

THE EFFECTS OF INTERLINGUAL AND INTRALINGUAL SUBTITLES ON SECOND LANGUAGE LEARNING/ ACQUISITION: A STATE-OF-THE-ART REVIEW

OS EFEITOS DE LEGENDAS INTERLINGUAIS E INTRALINGUAIS NA APRENDIZAGEM/AQUISIÇÃO DE SEGUNDA LÍNGUA: UMA REVISÃO DO ESTADO DA ARTE

Rafael Matielo*
Raquel Carolina Souza Ferraz D'Ely
Luciane Baretta

ABSTRACT

The disciplinary field of Second Language Acquisition (SLA) has witnessed an increasing interest in the investigation of the effects of subtitled and captioned audiovisual materials on domains of language learning/acquisition. In this context, this paper seeks to provide a systematic review of recent studies related to language learning aspects aided by the instructional/experimental use of subtitled and captioned materials. The present paper draws on relevant literature in the field of SLA that interfaces with subtitling/captioning, while outlining their goals and main findings. This paper also aims to unveil which dimensions have merited scholar attention the most in the last two decades. Finally, some considerations are made regarding possible avenues for future research, taking into account the existing literature and underinvestigated issues.

Keywords: Interlingual subtitles; Intralingual subtitles; second language learning/acquisition.

RESUMO

O campo disciplinar de Aquisição de Segunda Língua (ASL) tem observado um interesse crescente pela investigação dos efeitos dos materiais audiovisuais com legendas interlinguais e intralinguais com relação a diversos aspectos inerentes à aprendizagem/aquisição. Neste contexto, este artigo procura fornecer uma revisão sistemática da literatura que trata de aspectos da aprendizagem através do uso instrucional/experimental de materiais com legendas interlinguais e intralinguais. O presente trabalho baseia-se na literatura que se destaca no campo da ASL no que tange à interface com a legendagem aberta e fechada, ao mesmo tempo que aponta os principais objetivos e resultados oriundos destes estudos. Este artigo também objetiva desvendar quais dimensões desta interface têm merecido mais destaque acadêmico nas últimas duas décadas. Por fim, algumas considerações são feitas em

* CNPq/PPGI/UFSC, Santa Catarina (SC), Brasil. rafaelmatielo@yahoo.com.br; UFSC, Santa Catarina (SC), Brasil. raqueldely@gmail.com; UNICENTRO, Paraná (PR), Brasil. barettaluciane@gmail.com

relação a pesquisas futuras, levando em consideração a literatura da área e tópicos pouco investigados.

Palavras-chave: Legendas interlinguais; legendas intralinguais; aprendizagem/aquisição de segunda língua.

INTRODUCTORY REMARKS

The disciplinary field of Second Language Acquisition (SLA) has witnessed a growing interest in the investigation of the effects of subtitled and captioned audiovisual materials on several domains of language learning/acquisition¹. Such an increasing attention could be related to the fact that “subtitled television programs seem to provide a rich context for foreign language acquisition” (KOOLSTRA & BEENTJES, 1999, p. 51). Fruitful academic dialogue has therefore emerged, giving rise to a plethora of studies that have contributed toward a more solid understanding of the learning processes learners go through while engaged in video watching episodes within and outside instructional environments.

In the last two decades, studies on the instructional and non-instructional use of subtitled/captioned videos have addressed a number of topics that include, but are not limited to: the improvement of L2 reading, L2 listening comprehension, L2 word recognition, L2 vocabulary learning/acquisition, effects on implicit and explicit memory and cognitive processing, acquisition of L2 grammatical aspects, the development of intercultural competencies, and the improvement of L2 oral production.

In addition to providing a meaningful context for language acquisition, the interest in the use of subtitled/captioned videos may have also been driven forward by other reasons. Neuman and Koskinen (1992) point out at least three of them, namely: (i) videos’ combination of sounds and pictures might enhance the relationship between words and meanings; (ii) the entertainment qualities of videos, which can be taken as an advantage over texts; and (iii) the fact that viewing could be perceived as a cognitively active experience – when suitable material is used (NEUMAN, 1989). Due to their pictorial and entertaining nature, videos used in the instructional setting may improve the dynamics and tasks implemented

1 In the present paper we will be using the words “learning” and “acquisition” interchangeably. Although we are well aware of the differences between these two constructs, as posed by Krashen (1982/2009), we side with Ellis (2008) who argues that, for now, it is better not to treat these two situations as different since it still remains unknown how different the learning processes in each of them are.

in the classroom, as well as awaken the interest of students towards the story being narrated on screen.

In order to make videos accessible to populations that do not master the language spoken in the dialogues or to facilitate the students' overall comprehension in instructional settings, subtitles or captions are used. Regarding this translational aid, an important distinction follows: while subtitles² specifically refer to target-language texts typically displayed at the bottom of the screen, captions refer to same-language subtitles, which originally had the function to serve the hearing-impaired (NEUMAN & KOSKINEN, 1992). Nevertheless, it is important to be mindful of the fact that subtitles tend to exhibit specific textual features – as a result of mandatory linguistic compression that inevitably shapes them – therefore not allowing for a complete verbatim of what is spoken (MATIELO & ESPINDOLA, 2011).

In this context, this paper seeks to provide a brief, systematic review of recent studies³ that address language learning aspects aided by the instructional/experimental use of subtitled and captioned materials. This state-of-the-art paper synthesizes the relevant and groundbreaking literature in the field of SLA that interfaces with subtitling and captioning, while outlining their goals and main findings. It also aims to unveil which topics have merited scholar attention the most in the past years. Finally, some considerations are made as to possible avenues for future research, taking into account the existing literature and underinvestigated issues.

1. SLA, SUBTITLING, AND CAPTIONING: A CHRONOLOGICAL OVERVIEW OF RECENT FINDINGS

For organization and readability purposes, the studies hereby reviewed are presented into two separate sections. While the first section entails studies with single modality, that is, studies with the use of either subtitling or captioning, the second section provides an overview of key studies that have investigated the effects of these modalities on language learning/acquisition comparatively.

2 Interlingual subtitles are also used to refer to the common type of subtitles we know of, that is, the type that deals with a linguistic pair (when soundtrack and subtitles have two different languages).

Captions, on the other hand, are also frequently referred to as intralingual subtitles, since they deal with the same language on both soundtrack and subtitles.

3 For the purposes of this state-of-the-art article, only relevant experimental studies published in the period of 1990-2010 were considered.

1.1. Looking at single modality studies

Evaluating the use of captioned video materials in advanced language classes was the crux in Garza (1991) in the beginning of the 1990s. He reports on a study addressing captioned videos used as a pedagogical tool in advanced Russian as a Foreign Language (RFL) and English as a Second Language (ESL) classes. Garza established a set of criteria for the selection and production of the video test materials, including whether the videos contained unmarked, appropriate language, their grammatical and lexical complexity, interest value to university-level students, and a variety of salient speech functions. Whether the videos presented a high audio/video correlation was also taken into account, with a view to providing “a kind of ‘visual glossary’ for difficult or obscure lexicon” (p. 241).

Verbatim captions and a multiple-choice based test were adopted to check for content comprehension. Questions required participants to provide informational paraphrases, basic deductions, or synonym identification of low-frequency words, after watching the video segments twice. The study involved 40 adult RFL learners – native speakers of English – who were divided into two groups (the test group, with captions, and the control group, without captions) and 70 adult ESL learners – who spoke nine different native languages – equally divided into test and control groups. Five participants were randomly chosen from each test group to engage in a 5-minute oral interview to retell any of the video segments.

Results are suggestive of the positive effects of captions on comprehension for the striking number of correct answers reveals that the presence of captions significantly increased the amount of comprehensible input to the foreign language learners. Captions facilitated learners’ comprehension of the video they watched. Nonetheless, when comparing the performance of the groups, it is clear that the presence of captions had a more significantly positive effect on the Russian group when they watched for the second time with captions. Yet, the number of correct responses of the ESL non-captioned group was still higher than the number of correct responses by the Russian group when watching for the second time.

The results obtained in Garza (1991) are suggestive of the problems with the “generalizability of the ESL data or trends to other languages” (p. 245). It is important to note that no specific task was given to the students at the viewing point, which is particularly important for (pre)viewing goals might yield different results for they might channel students’ attention to specific aspects of the video.

Similarly, Neuman and Koskinen (1992) looked at incidental word learning by language minority bilingual children. Based on the insight that captioned

television may provide comprehensible input – a key ingredient for second language acquisition (KRASHEN, 1982/2009) – and can be seen as a “multisensory, largely entertaining medium” (p. 96), the scholars investigated the learning of incidental science vocabulary and concepts. The participants – 129 bilingual seventh and eighth graders – were divided into four groups: (a) captioned television; (b) non-captioned television; (c) reading along and listening to text; (d) textbook only. In order to explore the effects of learning words in context, television segments from *3-2-1 Contact*, a Children’s Television Workshop science production, was selected, given its motivational display of scientific concepts, its special appeal to the audience, and its appropriateness to seventh and eighth graders.

Participants were given pre-tests, a weekly 10-word recognition test to measure their ability to recall words, a weekly written retelling of the week’s lesson to measure the frequency of the target words in their writing, a sentence anomaly test to measure their ability to understand target-words in context, and a final 90-item multiple choice test to measure knowledge of all target word meanings.

The captioned TV group outscored the reading text group for all three units on word recognition, though they were not statistically significant for Units 1 or 3. Regarding the results of the sentence anomaly tests, differences among all four groups indicated a similar trend, favoring captioning. As for unit tests, results revealed that the captioned TV group outperformed the reading text group, but when comparing the captioned TV group and the traditional TV group, results were only statistically significant for Unit 2. These results indicate that specific features inherent to the videos in each unit must have played a role in the students’ comprehension of the science topics. As they speculate, “the visual representation of words in video form is an important contributor to students’ increased word knowledge” (p. 102).

Interestingly, scores on the word meaning posttest revealed that the captioned TV group outperformed the other groups because bilingual students made significant gains in vocabulary knowledge without any formal instruction. Also, analysis of participants’ weekly written recall of science concepts favored the captioned TV group for the participants used target words more often than other groups.

The participants in the captioned TV group consistently achieved higher mean scores than the other groups on all word knowledge tests, though these differences were not always statistically significant. As well as confirming the beneficial role of captioning for incidental vocabulary acquisition, this study raised

word and picture-related aspects, which need to be taken into account not only by researchers when designing such experiments, but also by practitioners when selecting video materials for the classroom. Comprehensible input, facilitated in a bimodal input form (audio + image), and the helpfulness of the context seem to have played a key role in the participant's vocabulary acquisition.

Thought-provoking results derived from the study carried out by d'Ydewalle and van de Poel (1999) on incidental language acquisition by children with subtitled material. The authors claim that for acquisition to happen, the channel in which the foreign language is presented – soundtrack or subtitles/captions – must be processed. They also claim that reading the subtitles is an automatic process, regardless of one's familiarity with them, knowledge of the foreign language in the soundtrack or its availability, which has been indicated in studies involving eye-movement recordings (D'YDEWALLE & GIELEN, 1992).

In order to investigate the acquisition of French and Danish – a closer language to the participants' first language, which was Dutch – as foreign languages by 327 third, fourth, fifth, and six graders of a primary school in Belgium, this study included tests on vocabulary, morphology, and syntax. *Young Deer*, a 10-min long movie, was shown in four different experimental conditions: Dutch subtitles and French soundtrack, French subtitles and Dutch soundtrack, Dutch subtitles and Danish soundtrack, and Danish subtitles and Dutch soundtrack. The control condition received a fifth version with Dutch in both soundtrack and captions. Participants took three different tests: One to assess vocabulary acquisition, containing 20 content words whose correct translations were to be chosen out of three alternatives. All target words were somewhat salient in the film (they all appeared four times at least), an important aspect to observe. As for the syntax test, participants were asked to choose the correct construction of 10 elementary sentences from three alternatives for each that differed in word order. In relation to the tests, because not all language components were equally salient in the auditory and the visual mode, the tests contained different visually versus auditory salient test items.

Regarding vocabulary, presenting the foreign language in the soundtrack improved acquisition in the visual and auditory tests; when the foreign language was presented in the subtitles, performance was only improved in the visual test. As for the syntax test, there was no evidence for foreign language acquisition. As regards the morphology test, performance in the auditory test was found to be better when the foreign language was available in the soundtrack.

Based on the findings, some issues emerge, deserving a closer look. As the authors point out, "similarity with the native language may cause interference in acquiring a foreign language; however, the similarity could also facilitate the acquisition process" (D'YDEWALLE & VAN DE POEL, 1999, p. 240). With few exceptions, this was evident when the results for the Danish and French tests are scrutinized and considering that Danish is closer to Dutch. Results also suggest that when there are significant differences in the experimental conditions, it was always to the advantage of the condition with the foreign language in the soundtrack, possibly linked to "efficiency of information processing" (p. 242). This lends support to the need for the inclusion of specific features of individual differences in studies that focus on the effects of subtitled and captioned materials on language learning.

Unlike previous studies, Huang and Eskey (1999) analyzed the effects of captioned TV on the listening comprehension of 30 intermediate ESL learners with a view to contrasting with learners watching traditional TV. The study also aimed to check whether there would be vocabulary and phrase acquisition by the participants. The authors investigated whether certain factors, such as starting age of ESL instruction, length of time in the United States, length of ESL instruction, time in private language schools, time with tutors, and time traveling in English speaking countries, would correlate with listening comprehension.

The participants watched a 7-minute episode of *Family Album U.S.A. (FAU)* twice, a television series designed in 1992 for ESL classroom teaching (non-authentic). A 10-minute TOEFL-based format listening test, consisting of spoken statements and short conversations, was used to test participants' listening comprehension of sixteen multiple-choice test items, each of them with three possible answers.

The captioning group outscored the control group. Also, participants reported that captioning helped them understand the story better, aiding them regarding their vocabulary/phrase acquisition, improving their language listening skill, and that it was an enjoyable way to learn English. Nevertheless, factors regarding their personal learning experiences showed no correlation with the listening comprehension test. Also, this study demonstrates that captioned materials can have a positive impact on students' listening comprehension, though it still is unclear at this point whether captioned material would have a similar impact on other populations, such as beginning learners.

Perhaps one of the first studies to take into consideration the non-instructional setting in language learning and watching subtitled/captioned videos equation is

that of Koolstra and Beentjes (1999), which examined foreign language vocabulary acquisition by 246 Dutch fourth and sixth graders⁴ watching subtitled TV at home. Participants watched a 15-minute episode on grizzly bears of the series called *The New Wilderness*. Three different experimental conditions were employed: (a) watching an English television program with Dutch subtitles; (b) watching the same English program without subtitles; and (c) watching a Dutch television program. At the end of the experiment, children were also asked about their habits in terms of watching subtitled videos at home.

The measures comprised an English vocabulary matching test, in which children listened to an audiotape on which a native (American) speaker spoke 45 English words and they had to select a picture depicting the word pronounced (for 33 items – an action, animal, object or body part) and choose the English word spoken from four pictures (an object, animal, or action); an English target vocabulary test, a multiple-choice test asking for the Dutch translation of 35 words depicted in the video; a word recognition test, based on a 30-item auditory word recognition test, 20 of them that were actually presented in the soundtrack and 10 that were not, but which could have been given their content.

Vocabulary acquisition scores were higher in the subtitled condition and scores in the no subtitles condition were higher than in the control group. The analysis also yielded a main effect of grade, with sixth graders outperforming fourth graders. Concerning word recognition, more English words were recognized after participants watched the subtitled television program in comparison to the no subtitles condition, and sixth graders outperformed fourth graders in this test as well. There was indeed a correlation between high frequency of watching subtitled programs at home often and higher English vocabulary scores.

As Koolstra and Beentjes (1999) posit, “the findings indicate that young children can acquire elements of a foreign language through watching subtitled television programs” (p.58). Thus, one of the greatest contributions is that word recognition in the no subtitles condition was not superior to the subtitled condition, suggesting that the belief that reading subtitles might distract viewers from hearing English words may be just a belief. Another contribution regards implicit learning since Dutch fourth graders did show some knowledge of the English language though they had never been taught English before. These findings lend support to the benefits of watching subtitled television programs at home for language learning

4 In the Netherlands, at primary schools, about one hour per week is spent teaching English from Grade 5 on. This is particularly important to note since fourth graders were then unlikely to have had formal English instruction by the time they participated in the study.

purposes, especially considering that more English vocabulary was acquired by those who watched subtitled TV at home more often.

As far as SLA and subtitling/captioning studies are concerned, late 1990s seems to have been a prolific period. In tune with previous research (GARZA, 1991; NEUMAN & KOSKINEN, 1992), Markham (1999) confirmed to some extent what other studies had suggested: "the availability of captions significantly improved the ESL students' ability to recognize words" (p. 321). In order to explore captions as an aid to comprehension and vocabulary development, he examined their effects on 118 advanced university-level ESL students' listening word recognition. The materials comprised a 13-minute episode of marine biology information on whales and a 12-minute episode of an interview-based discussion between two people on the history of the civil rights movement in the United States. While the first video presented a high audio/video correlation, the second video presented a low audio/video correlation. A 50-item listening multiple-choice test was administered after watching each video once. The participants listened to a sentence and had to choose the correct word from alternatives given. Demographic data on the participants were also taken into account.

Caption availability was found to improve the participants' listening ability to recognize words. In relation to the effects of captioning and passage content, the results were unexpected: The civil rights video, with a low audio/video correlation, was found to be less challenging regardless of caption availability. Demographic variables were not found to be significant.

Markham (1999) did not focus on students' global comprehension, but word recognition skills only. Hence, one may argue that audio/video correlation might have had little or no impact on the participants' performance of word recognition. Nevertheless, the findings confirm the potential benefits that captioning can have to second language learning, and this study "presents specific positive evidence concerning the influence of second-language captions directly on second-language listening" (p. 326).

Bird and Williams (2002) investigated an issue that for long had prevailed among the speculations of the effects of subtitled/captioned materials and language learning, that is, whether soundtrack gets processed when subtitled/captioned videos are watched. The study addressed the effects of single modality – either

5 According to Markham (1999), the students were from fifteen different countries, but 71% of them were Chinese, Japanese or Korean, therefore Asians. It is important to be mindful of such information since "generalizing the results of this research to other ESL populations should be done very cautiously" (p. 322).

sound or text – and bimodal input – sound and text – presentation on word learning, with an explicit focus on word learning. Measures involved enhancements in spoken word recognition efficiency (implicit memory) and recognition memory related to word retention (explicit memory).

Experiment 1 involved native speakers of English who ranged in age between 21 and 36 years old and advanced nonnative speakers of English, who ranged in age between 18 and 24. The first experiment comprised three phases: Phase 1 – reaction times to familiar and unfamiliar words, a measure used to decode speed; Phase 2 – reaction times for ‘old’ previously presented and ‘new’ items, a measure of implicit memory; and Phase 3 – recognition memory for items presented in Phase 1, representing a measure of explicit memory. Results showed that auditory lexical decisions on familiar words were equally primed by prior bimodal and sound-only presentation. No priming effects for nonwords were found. Experiment 2 involved 24 advanced learners of English, whose ages ranged from 19 to 26 years. In this experiment, the scholars employed a rhyme judgment task on nonwords. Results revealed that participants showed implicit memory facilitation for nonwords in the Text and Sound + Text condition.

As far as implicit memory is concerned, both experiments yielded different results. While repetition priming was not enhanced when text was added to auditory input in the first experiment, bimodal input enhanced implicit learning of nonwords in the second experiment. As Bird and Williams (2002) contend, “it appears that bimodal presentation beneficially affected implicit memory only when new phonological forms needed to be encoded” (p. 17). Also, the authors argue that bimodal input might be beneficial for implicit memory, but it might be limited to cases where the input and its phonological forms cannot be established based on sound only. Thus, the speculation that bimodal input might contribute to learning stands under certain, but not all conditions. Yet, “evidence is now available to support the idea that the cognitive systems dealing with auditory and visual word recognition are highly interactive and fully interconnected” (p. 17).

In relation to explicit memory, the results demonstrated that bimodal input played a beneficial role in the recognition memory task. One of the most important contributions of the present study is that “the bimodal condition created no apparent interference with auditory processing and learning” and “bimodal inputs can be attended to and used to bolster both the implicit and explicit aspects of vocabulary learning” (p. 18). This is a particularly important finding, giving the speculations on whether bimodal input would have an aiding impact on implicit and explicit learning of spoken word forms.

It is important, however, to note that the experimental condition employed differed significantly from regular viewing conditions or even experimental conditions employed in previous studies. In this study, participants did not watch subtitled/ captioned videos, which means that the participants' attentional resources were focused either on listening to and/or reading words, but not watching a film and following the story unfold, for instance. At this point, it still remains quite unclear whether attention is really devoted to soundtrack while processing both the visual and written bimodal input on screen and whether soundtrack is really processed under regular viewing conditions.

1.2. A closer look at comparative studies: captioning versus subtitling

Comparative analyses of the effects of the use of intralingual and interlingual subtitles and no subtitles on language learning/acquisition also emerges as a much debated topic in the beginning of 2000s. Markham, Peter and McCarthy (2001) sought to examine the effects of Spanish captions (intralingual subtitles), English captions (interlingual subtitles) or no captions on 169 intermediate university-level Spanish as a Foreign Language (SFL) students, with a view to verifying their listening/reading comprehension.

The high audio/video correlation listening passage was a DVD episode of around 7 minutes with information about preparation for the Apollo 13 NASA mission. The participants were distributed in the three treatment conditions: interlingual subtitles, intralingual subtitles, and no subtitles/captions. Participants were given 10 minutes to write a summary of the passage in English to check their understanding and recall. The written accounts were assessed on the basis of unit ideas, elaborations, and distortions. Also, participants were given a 10-item, multiple-choice test in English, which reflected the content and the level of difficulty of the video they watched.

As regards the written accounts, results revealed that the absence of captions prevented the participants from recalling much of the information and suggested a lower level of comprehension in relation to other conditions. As the authors point out, participants in the intralingual subtitles group performed in a somewhat similar fashion to the no subtitles/captions group. Regarding the multiple-choice test, results demonstrated that participants in the interlingual subtitles groups outperformed those in the intralingual ones, who in turn outperformed the ones in the no subtitles group.

The scholars postulate that “university-level second language students typically have better reading comprehension than listening comprehension skills, and that they would most likely benefit from viewing very difficult target language video material with native-language captions first” (pp. 443-444). After that, intralingual subtitles (captions) could be used and finally no captions whatsoever, which would then probably allow for a greater level of comprehension.

Markham and Peter (2003) investigated the effects of using Spanish caption, English captions (interlingual subtitles) or no captions on 213 intermediate university-level SFL students, with a view to examining their listening/reading comprehension. The same video passage used in Markham, Peter and McCarthy (2001) was selected for the present study. When asked about their knowledge of the Apollo 13 mission, 48 participants reported having little or no knowledge of the topic. These were the participants who were then distributed in the three treatment conditions: interlingual subtitles, captions, and no subtitles/captions. Participants answered a 20-item Spanish multiple-choice test on the passage.

The results revealed that interlingual subtitles were more beneficial for the students’ reading/listening comprehension than intralingual subtitles or no captions, as suggested by Markham, Peter and McCarthy (2001). This particular finding might indicate that “the English language reading input is obviously a powerful contributor to general comprehension” (MARKHAM & PETER, 2003, p. 339). The authors speculate that the participants’ Spanish language reading comprehension level may have also contributed to the general comprehension these students presented. More importantly, this specific element could be taken to mean “a factor in enhancing the participants’ listening comprehension” (p. 339).

One of the main contributions from both studies concerns the speculation that literate adult or secondary-level foreign language students would probably demonstrate enhanced listening comprehension if exposed to interlingual (native language) subtitles first, and then, as their foreign language literacy skills develop, they would be able to comprehend more difficult materials with intralingual subtitles or captions, and finally they could view and understand more challenging video materials with no subtitles or captions. This argument seems reasonable considering one’s language learning path and it has strongly influenced later studies, placing a focus on a more frequent and systematized investigation of the comparative effects of using interlingual and intralingual captions on language learning/acquisition.

Stewart and Pertusa (2004) attempted to explore how beneficial interlingual and intralingual subtitles for listening comprehension. The experiment involved 95 university-level SFL students who watched two full-length movies with either

Spanish captions or English subtitles. Participants were given an intermediate-level multiple-choice vocabulary quiz, containing items predicted to be unfamiliar for their proficiency level. A total of 7 intermediate-level conversation classes participated in the research during two semesters.

Results of the first semester showed more positive effects for the use of Spanish captions than English subtitles regarding vocabulary recognition. Results of the second semester demonstrated similar trends, except for one instance in which English subtitles group outscored the Spanish captions group. While positive effects of using interlingual subtitles were found in Markham, Peter and McCarthy (2001) and Markham and Peter (2003), positive effects for the use of intralingual subtitles were found in Stewart and Pertusa (2004).

Regardless of the inconclusive results in terms of the vocabulary recognition test, after seeing both films with either captions or interlingual subtitles, participants reported in an anonymous questionnaire that they felt they had learned more because they were able to listen to the word and see it written on screen. Also, they reported that they would prefer to watch films with captions in the future and relying on the Spanish captions did not seem to make them nervous, according to the questionnaires. In this sense, students' responses to the use of Spanish captions may signal beliefs that students hold, which may potentially lead to habit formation. Interestingly, most of the students who watched the films with English subtitles reported that they were able to understand the word when listening to them, but they felt they needed to see them written to establish a better connection. Most of these students reported to prefer to watch movies with Spanish captions in the future.

In short, the authors advocate for the use of intralingual subtitles, grounded in the students' beliefs and the partially positive effects observed in the results obtained from the study. Their main argument is that "the use of English subtitles does not encourage [Spanish] learners to use their previously acquired listening skills" (STEWART & PERTUSA, 2004, p. 438), taking to account this specific population and their level of proficiency. This is what may have contributed to trigger the debate in these studies, which raises the need for reflection on the choice of the type of subtitles to be used in the instructional setting and the impact and shortcomings that both options may bring about in the students' development.

In order to shed light upon key issues related to the benefits and limitations of using captioned videos for language learning purposes, Taylor (2005) carried out a study involving beginning language learners, a population that had been frequently

disregarded in the area. The author also attempted to unveil what processing strategies the students seemed to use while watching a verbatim captioned material.

After a pilot study, 85 university-level, beginning⁶ second-semester Spanish learners participated in the actual experiment, in which they watched a non-authentic 10-minute video segment narrating the history and the consumption of various foods of Spain and Latin America. Test materials consisted of: (a) a free written recall (in English); (b) a 15-item multiple-choice free recall in English; and (c) a sheet of paper in which participants explained their strategies when using captions, video, and audio for comprehension purposes.

When analyzing the results on the free recall and multiple-choice free recall, no significant difference was found comparing the groups. However, students with more time of Spanish study outperformed those with less time in the captioning group. Taylor asserts that the difference “was not surprising, assuming that the students with more years of study had more reading and listening comprehension practice” (p.425). As for the non-captioning group, no difference was found between more ‘real’ beginners and the ‘false’ ones. Nonetheless, a surprising finding is that when comparing real beginners in the captioning and non-captioning group, scores were found to be higher for the latter. “It seems that captions did not aid first-year students in comprehension, and in fact, seem to have been detrimental to their understanding of the video” (p. 425), which does not seem to be the case with false beginners because captioning had a neutral effect on them.

As far as processing strategies are concerned, while 35% of the first-year captioning group participants reported that captions were distracting or confusing and that they struggled when trying to devote attention to the three channels simultaneously – audio, video, and captions –, only 11% of third-year students in the same group reported similar difficulties. Also, 23% of ‘real’ beginners reported being able to devote attention to the three channels as opposed to 50% of ‘false’ beginners of the same group. As Taylor points out, despite their difficulties, students tended to express a positive attitude toward the use of captions, although some of them reported having ignored the audio and focused on the captions mostly.

In an attempt to study an underinvestigated topic, van Lommel, Laenen and d’Ydewalle (2006) examined whether grammar acquisition occurs while watching television programs with reversed subtitling (Dutch audio and Esperanto subtitles) and interlingual subtitles (Esperanto audio and Dutch subtitles). With the implicit versus explicit learning dichotomy as background, two experiments were designed:

⁶ Taylor (2005) clarifies that despite the fact that students were beginners, their length of previous Spanish study ranged from 8 months to 5 years.

experiment 1 involved 62 primary school sixth-graders and 47 secondary school sixth-graders, whereas experiment 2 involved 94 primary school sixth-graders and 84 secondary school sixth-graders. The participants were Dutch speakers from Belgium.

In experiment 1, half of the participants were explicitly taught grammatical aspects the day before watching the movie – a story about Esperanto. The grammar test, focusing on salient grammatical aspects, involved 40 multiple-choice items with sentences that appeared in the movie, as well as others that did not. The target language chosen was Esperanto, which is “known for its simplicity and small number of rules and irregularities” (p. 247). Explicit instruction was given on the undefined article and the endings of the nominative singular and plural of the substantive, the nominative singular of the adjective, and the present tense.

Results from experiment 1 yielded a positive effect for instruction (prior rule presentation) on rule acquisition, especially for older participants. The movie alone did not lead to rule acquisition by the participants, since without instruction, participants were not able to deduce or acquire the rules of Esperanto. Yet, as the scholars posited, performance was enhanced on items that actually appeared in the movie, which could point to a mere recollection, and not acquisition per se. In experiment 2, the focus of which was to look at the reliability of age difference among the participants, consisted of specifically telling participants to look for rules as applied in the movie. Explicit instruction also took place the day before watching the movie. In this experiment, a 40-minute Esperanto movie about Esperanto was shortened to 16 minutes. Participants were assessed based on four grammatical aspects explicitly taught and four grammatical aspects that were not explicitly taught. As in experiment 1, the test contained items that actually appeared in the movie and new ones.

Results from experiment 2 reveal that young and older participants performed better with advance rule presentation, suggesting a positive effect for explicit instruction, although older participants outperformed the younger ones in this condition. Regarding old and new items as a function of age and advance rule presentation, results were found to be inconsistent. Moreover, no effect of age, advance rule presentation, and their interaction on not-presented rules was found. Interestingly, without explicit instruction, young and older children performed similarly on items of presented rules. Finally, advance rule presentation versus presented/not-presented rule also interacted significantly with instructions, showing that performance was better when advance rule presentation occurred.

In short, results obtained from both experiments indicate that no rule acquisition by watching the movie itself was found. Nonetheless, advance rule

presentation, especially among older participants, had a positive impact on the participants' score. In addition to this finding, great contributions originated from this study, especially considering its design: the control condition included non-presentation of the movie and the insertion of old and new items to assess acquisition. Regardless of the improvements, "simply watching the movie did not lead to an incidental acquisition of the rules in the two experiments" (VAN LOMMEL, LAENEN & D'YDEWALLE, p. 254).

A comprehensive study, conducted by Bianchi and Ciabattoni (2008), addressed short and long-term effects of subtitling and captioning in terms of vocabulary acquisition and pragmatic use of language in which a computerized setting was adopted "to simulate a real home-video scenario where a student watches a film on DVD and takes advantage of the text aids provided (captions or subtitles)" (p.75).

The participants, 85 Italian ESL learners in the 18-45 age range, were classified into groups based on their proficiency level and the treatment condition as follows: beginners – with captions, with subtitles, and no text group; intermediate – with captions, with subtitles, and no text group; and finally advanced – with captions, with subtitles, and no text group. After being pre-tested on aspects of grammatical, lexical, vocabulary, and pragmatic use of lexico-grammatical phrases a week before, the participants watched a series of clips from two films in English (*Fantasia* and *Harry Potter and the Philosopher's Stone*) in their correspondent treatment condition and, at the end of each clip, answered multiple-choice questions. The participants could watch the clip twice to review their answers. Finally, a post-test was administered a week later to examine the long-term effects of subtitling and captioning.

At beginner's level, results revealed that participants in the subtitles group outperformed those in the other treatment conditions in both films' content comprehension, despite a more marked difference in score in the case of *Fantasia*. Regarding intermediate level participants, the subtitles group performed better than the other two groups, although the difference between the captions and no text group showed different patterns depending on the film: in the case of *Fantasia*, no captions group outperformed the captions group, whereas the opposite occurred in the case of *Harry Potter*. As far as advanced participants' results were concerned, the subtitles group performed slightly better than the captions group and significantly better than the no captions group. In short, the subtitles group outperformed the other groups in content comprehension, regardless of the proficiency level and type of film. As Bianchi and Ciabattoni (2008) argue, "this result is expected given

that subtitling is processed automatically and content comprehension can logically be facilitated by text in the mother tongue" (p. 78).

For vocabulary acquisition, best results were obtained by the control group at beginners' level, followed by the subtitles group and finally the captions one. In relation to intermediate participants, all groups obtained good results for *Harry Potter*, in which the captions group outperformed the others, but not for *Fantasia* because the best results were achieved by the subtitles group. Finally, with reference to advanced participants, no patterns were found, since all groups' results were almost identical for both films, although the scores were higher for the vocabulary related to *Harry Potter*.

The three proficiency levels did not exhibit a pattern in terms of the three treatment conditions. Nonetheless, it is interesting to notice that the results for *Harry Potter* were higher for all groups in all treatment conditions, in which "semantic match among the different communication channels was higher" (p. 79). Moreover, captions were found to be less effective for lower proficiency levels than subtitles, a finding that has already been reported in the present paper.

Considering language in use, beginners' scores were similar to beginners' in the vocabulary test, that is, the control group outperformed the experimental groups. Also, results were better for experimental conditions in the case of *Harry Potter*. As for intermediate participants, scores were higher for the experimental group as well, followed by the captions group and then the subtitles group (regarding *Harry Potter*); however, in relation to *Fantasia*, the control group outscored the experimental groups, but subtitles were more effective than captions in this case. Finally, in this type of task, advanced participants obtained higher scores with captions. When the participants' results are put together and film type is disregarded, an interesting picture emerges: "a gradual passage from text aids in general and captions in particular limiting comprehension in lower proficiency groups to the complete opposite with advanced students" (p. 82).

In terms of long-term acquisition, vocabulary and language in use aspects were taken into account by comparing the participants' pre-test and post-test scores. First, in terms of vocabulary gains, subtitles were found to be more effective than captions or no subtitles/captions when proficiency and film type are disregarded. When these two components are considered, different patterns emerge: beginners seem to have profited more from captions regarding *Harry Potter* and no subtitles/captions regarding *Fantasia*; and intermediate and advanced participants seem to have profited more from subtitles for both films. Moreover, as for long-term acquisition of pragmatic use of language, beginners did not tend to acquire when

subtitles or captions were made available. As for intermediate students, subtitles had a better effect on this type of acquisition, followed by captions and no text. The same pattern was found for advanced learners.

Bianchi and Ciabattoni (2008) shed light on several interesting issues, especially because different populations were compared across different tasks, taking into account short and long-term effects of subtitling and captioning. Though puzzling results were obtained, they “may be connected to the intrinsic differences between said activities in terms of nature and cognitive effort” (p. 87), which deserves further scrutiny.

Winke, Gass and Sydorenko (2010) investigated the effects of captioning on learning with a special focus on different languages – learners of Arabic, Chinese, Spanish, and Russian. In order to dive deeper into underinvestigated aspects, the authors look at: (i) whether captioning would elicit more comprehension by Spanish learners; (ii) effects of captioning order, that is, whether captions would be more effective the first or the second time when a video was watched twice (for all languages); (iii) whether proficiency differences affect the benefits of captioning derived from captioning order.

A total of 150 foreign language university learners participated in the study, who were second or fourth year learners of Spanish and Russian, and second year learners of Arabic and Chinese. Participants watched documentaries about three animals – salmon, dolphins, and bears – and then were given vocabulary tests which had the same target words despite the different target languages after being pre-tested. Half of the vocabulary words were presented orally first, while the other half were presented in written form and vice-versa. Participants were asked to translate the target words into English, which had the same target words despite the different target languages. Also, participants answered multiple-choice questions in English about the main points of the story to check for their overall comprehension.

Participants⁷ who saw the videos with captions both times outperformed those who saw the videos without captions both times on the vocabulary test with written input. Similar results were found on the vocabulary test with aural input. Captions then resulted in significantly higher comprehension test scores than no captions, in tune with previous research (GARZA, 1991; MARKHAM & PETER, 2003). Regarding the results of the effect of order, the participants who saw captions in the first viewing performed significantly higher on the aural vocabulary test than those who saw captions on the second viewing, but the effect of order

⁷ The scholars considered the score of the second-year learners of Spanish only at this point, since they were the only group who viewed the videos twice, both times with or without captions. Com

was not significant for the written vocabulary or the comprehension test. Yet, as for the effect of order, there seems to be a trend differentiating Russian and Spanish learners: captions first seemed to be more beneficial, as opposed to Arabic and Chinese where captions second appeared to be more helpful.

An aspect to be highlighted concerns the emerging themes from the interviews with the participants, in which they claim that they need multiple input modalities and that captions reinforced what they heard, affecting their attention to the input. However, some of them found captions to be “attention depleting” (WINKE, GASS & SYDORENKO, 2010, p. 78). This is relevant information for it enhances the question as to the extent to which learners are capable of devoting their attentional resources to bimodal input while engaged in video watching.

2. TOWARD RESEARCH TRENDS?

In light of the diversity of the studies carried out in the last two decades focusing on language learning and the effects of subtitling or captioning, some research trends seem to emerge regarding ‘the SLA/subtitling/captioning triangle’. The studies synthesized here suggest a focus on language domains and how the use of subtitled/captioned video materials tends to contribute to their development. Thus, overall focus has been placed on L2 reading comprehension, L2 listening comprehension and word recognition, and L2 vocabulary learning/acquisition. It is possible to perceive that little focus has been placed on L2 grammar learning/acquisition, which could be due to (i) either the design of the studies or (ii) the fact that short exposure to the films might not necessarily lead to the acquisition of grammatical aspects.

When taking into consideration the chronological aspect of these studies, a more frequent and explicit focus on the investigation of the impact of captions (intralingual subtitles) can be observed in the 1990s. This scenario seems to change from 2000s on, with the emergence of comparative studies dealing with interlingual versus intralingual subtitling. This shift can be interpreted as an attempt to obtain a broader understanding of the efficacy that each type of subtitles can have in language learning/acquisition.

The vast array of topics covered suggests how prolific the effects of subtitling and captioning can be on language learning/acquisition. Moreover, the positive effects found in the literature confirm what researchers have always speculated, that is, this specific niche can be taken “to provide a rich context for foreign language

acquisition" (KOOLSTRA & BEENTJES, 1999, p. 51), and should continue meriting further scholar attention.

3. CONCLUDING REMARKS AND AVENUES FOR FUTURE RESEARCH

This paper set out to provide a systematic review of recent studies addressing language learning aspects aided by the instructional and experimental use of subtitled and captioned video materials. This paper also attempted to unveil which topics have merited scholar attention in the past years, as well as pointing out underinvestigated issues in this particular niche.

Though the studies revisited in the present paper contribute to the understanding of the processes learners go through when learning another language and how these learners can benefit best from subtitled and captioned video materials, further research is necessary in order to allow for:

- The examination of the effects of subtitled and captioned materials on non-instructional settings;
- The investigation of the impact of subtitled/captioned materials on foreign language beginning learners, which has received little attention among scholars in comparison to intermediate and advanced populations;
- More comparative analyses of the impact on the use of authentic and non-authentic subtitled/captioned materials to understand whether or not there are significant differences in terms of language acquisition when using these materials for instructional, non-instructional, and experimental purposes;
- A more systematic investigation of the extent to which the multisensory/bimodal input indeed gets processed, apart from the subtitles/captions per se. So far, very little research has been carried out to investigate if viewers do process the soundtrack in its entirety along with the subtitles/captions (BIRD & WILLIAMS, 2002), since reading subtitles/captions has been suggested to be almost mandatory, at least by adults (D'YDEWALLE & VAN RENSBERGEN, 1989; D'YDEWALLE et al, 1991);
- Studies that take into consideration the students' accounts concerning their experiences, strategies, and reactions while watching subtitled/captioned video materials, with a view to furthering the understanding of

their beliefs and perceptions of the impact that such materials can have on their learning process;

- A more comprehensive investigation by means of longitudinal studies to check which effects long exposure to captioned and subtitled materials can have not only on listening and reading comprehension and vocabulary learning, but also on other domains of language, such as oral and written production.

Future investigation of issues related to the use of captioning and subtitling for learning purposes might help inform both learners and practitioners about the potentials and pitfalls that subtitled and captioned video materials can pose. Looking at their drawbacks more closely may also help learners and practitioners come up with working solutions to optimize the instructional use of subtitled and captioned video materials, therefore maximizing overall learning opportunities.

REFERENCES

- BIANCHI, F., & CIABATTONI, T. (2008). Captions and subtitles in EFL learning an investigative study in a comprehensive computer environment. Retrieved from http://www.openstarts.units.it/dspace/bitstream/10077/2848/1/bianchi_ciabattoni.pdf, April 26th, 2015.
- BIRD, S. A., & WILLIAMS, J. N (2002). The effect of bimodal input on implicit and explicit memory: an investigation into the benefits of within-language subtitling. *Applied Psycholinguistics*, 23(4), 509-533.
- D'YDEWALLE, G., & GIELEN, I. (1992). Attention allocation with overlapping sound, image, and text. In K. Rayner Ed.), *Eye movements and visual cognition: Scene perception and reading* (pp. 415-427). New York: Springer-Verlag.
- D'YDEWALLE, G., PRAET, C., VERFAILLIE, K., & VAN RENSBERGEN, J. (1991). Watching subtitled television: Automatic reading behavior. *Communication Research*, 18, 650-666.
- D'YDEWALLE, G., & VAN DE POEL, M. (1999). Incidental foreign-language acquisition by children watching subtitled television programs. *Journal of Psycholinguistic Research*, 28, 227-244.
- D'YDEWALLE, G., & VAN RENSBERGEN, J. (1989). Developmental studies of text-picture interactions in the perception of animated cartoons with text. In H. Mandl & J. R. Levin (Eds.), *Knowledge acquisition from text and pictures* (pp. 233-248). Amsterdam: Elsevier Science Publishers B.V. (North-Holland).

- ELLIS, R. (2008). *The study of second language acquisition*. 2nd Ed. Oxford: Oxford University Press.
- GARZA, T. J. (1991). Evaluating the use of captioned video materials in advanced foreign language learning. *Foreign Language Annals*, 24(3), 239-258.
- HUANG, H., & ESKEY, D. E. (1999). The effects of closed-captioned television on the listening comprehension of intermediate English as a second language (ESL) students. *Journal of Educational Technology Systems*, 28, 75-96.
- KOOSLTRA, C. M., & BEENTJES, J. W. J. (1999). Children vocabulary acquisition in a foreign language through watching subtitled television programs at home. *ETR&D*, 47(1), 51-60.
- KRASHEN, S. (1982/2009). *Principles and Practice in Second Language Acquisition*. Pergamon Press.
- MARKHAM, P. L. (1999). Captioned videotapes and second-language listening word recognition. *Foreign Language Annals*, 32(3), 321-328.
- MARKHAM, P. L., & PETER, L. (2003). The influence of English language and Spanish language captions on foreign language listening/reading comprehension. *Journal of Educational Technology Systems*, 31(3), 331-341.
- MARKHAM, P. L., & PETER, L., & MCCARTHY, T. (2001). The effects of native language vs. target language captions on foreign language students' DVD video comprehension. *Foreign Language Annals*, 34(5), 439-445.
- MATIELO, R., & ESPINDOLA, E.B. (2011). Domestication and Foreignization: an analysis of culture-specific items in official and non-official subtitles of the TV series Heroes. *Cadernos de Tradução*, 27(1), 71-93.
- NEUMAN, S.B. (1989). The impact of different media on children's story comprehension. *Reading Research and Instruction*, 28, 38-47.
- NEUMAN, S. B., & KOSKINEN, P. (1992). Captioned television as comprehensible input: Effects of incidental word learning from context for language minority students. *Reading Research Quarterly*, 27, 94-106.
- STEWART, M.A., & PERTUSA, I. (2004). Gains to language learners from viewing target language closed-captioned films. *Foreign Language Annals*, 37(3), 438-447.
- TAYLOR, G. (2005). Perceived processing strategies of students watching captioned video. *Foreign Language Annals*, 38(3), 422-427.
- VAN LOMMEL, S., LAENEN, A. & D'YDEWALLE, G. (2006). Foreign grammar acquisition while watching subtitled television programs. *British Journal of Educational Psychology* 76, 243-258.
- WINKE, P., GASS, S., & SYDORENKO, T. (2010). The effects of captioning videos used for foreign language listening activities. *Language Learning and Technology*, 14(1), 65-86.

Recebido: 30/07/2014

Aceito: 17/05/2015