

The reception of subtitled colloquial language in Catalan: an eye-tracking exploratory study

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Abstract

Usually, colloquial oral features in audiovisual fiction disappear when the oral language is transferred into written text by means of interlingual subtitles. Expressive devices and colloquial items are often omitted for the sake of condensation; standard forms generally substitute non-standard units; and grammatical mistakes are often corrected. However, not all the agents involved in the subtitling industry tackle this issue in the same way. For instance, at the Catalan Television (TVC), there has been an internal debate concerning the use of non-standard forms in subtitles, particularly concerning colloquial pronominal clitics. Moving away from this debate, by using eye-tracking technologies and questionnaires, this exploratory study aims to investigate whether using non-standard colloquial pronominal clitics instead of standard pronominal clitics alters the reception of the audiovisual product, and whether this approach is effective in transmitting the colloquial flavour of the dialogues.

Keywords: colloquial language, subtitling, reception, eye-tracking, intersemiotics.

Resumen

Las características del lenguaje coloquial tienden a desaparecer en los productos audiovisuales de ficción cuando se trata de transferir el lenguaje oral a texto escrito mediante subtítulos. A menudo se omiten los recursos expresivos y demás marcas

coloquiales por motivos de condensación; por lo general las formas estándares sustituyen a las unidades no estándares; y suelen corregirse los errores gramaticales. Sin embargo, no todos los agentes que intervienen en la industria de la subtitulación tratan este aspecto de igual modo. Por ejemplo, en Televisió de Catalunya se ha debatido sobre el uso de formas no estándares en los subtítulos, en concreto sobre el uso de los clíticos pronominales coloquiales. Este estudio exploratorio pretende investigar, utilizando sistemas de seguimiento de la mirada (*eye-tracking*) y cuestionarios, si el uso de clíticos pronominales coloquiales no estándares en lugar de sus formas estándares afecta la recepción del producto audiovisual, y si este enfoque es eficaz a la hora de transmitir la coloquialidad de los diálogos.

Palabras clave: lenguaje coloquial, subtitulación, recepción, *eye-tracking*, intersemiótica.

1. Introduction

Language variation in all its forms is an intrinsic feature of most audiovisual productions: not only do dialects and sociolects find their way into films, but so do all types of registers, from the formal language of a court setting to the taboo language of gangsters. Colloquial language –the language spoken in everyday conversations– is frequently to be found in filmic products, in which dialogues occupy a prominent position. However, this is generally a planned colloquial language which only reproduces some of the main features of real spontaneous colloquial language. When converting this oral input into written subtitles, most features of this planned colloquial language disappear, especially when these are non-standard units or non-grammatical constructions. To give just a few examples, interjections and other expressive devices are often omitted for the sake of text condensation, with taboo words often toned down or deleted, standard forms generally substituting non-standard units, and grammatical mistakes frequently corrected. However, in an attempt to reproduce the register of the audio input, some television broadcasters propose the inclusion of non-standard colloquial forms in interlingual subtitles. For instance, the Catalan Television TVC proposes keeping some loan words not included in the Catalan language academic dictionary. Furthermore, in certain contexts, it also recommends the use of some non-standard pronominal clitics (the so-called *pronomes febles*). This linguistic unit has always generated intense debate for two reasons: firstly because of the variety of forms it presents depending not only on the user (dialectal variation), but also on the situation (register), and secondly due to the problems it poses for non-native speakers of the language who have great difficulty mastering its use. TVC's proposal has generated a debate as to whether to use standard or non-standard forms in interlingual subtitles, especially with relation to pronominal enclitics. This discussion has thus far

been limited to professional and academic circles, the members of which are especially aware of the particularities of these linguistic units. However, interlingual subtitles are addressed to a wide audience who are not always concerned with language, and the impact of either solution on the audiences is not yet known. To put it differently, the focus so far has been on professional practice and the creation of guidelines, rather than on audience reception.

Taking into account the situation described above, this research aims to investigate the reception of colloquial language in interlingual subtitling. More specifically, it explores whether the use of non-standard pronominal clitics alters the reception of an audiovisual translation (AVT). Taking into account the fact that both eye-tracking and questionnaires will be used, three key aspects are considered:

- (i) the number of fixations on the subtitle / area of interest (AOI) containing pronominal clitics;
- (ii) the length of the fixation on the subtitle / AOI containing pronominal clitics;
- (iii) the audience's perception of such non-standard pronominal clitics as indicators of colloquiality or, on the contrary, as misspellings or grammatical mistakes.

Two groups of participants were selected depending on their previous language training, in order to assess whether informants with a linguistic background respond differently to the same input.

The article begins with an introduction to colloquial language in subtitling, focussing on the subtitling of pronominal enclitics in Catalan (Section 2). Section 3 describes the reasons why eye tracking can yield interesting data for our study and Section 4 deals specifically with the methodological aspects. Next, the results are presented in Section 5, before the paper concludes by offering ideas for further research into this area.

2. Colloquial language in subtitling: the case of Catalan pronominal enclitics

Colloquial language is to be found in many audiovisual fictional products depicting apparently spontaneous dialogues between friends or family talking about everyday topics. This prefabricated orality, in the words of Chaume (2003), erases or tones down some of the features of spontaneous colloquial language. However, according to Gottlieb (2001:90) it may still contain pauses, false starts, self-corrections and interruptions, unfinished sentences and grammatically unacceptable constructions,

slips of the tongue, self-contradictions, ambiguities and nonsense, overlapping speech, as well as dialectal, idiolectal and sociolectal features. Many of these aspects disappear in subtitling, and the “written version of speech in subtitles is nearly always a reduced form of the oral ST”, as clearly explained by Díaz-Cintas and Remael (2007:145). These authors later discuss the inclusion of spoken language variants in written subtitles and conclude: “The same concern with denotative meaning underlies the rule, contained in most instructions and guidelines, that subtitling must use standard language. Besides, many people consciously or unconsciously improve their linguistic skills thanks to intralingual and interlingual subtitling, which also plays a part here” (*ibid*:185).

Readability and comprehension seem to be two of the main reasons proposed to explain the condensation, deletion or modification of many colloquial features. Regarding the readability of subtitles, García del Toro (2004:117) argues that, if oral features were not standardized in subtitles, it would be difficult to read them. Indeed, when discussing the vocabulary to be used in subtitles, Ivarsson and Carroll (1998:89) state that “it is easier for viewers to absorb and it takes them less time to read simple, familiar words than unusual ones”. As far as comprehension is concerned, Ivarsson and Carroll (1998:87) affirm that there “is no point in trying to give a true reproduction of garbled speech, since it would only make the translation incomprehensible”. Or, as expressed by Díaz-Cintas (2003:286), subtitling is characterised by a certain monotony of register, because it is more important to enhance comprehension. Writing down what is colloquially uttered might imply violating standard language insofar as lexis, morphology, grammar and spelling are concerned. This is where a contradiction is to be found in the literature: for instance, whilst Ivarsson and Carroll (1998:157) indicate that “the language should be (grammatically) ‘correct’ since subtitles serve as a model for literacy”, they also maintain that “the language register must be appropriate and correspond with the spoken word” – two statements which can sometimes be difficult to balance.

All in all, as Díaz-Cintas and Remael (2007:192) indicate, each “case must be evaluated carefully since the (unwritten) rules for choosing the formal versus the informal variant also differ from language to language”, and they later add that attempting “to put too much of the linguistic variation into the subtitles can have a reverse effect”. Indeed, the authors suggest lexical variants as a strategy to indicate substandard grammar, rather than grammatical mistakes or the use of dialectal grammar. Indeed, using grammatical errors may not have the intended effect, because these may be regarded by the average audience as being incorrect translations (Assis Rosa 2001:218), an aspect already raised by Lefevere (1992: 70), who states: “*flavoured* translations that deviate significantly from dominant linguistic norms may be dismissed as *incorrect*”.

Despite previous considerations, the model of subtitling proposed by the Catalan Television TVC sometimes deviates from official linguistic norms. The TVC language model can be consulted on the online portal *ésAdir* (<http://esadir.cat/>), initially published in 2006 and now comprising part of the *Llibre d'estil de la Corporació Catalana de Mitjans Audiovisual*, a stylebook for the whole Catalan media corporation CCMA published in 2011. The website *ésAdir*, which is constantly updated, is aimed at professionals working for Catalan media linked to the CCMA group and tries to provide clear answers to the most frequent questions related to language use in the media. It often indicates whether a unit can be used in all contexts or only for certain registers. Regarding subtitling, it contains specific instructions concerning the norms to be followed by subtitlers working in Catalan Television TVC. The present paper will exclusively focus on the proposals concerning pronominal clitics.

Pronominal clitics depict many forms depending not only on the dialect (geographical variation), but also on the register: in Catalan, colloquial and standard pronominal clitics are considerably different, and very often a colloquial form is linked to a specific geographical area. This poses a problem for public broadcasters: if they choose a standard form, the language depicted will be more formal but common to a wider range and a greater number of audience members. Moreover, this will contribute to a supposedly educative function of television to promote the literacy of minority languages. On the contrary, if they decide to use colloquial pronominal clitics in order to maintain the register and be more faithful to the intentions of the original version, they will need to resort to many non-standard forms linked to a specific dialect. Catalan Television TVC has mainly opted to use this second strategy (which has been criticised by many such as Bibiloni (2000)), differentiating at two levels: firstly, indicating whether the form is adequate for (i) formal uses, (ii) spontaneous and formal uses, (iii) colloquial uses, or only for (iv) markedly informal colloquial uses; and secondly, indicating whether the proposal applies both to oral language and subtitling, or only to oral subtitling (in which case, standard forms should be used in written texts).

Analysing the various combinations presented on the online portal *ésAdir*, and leaving a few specific cases aside, it seems that the various instances of pronominal clitics can be classified into two broad categories: (a) those with a loss of sound, always accepted in subtitling, and (b) those with an addition of a sound, namely an epenthetic *e*, which are sometimes accepted in subtitling and sometimes not. Table 1 summarises the information provided on the website using our two category based distribution. The first column describes the phenomenon; the second reproduces examples of standard forms; the third presents the Catalan Television proposal; and the fourth indicates the context of its use. The final column indicates whether or not this applies to subtitling. If not, this means that the style-sheet explicitly indicates the use of the standard form.

Table 1: Pronominal enclitics in Catalan Television

(a) Loss of sounds				
<i>Description</i>	<i>Standard form</i>	<i>TVC proposal</i>	<i>Usage</i>	<i>TVC subtitling?</i>
(1) Imperative 2nd person sing. (final <i>-s</i> deleted) + pronoun in full/reduced form	digues-me tingues-ho vulgues-ho digues-m'ho	digue'm tingue-ho vulgue-ho digue-m'ho	All usages	YES
(2) Imperative + pronoun 1 st /2 nd person pl. reduced to's followed by pronouns <i>en</i> or <i>hi</i>	fixeu-vos-hi aturem-nos-hi	fixeu's-hi, aturem's-hi	Colloquial/Formal & spontaneous	YES
(3) Imperatives with further reductions	mira-te'l dóna'm	mi-te'l do'm	Colloquial	YES
(4) Infinitive: deletion of final <i>-r</i> + pronoun in reduced form	conèixer-nos conèixer-ne vèncer-los	coneixe'ns coneixe'n vence'ls	All usages	YES
(5) Infinitive: deletion of final <i>-r</i> + pronouns 1 st /2 nd person plural (reduced form) + other pronoun	dir-vos-el anar-nos-en emportar-vos-el	di-us-el anà'ns-en emportà-us-el	Colloquial	YES
(b) Addition of sounds (e)				
<i>Description</i>	<i>Standard form</i>	<i>TVC proposal</i>	<i>Usage</i>	<i>TVC subtitling?</i>
(6) Pronouns 1st/2nd person plural + pronoun <i>en</i> + verb starting with a vowel	ens n'anem us n'heu anat	ens en anem, us en heu anat	All usages	YES
(7) Imperative (2nd person singular) + pronoun in reduced/full form	ajup-te promet-me cull-les promet-ho	ajupe't promete'm culle-les promete-ho	Colloquial/ Spontaneous formal usage	YES
(8) Imperative + pronouns 1 st /2 nd person plural reduced to's + <i>e</i>	fixem-nos afanyeu-vos	fixem's-e afanyeu's-e	Markedly informal colloquial usage	NO
(9) Infinitive: deletion of final <i>-r</i> + pronouns 1 st /2 nd person plural (reduced form) + <i>e</i>	dir-vos calmar-vos mirar-nos	di-us-e calmà-us-e mirà'ns-e	Markedly informal colloquial usage	NO
(10) Any verbal form preceded by 1 st /2 nd person plural pronouns (full form) + <i>e</i> between consonants	ens surt ens la porta us la donaré	ens e surt ens e la porta us e la donaré	Colloquial usage	NO
(11) Imperative/inf. form final <i>-r</i> deleted + 1 st /2 nd person pl. pronouns (reduced form) + <i>la</i>	Porta'ns-la Portar-vos-la	porta'ns-e-la portà-us-e-la	Colloquial usage	NO

As summarised in Table 1, all instances in which a sound is lost are acceptable in subtitling for both colloquial and all other usages. However, when an epenthetic vowel is added, the strategy differs: two types of pronominal enclitics are accepted, whilst four are not accepted in subtitling and are only recommended for either colloquial or markedly informal colloquial usage in oral versions. This research will focus on instances of cases (2), (5) and (6) (*instal·lem-s'hi* instead of *instal·lem-nos-hi*; *have-us-el* instead of *haver-vos-el*; and *ens en oblidem* instead of *ens n'oblidem*), all of which are accepted in colloquial subtitling.

4. Eye-tracking in AVT studies

This study combines a quantitative study using eye-tracking technology with a qualitative research using questionnaires, as described in section 4. Since our interest lies in finding whether the use of colloquial or standard pronominal clitics alters the subtitling reading patterns, eye-tracking is considered a useful instrument for use in this study.

There is a fairly long history of research into reading processes using eye-tracking: in 1998, Rayner published a seminal article summarizing 20 years of research on eye movements in reading and information processing, research which still continues to this day. A clear description of eye movements whilst reading is to be found in Rayner *et al* (2006): the three key elements of reading are saccades, fixations and regressions. Eyes move with rapid movements (saccades) in which vision is suppressed. These saccades are separated by pauses, called fixations, with a length of 200-250 ms (at least whilst reading English). According to Rayner (1998:375), “[w]hereas a majority of the words in a text are fixated during reading, many words are skipped so that foveal processing of each word is not necessary. For example, content words are fixated on for about 85% of the time, whereas function words are fixated on for about 35% of the time [...] Function words are fixated on less frequently than content words because they tend to be short, and there is a clear relationship between the probability of fixating on a word and its length”. Expert readers jump between seven and nine letter spaces per saccade, although there is a high degree of variation depending on various features because:

when readers encounter words that are more difficult to identify [...] or sentences that are syntactically complex [...] fixations get longer. About 10% to 15% of the time, skilled readers regress (or make a saccade that moves the eyes backward in the text) to read material that they have previously encountered. It is generally assumed that as text gets more difficult, readers make longer fixations, shorter saccades, and more regressions (Rayner, Chace, Slatter & Ashby 2006:242).

Many elements can alter eye movements and increase fixation length whilst reading. Clifton *et al* (2007) provide the following list: word frequency, word familiarity, age-of-acquisition, number of meanings (i.e. ambiguity), morphological effects (for example, in compound words), contextual constraints, and plausibility effects. McConkie and Yang (2003), departing from Zola (1984), add words with spelling mistakes to the list.

Measures in reading studies usually focus on single fixations, first fixations and gaze duration when analyzing word recognition, and generally focus on first pass reading, go-past or regression path duration, regressions-out, second pass reading time, and total reading time in longer excerpts (Clifton *et al* 2007:248). It is therefore not unreasonable to analyse whether colloquial pronominal clitics, undoubtedly less frequent and familiar to the audience in written Catalan, can be an obstacle for reading subtitles and increase the duration of fixations on these units. No articles in the literature deal with this topic, although references in Clifton *et al* (2007:363) are not exactly encouraging. These researchers state that few studies have examined the effect of finding a syntactically or semantically anomalous word in a written text, and add the following:

...somewhat surprising that of the four studies [...] that have explicitly examined responses to syntactic anomaly (e.g., agreement errors), only two [...] found effects appearing on the anomalous word. On the other hand, four [...] of the fix studies of semantic or pragmatic anomaly have found increased first fixation duration or gaze duration on the offending word (57 reported only a late effect). Of course, it is possible that which measure an effect first appears in reflects the magnitude of the processing disruption occasioned by the effect, and not simply the timing of the processes that the effect reflects. (Clifton *et al* 2007:363).

More research into this area is undoubtedly needed, particularly taking into account that our study includes translated texts in subtitled form which coexist with visual inputs, and therefore the audience will divide their attention between text and image in such a dual task situation.

Concerning eyetracking and translation research, some results have been recently published by Shreve and Angelone (2010). LETRA researchers have worked on eye movements in translation (Alves, Pagano & Silva 2010), and eye-tracking has been used to monitor automatic translation (O'Brien, 2010). Special reference should be made here to the work of Jakobsen in relation to the pioneering project Eye-to-IP (Göpferich, Jakobsen & Mees 2008).

In the field of AVT, the first approximations relating to eye-tracking studies focused mainly on intralingual subtitling: studies by D'Ydewalle, Jensema and others into subtitling shed some light on eye movements and attention distribution whilst

reading subtitles on a screen (D'Ydewalle & Van Rensbergen 1987; D'Ydewalle, Warlop & Van Rensbergen 1989; D'Ydewalle & Gielen 1992; Gielen & D'Ydewalle 1992; D'Ydewalle, Praet, Verfaillie & Van Rensbergen 1991; Jensema 1997, 1998, 2000 & 2003). De Linde and Kay (1999) also used eye-tracking to examine the effects of various subtitling features (subtitle rate, the onset of speech, shot changes, the extent of editing, the visibility of the speaker) on reading behaviour. Caffrey (2008) researched the perception of visual nonverbal cues in *anime* using eye-tracking technologies and, in the field of respeaking, Romero-Fresco (2009 & 2010) has studied reading patterns and comprehension in live subtitling and has also compared verbatim versus edited subtitles. Perego (2008 & 2009) and Perego *et al* (2010) have analysed the readability and cognitive processing of subtitles and how non-verbal information is coded in subtitles, as well as aspects relating to subtitle recognition and scene recognition. Finally, Hefer (2010) has used an eye-tracker to research how the reading of subtitles differs when reading in one's native language as opposed to reading when English is a second language. A key project in the application of eyetracking to SDH and AD research has been DTV4ALL, the results of which will soon be published (Romero-Fresco, forthcoming). In the field of audio description (AD), Orero and Vilaró (forthcoming) have used eye-tracking to analyse the focus of the attention of the audience of films, in order to obtain objective data to propose what should be described. To the best of our knowledge, no further research has thus far been published concerning other AVT modalities.

5. Methodological considerations: the design of the experiment

For this study, 24 participants were selected and divided in two groups according to their prior language training. They were all aged between 18 and 31, comprising 15 women and 9 men being equally split as far as was possible between the groups. Group 1 (the "specialists") comprised those research subjects with previous training in languages (undergraduates or graduates in Translation or Catalan Philology), whilst group 2 (the "non-specialists") comprised those research subjects with no specific linguistic training (undergraduates or graduates of other fields such as Medicine, Engineering or Musicology). None of the research subjects from either group were familiar with the language in the clips (German) and all had had similar prior exposure to subtitling.

The study combined an eye-tracking study with a questionnaire. The audiovisual material used for the first part of the eye-tracking analysis comprised six audiovisual 1-minute clips from the TV series *Berlin Berlin*, produced in Germany between 2001 and 2004. The clips were extracted from episodes 47 (*Sven oder Alex*) and 51 (*Jung, dynamisch, arbeitslos*) from the programme's third season. The series was chosen because it is in German, meaning it was easier to find people with no knowledge of the original language, a requisite for the experiment because we wanted participants to rely solely

on the subtitles to understand the plot, avoiding any comparisons between the original and the translation. Moreover, the language used in this series is colloquial but not taboo (which could have had a distracting effect). The selected excerpts were subtitled and two versions created for each clip. Both versions were identical except for the pronominal clitics used: one followed linguistic norms established by the Catalan language academy Institut d'Estudis Catalans and used standard forms for pronominal clitics, whilst the other deviated from the norm and included colloquial pronominal clitics accepted by Catalan Television. The total number of subtitles to be analysed which included pronominal enclitics was initially 12, but for technical reasons one of these was not recorded, meaning that the final number was reduced to 11. The type of pronominal clitics included were imperative forms such as *instal·lem-s'hi* instead of *instal·lem-nos-hi*; *havè-us-el* instead of *haver-vos-el*; and *ens en oblidem* instead of *ens n'oblidem*. An additional one-minute clip from the same series was created to be used for the second part of the eye-tracking analysis. This clip included three subtitles with exclusively non-standard pronominal clitics.

As for the questionnaire, this was carefully designed so that it could yield interesting results without giving away the purpose of the research. Informants were asked about (i) their general opinion about subtitles, (ii) whether they were shocked by any subtitles and, if so, which ones and why, and (iii) their opinion about how the subtitles were written, without further indication concerning any linguistic issues. After an exploratory study, it was thought that the use of the word “written” could compel participants to express their views on the language of the subtitles, although it was obvious that they could also focus their attention on other issues such as typographical criteria or subtitle segmentation.

The experiment, lasting some 20 minutes for each participant, was carried out as follows: after consenting to take part in the experiment, participants were given written instructions asking them to carefully watch a series of clips with no further indications. During the first stage of the experiment, they were shown six clips while their eye movements were monitored using a T60 Tobii eye-tracker with a frequency rate of 60Hz. Clips were shown in the same order to all participants so that the plot could be easily followed, but there was a random and even distribution of standard and non-standard forms amongst the subjects. After watching six clips, participants were asked to answer a written questionnaire (Q1), with the aim of gathering qualitative information which would complement the quantitative data provided by the eye-tracker. This ended the first part of the experiment.

Immediately after this first stage, and without a pause, the second stage of the experiment began: participants were asked to watch the same clip, (clip number 7, including only non-standard forms) whilst paying special attention to the subtitles. Their eye movements were again monitored, though the results of this part of the

experiment were not considered for inclusion in the present discussion, and the subjects were given the same questionnaire (Q2) to answer at the end of the clip.

The eye-tracking data were processed using Tobii Studio™. Data for both the subtitles and the area of interest around the pronominal clitics were extracted and compared. As for the questionnaires, these were manually analysed in order to obtain data on recurrent patterns and relevant information concerning the research questions. Some of the setbacks of this preliminary study were the limited number of informants and the need to further assess the impact on reading patterns of the words before and after the pronouns. Moreover, when altering the pronominal clitics, the length of the subtitles changed in one or two characters. In order to compensate for this, the area of interest was kept identical to obtain comparable data, and correlation tests were carried out, which showed no significant alterations. Despite all these setbacks, the results discussed in the following section exhibit trends and can form the basis for future research.

6. Results and discussion

The results from each stage of the study (the eye-tracking analysis and the questionnaires) will be presented. As previously indicated, the six clips from the first part of the study were used for the purposes of eye-tracking analysis. Although more subtitles were shown to the participants, the analysis focused on 11 subtitles containing pronominal clitics. Two areas of interest were drawn for each subtitle: one for the whole subtitle and one for the specific area containing the pronominal clitics plus the verb. Data concerning the fixation count and fixation length were extracted and the mean data calculated, with the results summarised in Table 2.

Table 2: Results of the number of fixations and the length of these fixations

	Colloquial non-standard subtitles		Standard subtitles	
	Subtitle	Pronominal area	Subtitle	Pronominal area
Higher number of fixations	54.6%	54.6%	45.4%	45.4%
Mean number of fixations	6.71	4.21	7.04	4.55
Higher fixation lengths	63.6%	54.5%	36.4%	45.5%
Mean fixation lengths	1.08	0.68	1.10	0.72

For almost 55% of non-standard subtitles, there were a greater number of fixations on both the entire subtitle and the specific area of interest around the clitics, when compared to standard language subtitles. However, the mean number of fixations presents the following results: 6.71 for non-standard subtitles *versus* 7.04 for standard subtitles, and 4.21 for the non-standard pronoun area *versus* 4.55 for the standard pronoun area. Regarding fixation lengths, although greater fixation lengths on both the subtitle and the pronoun area are to be found in non-standard subtitles, the mean data values again show no relevant differences (1.08 *versus* 1.10, and 0.68 *versus* 0.72). The results discussed thus far do not take into account the profile of the participants. To assess whether prior linguistic training had an effect on the data, the same information was extracted whilst differentiating between language specialists and non-specialists, with the results shown in Table 3. It must be noted that the cases in which the number of fixations or fixation lengths were identical have not been included in the table.

Table 3: Results according to the profile of the participants

	Specialists (Group 1)		Non-specialists (Group 2)	
	Subtitle	Pronominal area	Subtitle	Pronominal area
Higher number of fixations	36.4%	36.4%	59.1%	59.1%
Mean number of fixations	6.43	4.07	7.27	4.66
Higher fixation lengths	63.6%	50%	36.4%	41%
Mean fixation lengths	1.13	0.73	1.05	0.67

With regards to the reading patterns for Group 1 and Group 2, it seems that non-specialists exhibit a greater number of fixations on both the subtitles and on the pronoun area, although the mean data values do not display great differences (6.43 vs 7.27, and 4.07 vs 4.66). On the contrary, specialists display longer fixation lengths in a larger percentage of subtitles and pronominal areas, although, again, the mean fixation lengths are practically identical. To establish whether these data were statistically relevant, some non-parametric tests were carried out, since the data did not follow a normal distribution. Such tests did not show any significant differences ($p > .05$) in fixation length or in the fixation count either depending on the condition (standard / non-standard) or on the profile of the participants (specialist / non specialists).

As far as the questionnaires are concerned, the content of the replies was manually analysed, taking into account all explicit written references to three key issues: (a) the usage of pronominal clitics; (b) the usage of colloquial language, and (c) misspellings and mistakes. Differentiation was made between the results obtained

from the questionnaire (Q1) provided in the first stage (no specific task, six clips with a random and even distribution of standard and non-standard subtitles) and the questionnaire (Q2) provided in the second stage (a specific task focusing on subtitles and one single clip with non-standard forms).

Regarding the presence of pronominal clitics, Table 4 summarises the results, which are then discussed below.

Table 4: Results of the questionnaires

Reference to...	Q1		Q2	
	Specialists (Group 1)	Non-specialists (Group 2)	Specialists (Group 1)	Non-specialists (Group 2)
Pronominal clitics	4 participants	1 participant	6 participants	4 participants
	Total: 20% (5/24)		Total: 41% (10/24)	
Colloquial language	5 participants	3 participants	5 participants	3 participants
	Total: 33% (8/24)		Total: 33% (8/24)	
Misspellings or mistakes	2 participants	1 participant	4 participants	3 participants
	Total: 12.5% (3/24)		Total: 29% (7/24)	

In the first part of the experiment, 20% of the participants (mainly the language experts) referred to the pronominal clitics. That said, when asked to pay special attention to the subtitles, this percentage increased to 41% (with most of these respondents again being language experts). However, the remarks concerning pronominal clitics are very different. For the first part of the experiment, two participants stated that they were surprised by the use of certain pronominal clitics, whilst two asserted that it was difficult to read all the pronominal clitics. Another respondent indicated that too many pronominal clitics were present in the selected clips. For the second part of the experiment, one participant admitted that they were surprised by the use of pronominal clitics without giving further details, and three refer to the fact that personal pronouns are misspelt. Two participants thought that there were an excessive number of personal pronouns, whilst four subjects who are language experts indicated that colloquial spellings were used and that this made reading the subtitles difficult.

As far as colloquial language is concerned, 33% of participants referred to these issues in the first questionnaire, a figure which increased to 62% in relation to the second stage of the experiment, with a higher percentage of language experts responding in both instances. The comments in this regard are manifold: two language experts

for the first stage of the experiment and three for the second made positive remarks concerning the use of colloquial language. The rest provided contradictory comments such as (our translation), “subtitles should have been more colloquial, taking into account the fact that they address a young audience”, “subtitles are written in standard Catalan and at some points are quite formal”, “we do not write like this – they are very colloquial” or “Quite good subtitling, but perhaps too colloquial”. The strict design of the experiment did not allow the researcher to intervene and ask subjects to provide more specific opinions, but in future experiments, semi-structured interviews could provide further insights into this topic.

Finally, regarding misspellings or grammatical errors, for the first part of the experiment, 12.5% and for the second, 20.8% of participants (mostly language experts) referred to this issue, and in 60% of these instances, misspelt pronominal clitics were specifically referred to. For instance, one informant gave *mirem-s’ho* as an instance of what s/he considers to be a spelling mistake and states that “some words are not written correctly and then I pay more attention to subtitles”.

This qualitative analysis of the questionnaire responses shows that, in free viewing, most participants do not perceive there to be a difference between colloquial non-standard subtitles and standard subtitles and, furthermore, some subjects believe that the inclusion of non-standard forms is nothing more than a mistake.

7. Conclusions

This research has uncovered certain trends which should be further confirmed by future research. Globally, and regardless of the previous linguistic training of the participants, there was a slightly greater number of fixations and longer fixations for non-standard subtitles. As far as the participants’ profiles are concerned, language experts exhibited fewer but longer fixations. However, the differences are not statistically relevant, in line with the results of previous research into reading patterns for anomalous words. In this specific research, the fact that the area analysed was very small and dynamic has probably conditioned the results, which from a quantitative point of view, are inconclusive. However, the questionnaires have shown some interesting data from a translational perspective: using non-standard enclitic forms in subtitles can have an unexpected effect because some viewers associate non-standard forms with misspelling instead of considering these forms to be instances of colloquial language use. Although not conclusive enough to provide scientific data for proposing which is the best strategy for subtitling colloquial language, this study has shed some light on a topic which merits further investigation and has offered food for thought to those who establish the guidelines in this area. The focus has so far been largely on

subtitle production, but it is essential to consider how subtitles will be received by the viewer and the effects of subtitling decisions on audiences.

Future research, taking the present study as its point of departure, could use a greater number of participants and analyse other eye-tracking measures, such as regressions. Concerning the questionnaires, more precise questions relating to linguistic issues could be included. It is also important to highlight that this research has focused on a very specific feature of colloquial Catalan: pronominal clitics. However, as far as colloquial language is concerned, there are many other features which could be taken into account. Beyond lexical features (which have already been the subject of research and are normally toned down due to the different effect produced by either a written or an oral invective), there are specific phonological, morphological and syntactical traits which merit investigation. The research possibilities are manifold and a combination of quantitative and qualitative research could have a positive impact on subtitling, providing objective evidence with which to improve professional practices.

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