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Incidental Learning of Word Stress with Captioned Authentic Videos: The Effect of Repetition

Aprendizaje incidental de la acentuación con vídeos auténticos subtitulados: el efecto de las repeticiones

EKATERINA SINYASHINA
ISABEL BALTEIRO
UNIVERSIDAD DE ALICANTE

Recent technological advances and access to authentic input have promoted autonomous and incidental target language (TL) vocabulary learning. Very few studies, however, have so far put focus on both incidental learning of the word stress aspect of potentially new lexis and the influence of the repetition variable on this process, while viewing authentic videos. Similarly, there is very limited research on determining the critical number of repetitions needed to effectively learn word stress aspect of potentially new vocabulary by using authentic videos with captions. To address these three issues, Spanish participants from an incidental learning group were asked to watch 5 hours of authentic TV documentary with English captions, where eleven target words had from 2 to 112 repetitions. The general results revealed an apparent better performance of the incidental group in comparison to the control one. Nevertheless, a more detailed statistical analysis of the results for each target word has proven to be not significant. Furthermore, no statistically significant correlation between the increase in the number of repetitions and successful learning of the word stress was detected and, as a consequence, it was unfortunately impossible to determine the critical number of repetitions for successful incidental acquisition of the word stress aspect of new lexis while viewing authentic videos.

Keywords: *word stress; incidental learning; authentic videos; repetitions*

Los avances tecnológicos recientes y el acceso o exposición a *input* auténtico han promovido el aprendizaje de vocabulario de forma autónoma e incidental. Sin embargo, hasta ahora muy pocos estudios se han centrado en el aprendizaje incidental del aspecto de la acentuación de palabras y la influencia de la variable de repetición en este proceso mientras visualizan vídeos auténticos. Del mismo modo, la investigación es muy limitada en el campo de determinar el número crítico de las repeticiones necesarias para el aprendizaje efectivo del aspecto de la acentuación de palabras nuevas a través del uso de vídeos auténticos con subtítulos. Para abordar estos dos problemas, se pidió a los participantes españoles del grupo incidental que vieran cinco horas de un documental de televisión (auténtico, sin adaptar) con subtítulos en inglés, donde once palabras tenían de 2 a 112 repeticiones. Los resultados generales revelaron un aparente mejor desempeño del grupo incidental frente al grupo de control. Sin embargo, un análisis estadístico más detallado de los resultados para cada palabra objeto de estudio ha demostrado no ser significativo. Además, no se ha detectado una correlación estadísticamente significativa entre el aumento del número de repeticiones y el aprendizaje de la acentuación de la palabra y como consecuencia fue imposible determinar el número crítico de las repeticiones para el aprendizaje incidental exitoso del acento léxico de nuevas palabras con vídeos subtitulados auténticos.

Palabras clave: *acentuación; aprendizaje incidental; videos auténticos; repeticiones*

1. INTRODUCTION

English is nowadays compulsorily learned in Spain at all stages of education but it is also promoted as an international language in all spheres of Spanish everyday routine. Still, more than half of the Spaniards (56% according to *Special Eurobarometer 243* of the European Commission, 2006: 4) admit that they do not know any foreign language. Furthermore, Caraker (2016: 29) reveals that “only 7% of the respondents felt that Spaniards attained passable levels of English proficiency compared with other Europeans”. Therefore, data seem to suggest that there remains a lot of work to be done in Spain in order to improve the linguistic proficiency in English in general. New generations, however, seem to be considerably and progressively improving their English skills thanks to new technologies and/or the Internet (see Chuo & Kung, 2002), which may be autonomously used by teachers or learners.

Today not only do language teachers have an infinite number of “fascinating options for using technology to enhance language learning”, but they are expected “to use social technologies in ways that align with [students] established social practices” (Kessler, 2018: 206), especially because present-day learners are *Digital Natives* (Prensky, 2001: 1). The Internet and digital platforms provide access to almost any type of video, from authentic films and TV series to short homemade videos that can be found in YouTube and “provide students with an opportunity to engage meaningfully in the target language” (Terantino, 2011: 11). Thus, new technologies, which include viewing captioned authentic videos, can facilitate incidental learning of vocabulary and grammar but also other aspects, such as word stress, which will be the focus of this work.

2. LITERATURE BACKGROUND

2.1 *Authentic videos in EFL learning*

New technologies facilitate access to many authentic videos (e.g., films, TV series, etc.), “an infinitely richer teaching resource compared to a much smaller number of scripted L2 video programs, designed for a specific level of language proficiency” (Baltova, 1999: 147-148), and which can help to compensate “for all shortcomings in the EFL learning experience by bringing language to life” (King, 2002: 510). Authentic audio-visual material allows Target Language (TL)¹ learners to enhance their TL proficiency “particularly in their increasingly fluent speech, more native-like accent and a growing repertoire of useful expressions for informal social contexts” (Lin & Siyanova-Chanturia, 2014: 4).

The potential learning benefits of authentic videos may be explained by the multimodal input they provide: visual, audio and verbal information (Williams & Lutes, 2007; Lin & Siyanova-Chanturia, 2014). Nelson, Balass and Perfetti (2005: 39) noticed that more words are learned through the written (or print) modality than through speech and concluded that “learners establish memory traces for new words through written forms more quickly than through spoken”.

As regards target vocabulary learning, Brown (2010) found that most learners could acquire vocabulary through a film provided they had a subsequent amount of time and an

¹ The term Target Language (TL) is used in the present paper when making reference to the English language as well as to other languages mentioned in the background section. The authors of this paper opt for this term as it is broader and encompasses other terms that can be used when referring to English in the teaching-learning context, e.g., SL, L2, FL, etc. (see, for example, Moeller & Roberts, 2013; Barcroft, 2015). Moreover, TL can be used in reference to any language that is studied by TL learners all over the world.

adequate amount of repetition. Similarly, Garnier's (2014) longitudinal single-case study showed that the participants demonstrated tangible vocabulary acquisition after having watched a film eight times with reversed subtitles.

Although authentic videos can also have a strong motivational effect on TL learners with different proficiency levels (Cruse, 2007; Seferoğlu, 2008; Kabooha, 2016), some studies have also mentioned potential learning difficulties because "English internet television is intended for people residing in native English-speaking communities" and "it does not provide modified input (e.g., foreigner talk) like educational videos do" (Lin & Siyanova-Chanturia, 2014: 7), and also because learners cannot learn "without simultaneously learning the connections between a large number of elements" (Sweller, 1994: 304). The latter seems to suggest that some formal teaching or guidance is needed.

2.2 The use of subtitles and captions for vocabulary learning

The literature in general suggests that TL learners will benefit more from watching authentic videos with captions and/or subtitles in the TL than without them (see, for example, Neuman & Koskinen, 1991; Shabani & Zanussi, 2015). Thus, for example, BavaHarji, Alavi and Letchumanan (2014) recorded higher vocabulary gains for the students who watched authentic videos with captions in the TL than those without captions. Similarly, Peters, Heynen and Puimege's (2016) experiment reveals positive effects of captions for form recognition and recall; in the case of form recall, captions result in more word learning than L1 subtitles. Peters and Webb (2018: 19), on their part, also showed that watching single, full-length TV programmes "can result in substantial learning gains at the level of meaning recall and meaning recognition" but no learning gains in the form recognition test.

Apart from that, Gorjian (2014: 823) reveals that "different type of subtitling has a different effect on incidental learning of new vocabulary through watching subtitled movies". Apparently, the reversed subtitles or captions (sound in the L1 and subtitles in the TL) generate better results than the standard (sound in the TL and subtitles or captions in the L1) or bimodal ones. In line with this, Garnier (2014: 26) affirms that with reversed subtitles or captions the learners may be "constantly acquiring new words whilst remembering what was previously learned". As regards intralingual and interlingual subtitles (or captions), Frumuselu, De Maeyer, Donche and Gutiérrez Colon Plana's experiment (2015: 115) concluded that "students who were exposed to authentic audio-visual materials for a period of 7 weeks with intralingual (English) subtitles benefited more, as regarding their lexical learning, than those who watched the episodes under the interlingual (Spanish) condition".

Although most papers indicate that different subtitled or captioned modes can facilitate incidental and intentional learning of the TL and its lexis, some studies did not find conclusive evidence of the effectiveness of different subtitled/captioned conditions for TL vocabulary learning, namely, Stewart and Pertusa (2004), Birulés-Muntané and Soto-Faraco (2016), and Yuksel and Tanriverdi (2009).

2.3 Incidental vocabulary learning: the effectiveness of watching authentic videos with subtitles or captions

The effectiveness of incidental vocabulary learning has been widely discussed. One of the main supporters of incidental vocabulary acquisition is Krashen (1982, 1988, 1989), who equals "comprehensible input" to incidental learning and believes that it is the main source of vocabulary competence. Moreover, incidental learning is proven to be more beneficial at a higher stage of mastering new vocabulary as it helps to enhance contextual knowledge (Schmitt, 2008). Several studies have proved that certain vocabulary gains can take place

incidentally while reading or being exposed to any type of TL input (Swanborn & de Glopper, 1999; Sonbul & Schmitt, 2010). Other scholars like Sweller, Kirschner and Clark (2006) or Coyne, McCoach and Kapp (2007) argue that simple exposure to different types of input (through the reading type of input) without any further work on the vocabulary does not lead to effective learning and retention of new lexis.

As regards authentic videos for incidental acquisition of new vocabulary, experiments with short videos generally recorded poor vocabulary gains (e.g., Bisson, Van Heuven, Conklin, & Tunney, 2014; Peters et al., 2016). Conversely, studies with more extensive exposure to authentic audio-visual material report that TL learners can incidentally learn different aspects of new vocabulary (Rodgers, 2013; Gorjian, 2014; Frumuselu et al., 2015; Chen, Liu, & Todd, 2018). Differences in results, however, may be attributed not only to the time of exposure to the video, but also to other variables such as the participants' age and proficiency level as well as particular aspects of the target words measured.

Note also that most of the existent studies were conducted with TL learners of pre-intermediate to intermediate proficiency level (see Yuksel & Tanriverdi, 2009; Rodgers, 2013; Garnier, 2014; Gorjian, 2014; Birulés-Muntané & Soto-Faraco, 2016; Peters & Webb, 2018). Other research papers focused on TL learners of mixed proficiency levels (Bianchi & Ciabattini, 2008; Frumuselu et al., 2015; Chen et al., 2018), and of elementary level (see d'Ydewalle & Van de Poel, 1999; Koolstra & Beentjes, 1999).

2.4 Repetition variable and incidental learning of new vocabulary

Several factors can influence incidental vocabulary learning from different types of input. Apart from individual TL learners' characteristics (e.g., age, gender, aptitude, proficiency level, memory, attitude, motivation and strategies), the characteristics of input itself, the difficulty of texts, generative word uses, contextual richness or word repetition should be considered (see, for example, Krashen, 1988; Schmitt, 2008; Webb, 2008, etc.).

The repetition variable is analysed in the present study, as there seems to be a connection between the learning of different aspects of a new word and the number of times a learner is exposed to it (Nation, 2004; Barcroft, 2015; Hulstijn, 2015). Although sometimes one word occurrence may be enough for it to be remembered (see Cook, 2001), the general tendency is that new words should be encountered several times before they are learnt. Schmitt (2008: 339), for example, states that "anything that leads to more exposure, attention, manipulation, or time spent on lexical items adds to their learning". In line with this, Barcroft (2015: 130) believes that "increasing the number of exposures to a target L2 word in the input leads to better L2 word learning than increasing the interval length of each exposure".

It is interesting to note that Zahar, Cobb and Spada (2001) and Tekmen and Daloğlu (2006) found that repetition of new words plays a more important role for lower-level learners than for advanced ones, and most significantly for intermediate participants. Peters (2014: 89), in turn, highlights the importance of "a large and positive effect of frequency". Higher number of repetitions seems to be necessary for the acquisition of the form of collocations (Webb, Newton & Chang, 2013); positive frequency effects were also found in Malone (2018).

One of the earliest studies into the influence of the number of repetitions on the retention of new words through reading input was conducted by Hulstijn, Hollander and Greidanus, (1996). These concluded that students "more readily recognized target words that had appeared three times than target words that had appeared only once" (Hulstijn et al. 1996: 331). Waring and Takaki (2003), however, suggest that more than eight repetitions are needed for successful recognition of meaning and form of new words, whereas a higher number of repetitions (probably more than fifteen) is needed for TL learners to be able to translate new words.

Likewise, Webb (2007: 62) considers that “in many cases more than ten encounters are needed to achieve full knowledge of a word”.

Vidal (2003), Pellicer-Sánchez and Schmitt (2010), Vidal (2011), Webb (2007), Webb et al. (2013) analysed the effects of the repetition variable on incidental vocabulary learning through the reading or listening types of input and tried to pinpoint the possible critical number of repetitions for successful vocabulary learning. Rodgers (2013), Peters et al. (2016), Peters & Webb (2018) and Sinyashina (2019) examined video input, but only the latter has so far attempted to establish the minimal number of repetitions for TL vocabulary learning while being exposed to the audio-visual input in the TL. The other three papers observed the beneficial effect of frequency of occurrence on incidental word learning, while Peters and Webb (2018: 21) added that “repetition had a lightly bigger impact on meaning recall than on meaning recognition”.

2.5 English vocabulary pronunciation and word stress learning

Knowing a word means mastering its various aspects (see Nation, 2004). Apart from acquiring its form and meaning, TL learners should have knowledge of, amongst others, morphosyntactic properties, collocational properties and pronunciation of new vocabulary, which is particularly necessary in order to use words in a productive way (Schmitt, 2008).

Harmer (2003) names *intelligibility* as the primary goal of pronunciation teaching, i.e. knowing and being able to produce not only the correct pronunciation of segmental elements, such as vowels and consonants, but also suprasegmental ones, e.g., pitch, loudness, tempo, stress, accent, tone and intonation (see also Knowles, 1990; Roach, 2004) in order to be understood.

Within pronunciation, “learning word-stress information is an integral part of the experience of learning a new word” (Aitchison, 1992). More importantly, “lack of correct stress can lead to difficulty of word recognition” (Cutler, 1984: 80), and Harmer (2003: 184) adds that “stressing words and phrases correctly is vital if emphasis is to be given to the important parts of the messages and if words are to be understood correctly”. Moreover, lexical stress is one of the suprasegmental features of language, whose importance in communication and listeners’ comprehension has been highlighted by many researchers (e.g., Hahn, 2004; Kang, Rubin & Pickering, 2010). As English has no fixed position of stress in individual words (Lillo Buades, 2012) and does not use the graphic accent, it is impossible to predict which syllable is going to be stressed in a word (see, for example, Lewis & Deterding, 2018).

In the case of Spanish learners of English, as in the present study, another difficulty is that even English words that are similar to Spanish ones tend to have a stress on a different syllable. Thus, for example, due to L1 lexical knowledge and transfer to the TL language, Spanish speakers are more likely to mark the middle section of the word in a trisyllabic word, rather than its boundaries (Toro-Soto, Rodríguez-Fornells & Sebastián-Gallés, 2007).

Although English is full of exceptions, some factors can contribute to determining the position of word stress: the origin of the word, its morphological structure and grammatical category, as well as the phonological composition of its syllables (Knowles, 1990). Lillo Buades (2012: 166) explains that in the case of two-syllable words, the stress usually either falls on the first syllable or “a stressed syllable must always have a strong vowel”. Therefore, knowledge of these stress patterns or rules can be taught through instruction (see Sardegna, 2009; McCrocklin, 2012) and undoubtedly help learners of English to avoid incorrect placement of word stress.

As regards the potential use of authentic videos for word stress learning, to our knowledge only three studies have so far looked into the effect of viewing authentic videos for learning the word stress property of words. Damar (2014) reported that watching authentic

videos helped Turkish EFL learners to improve their ability to produce and perceive different stress and intonation patterns of words, phrases and sentences. Chan and Leung (2014: 477) found that the participants were able to “learn simplified L2 word stress regularities without explicit instruction”. Incidental acquisition of word-stress was also reported in the study by Zellers, Post, and Williams (2011).

3. THE STUDY

3.1 Objectives

The present study is concerned with incidental learning of word stress while learners view authentic videos in their free time, under real-life conditions. Moreover, it aims to analyse the potential effect of the repetition variable on the incidental process of learning the word stress aspect during exposure to authentic audio-visual material. The focus is on the relation between the increase in the number of times a target word appears in the video material and the incidental learning of word stress. The following research questions were formulated:

- 1) Does viewing five hours of an authentic TV documentary series result in incidental learning of the word stress aspect of the target words in comparison to the control group?
- 2) If the incidental group outperforms the control one, is there a relationship between the increase in repetitions and the growth in the number of correct answers for the target words?
- 3) If the incidental group outperforms the control one, is there a critical point of repetitions at which the participants from the incidental group begin to consistently outperform the control group in the reading aloud test?

3.2 Participants and authentic material

For this study, 90 first-year university students of the English Studies Degree of the University of Alicante were asked to voluntarily answer a pre-testing and complete a placement test. The purpose of the pre-testing part was to collect background information concerning age, gender, L1 and proficiency level of English, as well as to select only those students who were interested in taking part in the experiment (see Appendix 1). The placement test, which consisted of completing a part of the Use of English part of B2 First Cambridge English Qualifications, allowed us to confirm the proficiency level stated by the potential participants in the pre-testing questionnaire and discard participants with the proficiency level higher than B1 (see in references Cambridge Assessment English). It is also worth noting that most of the participants who were eventually selected for the study had an official B1 or lower-level certificate (University of Cambridge, Trinity College London, etc.) of their competence level of English. Thus, 46 students, aged between 18 and 22, were selected and randomly distributed between two groups, namely the control and the incidental groups. Six participants from the incidental group, however, dropped out before completing the experimental part. The total number of participants and their characteristics are reflected in Table 1.

Table 1: Participants and their characteristics

Group	Number of participants	Age	Male	Female	L1
Incidental	17	18-22	2	15	Spanish
Control	23	18-22	7	16	Spanish

Sixteen episodes from the 11th season of the TV documentary *Forensic Files* were used as the authentic audio-visual material for the experiment. These episodes were chosen as they are easily accessible on the YouTube webpage with the option of activating captions in English (see Appendix 2). Each episode lasts approximately 20 minutes, with a total running time of approximately five hours.

3.3 Target words

Fifteen target words were chosen from those episodes in order to test the word stress aspect. In order to select the target words for the study, the *Range* and *Frequency* programs developed by Nation (2017) helped to determine the target words frequency in general and their occurrences in the sixteen episodes (see Table 2). As is reflected in Table 2, most of these were low frequency words. This aspect of the target words was paid attention to, as B1 to B2 learners of English normally have an approximate knowledge of 2,750 to 3,750 words (see Meara & Milton, 2003, cited in Milton & Alexiou, 2009: 198). Therefore, choosing words from baselists 5 and higher could help to avoid words that the participants were most probably familiar with before the experiment. Nevertheless, four high frequency words (*charges*, *questioning*, *statement* and *evidence*) were also included. Although word frequency may be a decisive factor when choosing target words for testing other aspects of words (e.g., form, meaning, etc.; see Nation 2004; Webb 2007, 2008), for lexical stress aspect this factor was not considered as critical. Special attention was paid to the stress patterns that could pose certain difficulties for Spanish learners of English. Both L1 and TL formal similarities and differences in stress patterns were considered. Thus, the experiment includes units that resemble Spanish words in form but have a different stress placement pattern (e.g., *felony*, *testimony*, *prosecutor*, *evidence*).

Table 2: Target words

Target Word	Number of Repetitions	BNC/ COCA word lists of 25,000 words
felony	2	baselist 12
charges	3	baselist 1
attorney	4	baselist 8
manslaughter	4	baselist 11
questioning	5	baselist 1
statement	5	baselist 1
parole	6	baselist 9
testimony	6	baselist 7
assault	8	baselist 4
abduction	11	baselist 8
stalker	12	baselist 6
arson	14	baselist 7
alibi	30	baselist 8

Target Word	Number of Repetitions	BNC/ COCA word lists of 25,000 words
prosecutors	45	baselist 4
evidence	112	baselist 1

3.4. Procedure and reading aloud test

The experiment consisted in the subjects from the incidental group watching the sixteen episodes at home in their free time (see the instructions in Appendix 2) in a maximum of three weeks, whereas the control group was used as a reference: after having completed the pre-testing part no task was assigned to the participants from the Control Group until the day of the reading aloud test. The participants from the incidental group had to view the episodes with captions in English as previous research (e.g., Frumuselu, De Maeyer, Donche & Gutiérrez Colon Plana, 2015; Shabani & Zanussi, 2015; Nasab & Motlagh, 2017) revealed their more beneficial effect for lexical learning rather than viewing videos without captions/subtitles or with captions/subtitles in the mother tongue. Moreover, the authors of the papers decided to opt for captions in the TL because they believe they could help the participants to relate the form of the target words to their pronunciation (although, to our knowledge, no research has so far confirmed or discarded this belief). Given that the aim of the study was to test purely incidental learning of the word stress aspect under real-life conditions, no further requisites regarding the participants' actions while viewing the episodes were established. Hence, the participants' actions while watching the episodes were neither controlled nor restricted.

Two weeks after the incidental group had finished watching the videos, the participants answered a questionnaire concerning the content of the episodes and a reading aloud test was administered. For the reading aloud test, each participant was asked to read each of the fifteen target words during an individual session where their performance was recorded using a mobile application. The results were then analysed by both authors of this paper in order to properly interpret them. When analysing the results, we focused on the correct placement of the primary word stress. Table 3 shows the word stress patterns used as a reference that were adapted from Lillo Buades (2012:172-177). Any deviation from these patterns when reading aloud the target words was considered as incorrect and marked with zero points. A maximum of one point was awarded every time the participants correctly stressed each target word and the word stress pattern coincided with that presented in Table 3.

Table 3: Word stress patterns for the reading aloud test

Target words	Word stress pattern
felony	' _ _ _ _
charges	' _ _
attorney	_ _ ' _ _
manslaughter	' _ _ _ _
questioning	' _ _ _ _
statement	' _ _ _
parole	_ _ ' _
testimony	' _ _ _ _ _
assault	_ _ ' _
abduction	_ _ ' _ _
stalker	' _ _ _
arson	' _ _ _
alibi	' _ _ _ _

Target words	Word stress pattern
prosecutor	' _ _ _ _ _
evidence	' _ _ _ _

3.5 Results

3.5.1 Question 1. The effectiveness of watching 5 hours of authentic videos

The general results of the participants' reading aloud performance are presented in Table 4. Data reveal that subjects from the incidental group managed to correctly place stress in 78% of the target words, whereas participants from the control group showed lower results, with 69% of correctly stressed target words. In general, these data suggest that the incidental group performed better than the control one. Nevertheless, the analysis of the results for each target word sheds more light on the general higher score of the incidental group and the apparent effectiveness of incidental learning while viewing the episodes.

Table 4: General results for the word stress aspect

Number of Repetitions	Target Word	CA ² Control Group	%	CA Incidental Group	%	% difference ³
2	felony	19	83%	14	82%	-1%
3	charges	10	43%	10	59%	15%
4	attorney	14	61%	11	65%	4%
4	manslaughter	8	35%	7	41%	6%
5	statement ⁴	21	91%	17	100%	9%
6	parole	12	52%	12	71%	18%
6	testimony	12	52%	9	53%	1%
8	assault	15	65%	16	94%	29%
11	abduction	22	96%	16	94%	-2%
12	stalker	19	83%	16	94%	12%
14	arson	23	100%	16	94%	-6%
30	alibi	9	39%	16	94%	55%
45	prosecutor	13	57%	12	71%	14%
112	evidence	22	96%	16	94%	-2%
Totals:	15	239	69%	199	78%	9%

² CA=correct answers; for the control group out of 23; for the incidental group out of 17.

³ “% difference” refers to the difference in percentages between the control and incidental groups. It shows if there was an improvement in the acquisition of the word stress aspect in the incidental group in comparison to the control one.

⁴ It is interesting to note that although the primary focus of the study was on the correct placement of lexical stress, when the word *statement* was mispronounced with the Spanish ‘es’ accent (e.g., [e' stertmənt]), it was classed as wrong. The results, however, reveal that this word did not pose much difficulty as the majority of the participants (100% in the Incidental group and 91% in the Control one) pronounced it correctly not only in terms of lexical stress placement but also in terms of pronunciation of the initial sounds.

3.5.2 Question 2. The relationship between the increase in the number of repetitions and the incidental learning of the words stress aspect

Difference in performance between the control and incidental groups for each of the fifteen target words in the reading aloud test is presented in Table 5 (see the column “% increase”). A positive improvement tendency of the incidental group for many of the target words can be observed when comparing its results with those of the control one (e.g., *charges* – 15%, *statement* – 9%, *manslaughter* – 6%; *parole* – 18%, *stalker* – 12%, etc.). The greatest improvement was noted for *alibi* (55%), followed by *assault* (29%), *parole* (18%), *charges* (15%) and *prosecutor* (14%). At the same time, a negative tendency was observed for several target words: *felony* (-1%), *questioning* (-22%), *abduction* (-2%), *arson* (-6%) and *evidence* (-2%), that is, the participants from the control group gave more correct answers than those from the incidental one. In general, the results can be defined as irregular due to their variety in the sample.

The statistical Fisher test (one-tailed) was applied in order to analyse if the percentage differences between the two groups for each of the fifteen target words were statistically significant. The Fisher test was used instead of the commonly used chi-square due to the small number of participants in the sample. The test revealed that the improvement in scores was statistically significant for only two target words, *assault* and *alibi* (see Table 5). For the rest of the words, the test found the difference between the two groups statistically insignificant. That is, no improvement in the acquisition of the word stress aspect was statistically confirmed for the majority of the target words.

Table 5: Fisher test results

Repetitions	Target Word	% increase	Fisher test results	
2	felony	0%	0.649	not significant
3	charges	15%	0.262	not significant
4	attorney	4%	0.534	not significant
4	manslaughter	6%	0.466	not significant
5	statement	9%	0,324	not significant
5	questioning	-22%	0,100	not significant
6	parole	18%	0.199	not significant
6	testimony	1%	0.607	not significant
8	assault	29%	0.03	significant
11	abduction	-2%	0.676	not significant
12	stalker	12%	0.280	not significant
14	arson	-6%	0.425	not significant
30	alibi	55%	<0.001	significant
45	prosecutor	14%	0.280	not significant
112	evidence	-2%	0.676	not significant

Regarding the linear relationship between the growth in the number of repetitions and the increase in the number of correct answers for each target word, no correlation was detected with the correlation coefficient of 0,02 (see Figure 1). This indicates that we can neither establish the relationship between these two variables nor can we discard it.

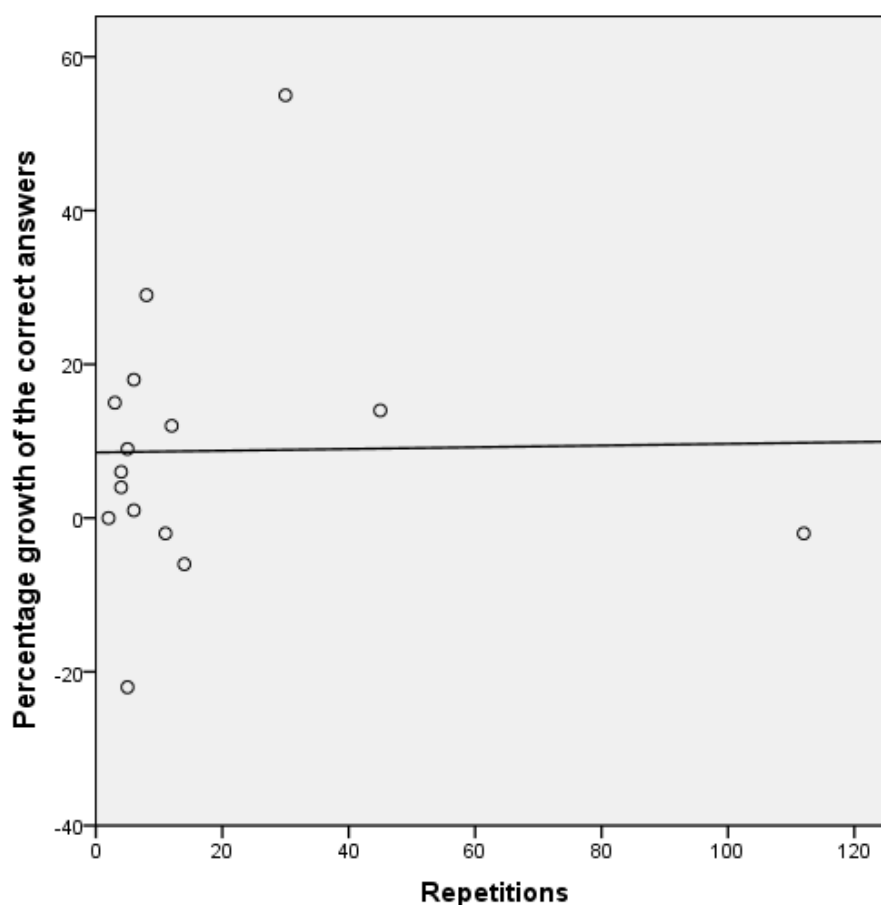


Figure 1: Relationship between the number of correct answers and the increase in the number of repetitions of the target words in the reading aloud test

4. DISCUSSION AND CONCLUSIONS

The general results of the experiment revealed that the incidental group scored higher in the reading aloud test than the control one: 9% of difference. These results should undoubtedly be interpreted as a positive outcome of the study as they suggest the positive effect of viewing authentic videos on the incidental learning of the word stress aspect. Moreover, they agree with previous research (see, for example, Zellers et al., 2011; Chan & Leung, 2014; Damar, 2014), which also found that word stress can be incidentally acquired with simple exposure to the TL. Nevertheless, this is only an initial impression of the effectiveness of viewing authentic videos for incidental TL vocabulary learning: a more detailed analysis of the percentage differences between the two groups for each target word showed that they were statistically non-significant for most of the target words. Therefore, it cannot be concluded that viewing 5 hours of the TV documentary contributes to effective incidental acquisition of new lexis.

It may be the case that the level of difficulty of the video material may not have allowed the participants to explore all the benefits that the videos had to offer for the acquisition of the word stress aspect. Webb and Rodgers (2009: 20), for example, analysed the lexical coverage of films and determined that in general “knowledge of the most frequent 3,000 families may be the vocabulary size from which movies may become useful for language learning”. For certain genres, such as crime, however, knowledge of 95% of the words in a movie may not be enough to understand it and feel comfortable watching it, as TL learners also need to become

accustomed to the speed of the dialogue and the pronunciation of (the) words (see Webb & Rodgers, 2009). Apart from that, there are other factors which could explain the statistically non-significant results of the study, as discussed below.

Regarding the relationship between the increase in the number of repetitions of the target words and incidental learning of the word stress aspect, the data showed that the percentage difference between the two groups did not consistently augment with the increase in the number of times the target words appeared in the authentic videos. Irregular results were observed for the target words independently of higher and lower number of repetitions. For instance, *statement* (100%) and *assault* (94%), repeated 5 and 8 times respectively, showed higher scores in the incidental group in comparison to *prosecutor* (71%), which was repeated 45 times in the video. Likewise, the target word *charges* achieved 10% of improvement with only three repetitions, whereas *arson*, which was repeated 14 times, showed a negative tendency of improvement, -6%. As the linear relationship resulted statistically non-significant the possible relationship between the growth in the number of repetition and incidental learning of new target lexis cannot be discarded, nor can it be confirmed. Similarly, it was unfortunately impossible to establish the critical point of repetitions for successful incidental learning of the word stress aspect of the target words through exposure to authentic videos.

The improvement in the placement of word stress, which could be attributed to incidental learning while viewing 5 hours of authentic videos, was statistically significant for only two target words: *assault* and *alibi* (in the case of the second one probably due to the fact that it was repeated 30 times). The rest of the data can be characterized as irregular and should probably be analysed considering different factors or variables related to suprasegmental features of English and Spanish as well as the characteristics of the target words and the participants chosen for the experiment.

As is discussed in Section 2.5, stress perception and production tend to pose problems to Spanish learners of English because English is a stress-timed language, whereas Spanish is a syllable-timed one. As a consequence, while in English stressed syllables normally sound longer than unstressed ones, in Spanish all the syllables tend to sound as if they were of the same length. It should be mentioned, however, that although duration of syllables is more important in English than in Spanish (partially because of the vowel reduction in English), duration does play an important role in Spanish word-level stress as well (see Harris, 1985). Regarding lexical word stress, Gutiérrez (2001) explains, for example, that the duration of stressed syllables in English is longer than in Spanish; however, the duration of unstressed syllables is similar in the two languages. Moreover, the durational variability between stressed and unstressed syllables is considerably greater in English than in Spanish (Gutiérrez, 2001). It is common that TL learners tend to apply stress pattern rules from their mother tongue to the language they are studying. Thus, it is possible that there was negative transference of the L1 in, for example, the target words *testimonio*, *prosecutor*, etc.

Contrary to the preceding results, no negative interference from L1 (Spanish) to English was observed for *evidence* and *abduction*, which also have Spanish equivalents with different stress patterns. In these cases, students managed to achieve very high results in both groups, probably due to either the high frequency of these words or the participants' familiarity with them prior to the experiment. It is possible that they could have acquired them in one of the subjects that were taught during the period of time the experiment was conducted or outside the university, while performing informal activities which involve English as the TL. The frequency factor and the last supposition, however, should not have been a sufficient reason for excluding these words from the target wordlist due to the practical and physical nature of the lexical stress aspect of words (Vitanova & Miller, 2002; Harmer, 2003). Sometimes, TL learners can be familiar with forms and meanings of some frequent words and still fail to

produce their correct stress patterns. Accordingly, no positive effect was observed for the highly frequent target word *questioning*, which scored even lower in the incidental group, probably due to negative L1 interference.

Another variable to bear in mind when interpreting the results of the study is the placement of stress in derivative words. Although, as mentioned earlier, lexical stress in English does not follow clear rules and is full of exceptions, certain patterns can be distinguished, particularly regarding the placement of stress in derivatives (Lewis & Deterding, 2018). Familiarity with these rules, which are explained from low proficiency levels, can be analogically applied to other words formed using the same suffixes and prefixes. Thus, the participants were successful at stressing the target words *abduction* and *stalker*, probably because they knew that English words ending with the suffix *-ion* are stressed on the penultimate syllable. Similarly, for *stalker* participants may have instinctively relied on the rule that English words with the suffixes *-or* and *-er* are normally stressed on the first syllable. Another explanation for the high score of this word may be that it has become increasingly popular recently due to cyberstalking.

Other two variables may be considered: the origin of the target words and consonant and/or vowel clusters with various forms of pronunciation. In relation to the former, *parole*, a borrowing from French, follows the stress pattern of the source language, which may explain why the participants incorrectly placed the stress. With regard to clusters, certain sound combinations in English can be more challenging for Spanish learners of English due to the exceptions and various pronunciations that they may have. This may be the case of *manslaughter*, in which *-augh* may be pronounced as /ɑ:f/ or /ɔ:/. The participants were probably familiar with the pronunciation of this cluster in the frequently used word 'laughter' and by analogy applied the same rule to *manslaughter*. In fact, many of the participants pronounced this word as [mæns'la:ftə].

Finally, regarding the results of the effect of the number of repetitions of the target words on their incidental learning while viewing authentic videos, it is interesting to consider the idea that repetitions may be masked by low or high frequency of the target words. In other words, high frequency of some of the target words could be one possible explanation of the improvement of the incidental group in comparison to the control one and sometimes it can compensate for the low number of repetitions of these words in the video material. For example, it could be the case of the high frequent target words *charges* and *assault*, which were repeated only three and eight times in the episodes respectively, but managed to achieve considerable improvement of 15% and 29%. As these two target words were of high frequency, we can suppose, for instance, that the participants could have acquired them outside the experimental environment. It is noteworthy, however, that no such tendency was observed for the other two highly frequent words *statement* and *questioning*.

On the whole, the results of this study suggest random and inconsistent effect of the repetition variable on incidental learning of the word stress property of English words. The need to refer to several variables in order to explain the results here obtained seems to point to the idea that a combination of these variables (e.g., similarities or differences between L1 and L2, the origin of a word, its frequency, etc.) is probably of greater importance than the number of times a word appears in the audio-visual input. This statement, however, requires further research and comparative analysis of the impact of different variables. Concerning the lack of clear evidence of the effectiveness of viewing five hours of authentic videos for incidental learning of the word stress aspect, it can possibly be attributed to two reasons: firstly, the design of the study and the potential limitations related to the number of participants, the choice of the target words and the duration of the audio-visual material. Secondly, the nature of incidental learning, which is spontaneous and characterized by high susceptibility to the influence of

many different factors, one of which is the repetition variable analysed in this experiment. The effect of these factors is particularly noticeable when the focus is on the acquisition of the lexical stress property of words, which is irregular in nature and requires not only theoretical knowledge but also articulatory practice. In addition to the preceding, it is to be noted that Spanish and English differ greatly in terms of suprasegmental properties. As a consequence, incidental acquisition of the word stress aspect by Spanish learners of English turns into a challenge and, in this sense, statistically non-significant results of this study should not be perceived as surprising. The general results of this paper can still be characterized as promising and seem to suggest that constant and extensive exposure to authentic audio-visual material input may eventually result in the incidental mastering of this property of words. Nevertheless, statistical evidence raises a question regarding the need for direct instructions and purposeful teaching of the word stress in order to achieve better results in a shorter period of time. Further research into this area may shed more light on the results observed in the present paper.

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APPENDICES

APPENDIX 1

Pre-experimental questionnaire

Your ID number:

Age:

L1 (Mother Tongue):

Gender:

Do you like watching documentaries, films or TV series about crime investigation?

Yes No

Would you like to participate in a study that consists of watching 16 Episodes of the TV series called *Forensic Files* (approximately 5 hours)?

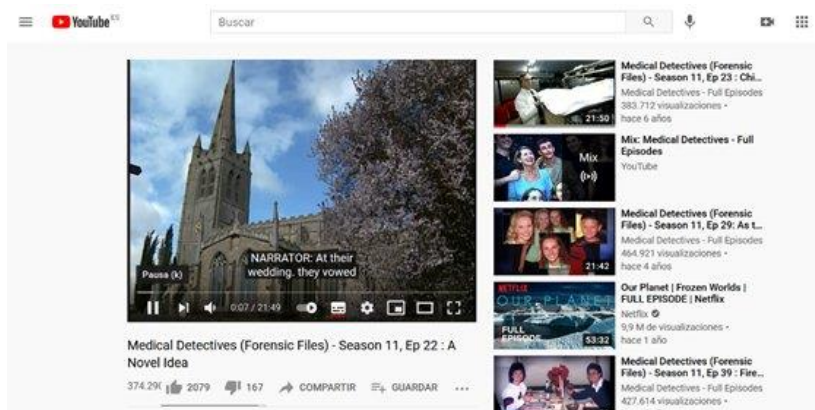
Yes No

APPENDIX 2

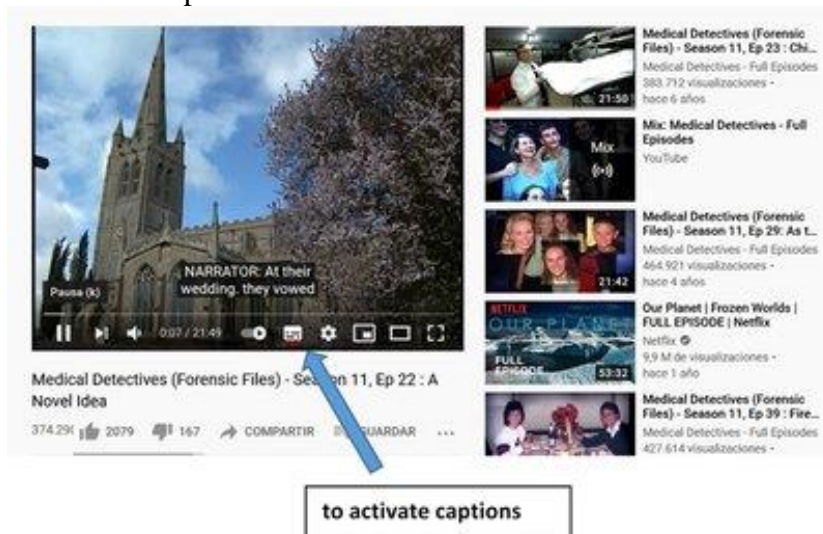
Instructions for the incidental group

1. Go to the following link: <https://www.youtube.com/watch?v=rq4kLtvVgWI>

or type the following line in YouTube: *Medical Detectives (Forensic Files) Season 11 Episode 22*.



2. Activate captions.



3. Watch the following episodes with captions in English: 22, 23, 25, 26, 27, 28, 30, 31, 33, 34, 35, 37, 38, 39, 40, 41.