Innovative subtitling

A reception study*

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This paper presents the results of an experimental study investigating reception capacity and audience response to subtitled movies. Twenty-seven viewers were shown four movie excerpts, with commercially available standard subtitling or with innovative subtitling. The latter comprised additional information regarding language and culture-specific elements in the original soundtrack. Data were collected simultaneously with eye-tracking and consecutively with questionnaires. Eye-tracking measured fixation duration and percentage of gaze time in the various areas of interest, whereas the questionnaire assessed accuracy on questions about movie content and audience perception and satisfaction. The results show no significant differences in accuracy between the two conditions, indicating that viewers of subtitled audiovisual productions are able to process more information than established subtitling norms suggest.

Keywords: subtitling, reception capacity, audience response, eye-tracking, questionnaire

1. Introduction

Dialectal and sociolectal elements, ethnolect and slang are a few examples of linguistic varieties that characterize oral discourse. They can have a large number of functions in feature as well as in documentary films, from conveying local color or the background of a particular character to illustrating social and hierarchical power relationships. Independent of the question as to the extent that the language in any film actually reflects spontaneous orality, certain features of original film dialogues

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are generally considered difficult or impossible to render in subtitles because of space and time constraints. Many studies on subtitling (e.g. Hurt, Koloszar and Lisa 1997; Reinart 2004; Georgakopoulou 2009) have therefore identified a leveling of speech varieties such as dialects or sociolects. Such leveling is even explicitly called for in handbooks for subtitlers. Ivarsson and Carroll (1998: 75), for example, argue that subtitlers should make subtitles as inconspicuous as possible so as not to distract the audience from the film itself – a norm most subtitlers seem to follow. A similar tendency of striving for inconspicuousness has often been observed regarding the handling of extralinguistic culture-bound elements (see Nedergaard-Larsen 1993 for a definition of intra- and extralinguistic culture-bound translation problems and, more recently, Pedersen 2007), which are often left untranslated, probably in an effort to avoid any negative feedback effect from the original soundtrack.

However, little is actually known about the cognitive effort necessary to watch subtitled movies. Even the legitimacy of the often cited norm, according to which a subtitle of two full lines with 80 characters should be displayed for about 6 seconds (see Ivarsson and Carroll 1998: 67), still awaits empirical testing. D'Ydewalle and Gielen (1992: 416), for instance, rightly argue that such a presentation time may be preferred by audiences simply because they are used to reading subtitles of that duration. The acceptance of the norm of inconspicuous subtitling is also being challenged by more innovative, experimental forms of audiovisual translation such as "fansubs" (i.e. amateur subtitling on the internet). Fansubs violate mainstream subtitling norms in several respects: the use of subtitles of more than two lines, notes at the top of the screen and glosses in the body of the subtitles to explain cultural referents, and capitalization of entire words to represent intonation are just a few examples. The main aim of these alternative practices is to allow a more comprehensive understanding of the original film dialogues (Díaz Cintas and Muñoz Sánchez 2006: 45).

The need for more research into reception is well recognized in Translation Studies and audiovisual translation. Gambier (2008: 30) recently criticized the fact that in subtitling research, reception studies almost exclusively focus on intralingual subtitling for the hard-of-hearing. One exception is Caffrey (2008), who has reported results from a study on interlingual subtitling, investigating the cognitive effort necessary to watch Japanese TV animes subtitled in English with either standard subtitling or with additional pop-up glosses. The use of pop-up gloss was suggested to have increased processing effort, as indicated by various measures from the eye-tracking data, such as a larger proportion of skipped subtitles and a significantly lower gaze time in the subtitle area. These objective measures were corroborated by the subjective assessments given by the participants in an electronic questionnaire, indicating that they experienced the same subtitles as faster when pop-up glosses were used. However, it is not clear whether it was the additional information on the screen or the mode of presentation of that information that resulted in the apparent increase in cognitive effort.

The empirical study reported in this paper therefore sets out to investigate reception of and audience response to a different type of innovative subtitling more

similar to standard subtitling. Responses to movie extracts with standard, commercially available subtitling were compared by means of a mixed method design to the extracts with additional information provided in "surtitles" at the top of the screen. Indicators of the cognitive effort necessary to watch subtitled movie excerpts were collected simultaneously with eye-tracking technology and consecutively by means of a questionnaire. The questionnaire was designed to provide information on the participants' subjective perception of subtitle speed, their satisfaction with innovative subtitling, and their retention of different types of visual and verbal information in the movie excerpts to be viewed. The study is part of a larger research project being carried out to investigate the production and reception processes of subtitled movies.

By measuring whether visual and verbal information in movies is better retained with the established presentation norms of subtitling than with more innovative practices of subtitling, and by assessing the acceptance of such innovative practices, our study addresses the central issue of the effect of reading subtitles on audience satisfaction and the allocation of audience attention. The focus here is thus not on the impact of innovative subtitles on more complex psychological and cognitive processes of overall movie comprehension (see Gambier 2003: 185 for different research strands into subtitle reception). Rather, the focus is on attitudinal and perceptual issues, i.e. the viewers' preferences for standard or innovative subtitling, and on their subtitle-decoding strategies.

2. Method

2.1 Participants

Twenty-seven undergraduate students (23 women and 4 men, mean age = 27.7 years) who are enrolled in a translation program at Zurich University of Applied Sciences volunteered to participate in the present experiment. They were contacted by e-mail and informed that the study aimed at investigating the reception of subtitled movies. All participants were native German speakers. The participants were randomly assigned to one of two groups (A or B; see Section 2.3 below), except for the restriction that there be an equal number of men in each group.

Before viewing the film, the participants were asked about their competence in the language of the movie to be viewed (French). On a 5-point scale (1 = "very good" and 5 = "weak"), the average self-reported judgment of listening comprehension of French was 2.5, with no significant difference between the two groups. Only two participants reported having already seen the film (one in each group). Moreover, one may assume that the participants are regularly exposed to subtitles – in larger Swiss cities there is generally a choice of cinemas offering either subtitled or dubbed versions – but not necessarily to innovative subtitles such as fansubs.

2.2 Material

Four excerpts between 59 and 138 seconds long were chosen from the French movie *Entre les murs* ("The Class," 2008, directed by Laurent Cantet), which is commercially available with German subtitles. The movie is a semi-autobiographical account of a middle school teacher of French language and literature in a suburb of Paris. The pupils are aged from 13 to 15 and are of mixed ethnic and cultural background. The movie and two excerpts of it were chosen because the dialogues contain a high degree of linguistic varieties in the form of sociolect, ethnolect, slang or *verlan*, which is typically used by young French speakers and consists of inverting syllables in a word. The two other excerpts were chosen because they contain potential extralinguistic culture-bound translation problems (i.e. references to France's geography, history or media). An analysis of the German subtitles had shown that the intralinguistic culture-bound elements were generally either leveled or omitted altogether, whereas the extralinguistic culture-bound references were rendered verbatim, without any potentially useful explicitations for the target audience.

Two versions of each excerpt were therefore prepared, one with standard subtitling (French soundtrack and commercially available German subtitles) and the other with additional information in German in the upper part of the screen (i.e. surtitles[1]), made for the occasion to supplement the commercially available subtitled version. The surtitles contained metalinguistic information such as explanations of word play, of connotations of linguistic items that were rendered in the German subtitles only in their denotative sense, if at all, and of culturally specific elements. The design resulted in two conditions for each of the four excerpts, one containing surtitles (the treatment or "sur" condition), and one without surtitles (the normal or "sub" condition). An example of screen captures from both conditions can be seen in Figure 1: the surtitle in the screenshot on the right explains the unintended pun produced by one of the pupils, which the teacher interprets as an impudent comment. Surtitles in Excerpt 2 provided additional information such as details about French history and on the French philosopher Voltaire's novels *Candide* and *Zadig*. Surtitles in Excerpt 3 dealt mainly with the connotations of the French verb form *imparfait du subjonctif*. Excerpt 4, finally, contained among other things additional information on French TV series mentioned in the original soundtrack (*Tropiques amers* and *Sécurité intérieure*). The selection of the segments of the original soundtrack to be surtitled and the wording of the surtitles were done in teamwork by a translator and a subtitler with more than 10 years of professional experience.

Three measures of text density were determined for each excerpt (see Table 1). The first was the number of surtitles and subtitles: each excerpt had 5 or 6 surtitles, and between 12 and 22 subtitles. The second measure of text density was the number of characters per subtitle or surtitle: on average, the length of the surtitles (Ø = 103.0

1. The term "surtitle" in this paper is thus not used in its traditional sense (i.e. for the opera and the theater).

(a) subtitle condition

(b) surtitle condition

Figure 1. Example of the third sequence of Excerpt 1 in the two presentation conditions

characters) was higher than the conventional recommendation of a maximum of 80 characters for subtitles and more than three times as long as the average length of the commercially available subtitles in the movie excerpts used in the present study (Ø = 33.3 characters). The third measure of text density was the number of characters per minute to be read by the participants in each of the four clips. The average total of 1802.5 characters per minute in the sur condition was more than twice as much as the reading speed of 750 characters per minute applied for instance by the European Captioning Institute (Georgakopoulou 2009: 34).

2.3 Procedure

Data collection took place in the usability laboratory at Zurich University of Applied Sciences. All of the participants in the study were tested individually and under similar conditions. Upon arrival at the laboratory, they were asked to read and sign an

Table 1. Text density in each excerpt (in terms of number of subtitles, surtitles and characters)

	Excerpt 1	**Excerpt 2**	**Excerpt 3**	**Excerpt 4**	
Number of:					Total
Subtitles	22	16	13	12	63
Surtitles	6	5	5	5	21
Total (sur+sub)	28	21	18	17	84
Average number of characters in:					Overall
Subtitles	33.9	29.3	33.2	37.4	33.3
Surtitles	95.7	98.0	125.4	94.6	103.0
Number of characters per minute in:					Average
Subtitles	846.1	833	711.7	858	812.2
Surtitles	846.5	801.5	1245	1068.3	990.3

Table 2. Presentation conditions (italics is *sub* condition, bold is **sur** condition)

	Excerpt 1	Excerpt 2	Excerpt 3	Excerpt 4
Group A (n = 14)	*sub*	**sur**	*sub*	**sur**
Group B (n = 13)	**sur**	*sub*	**sur**	*sub*

Note: *sub* = normal condition (subtitles only); **sur** = treatment condition (surtitles in addition to subtitles).

informed consent form. They were then seated in front of an eye-tracking monitor. After the calibration procedure, the participants answered some preliminary questions on-screen (e.g. age, sex, level of French competence) and then were asked to watch the four movie excerpts. Each participant saw the excerpts in alternating "sub" and "sur" conditions, as outlined in Table 2, depending on which group they were assigned to.

While each excerpt was viewed, various types of simultaneous data were collected by the Tobii TX60 eye-tracker and computed by the Tobii Studio software.[2] The eye-tracking equipment consisted of a flat-panel computer monitor with special, discrete diodes mounted around the edges. By tracking the movements of the eye, they record what part of the screen a person is attending to at any particular time. The eye-tracking data available include: number and duration of fixations over 30 ms,[3] gaze time in various areas of interest (i.e. subtitle, surtitle and the rest of the screen image), delay until the first fixation, shifts between areas of interest, skipped sub- and surtitles, probability of word fixation, pupil size, etc. For the purposes of the present discussion, only the first three measures will be examined in detail (see Figure 2 for examples from two participants of the areas of interest, recorded fixations, and gaze paths for the third sequence of Excerpt 1, which lasted approximately 12 seconds).

(a) subtitle condition (participant a22) (b) surtitle condition (participant b21)

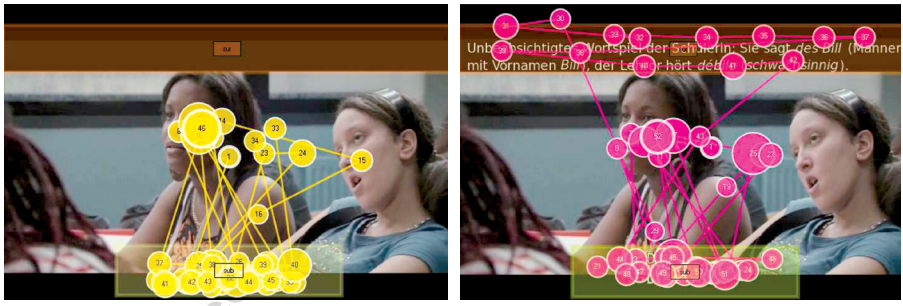

Figure 2. Fixations and gaze paths for the third sequence of Excerpt 1 in the two presentation conditions

2. Tobii Studio version 1.7.2; see http://www.tobii.com/scientific_research.aspx.

3. This minimum fixation duration was chosen to allow comparisons with Caffrey (2008).

After each excerpt, consecutive data was collected by means of on-screen questions about the participants' reading and viewing strategies (i.e. measures of accuracy) and their perception of and reaction to the sub- and surtitles (i.e. judgments of speed and usefulness). Specifically, there were five questions for each excerpt that assessed reception capacity with regard to three types of information (cf. Hickethier 2007): two about the images (i.e. iconic attention), two about the dialogue (i.e. verbal attention), and one about the overall situation in the excerpt (narrative attention). For each of these questions, there were five answer options: one correct choice, three incorrect choices, and a final option of "I don't know." The questions were presented in the same order to all participants. In addition, two questions addressed participants' perceptions of the subtitle and surtitle speed as well as the usefulness of the additional metalinguistic information given in the surtitles (if present). After the final excerpt, participants were asked to provide their overall judgments about the surtitles.

3. Results

The results concerning reception capacity as well as audience response to the subtitles and surtitles are presented first and then compared with the on-line measures provided by the eye-tracking data.

3.1 Reception capacity

The participants were able to answer 68.3% of the questions about the movie content correctly. The order of presentation of the conditions did not seem to matter, since the groups performed very similarly, although there was a slight difference in the proportion of "don't know" answers (11.1% for group A and 8.1% for group B). Most strikingly, however, there were no differences in overall accuracy based on presentation condition (sub = 67.8%; sur = 68.8%) or on excerpt (see Table 3). The additional surtitles therefore did not seem to have had a distracting effect on the participants' attention processes and reception capacity.

The analysis of the question types revealed differences, however, with answers about the general situation in the excerpt most accurate and questions about the image least accurate (see Table 4). Although questions about the dialogue were slightly

Table 3. Percentage correct by group, excerpt, and presentation condition (italics is *sub* condition, bold is **sur** condition)

	Excerpt 1	Excerpt 2	Excerpt 3	Excerpt 4	Overall
Group A	*64.3*	**70.0**	*70.0*	**70.0**	68.6
Group B	**70.8**	*64.6*	**64.6**	*72.3*	68.1
Overall	67.5	67.3	67.3	71.2	68.3

Table 4. Percentage correct by question type and presentation condition (italics is *sub* condition, bold is **sur** condition)

Question type:	*sub*	sur	Overall
Image	*50.6*	**55.6**	53.1
Dialogue	*74.3*	**70.3**	72.3
Situation	*89.1*	**92.4**	90.8

Table 5. Subjective rating of time available by presentation condition (italics is *sub* condition, bold is **sur** condition) and usefulness of surtitles

	Excerpt 1	Excerpt 2	Excerpt 3	Excerpt 4	Overall
Time available*:					
sub	*4.2*	*4.4*	*4.6*	*4.9*	*4.5*
sur	**3.5**	**3.4**	**2.8**	**3.9**	**3.4**
Overall	3.9	3.9	3.7	4.4	4.0
Helpfulness** of:					
surtitles	**3.3**	**3.7**	**2.9**	**3.5**	**3.4**

* 1 = not enough time, 5 = more than enough time.
** 1 = very helpful and 5 = very distracting.

more accurate in the subtitle only condition and those about the image and situation in general slightly more accurate in the condition including surtitles, none of these differences were significant according to Fischer's exact test for count data.

3.2 Audience perception and satisfaction of subtitles and surtitles

The judgments made after each excerpt of the time available to read the text on the screen were quite positive overall for both conditions (4.5 and 3.4 for the sub and sur condition, respectively, on a scale from 1 = not enough time, 5 = more than enough time), although the judgments for the condition including surtitles were significantly lower than those for the subtitles only condition ($p < 0.001$, Fischer's exact test for count data; see Table 5). This pattern held for all of the excerpts, although only the difference for Excerpt 3 was highly significant.

The qualitative judgments of the helpfulness of the metalinguistic information provided in each of the excerpts for the surtitle condition were rather neutral, with an overall average for the four excerpts of 3.4 (where 1 = very helpful and 5 = very distracting). There was little difference in judgments between the excerpts (see Table 5). A possible explanation for this result could be the fact that the participants had on the whole quite good knowledge of French (see Section 2.1) and were therefore less dependent on the surtitles.

For the question at the end of the experiment about the usefulness of surtitles in general, the average judgment across participants of 3.3 (where 1 = very useful, 5 = very distracting) was very similar to their judgments of the metalinguistic information provided in the surtitles, with a suggestive but non-significant difference between the two groups (overall judgments for Group A = 3.6 and for Group B = 3.0). Interestingly, there was no correlation between judgments of the usefulness of surtitles in each excerpt and of the time available to read them (rank correlation = 0.046).

3.3 Eye-tracking results

The first two on-line measures of attention (mean fixation length and number of fixations) revealed a slight difference between the two presentations. The mean fixation length for each participant for each excerpt was calculated by dividing the sum of all fixations over 30 ms by the number of fixations. Since some of the eye-tracking records suggested that certain participants spent very little time fixated on the screen for certain excerpts, these data points were eliminated. Specifying that a minimum of 50% of the total time had to be fixated on the screen meant that all data from two participants (one per group) and data for certain excerpts for other participants had to be eliminated (two additional excerpts from the sub condition and four from the sur condition). Using this criterion, there was a significant difference in mean fixation length between the two conditions (sub = 0.36 s; sur = 0.32 s, $p < 0.01$), although the difference in the actual number of fixations between the two conditions did not reach significance (sub = 227; sur = 251; see Table 6). There were also no significant differences in the mean fixation length for the four excerpts. The differences in the number of fixations for each extract were predictable, since they were directly related to the length of each excerpt. The t-tests used for these comparisons were for independent samples with unequal variance.

The third measure of attention from the eye-tracking data was gaze time in various areas of interest. Three areas of interest were defined: (1) the area at the bottom

Table 6. Mean fixation length (meanFlength in seconds) and number of fixations (allFcount) by presentation condition and excerpt (italics is *sub* condition, bold is **sur** condition)

	Excerpt	**Excerpt 1**	**Excerpt 2**	**Excerpt 3**	**Excerpt 4**	**Overall**
sub	*meanFlength*	*0.34*	*0.35*	*0.37*	*0.38*	*0.36*
	allFcount	*274*	*345*	*134*	*165*	*227*
sur	**meanFlength**	**0.32**	**0.31**	**0.32**	**0.33**	**0.32**
	allFcount	**283**	**373**	**156**	**197**	**251**
Overall	meanFlength	0.33	0.33	0.35	0.36	0.34
	allFcount	279	358	145	180	238
Length		108 s	138 s	59 s	73 s	

Table 7. Percentage of gaze time in different areas of interest by presentation condition (italics is *sub* condition, bold is **sur** condition)

	Subtitle area	Surtitle area	Rest of image
sub	*31.5%*	*0.1%*	*68.5%*
sur	**29.4%**	**10.8%**	**59.8%**
Overall	30.4%	5.4%	64.2%

of the screen where the subtitles were shown; (2) the area at the top of the screen where the surtitles were shown in the surtitle condition; and (3) the rest of the screen image (see Figure 2 for examples). Again, a criterion of at least 50% of overall time spent looking at the screen was set, which meant that two excerpts for one participant had to be eliminated (one in each condition). An examination of the proportion of gaze time in the three areas of interest showed that all except one participant looked at subtitles in all the excerpts (and she did in three of the four excerpts). All except one (other) participant must have noticed the surtitles as well, because they looked at them for some portion of the time. The analysis indicated that significantly less time was spent gazing at the image if surtitles were present ($p < 0.01$, t-test for independent samples with unequal variance; see Table 7).

Whereas the amount of time spent reading the subtitles was similar in the two conditions, participants spent significantly less time looking at the visual nonverbal image when additional metalinguistic explanations were displayed. This result has to be weighed against the fact that retention of visual elements was, however, better in the surtitle condition, as Table 4 revealed.

4. Discussion

The aim of this study was to investigate reception of and audience response to subtitled movies by testing the legitimacy of the commonly accepted norm in the subtitling industry and literature, according to which a subtitle should not exceed two lines of text and a maximum of 80 characters. If two full lines are used, the subtitle should be present on screen for six seconds. Shorter subtitles are displayed accordingly (see, for example, Ivarsson and Carroll 1998). Moreover, it is assumed in the subtitling industry that average reading speed should not exceed 750 characters per minute (Georgakopoulou 2009).

In a mixed method design, reading and viewing strategies of university students who were asked to watch several movie excerpts were studied in two different conditions. A questionnaire tested accuracy with respect to three types of information: iconic attention (the image), verbal attention (the dialogue), and narrative attention (the general situation). Eye-tracking, on the other hand, measured percentage of gaze time in different screen areas as well as mean fixation durations. Subtitling was either according to the existing norm (i.e. commercially available standard subtitling, with

one or two lines of subtitled text) or with additional metalinguistic explanations (i.e. innovative subtitling that included both subtitles and surtitles). The latter is already practiced in amateur subtitling on the internet. The surtitles explained the use and connotation of culturally specific references in the original French soundtrack and of elements that belonged to non-standard linguistic varieties and that were either leveled or not translated in the commercially available German subtitled version of the movie.

The results of the study challenge the legitimacy of the above-mentioned subtitling norm. Watching a movie without subtitles involves an almost continuous distribution of attention between two input channels and two types of information, visual and auditory. Subtitles add a third source of information to this already complex situation. In the present study, a fourth information source was added. The presence of surtitles, comprising metalinguistic explanations, did not negatively affect the participants' reception capacity. This result suggests that movie watchers are able to process a larger amount of textual information without being distracted from the plot than is generally assumed.

There are some important implications from our results. First, viewers, and perhaps particularly younger cohorts of viewers, might be able to process more information in the form of subtitles and surtitles than has been conventionally assumed. If more information can be included in text form, then a deeper understanding of the original movie might be possible. And finally, surtitles would be an important step in tailoring such information to the needs of specific audiences. For example, the hard-of-hearing, language teachers, or learners might be prepared to pay for such additional information in the form of surtitles.

The established rules regarding presentation time and maximum number of characters per subtitle seem however to have been internalized by the participants in the present study. Thus, when asked to assess the time available to read the text in standard vs. innovative subtitling, participants' ratings differed significantly between the two modes. The amount of time available for processing text in the condition with surtitles was experienced as significantly lower than in the condition with subtitles only, suggesting an additional cognitive load. However, participants' performance in terms of retention of various verbal and visual elements in the movie excerpts was identical in the two conditions. This result suggests that standard subtitle presentation rules may simply be preferred because viewers are used to seeing subtitles at that duration and length.

The study also involved three types of eye-movement measures: number of fixations, mean fixation duration per excerpt, and percentage of gaze time in the various areas of interest (i.e. subtitles, surtitles, and rest of image). The results reveal a significant difference in mean fixation duration between excerpts with subtitles only and those with both subtitles and surtitles. Fixations were shorter for excerpts that had surtitles but there was no significant difference between the average number of fixations in the two conditions, suggesting that the participants spent more time moving between various areas of interest when an excerpt included surtitles and less time

fixating on individual points. This may be related to a higher cognitive load due to the presence of additional text on the screen, which is also reflected in the more negative judgments of the time available to process the textual information.

The analysis of eye-tracking data by areas of interest indicated a significant difference regarding the percentage of gaze time in the areas of surtitles, image and subtitles. Surprisingly, especially in light of the results reported by Caffrey (2008), the time spent gazing at surtitles in the present study was not at the cost of time spent on the subtitles, because less time was spent gazing at the rest of the image in the condition with surtitles. This is also unexpected in light of the questionnaire data, which indicated differences in accuracy based on question type (image, dialogue, general situation), but no significant differences between the two conditions. In the surtitle condition, accuracy was slightly lower for questions regarding the retention of elements that concerned the dialogue, yet actually slightly higher for the questions regarding the general situation and the image. The last result seems counterintuitive: it suggests that although less time was spent looking at the image in the surtitle condition, visual information was retained better in that condition than in the subtitle condition. Although not statistically significant and therefore possibly attributable to chance, the difference between the two conditions might be due to attention-switching between the bottom and top of the screen when surtitles are present and the processing of additional visual information as eyes sweep vertically instead of merely in the horizontal direction of text. Introducing textual information in two different areas of the screen might therefore actually improve overall processing of images. This hypothesis needs further empirical investigation, however.

We are aware of the possible limitations related to our findings. First, the participants in our study are university students and therefore represent a fairly young and literate cohort. It can be assumed that they are able to handle a higher reading speed than other demographic groups. On the other hand, at least in Switzerland, moviegoers have a choice between dubbed and subtitled versions. Those who decide to watch a movie with subtitles may have higher reading skills in general, and additional metalinguistic information might not distract them from enjoying a movie. Moreover, they represent a generation that has virtually grown up with audiovisual media. Established subtitling norms may not meet their needs, expectations, and capacities in every respect. Secondly, the movie excerpts prepared for the experiment were fairly short. High reading speeds might be unproblematic in the short run, whereas watching a whole movie with additional surtitles could lead to considerable fatigue and thus reduced reception capacity. This possible limitation has however to be weighed against the fact that the clips represented segments of the original soundtrack that contained a large amount of language- and culture-specific references. Not all scenes of an entire movie would need surtitles, of course. Finally, it has to be acknowledged that there was generally little on-screen activity going on while the surtitles were displayed. The polysemiotics of audiovisual productions is a variable to be taken into consideration in empirical research into screen translation. In movies where the visual nonverbal components play a decisive part, additional text might distract viewers from the plot.

On the other hand, one may claim that surtitles are particularly relevant for art films ("writers' films") such as the one used in this experiment. Writers' films tend to favor the verbal message over the other sign systems that make up the audiovisual text (Zabalbeascoa 2008).

Audiovisual media play a major role in the modern world, both at home, at school and at work. It is therefore only natural that research into audiovisual translation is a rapidly expanding domain. So far, however, only a few studies have addressed the issue of reception, as Gambier (2008) recently pointed out. The aim of the present study was to make a contribution in this direction, by investigating how people are able to divide and shift their attention in such a complex situation as watching subtitled movies. Moreover, by testing the reception and acceptance of subtitles that violate established norms, we hope to have contributed to helping define new research paths exploring viewers' actual needs and capacities as well as the readability and legibility of subtitled audiovisual productions. The present study focused on the handling of culturally specific elements and of non-standard language use, a fundamental challenge since subtitling involves the shift between two modes that are each governed by their own rules – the oral and the written – under space and time constraints. Other challenges await further research, in particular the question of how surtitles containing additional metalinguistic information should best be formulated and presented so as to boost movie comprehension. The segmentation of subtitles, their position on the screen, and the use of color to indicate paraverbal information are other areas that need to be explored further.

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