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How easy are audio descriptions? Exploring the viability of hybrid access services across English, Spanish and Catalan

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Abstract: Easy-to-understand (E2U) language has typically been used for written content, but there has been a recent interest in applying this concept to audiovisual content and access services on streaming platforms. In this regard, the EASIT project addressed whether the hybridisation of E2U language with audio description (AD) could produce a new access service. This new form of easy AD may be key soon for streaming platforms to create an environment where individuals with diverse profiles can engage with media in ways that are accessible and enjoyable. While professionals from AD and E2U language hold diverging views on the topic, one central aspect remains to be investigated: how easy are current audio descriptions? This paper presents a contrastive analysis of a corpus of film AD in English, Catalan and Spanish, to assess the extent to which AD scripts share the principles of E2U language as described in international standards. Materials validated as easy in the same languages are used for comparison. This descriptive study sheds light on current practices with a cross-linguistic perspective and allows us to identify commonalities and divergences between E2U language and AD. The paper reports on features connected to sentence complexity, namely sentence length, part-of-speech distribution, verbs per sentence, and frequency of verbal periphrases. It also offers a lexical analysis considering corpus aboutness, lexical density, vocabulary richness, and information load, as well as relevant readability indexes. Additionally, it contributes to the development of the so-called concept of easy audios, as proposed by the ongoing WEL project.

Keywords: audio description, easy-to-understand language, corpus analysis, readability, accessibility

1. Introduction

The advent of streaming platforms has allowed users to shape their viewing experience. ATAWAD (anytime, anywhere, any device) is an acronym which illustrates our current aspiration when consuming media. Audiovisual translation (AVT) and media accessibility (MA) play a pivotal role in making this ATAWAD motto a reality. Platforms often give users a choice of language and audiovisual transfer modes. For this reason, audiovisual translation modes such as subtitling or dubbing are on the rise, with films and series expanding beyond the omnipresent English-speaking content and English-speaking markets embracing dubbed material (Sánchez-Mompeán, 2021). Access

services, such as intralingual subtitling (or captioning) and audio description (AD), also have a key role, catering for the needs of people who cannot see or hear the content. However, the needs of a specific user group have not received as much attention, namely people with cognitive or learning disabilities. Proposals are currently being developed to enhance narrative comprehension in audiovisual content (e.g. Deleanu, 2023) like the one offered by streaming platforms. However, the potential of easy AD as a means for platforms to be more inclusive has been little explored so far. Likewise, knowing the extent to which existing AD scripts may cater for the needs of people with cognitive or learning disabilities may have an impact on streaming platforms in terms of their future AD offer.

Easy-to-understand (E2U) languages are used to enhance comprehensibility and range from Easy Language—addressed to those who have difficulties reading and understanding content, such as persons with cognitive or learning disabilities, or persons learning a language, among others—to Plain Language—addressed to all. Although the traditional focus of E2U languages has been on written content, there has been a recent interest in applying them to audiovisual news and to access services such as subtitling and AD. In fact, the ISO standard on audio description already acknowledges the need to present the information “in a manner that can be easily understood by their intended users” (ISO, 2015, p. 11).

Focusing on AD, and following the path initiated by Bernabé-Caro and Orero (2020), the EASIT project addressed whether the hybridisation of E2U language with AD could produce a new access service and could cater for the needs of a wider range of users. Professionals from both AD and E2U language held diverging views on the topic (Arias-Badia & Matamala, 2020), but one central aspect remained to be researched: how easy are current audio descriptions?

To answer this question, this article presents a contrastive analysis of a corpus of film audio descriptions in English, Catalan and Spanish. Our aim is to assess the extent to which current audio descriptions are already easy to understand, i.e., to what extent they share the principles of E2U language, as described in the ISO Standard 238591:2023.

The article begins with a brief overview of AD research, followed by a discussion of the concept of E2U language. A section on the hybridisation of these two access services closes the state of the art. The methodology of the study is presented in Section 4, and results are discussed in Section 5. Both limitations and future work are included in the Conclusions.

2. Audio description and easy-to-understand language

AD has traditionally been addressed to persons with sight loss. To provide a simple definition, in AD the visuals are translated into words which are received auditorily. Research on AD has increased in the last two decades, encompassing descriptive and empirical studies, often applying user-centric methodologies (Matamala & Orero, 2016; Braun & Starr, 2020; Taylor & Perego, 2022). Research has identified user requirements for different types of content and explored creative approaches to accessibility. The presence of AD is still scarce on major streaming platforms in Europe—it is offered for 12 % of the content, and mostly in English (Agirre-Miguel et al., 2023)—, but this situation is expected to change soon, as a result of recent European language policies and legislation, such as the Audiovisual Media Services Directive (2018).

Many authors advocate for a universal design approach and believe access services are not for certain groups only (Greco, 2016; Arias-Badia et al., 2022). In other words, AD is not only for the blind and visually impaired but may benefit all of us in certain circumstances where we do not have access to the visuals. Some researchers take a step further and argue that, even if audiences have access to the visuals, AD may have a positive impact on language learning (Palomo, 2008; Bardini & Espasa, 2023). Talaván et al. (2022) also explore the potential of description as a didactic tool in her AUDIOSUB project, showing an improvement in written production and translation skills.

Other user groups have been the focus of research although to a limited extent: in her doctoral thesis, Starr (2017) explored the application of the so-called “bespoke AD” for emotion recognition, from the perspectives of individuals with autism spectrum disorders (ASD) experiencing comorbid emotion recognition difficulties (ERDs). The thesis investigated whether AD could be a suitable vehicle for delivering emotion-based cues and allow users to access affective markers in films. Starr’s research suggests that standard AD may not assist ASD audiences with emotion recognition—although further research is needed. As for what she terms *bespoke* AD modalities, further research is also needed as statistical significance was not reached but “modelling and re-versioning AD for individuals with ERDs clearly has the potential to assist autism spectrum audiences requiring help with interpreting emotional cues” (Starr & Braun, 2020, p. 117). More recently, Zabrocka and Kata (2023) presented a study at the Advanced Research Seminar on Audio Description (ARSAD) conference in which they aimed to verify whether AD could enhance visual information processing by young viewers with autistic spectrum disorder. A group of 33 sighted children aged 6-12 with autism and a group of 38 neurotypical children took part in the experiment, in which both eye-tracking and questionnaires were used. Results show that emotionally tuned AD improved the comprehension of the films, whereas neutral AD did not. This positive effect was observed in all children, although it was more pronounced in children with ASD in comparison with their neurotypical peers.

E2U language, using the ISO/IEC 23859 standard published in 2023, refers to “any language variety which enhances comprehensibility”. E2U languages include Plain Language, Easy Language and any intermediate variety. Plain Language is generally addressed to all audiences and has traditionally been used in legal and administrative texts. Easy Language, traditionally called Easy-to-Read or Easy Read, is especially targeted to those who may have difficulties reading and understanding texts. These difficulties may be linked to the circumstances or context in which the interaction takes place (for instance, stressful situations), to different abilities (cognitive and linguistic difficulties, ageing, low literacy levels) and to the user’s previous knowledge of or interest in a topic.

Guidelines and recommendations on how to produce Easy Language texts exist, although the focus has generally been on written content with fewer references to oral or audiovisual modes (IFLA 2010, Inclusion Europe 200). Research is scarce (González-Sordé & Matamala, 2023) and the practice across Europe is uneven (Lindhom and Vantahalo, 2021), with terminology still not being fully established.

3. Towards a hybrid service: easy-to-understand audio description

The EASIT project (Orero & Matamala, 2018)¹ explored the integration of E2U languages in audiovisual content such as film, TV news and art exhibitions with two access services. More specifically, it focused on E2U audio descriptions, E2U subtitles and E2U audiovisual news (Fernández-Torné & Matamala, 2021). The project was funded by the Erasmus + programme in the period 2018-2021 and was mainly educational: it defined new professional profiles, produced a series of skills cards for these new profiles, designed curricula to train them and produced a wealth of educational content now available on the EASIT platform (transmediacatalonia.uab.cat/easit). The project team also carried out some initial research on the challenges and opportunities associated with these new hybrid access services, as discussed by Bernabé-Caro and Orero (2019), and Maaß and Hernández Garrido (2020). However, research in this area is still limited and focuses on easy subtitles (Alba Rodríguez, 2013; Oncins et al., 2020; Bernabé-Caro & Cavallo, 2021; Marmit, 2021), easy audio descriptions (Arias-Badia & Matamala, 2020, 2021; Bernabé-Caro & Orero, 2021; Taylor & Perego, 2021) and easy interpreting (Schulz et al., 2020), also referred to as simultaneous simplification (Yalon-Chamovit & Avidan-Ziv, 2016; Nahón Guillén, 2020). A related concept is that of easy audios (Matamala, 2023), also called “audio explanations”, which are defined by Jiménez Dorado (2021) as a cognitive accessibility service based on the concept of Easy Language with many similarities with AD. Easy audios, in his experience, are recordings created using Easy Language methodologies and included in the silent gaps which are validated by users with cognitive disabilities. As described by Matamala (2023), easy audios explain the meaning of difficult words, clarify what happens and remind of important past events. Easy audios can be integrated in both audio (e.g., a podcast or radio programme) and audiovisual content (e.g., a film or a theatre play).

Focusing specifically on E2U AD, the object of this article, Bernabé and Orero (2021) explore how Easy Language principles could be used to create simplified AD. By adopting a conceptual approach, prior to validation with users, the authors consider a variety of applications for E2U AD, from museum AD to screen AD. Their framework includes AD, Easy Language and sound mix guidelines together with Web Content Accessibility Guidelines (WCAG) 2.1. Taylor and Perego (2021) discuss museum AD and consider that a simplified AD, one with concise and clear information, could foster museum visits by a diversity of visitor profiles. As part of the EASIT project, Arias-Badia and Matamala (2020) held a focus group with professional audio describers and Easy Language experts to explore the potential of easy audio descriptions. Although experts acknowledged many similarities in AD in films and Easy Language (use of short simple sentences, for instance), they also put forward a potential mismatch between easy ADs and complex dialogues. Participants see the potential for certain types of content (opera, theatre, dance), but also observe challenges for other forms such as films.

To analyse the similarities in filmic AD and Easy Language texts, Arias-Badia and Matamala (2023) carried out a corpus-based study of filmic ADs in Catalan. Their research shows many similarities: preference for simple clauses, neutral word order, general vocabulary, absence of figurative language, neology and foreign words. Readability scores also prove a low complexity of the audio descriptions. A similar study has been undertaken in Spanish by the same authors (Matamala & Arias-Badia, in press), who demonstrate that the linguistic

¹ webs.uab.cat/easit.

features analysed in the Spanish AD corpus of fiction films follow the Easy Language recommendations. When comparing the AD text with written texts validated as Easy Language in terms of readability scores, AD texts seem to be easier to read.

Demonstrating that ADs are easy in terms of Easy Language parameters does not prove its usefulness for other audiences beyond the blind. This would be the object of another study. However, these results may show that simplification may not be as needed as one had initially anticipated when discussing the hybridisation of access services because ADs are already simple enough. The previous results, from corpora of AD scripts in Catalan and Spanish, may not be applicable to other languages as each language has its own AD style and complexity may differ. For this reason, our investigation aims to expand our previous work (Arias-Badia & Matamala, 2023; Matamala & Arias-Badia, in press) to include English and provide a contrastive analysis on how easy filmic ADs are in terms of Easy Language features. At this point, it is important to recognise that Easy Language involves more than just simplified wording—it also includes the careful selection of information, its visual presentation, and additional features like glossaries or explanatory notes. All these paratextual and visual aspects are beyond the scope of our current research, which focuses exclusively on linguistic aspects. Similarly, prosodic features such as speed, volume or pauses may play a key role in enhancing comprehension when moving from written to oral texts (Machuca et al., 2020) but are also not addressed in this paper.

4. Methodology

In this paper we bring together new data yielded by a corpus study of AD and Easy Language texts in English and the results of the two previous studies on AD and Easy Language texts in Catalan (Arias-Badia & Matamala, 2023) and Spanish (Matamala & Arias-Badia, in press) cited in Section 3, by applying statistical tests to account for significant differences observable across AD scripts written in different languages. Our aim, as stated in the introduction, is to offer a cross-linguistic perspective to shed light on our main research question: how easy are audio descriptions across different languages? (whether current AD follows the principles of easy-to-understand language).

For the purposes of the study, a main corpus and a secondary corpus were compiled. The main corpus includes the AD script of 27 blockbusters (nine in each of the languages of the study, i.e. English, Spanish, and Catalan). Consent was obtained from the script owners in all cases to use the material for the purposes of this research². The films included in the study premiered between 1983 and 2014 and belong to a wide range of film genres—action, thriller, fantasy, comedy, drama, romance, terror. Since the AD of specific genres has been reported to pose specific challenges—note, for example, the case of children’s content (Puigdomènech et al., 2010), the case of horror (Wiffler Stefanini & Matamala, 2023) or of action (Matamala & Remael, 2015)—, the methodological decision to include diverse genres was made to account for different AD strategies in this first E2U AD cross-linguistic exploratory study. The full list of films under consideration is available in Appendix 1. In total,

² The AD scripts in English were kindly provided by American audio describer Joel Snyder (Audio Description Associates). The AD scripts in Spanish are authored by Aristia, a well-known audio description company in Spain. The AD scripts in Catalan were kindly provided by the Catalan Corporation of Audiovisual Media (CCMA).

corpus extension is of 181,862 tokens. Table 1 below summarises the basic details on corpus extension for each language.

Table 1: Main corpus: Token distribution across languages

Language of the AD scripts	Tokens
English	82,711
Spanish	52,243
Catalan	46,908
Total extension	181,862

The secondary corpus includes texts validated as Easy Language. For English and Spanish, excerpts from Issue 2 of the international journal *Europe for Us* (2022) were used, as it allowed us to have the same content in two different languages validated by a reference association in the field of Easy Language; for Spanish and Catalan, three opera plot summaries from Liceu were used, namely the plots of *Roméo et Juliéte*, *Il viaggio a Reims*, and *Un ballo in Maschera*. In this case, the content was narrative and had also been validated by the Catalan Easy Read Association. Table 2 presents a summary of the corpus materials. This corpus is smaller, since it was exclusively intended to be used as a first term of comparison for some of the language features considered in the analysis—we acknowledge, however, the secondary corpus size and variability across languages as a limitation of the present study.

Table 2: Secondary corpus: Materials considered and token distribution across languages

Language	Materials	Tokens
English	Excerpts from <i>Europe for Us</i>	755
Spanish	Excerpts from <i>Europe for Us</i>	828
	Opera plot summaries	2,953
Catalan	Opera plot summaries	2,476
Total extension		7,012

As explained in the ISO 23859:2023 standard, “the specific language features that make written text easy can change depending on the language and the writing system” (ISO 2023, p. 4). Therefore, the selection of language features under analysis in this study is intended to account for AD strategies which are not typically language dependent. It is guided by the requirements and recommendations on grammar, sentences, and vocabulary suggested by the ISO standard. The results section of the paper is divided into three subsections.

Section 5.1 reports on the results of analysing the following morphosyntactic features in connection with syntactic complexity and part of speech (PoS) distribution: sentence length, verbs per sentence, percent occurrence of lexical word categories among lexical words³. Section 5.2 focuses on lexical features. Our analysis yields results on the following items connected to lexical variation: lexical density (computed via the type/token ratio formula, TTR); vocabulary richness (number of lemmas/number of tokens); and information load (number of lexical words/number of tokens).

³ Following Halliday’s (1985) and Biber et al.’s (1999, p. 55) definitions of lexical words, the following PoS categories were computed as lexical words in the analysis: adjectives, adverbs, nouns, and verbs.

The open access tool Contawords©⁴, developed by the Institute for Applied Linguistics at the Universitat Pompeu Fabra (Barcelona, Spain), was used to run an automatic lemmatisation of the corpus and PoS tagging. The tool allows the computation of homonymic lemmas as different PoS (e.g. *look* as a noun or verb in English). This tool lists named entities (i.e., proper nouns) separately from common nouns; since the mention of characters' names is relevant for the study of AD scripts, we decided to keep this differentiation in our presentation of results.

ANOVA tests were run to compare the results of analysing the features above in each of the three languages. Whenever significant differences were found in the analysis, t tests for each language pair were computed to establish where the differences arise.

Section 5.2 also reports on corpus aboutness, understood as the words that typify a corpus (Oakes 2012), from a qualitative perspective. To do so, the 30 most frequent lexical words from each AD script were retrieved from the outputs provided by Contawords©. In relation to E2U language, we aimed to examine the content focus of the corpus to ascertain whether less common (i.e. typically understood as more difficult) words, like specialised terminology or creative new words, were prominently featured in the main corpus. At the same time, corpus aboutness reveals which lexical items are repeated across different films in the AD scripts in the three languages.

Finally, Section 5.3 contrasts the results of automatically computing readability and text comprehension by using language-dependent indexes for both the main and the secondary corpora. In this case, we briefly recap the findings of our previous work on Catalan and Spanish and offer the new data for English, for which we use the Gunning Fog Index measure. In Perego's study (2020), this index is employed to contrast the level of difficulty involved in comprehending ADs for films and art in the English language. Traditionally, this index serves as a readability measure, highlighting the connection between syntactic complexity, determined by sentence length, and the presence of intricate vocabulary. As summarised on the site Readable (n. d., para. 2-3),

The Gunning Fog formula generates a grade level between 0 and 20. It estimates the education level required to understand the text.

A Gunning Fog score of 6 is easily readable for sixth-graders. Text aimed at the public should aim for a grade level of around 8. Text above a 17 has a graduate level.

5. Results and discussion

5.1. Morphosyntactic analysis

The ISO 23859 standard for E2U language promotes the use of simple verb forms and of short sentences, and the avoidance of noun chains. It states that “complex sentences with many subordinate clauses should be avoided” (ISO, 2023, p. 11). This section explores sentence complexity in the main corpus.

5.1.1. Sentence length

As mentioned above, the ISO standard states that “[un]necessarily long sentences should be avoided” in E2U language (ISO, 2023, p. 11). Also, Inclusion Europe (2009) recommends E2U content professionals to keep sentences short. For English and Spanish, two of the languages under study, guidelines such as those provided by the European Commission (2012) specify

⁴ <http://contawords.iula.upf.edu>.

that sentences up to 20 words are preferable to enhance clarity in writing. 20.99 is also the mean sentence length in general usage corpora in Catalan. The materials in the secondary corpus, validated as E2R, have a mean sentence length of 9.93 word per sentence (wps) for English (*Europe for Us* journal), 11.5 wps (*Europe for Us*) and 19.16 wps (opera plot summaries) for Spanish, and 14.91 (opera plot summaries) for Catalan.

Considering the parameters above, it is safe to say that our main corpus generally shows short sentences, and is thus in line with a basic principle of E2U language, as well as with AD guidelines (e.g. Fryer, 2016, pp. 70-71). The mean sentence length was found to be 9.54 wps for English, 9.23 wps for Spanish, and 12.17 wps for Catalan. Note the following excerpt from the initial AD units in *Les choristes* in Spanish, in which all sentences are below eight words per sentence:

ES: Pierre niega. Miran una antigua foto del colegio. Señala a un niño. Señala a un profesor. Pepinó le entrega un cuaderno. Pierre lo abre y lee la primera página. [‘Pierre says no. They look at an old picture. He points to a boy. He points to a teacher. Pepinó gives him a notebook. Pierre opens it and reads the first page’].

Figure 1 summarises the quantitative results⁵. A one-way ANOVA was computed comparing the scores of sentence length among languages. A significant F ratio was found among the three groups, $F = 19.95$, with $p < .05$. T-tests computed on language pairs revealed that significant differences were found for Catalan, the language that makes use of the longest sentences within our corpus, with $p < .05$.

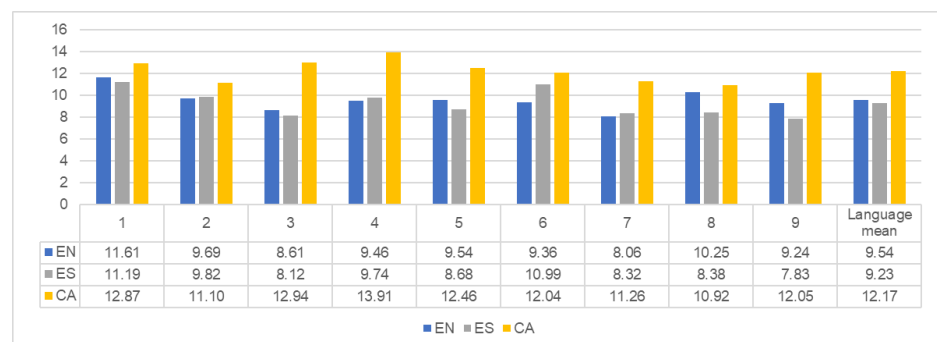


Figure 1: Mean sentence length in the main corpus.

AD is not rendered in isolation but integrated within a whole audiovisual text. In this sense, it is worth noting that our results seem to favour a natural integration of E2U AD in the three languages, following the criteria for most mainstream audiovisual products. Short sentences have traditionally been described as prototypical of spoken colloquial genres (O'Donnell, 1974; Biber, 1988). As a feature of colloquial language, short sentences are promoted in scriptwriting handbooks (McKee, 1997, p. 389) and have been found to be frequent in television dialogue (Forchini, 2012; Baños, 2009; Arias-Badia, 2020) and dubbing (Baños, 2009). They have also been favoured in audiovisual translation modes, such as subtitling, to enhance comprehension (Díaz-Cintas & Remael, 2007) and have been found to be used in television subtitling in previous corpus studies (Arias-Badia, 2020).

⁵ In the figures, a code (1-9) has been assigned to a different film in each language for readability purposes. Codes are specified in Appendix 1, where all films are listed.

5.1.2. Verbs per sentence and occurrence of verbs

Fewer verbs per sentence involve less sentence complexity (Bernabé-Caro & Orero, 2021), so we decided to consider this measure in our analysis. All the AD scripts included in the main corpus show a mean occurrence of below two verbs per sentence—with the script of *Patch Adams* in English scoring below one (0.94)—, which is informative about the syntactic simplicity of the ADs. Means are of 1.20 (EN), 1.49 (ES), and 1.67 (CA) verbs per sentence. Again, the main corpus obtained better scores than the secondary corpus in terms of syntactic simplicity. The journal in English shows a mean of 1.97 verbs per sentence; the journal in Spanish uses 2.2 verbs per sentence, the opera plots in Spanish use 2.94 verbs per sentence; finally, the opera plots in Catalan use 2.05 verbs per sentence. Below are examples of one-verb sentences in the main corpus (verbs in bold):

1. EN: Daniel's son **squeezes** a milk bottle at a lamb. / She **smiles**. / Miranda **takes** the phone. (*Mrs Doubtfire*)
2. ES: **Entra** en su tienda ['He enters his shop']. / Martin le **mira** compungido ['Martin looks at him worried']. / Ana **espera** en el vestíbulo ['Ana awaits at the lobby']. (*Notting Hill*)
3. CA: **Seuen** en unes roques damunt del mar ['They sit at some rocks on the sea']. / **Treu** un diari d'una bossa ['She takes a diary out of a bag']. / **Arriben** a una casa ['They arrive at a house']. (*Mamma mia!*)

The results obtained for the main corpus are summarised in Figure 2. A one-way ANOVA was computed comparing verbs per sentence among languages. A significant F ratio was found among the three groups, $F = 11.88$, with $p < .05$. T-tests computed on language pairs revealed that significant differences were found for English, which shows significantly fewer verbs per sentence in the AD scripts, with $p < .05$.

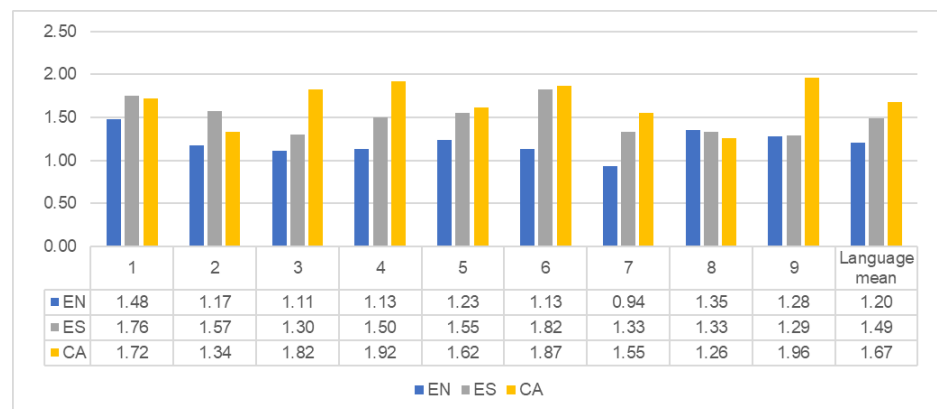


Figure 2: Mean verbs per sentence in the main corpus.

These results are in line with the ones obtained regarding the percentage occurrence of verbs among the lexical words in the main corpus: 22.31 % in English, of 29.89 % in Spanish and of 30.74 % in Catalan. As a reference, the secondary corpus shows means of 28.90 % (EN), 27.56 % (ES), and 28.19 % (CA). The results of the main corpus are summarised in Figure 3. A one-way ANOVA was computed comparing this feature among languages. A significant F ratio was found among the three groups, $F = 27.15$, with $p < .05$. T-tests computed on language pairs revealed that significant differences were found for English, which shows significantly fewer verbs in the AD scripts, with $p < .05$.

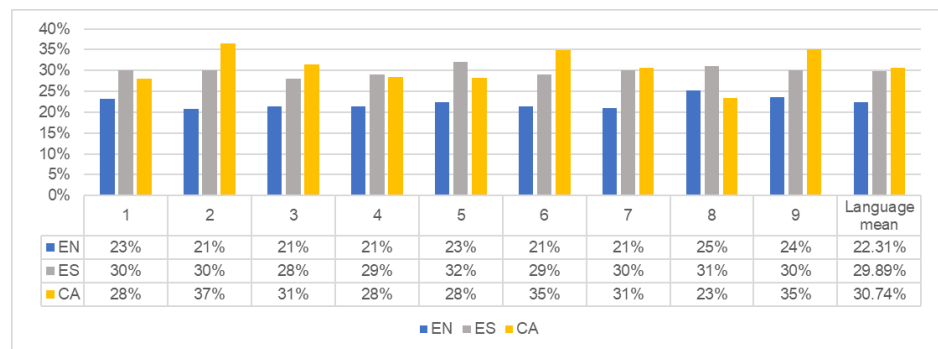


Figure 3: Percent occurrence of verbs among lexical words in the main corpus.

5.1.3. Occurrence of common and proper nouns

Nouns have been reported as the most frequent lexical word category in AD scripts in previous corpus studies (Reviers, 2018; Matamala, 2018; Hermosa-Ramírez, 2021). The main corpus shows a mean percent occurrence of nouns among lexical words of 53.54 % in English, of 49.00 % in Spanish and of 48.12 % in Catalan. Nouns are also the most frequent lexical word category in the secondary corpus, with means of 44.89 % (EN), 45.25 % (ES), and 45.49 % (CA). The results of the main corpus are summarised in Figure 4. A one-way ANOVA was computed comparing the occurrence of this lexical category among languages. A non-significant F ratio was found among the three groups, $F = 2.98$, with $p > .05$, thus signalling that the use of nouns is similar across languages.

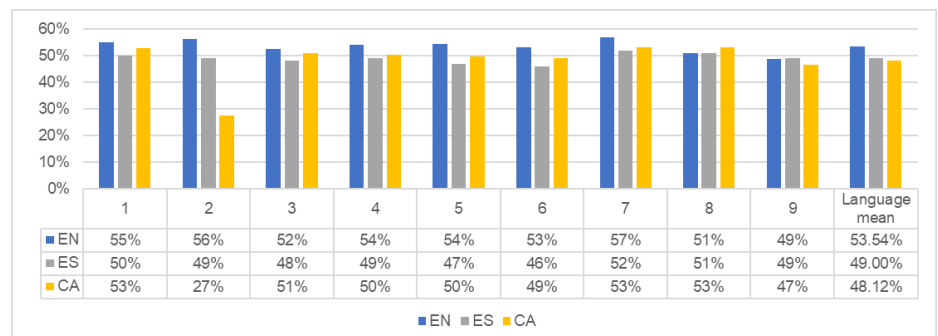


Figure 4: Percent occurrence of nouns among lexical words in the main corpus.

The use of proper nouns in AD is understood to prioritise denotation over connotation or interpretation (Marra, 2023, p. 219). The use of these units is intended to enhance clarity in characters and locations identification. The AD scripts included in the main corpus show a mean percent occurrence of named entities (i.e. proper nouns) of 10.57 % in English, of 14.00 % in Spanish and of 11.18 % in Catalan. For reference, the secondary corpus shows means of 10.21 % (EN), 16.70 % (ES), and 15.13 % (CA); in this case, a larger presence of named entities is expected, since plot summaries present the main characters of an opera, and the journal *Europe for Us* features news about persons with disabilities. The results of the main corpus are summarised in Figure 5. A one-way ANOVA was computed comparing the occurrence of this lexical category among languages. A non-significant F ratio was found among the three groups, $F = 2.22$, with $p > .05$, thus signalling that the use of named entities is similar across languages.

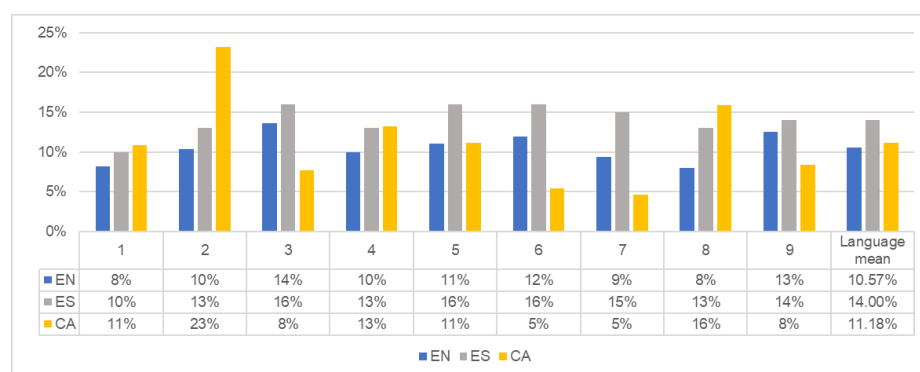


Figure 5: Percent occurrence of named entities among lexical words in the main corpus.

5.1.4. Occurrence of adjectives and adverbs

In modifying nouns or acting as attributes, adjectives are lexical units which allow “finer gradations of meaning” (Huddleston & Pullum, 2002, p. 526). Thus, their occurrence potentially adds a layer of difficulty to any descriptive text.

The AD scripts included in the main corpus show a mean percent occurrence of adjectives of 6.65 % in English, of 4.78 % in Spanish and of 6.37 % in Catalan. For reference, the secondary corpus shows means of 10.21 % (EN), 6.96 % (ES), and 7.95 % (CA); a likely explanation for this difference is the fact that the written mode allows more space for modification. The results of the main corpus are summarised in Figure 6. A one-way ANOVA was computed comparing this feature among languages. A significant F ratio was found among the three groups, $F = 8.55$, with $p < .05$. T-tests computed on language pairs revealed that significant differences were found for Spanish, which shows significantly fewer adjectives in the AD scripts, with $p < .05$.

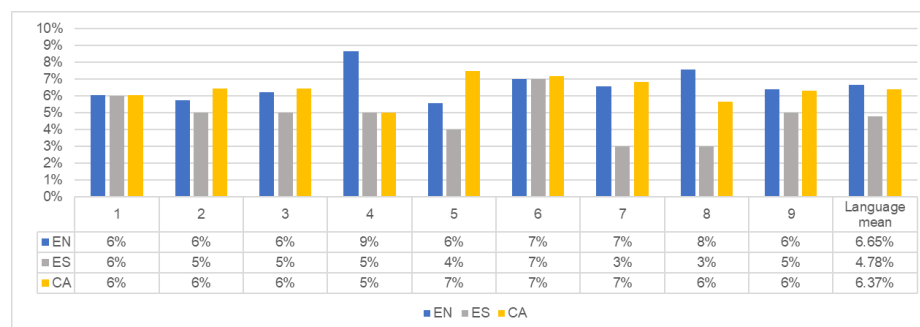


Figure 6: Percent occurrence of adjectives among lexical words in the main corpus.

Because they typically offer additional information or nuances on how to interpret a clause, adverbs have been described as an expendable morphosyntactic category in AD, if the time-and-space constraints of this audiovisual translation modality are considered (Marra, 2023). In the main corpus, the presence of adverbs is the smallest among lexical word categories, with means of 6.94 % in English, of 2.33 % in Spanish and of 3.59 % in Catalan. Interestingly, the trend observed in the scripts is similar to the one found in the secondary corpus. Adverbs are the least frequent lexical word category in the corpus—they amount to 3.71 % of the lexical words in average, with English

easy texts showing a highest occurrence of adverbs; means are of 5.78 % (EN), 3.54 % (ES), and 3.24 % (CA).

The results of the main corpus are summarised in Figure 7. A one-way ANOVA was computed comparing this feature among languages. A significant F ratio was found among the three groups, $F = 41.60$, with $p < .05$. T-tests computed on language pairs revealed that significant differences were found for all languages, with $p < 0.5$. Thus, again, Spanish scripts portray adverbial modification the least.

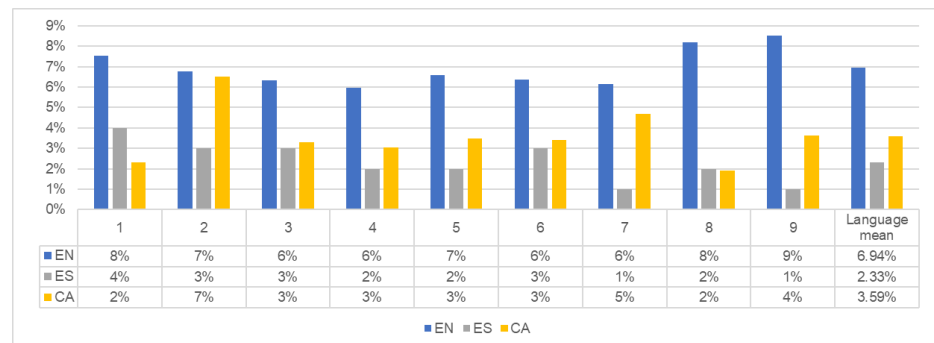


Figure 7: Percent occurrence of adverbs among lexical words in the main corpus.

5.2. Lexical analysis

5.2.1. Lexical density, vocabulary richness and information load

In its section devoted to vocabulary in E2U texts, the ISO (2023, p. 9) standard states that “the same word should be used consistently throughout a written text to refer to the same object or referent”. Consistency is also promoted in the ISO (2015) standard for AD, which repeatedly reminds the reader to use the same words to refer to the same characters or elements throughout a programme or series, to enhance understandability. Such a consistency involves lexical repetition, which in the case of AD typically coexists in practice with the aim of using a vivid style that engages the audience. Consistency is also recommended in AD practical guides (Fryer, 2016, p. 113). AD professionals argue that using a rich vocabulary is a requirement to fulfil that aim, which may be an impediment for the promotion of hybrid access services (Arias-Badia & Matamala, 2020).

This section employs three classical measures of lexical variation in texts to explore the extent to which lexicon is varied or repetitive in AD scripts, namely lexical density (TTR), vocabulary richness (lemmas/tokens), and information load (lexical words/tokens). Our results must be interpreted cautiously, since morphological differences among the languages under study may influence the results (Corpas-Pastor, 2008, p. 128). Likewise, different audiovisual content may have an effect in the results obtained. However, we have deemed it interesting to statistically contrast lexical variation in scripts written in different languages, for the purposes of this first, exploratory study on AD from an E2U language perspective.

Using the TTR formula, results show higher scores in lexical density for Spanish and Catalan (22 % and 21 %, respectively) than for English (18 %). These results were expected, considering that both Spanish and Catalan are Romance languages, in which verbal derivation results in numerous potential realisations of a verb (*veo/veig* [‘I see’], *ves/veus* [‘you see’], and so on) than in English, which has a maximum of five forms for the same verb (see, sees, saw, seen, seeing). Interestingly, however, the ANOVA test computed yielded non-

significant differences among the three groups, with $F = 2.90$ and $p > .05$. This may be due to the nature of AD scripts, which repeatedly make use of the present tense and the third person, a norm that applies in the three languages. Our analysis of the Catalan corpus was checked against previous AD corpus studies in different languages (including Dutch and Italian) and genres (including art AD), all of which yielded close quantitative results (Arias-Badia & Matamala, 2023).

Similar results were obtained when applying the vocabulary richness formula proposed in the literature to account for formal differences between languages (Corpas-Pastor, 2008, p. 128). Both Spanish and Catalan scored higher (17 % and 16 %, respectively) than English (14 %). Again, the differences among the groups were found to be non-significant after computing an ANOVA test, with $F = 1.57$ and $p > .05$.

A different tendency was observed as regards information load. In this case, English scored highest (57 %), followed by Spanish (54 %) and, finally, by Catalan (45 %). Here, the ANOVA test computed revealed significant differences among the three groups, with $F = 29.38$ and $p < .05$. After computing paired t-tests, we found that significant differences arose for all language pairs. This means that AD scripts in English portray richer vocabulary and are less repetitive than scripts in the other two languages. The results after applying the three formulae are summarised in Table 3.

Table 3: Lexical density, vocabulary richness and information load in the main corpus.

Feature / Film code		1	2	3	4	5	6	7	8	9	Language mean
Lexical density	EN	15 %	17 %	20 %	17 %	19 %	17 %	22 %	16 %	19 %	18 %
	ES	23 %	20 %	29 %	20 %	18 %	24 %	22 %	16 %	23 %	22 %
	CA	20 %	20 %	19 %	20 %	18 %	18 %	24 %	30 %	19 %	21 %
Vocabulary richness	EN	12 %	13 %	16 %	14 %	14 %	17 %	19 %	13 %	15 %	14 %
	ES	17 %	14 %	24 %	16 %	14 %	19 %	17 %	12 %	18 %	17 %
	CA	16 %	16 %	15 %	15 %	13 %	14 %	18 %	25 %	14 %	16 %
Information load	EN	55 %	58 %	60 %	56 %	57 %	56 %	55 %	52 %	58 %	57 %
	ES	52 %	54 %	57 %	52 %	56 %	56 %	53 %	51 %	55 %	54 %
	CA	48 %	32 %	44 %	48 %	46 %	45 %	45 %	49 %	46 %	45 %

All the texts included in the secondary corpus scored higher in the three measures described in this section, in the three languages, with major differences observable in lexical density and vocabulary richness values—see Table 4. This means that texts validated as easy make use of more lexical variation than AD scripts.

Table 4: Lexical density, vocabulary richness and information load in the secondary corpus.

Feature		Language mean
Lexical density	EN	43 %
	ES	40 %
	CA	38 %
Vocabulary richness	EN	37 %
	ES	33 %
	CA	32 %
Information load	EN	62 %
	ES	59 %
	CA	60 %

5.2.2. Corpus aboutness

The 30 most frequent lexical words in each script were retrieved to explore corpus aboutness from a cross-linguistic approach. The lists of the words obtained for this analysis can be consulted in Appendix 2 to this paper. This section briefly reports on the main findings.

All the words retrieved belong to frequent vocabulary in the three languages, which is in line with E2U guidelines—“[u]nusual words are more likely to be difficult to understand. Therefore, one should use simple, common and every-day vocabulary” (ISO, 2023, p. 9). Likewise, non-abstract words are used.

A preference for short words is observable, also in line with the ISO (2023) standard recommendations. Most words consist of one or two syllables. Whenever exceptions to this trend are found, the words retrieved belong to very frequently used lexicon, such as ‘elevator’ (English), *ordenador* [‘computer’] (Spanish), or *motxilla* [‘backpack’] (Catalan).

Finally, as reported in greater detail with regard to the corpora in Catalan and Spanish (Arias-Badia & Matamala, 2023; Matamala & Arias-Badia, in press), it is worth noting that the words retrieved in English are semantically coherent with previous AD corpus studies: they include names of characters, body parts (‘hand’, ‘eye’, ‘face’, ‘mouth’), locations (‘room’, ‘floor’, ‘window’) and perception verbs (especially ‘look’).

5.3. Readability

AD is conveyed via the audio channel and in the context of a larger audiovisual text. In this sense, it is difficult to think of AD reception as the activity typically defined as *reading*. However, AD users are persons who may also *read* via the audio channel (by means of screen-readers), and readability indexes are connected to understandability, which makes them relevant for the present study.

Readability indexes are language dependent. Reports on readability for Catalan and Spanish have been provided in our previous studies (Arias-Badia & Matamala, 2023; Matamala & Arias-Badia, in press, respectively). In both languages, the main corpus consistently scores better than the secondary corpus in terms of readability, as well as for some *comprehensibility* indexes in Spanish. Figure 8 summarises the findings after applying the Gunning Fog Index measure to the scripts and the Easy Language journal in English.

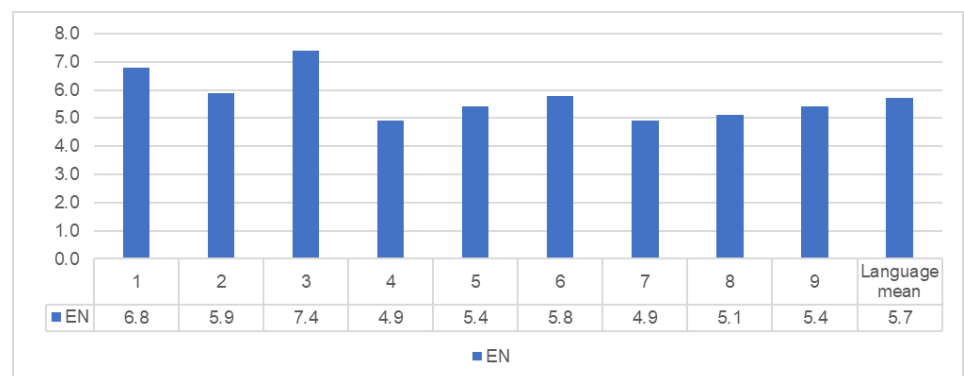


Figure 8: Gunning fog index of the scripts included in the English main corpus.

As found for Catalan and Spanish, the Gunning Fog Index of English AD scripts is lower (mean = 5.7) than the one found in the easy journal (10.3). While further research must be devoted to exploring this aspect in depth, with larger,

comparable corpora, we believe that this, again, speaks of AD as an already “easy” text modality, which favours the implementation of hybrid services on platforms in the near future.

6. Conclusions

This paper is a first attempt towards contrasting the extent to which AD is easy to understand in different languages. It is understood as a step prior to validation with users, since Easy Language may only partially be studied without the end users’ input. In line with the findings regarding Catalan and Spanish (Arias-Badia & Matamala, 2023; Matamala & Arias-Badia, in press), the analysis in this paper demonstrates that ADs in English also portray a significantly easy language, in the sense that scripts follow the main principles of this language variety. The scores obtained for the three languages in terms of sentence length, verbs per sentence, TTR, and information load point in this direction. Likewise, the analysis of corpus aboutness reveals a predominant use of frequent words in AD scripts across all three languages. Consistently, we have found that AD scripts score better than validated Easy Language texts in terms of understandability when applying readability indexes applicable to each language.

Further studies are needed to reach conclusive evidence, as the present study has methodological limitations. Specifically, a more robust secondary corpus could reinforce the findings reported here. Ideally, the authorship of the AD scripts should also belong to different describers, to be able to identify differences between individual stylistic decisions and global norms in each of the languages under study. Two additional considerations to be repeated at this point are: 1) Easy Language does not only deal with linguistic features but also takes into account visual presentation and 2) Even if ADs are easy, they may be integrated in an audiovisual content with complex dialogues, rendering the whole audiovisual experience challenging.

Despite the above limitations, our study shows tendencies that make AD scripts in these languages easier if specific features are considered. English seems to share E2U language principles to a greater extent in its use of syntax: it makes use of shorter sentences and of significantly fewer verbs per sentence. By contrast, it is a highly synthetic—loaded, from a semantic perspective—language when it comes to AD, a feature that is demonstrated by its higher scores in terms of information load (which, in any case, score better than Easy Language validated texts). Spanish AD scripts favour short sentences too, but seem to be prone to avoiding modifiers and adjuncts. Catalan, in turn, makes use of significantly longer sentences but has been shown to be the language with the lowest information load. While this is beyond the scope of the present paper, future studies could explore the extent to which longer sentences including function words enhance understandability and textual cohesion.

As has been explained in Section 4, the study has explored a variety of film genres, all of which are present on streaming platforms today. Future lines of research could focus on investigating the extent to which language is easier in the AD of specific genres or types of artistic products. Both AD and E2U language experts agree that easy AD could be more easily implemented in specific areas, including theatre, opera, or museums; as well as in films with simple plots (Arias-Badia & Matamala, 2020). For now, our results support the notion that currently available AD scripts can enhance the participation of individuals with cognitive and learning disabilities in streaming platforms. By providing an easy-to-understand, descriptive narration of visual elements, AD

may make content more accessible and enjoyable for those who might otherwise struggle with comprehension. Thus, a larger AD offer on platforms is bound to help bridge gaps and empower individuals with cognitive disabilities to engage more fully with media, fostering a sense of belonging and connection.

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Appendix 1: Basic data about the films included in the analysis

Table 5: Basic data of the AD scripts in English included in the analysis. Source: FilmAffinity (2024).

Film code	Original title	Year	Country	Director	Production company	Duration	Tokens in AD script
1	Octopussy	1983	UK	John Glen	Metro-Goldwyn-Mayer	130 min.	13,977
2	Backdraft	1991	US	Ron Howard	Universal Pictures	136 min.	11,758
3	Mrs Doubtfire	1993	US	Chris Columbus	20 th Century Fox	125 min.	6,554
4	The Shawshank Redemption	1994	US	Frank Darabont	Castle Rock Entertainment, Columbia Pictures	142 min.	8,437
5	Die Hard with a Vengeance	1995	US	John McTiernan	20th Century Fox, Cinergy Pictures	130 min.	8,879
6	Mission Impossible	1996	US	Brian de Palma	Paramount Pictures, Cruise-Wagner Productions	110 min.	10,246
7	Patch Adams	1998	US	Tom Shadyac	Universal Pictures	120 min.	4,898
8	What Lies Beneath	2000	US	Robert Zemeckis	Dreamworks SKG, 20 th Century Fox, Image Movers	123 min.	11,214
9	Down To You	2001	US	Kris Isacsson	Open City Films	89 min.	6,748

Table 6: Basic data of the AD scripts in Spanish included in the analysis. Source: FilmAffinity (2024).

Film code	Original title	Year	Country	Director	Production company	Duration	Tokens in AD script
1	Cinema Paradiso	1988	Italy	Giuseppe Tornatore	Coproducción Italia-Francia; Les Films Ariane, Cristaldifilm, TF1 Films Production, RAI 3, Forum Picture	155 min.	8,249

2	Die Hard	1988	US	John McTiernan	20th Century Fox, Lawrence Gordon Productions, Silver Pictures	131 min.	7,735
3	Scent of a woman	1992	US	Martin Brest	Universal Pictures, City Light Films	157 min.	2,663
4	Jurassic Park	1993	US	Steven Spielberg	Universal Pictures, Amblin Entertainment	121 min.	5,622
5	Shakespeare in love	1998	US	John Madden	Miramax, Universal Pictures, The Bedford Falls Company	123 min.	6,036
6	Notting Hill	1999	UK	Roger Michell	Polygram Filmed Entertainment, Working Title Films, Bookshop Productions, Notting Hill Pictures	124 min.	5,682
7	Les choristes	2004	France	Christophe Barratier	Galatée Films, Pathé Renn Productions, France 2 Cinema, Novo Arturo Films, CNC, Vega Film, Canal+	95 min.	3,826
8	The curious case of Benjamin Button	2008	US	David Fincher	Paramount Pictures, Warner Bros., The Kennedy/Marshall Company	167 min.	8,263
9	The imitation game	2014	UK	Morten Tyldum	Black Bear Pictures, Ampersand Pictures, The Weinstein Company	114 min.	4,167

Table 7: Basic data of the AD scripts in Catalan included in the analysis. Source: FilmAffinity (2024).

Film code	Original title	Date	Country	Director	Production company	Duration	Tokens in AD script
1	Closer	2004	UK, US	Mike Nichols	Columbia Pictures	104 min	4,322
2	The Contract	2006	US	Bruce Beresford	Millennium Films	92 min.	4,752
3	Deception	2008	US	Marcel Langenecker	20th Century Fox, Seed Productions, Rifkin-Eberts, Media Rights Capital (MRC)	108 min.	6,202
4	Mamma Mia!	2008	UK	Phyllida Lloyd	Universal Pictures, Littlestar Productions, Playtone	108 min	6,911
5	Harry Potter and the Half-blood Prince	2009	UK	David Yates	Warner Bros., Heyday Films	153 min.	7,601
6	Law Abiding Citizen	2009	US	F. Gary Gray	The Film Department, G-BASE, Warp Films, Evil Twins	108 min.	5,611
7	Buried	2010	France, Spain, US	Rodrigo Cortés	Versus entertainment	93 min	2,714
8	Midnight in Paris	2011	France, Spain, US	Woody Allen	Gravier Productions, Mediapro, Pontchartrain Productions, Televisión de Galicia (TVG), Versátil Cinema	96 min	2,326
9	[•REC] ³ : Génesis	2012	Spain	Paco Plaza	Castelao Pictures, Canal+ España, Filmax, ICIC, Ono	81 min.	6,469

Appendix 2: Word lists retrieved for corpus aboutness analysis

Table 8: Most frequent lexical words in the AD scripts in English (ordered by absolute frequencies).

Film code	30 most frequent words
1	Bond, man, Gobinda, car, woman, be, train, Octopussy, look, door, Orlov, pull, turn, hold, Kamal, watch, open, soldier, run, enter, Vijay, plane, wear, guard, follow, twin, leave, hand, climb, room
2	Brian, firefighter, fire, hand, Stephen, look, man, flame, door, Jennifer, truck, sit, Krizminski, face, fireman, walk, turn, hose, eye, Adcox, stand, run, be, room, pull, other, open, window, floor, side
3	Daniel, Miranda, smile, eye, stu, hand, turn, man, Lydia, Natalie, child, door, stand, look, table, step, sit, face, Chris, walk, open, room, wear, pull, head, watch, woman, stop, purse, mouth
4	Andy, red, man, guard, Norton, cell, open, sit, then, head, hand, turn, door, walk, Tommy, stand, Hadley, wall, look, prisoner, eye, be, table, step, pull, yard, hold, Heywood, bar, white
5	McClane, Zeus, man, Simon, John, truck, look, be, car, hold, gun, phone, door, side, open, turn, hand, street, Joe, walk, stop, run, pull, guard, eye, Walter, helicopter, head, water, take
6	Ethan, man, hand, Jim, Krieger, Donloe, Claire, Sarah, look, eye, computer, door, head, watch, turn, hold, sit, be, room, pull, Golitsyn, Luther, screen, glass, open, Kittridge, monitor, elevator, type, stand
7	Patch, man, hunter, hand, room, Truman, eye, head, sit, smile, stand, door, Carin, Walcott, Mitch, turn, step, bed, wear, Rudy, open, hold, finger, woman, face, nurse, walk, take, nose, Mendelson
8	Claire, Norman, eye, be, hand, turn, open, door, head, window, water, face, arm, close, woman, pull, light, look, step, phone, floor, stare, stand, sit, hair, white, wear, walk, room, lean
9	Al, Imogen, hand, smile, look, sit, man, head, monk, turn, stand, bed, be, arm, hold, eye, take, woman, wear, Cyrus, face, close, walk, open, other, room, kiss, shake, Lana, Ray

Table 9: Most frequent lexical words in the AD scripts in Spanish (ordered by absolute frequencies).

Film code	30 most frequent words
1	Totó, Alfredo, mirar, estar, haber, Salvatore, otro, ser, película, cine, ver, pantalla, mujer, hombre, mano, todo, cabina, niño, cura, chico, sonreír, él, ojo, pueblo, no, Elena, madre, plaza, aparecer, sentar
2	John, Hans, puerta, Karl, ver, mirar, Holly, mientras, pistola, estar, coger, llegar, entrar, ascensor, Theo, planta, hacia, hombre, edificio, acercar, salir, disparar, abrir, caer, arriba, otro, fuera, cristal, metralleta, haber
3	Frank, Charlie, estar, hacia, que, coche, sentar, entrar, ir, Harry, George, salir, puerta, bastón, mano, dar, sacar, mirar, dirigir, detener, desde, ser, poner, limusina, haber, director, mesa, hacer, gesto, calle
4	doctor, Grant, con, coche, mirar, Tim, puerta, Lex, estar, velociraptor, niño, él, ir, Denis, abrir, otro, caer, ver, Malcolm, todo, salir, Hammond, animal, ordenador, cerrar, Sattler, hacer, entrar, control, alameda
5	Will, mirar, Viola, él, ir, Henslowe, estar, teatro, correr, ama, entrar, besar, Wessex, Fenniman, actor, escenario, acercar, salir, levantar, coger, reina, caminar, calle, violar, mirada, espada, Burbage, quedar, poner, papel
6	Will, Ana, mirar, William, Spike, él, puerta, volver, mano, Bella, salir, otro, Max, entrar, como, ver, luego, ir, besar, abrir, bajar, Honey, sonreír, levantar, sentar, poner, estar, hacer, dejar, dar
7	Clément, Pierre, niño, chico, Rachin, puerta, acercar, mirar, entrar, Pepinot, Morhange, mesa, salir, colegio, ventana, ver, observar, mano, estar, él, subir, Chabert, sentar, despacho, sala, poner, patio, papel, Maxance, llegar

8	Ben, él, Daisy, Benjamin, mirar, estar, salir, sentar, entrar, puerta, cama, observar, dar, coger, acercar, caminar, sonreír, casa, abrir, ver, escalera, Caroline, mano, levantar, habitación, asilo, subir, Queenie, anciano, Thomas
9	Alan, mirar, Turing, él, estar, sentar, entrar, máquina, Hugh, Joan, papel, acercar, ir, mesa, caminar, Peter, mujer, John, sala, otro, hombre, comandante, quedar, off, joven, dar, varios, sonreír, militar, levantar

Table 10: Most frequent lexical words in the AD scripts in Catalan (ordered by absolute frequencies).

Film code	30 most frequent words
1	ell, Fer, Dan, Alice, Larry, Anna, mirar, mà, cap, posar, aturar, mirada, mentre, acostar, somriure, ull, davant, tornar, passar, treure, mig, deixar, veure, noia, vista, taula, porta, casa, damunt, asseure
2	Frank, Ray, home, cap, Chris, bosc, mirar, Davis, córrer, tot, Sandra, fer, agafar, mà, avançar, arma, anar, Turner, ser, cotxe, terra, noi, helicòpter, deixar, avall, aturar, treure, tornar, motxilla, Johnson
3	ell, Jonathan, mirar, Wyatt, anar, noia, vista, carrer, cap, fer, sortir, somriure, entrar, ros, porta, davant, observar, mà, agafar, treure, mirada, llit, habitació, creuar, veure, posar, passar, vestibul, sala, dona
4	Donna, Sophie, fer, Sam, Rosie, Bill, Tanya, ell, cap, Harry, tot, mirar, mà, anar, mentre, sortir, Sky, pati, somriure, escala, home, ballar, treure, saltar, moll, dinamos, asseure, alçar, posar, aigua
5	Harry, noi, cap, mirar, anar, Ron, home, Draco, tot, mà, fer, Dumbledore, davant, acostar, agafar, noia, Hermíone, gran, altre, vareta, aigua, ser, obrir, girar, porta, on, tornar, sortir, haver, ell
6	Nick, Clyde, cotxe, fer, Dunnigan, mirar, ser, haver, altre, tot, mirada, cap, Cantrell, davant, sortir, presó, cella, taula, Sarah, sala, porta, Darby, creuar, anar, agent, posar, mà, Garza, ell, passadís
7	encenedor, mòbil, cap, mà, llum, agafar, llanterna, fer, caixa, deixar, sostre, sorra, Paul, apagar, peu, amunt, treure, ser, mirar, anar, vara, panxa, engegar, cara, tornar, terra, caure, petaca, paret, enfocar
8	Gil, ser, ell, cap, asseure, cotxe, anar, mirar, home, tot, fer, aturar, Adriana, passejar, costat, carrer, acostar, treure, porta, on, Inez, haver, entrar, detectiu, caminar, butxaca, vestir, tornar, museu, mà
9	Koldo, infectar, Clara, ell, mirar, cap, porta, anar, fer, haver, mà, Adrián, Rafa, cuina, altre, saló, ull, túnel, tiet, passar, càmera, ser, on, dona, sang, ensangonar, apropar, agafar, veure, treure