). *Tapping the Process: An Explorative Study of the Cognitive and Affective Factors Involved in Translating*. PhD thesis. University of Joensuu.

- **Kellogg, Ronald T.** (1986). "Designing idea processors for document composition." *Behavior Research Methods, Instruments, & Computers* 18(2), 118-128.

- **Kellogg, Ronald T.** (2001). "Competition for working memory among writing processes." *The American Journal of Psychology* 114(2), 175-191.

- **Krings, Hans** (1986). *Was in den Köpfen von Übersetzern vorgeht: eine empirische Untersuchung zur Struktur des Übersetzungsprozesses an fortgeschrittenen Französischlernern*. Tübingen: Narr.

- **Krings, Hans** (2001). *Repairing Texts: Empirical Investigations of Machine Translation Post-editing Processes*. Kent: Kent State University Press.

- **Krings, Hans** (2005). "Wege ins Labyrinth – Fragestellungen und Methoden der Übersetzungsprozessforschung im Überblick." *Meta* 50(2), 342-358.

- **Kruger, Haidee and Jan-Louis Kruger** (2017). "Cognition and reception." John W. Schwieter and Aline Ferreira (eds) (2017). *The Handbook of Translation and Cognition*. Hoboken: Wiley Blackwell, 71-89.

- **Lauffer, Sabine** (2002). "The translation process: An analysis of observational methodology." *Cadernos de Tradução* 2(10), 59–74.

- **Levy, Michael C. and Sarah Ransdell** (1994). "Computer-aided protocol analysis of writing processes." *Behavior Research Methods, Instruments, & Computers* 26(2), 219-223.

- **Levy, Michael C. and Sarah Ransdell** (1995). "Is writing as difficult as it seems?" *Memory & Cognition* 23(6), 767-779.

- **Limpo, Teresa and Rui A. Alves** (2018). "Effects of planning strategies on writing dynamics and final texts." *Acta Psychologica* 188, 97-109.

- **López Rojo, Ana Maria and Paweł Korpal** (2020). "Through your skin to your heart and brain: A critical evaluation of physiological methods in Cognitive Translation and Interpreting Studies." *Linguistica Antverpiensia, New Series – Themes in Translation Studies* 19, 191-217.

- **Massey, Gary and Maureen Ehrensberger-Dow** (2011). "Technical and instrumental competence in the translator's workplace: Using process research to identify educational and ergonomic needs." *Ilcea* 14, 1-14.

- **Massey, Gary and Peter Jud** (2020). "Translation process research in audiovisual translation." Łukasz Bogucki and Mikołaj Deckert (eds) (2020). *The Palgrave Handbook of Audiovisual Translation and Media Accessibility*. London: Palgrave Mcmillan, 359-379.

- **Matamala, Anna** (2006). "La accesibilidad en los medios: aspectos lingüísticos y retos de formación." Ricardo Pérez-Amat García and Álvaro Pérez-Ugena y Coromina (eds) (2006). *Sociedad, Integración y Televisión en España*. Marid: Comunicación (Laberinto), 293-306.

- **Mazur, Iwona** (2017). "Audio description crisis points: The idea of common european audio description guidelines revisited." Jorge Díaz Cintas and Kristijan Nikoliĉ (eds) (2017). *Fast-Forwarding with Audiovisual Translation*. Bristol: Multilingual Matters, 127-140.

- **Muñoz Martín, Ricardo** (2016). "Reembedding translation process research." Ricardo Muñoz Martín (ed.) (2016*). Reembedding Translation Process Research*. Amsterdam/Philadelphia: John Benjamins, 1-20.

- **Norberg, Ulf** (2003). *Übersetzen mit doppeltem Skopos: eine empirische Prozess- und Produktstudie*. PhD thesis. Uppsala Universitet.

- **O'Brien, Sharon** (2012). "Translation as human–computer interaction." *Translation Spaces* 1, 101-122.

- **O'Brien, Sharon** (2013). "The borrowers: Researching the cognitive aspects of translation." *Target* 25(1), 5-17.

- **Orrego-Carmona, David, Dutka, Łukasz and Agnieszka Szarkowska** (2018). "Using translation process research to explore the creation of subtitles: an eye-tracking study." *The Journal of Specialised Translation* 30, 150-180.

- **Penningroth, Suzanna L. and Sheldon Rosenberg** (1995). "Effects of a high information-processing load on the writing process and the story written." *Applied Psycholinguistics* 16(2), 189-210.

- **Posadas Rodríguez, Gala** (2010). "Audio description as a complex translation process: A protocol." Jorge Díaz Cintas, Anna Matamala and Joselia Neves (eds) (2010). *New Insights into Audiovisual Translation and Media Accessibility: Media for All 2*. Amsterdam/New York: Rodopi, 195-211.

- **Remael, Aline, Reviers, Nina and Gert Vercauteren** (eds) (2015). *Pictures Painted in Words: ADLAB Audio Description Guidelines*. Trieste: EUT Edizioni Università di Trieste.

- **Risku, Hanna and Angela Dickinson** (2017). "Translators as networkers: The role of virtual communities." *HERMES - Journal of Language and Communication in Business* 22(42), 49-70.

- **Risku, Hanna, Milosevic, Jelena and Christina Pein-Weber** (2016). "Writing vs. translating." Ricardo Muñoz Martín (ed.) (2016*). Reembedding Translation Process Research*. Amsterdam/Philadelphia: John Benjamins 47-68.

- **Rojo, Ana** (2017a). "The role of emotions." John W. Schwieter and Aline Ferreira (eds) (2017). *The Handbook of Translation and Cognition*. Hoboken: Wiley Blackwell, 369-385.

- **Rojo, Ana** (2017b). "The role of creativity." John W. Schwieter and Aline Ferreira (eds) (2017). *The Handbook of Translation and Cognition*. Hoboken: Wiley Blackwell, 350-368.

- **Rojo, Ana and Marina Ramos Caro** (2016). "Can emotion stir translation skill? Defining the impact of positive and negative emotions on translation performance." Ricardo Muñoz Martín (ed.) (2016). *Reembedding Translation Process Research*. Amsterdam/Philadelphia: John Benjamins, 107-130.

- **Rojo, Ana, Ramos Caro Marina and Javier Valenzuela** (2014). "The emotional impact of translation: A heart rate study." *Journal of Pragmatics* 71, 31-44.

- **Snyder, Joel** (ed) (2010). *Audio Description Guidelines and Best Practices*. http://docenti.unimc.it/catia.giaconi/teaching/2017/17069/files/corso-sostegno/audiodescrizioni (consulted 24.10.2021)

- **Sun, Sanjun** (2011). "Think-aloud-based translation process research: Some methodological considerations." *Meta* 56(4), 928-951.

- **Sun, Sanjun, Li, Tian and Xiaoyan Zhou** (2020). "Effects of thinking aloud on cognitive effort in translation." *Linguistica Antverpiensia, New Series: Themes in Translation Studies* 19, 132-151.

- **Szarkowska, Agnieszka** (2011). "Text-to-speech audio description: Towards wider availability of AD." *The Journal of Specialised Translation* 15, 142-163.

- **Szymańska, Barbara and Tomasz Strzymiński** (2010). *Standardy Tworzenia Audiodeskrypcji do Produkcji Audiowizualnych*. http://avt.ils.uw.edu.pl/files/2010/12/AD- standardy tworzenia.pdf (consulted 15.05.2020).

- **Walczak, Agnieszka** (2017). *Immersion in Audio Description. The Impact of Style and Vocal Delivery on Users' experience*. PhD Thesis. Universitat Autònoma de Barcelona. http://tesisenred.net/handle/10803/402401 (consulted 22.07.2020).

- **Whyatt, Bogusława** (2018). "Old habits die hard: Towards understanding L2 translation." *Między Oryginałem a Przekładem* 24(41), 89-112.

- **Żórawska, Anna, Więckowski, Robert, Künstler, Izabela and Urszula Butkowska** (2011). *Audiodeskrypcja – Zasady Tworzenia*. http://dzieciom.pl/wp-content/uploads/2012/09/Audiodeskrypcja-zasady-tworzenia.pdf (consulted 22.07.2020).

Filmography

- *Anioł w Krakowie* (2002). Dir. A. Więcek.

- *Barbórka* (2005). Dir. M. Pieprzyca.

- *Biała sukienka* (2003). Dir. M. Kwieciński.

- *18 Comidas* (2010). Dir. J. Coira.

- *Dieta mediterránea* (2009). Dir. J. Oristrell.

- *Dlaczego nie!* (2007). Dir. R. Zatorski.

- *Inglourious Basterds* (2009). Dir. Q. Tarantino.

- *Memoirs of a Geisha* (2004). Dir. R. Marshall.

- *Ocho apellidos catalanes* (2014). Dir. E. Martínez-Lázaro.
- *Wesele* (2004). Dir. W. Smarzowski.
- *Vicky, Cristina, Barcelona* (2008). Dir. W. Allen.
- *Żółty szalik* (2000). Dir. J. Morgenstern.

Disclaimer: Authors are responsible for obtaining permission to use any copyrighted material contained in their article.

Bionote

Anna Jankowska (https://orcid.org/0000-0001-6863-5940), PhD, is Assistant Lecturer in the Chair for Translation Studies and Intercultural Communication at the Jagiellonian University in Kraków (Poland) and a Professor at the Department of Translators and Interpreters of the University of Antwerp. She was a visiting scholar at the Universitat Autònoma de Barcelona within the Mobility Plus program of the Polish Ministry of Science and Higher Education (2016-2019). Her recent research projects include studies on audio description process, mobile accessibility and software. She can be reached at: anna.jankowska@uantwerpen.be or anna.m.jankowska@uj.edu.pl.

Notes

[1] See Becker (2006) and Norberg (2003) for an overview.
[2] Different terms are used to refer to the different stages of writing and translation processes, e.g., phases/stages (Dam-Jensen and Heine 2013: 92-95), processes (Levy and Ransdell 1994: 219-220) or even strategies (Lauffer 2002: 68). Following Dam-Jensen and Heine (2013), in this article I will use "phase" to refer to the three steps of the writing/translation process (i.e. pre-drafting, drafting, post-drafting) and following Levy and Ransdell (1994), I will use "subprocesses" to refer to the different actions carried out with the aim of producing a text.
[3] Although *Vicky, Cristina, Barcelona* is an American film, it is set in Barcelona and presents snapshots of the city; it was considered as belonging to Spanish source-culture in this study.
[4] In films, audio description needs to fit in the gap between dialogues and sound effects (for more information see, e.g., Remael *et al*. (eds) 2015).
[5] To ensure anonymity, images, sounds and on-screen text that could make it possible to identify the participants have been removed and/or blurred.
[6] The color-coding was done for the purpose of this publication using image processing software to better visualise data.