



MORPHEME ORDER STUDIES: A DESCRIPTIVE STUDY IN ENGLISH AS A SECOND LANGUAGE

Jon Ramos Feijoo

Supervisor: Dr. Yolanda Ruiz de Zarobe

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0. ABSTRACT

Morpheme Order Studies (MOS) conform a set of highly influential studies in the field of first and second language acquisition. These studies were based on the assumption that there exists a universal and natural order for morpheme acquisition that all learners follow regardless of their background. The present paper aims to make a critical review of these studies by outlining the most significant ones in the domain of Second Language Acquisition (SLA). It also presents some evidence which accounts for the influence of other factors when acquiring Second Language (L2) morphemes, such as the role of the First Language (L1) or the features of morphemes themselves. Additionally, a small study has been carried out with the purpose of finding out in which order morphemes are actually acquired and to what extent L1 transfer can alter this order. I have gathered data from the writing section of an exam completed by learners in an English academy. I have chosen two classes of different proficiency levels (B1 and B2) for a more comprehensive study. I have analysed the writings focusing on the errors related to the target morphemes of the study: progressive *-ing*, plural *-s*, copula *be*, auxiliary *be*, articles, irregular past, regular past *-ed*, 3rd person singular *-s* and possessive 's. This analysis enabled me not only to determine which morphemes the students acquired first and which ones later but also to propose a possible order of acquisition that the participants could have followed, depending on the number of errors gathered in relation to each morpheme. After that, I have compared the order determined by this study to the one proposed by Krashen (1982) to check if these subjects adhered to the natural order of acquisition. The results reveal that students did not follow accurately Krashen's natural order and the existence of various errors caused by interlingual transfer corroborate that the L1 plays a significant role on the acquisition of L2 morphemes. Therefore, the students' L1 seems to have affected the natural order of acquisition of these morphemes. However, these results are quite tentative since several variables, such as age or type of task, should also have been taken into account.

Keywords: Second Language Acquisition (SLA), Morpheme Order Studies (MOS), natural order hypothesis, L1 transfer.

1. INTRODUCTION

Many theories have been proposed in the literature in order to explain how and in which order morphemes are acquired when learning an L2. During the 20th century, behaviourist theories claimed that the acquisition of L2 morphemes was potentially influenced by our mother tongue. However, in the 70s, a new innatist perspective emerged with regard to this line of research. It suggested that there is a natural sequence of morpheme acquisition common to all L2 learners regardless of their L1 and the type of instruction they have received. This assumption was endorsed by a set of studies which were conducted from 1970 onwards, they were called morpheme order studies. Therefore, the main aim of this paper will be to shed some light on these studies and corroborate or refuse some of the hypotheses they hold.

The present study is divided into two main sections, one theoretical and the other one practical. The first section will be introduced by the main studies conducted in this field during the 70s and 80s, in which the most well-known names such as Dulay and Burt (1973, 1974 and 1975), Larsen-Freeman (1975) or Krashen (1982) will appear. Then, in an independent section, I have outlined two more updated studies which also provide evidence that learners could follow a predictable order in the acquisition of L2 morphemes. Given the fact that this assumption was later questioned by several linguists such as Hakuta (1976), Zobl (1982) or Murakami & Alexopoulou (2016), I have devoted two sections to its reanalysis. In the first one, I have outlined some studies conducted by behaviourist researchers who considered L1 transfer the main factor to determine the order of L2 morpheme acquisition. In the second one, I have presented some other putative determinants which could also play a major role in this process. I have included the ones proposed by Goldsneider & Dekeyser (2001) and Kwon (2005): perceptual salient, semantic complexity, morphophonological regularity, syntactic category, frequency, syllabicity and lack of exception.

In the second section of my paper, I have carried out a small piece of research so as to ascertain whether learners do acquire L2 morphemes in a predictable sequence or they, otherwise, are influenced by other factors which determine this order, such as L1 transfer. For this, I have tested some students with different proficiency levels who attend an English academy in order to receive instruction for the Cambridge examinations. To

gather data, I have scrutinised the writing part of a mock exam they did for training and then, I have extracted all the errors concerning the morphemes I targeted for the study: progressive *-ing*, plural *-s*, copula *be*, auxiliary *be*, articles, irregular past, regular past *-ed*, 3rd person singular *-s* and possessive *'s*. A high number of errors in one category would imply that this morpheme has not been mastered yet by the majority of the students, and this would lead me to the assumption that it is acquired at a later stage in comparison to other with less number of errors. I have chosen the order of acquisition that Krashen (1982) proposed so as to compare my results with the ones obtained by him and draw some conclusion concerning the actual order of acquisition of these target morphemes. All this information regarding participants, the research questions, the instrument I have used, the methodology I have followed and the results obtained is arranged in different sections throughout the study. Finally, to wrap up my paper, I have devoted one section to concluding remarks and pedagogical implications. Finally, the limitations and gaps of my study are presented, such as the reduced number of subjects, the differences in the tasks that the students received and the lack of attention to other relevant variables such as age or gender.

2. MORPHEME ORDER STUDIES (MOS)

As mentioned above, in 1970, behaviourist theories, which supported language transfer, were replaced by innatist theories in which the so called morpheme order studies are found (Gass & Selinker, 1994). MOS started to be carried out under the assumption that humans had an innate ability for language learning. According to Chomsky, this ability was the Universal Grammar (UG), a set of constraints that humans innately possess which let us differ between grammatical and ungrammatical sentences. UG is composed of universal principles and parameters which vary across languages. Krashen, on the other hand, proposed the Language Acquisition Device (LAD), a mechanism which enables us to learn specific structures which do not appear in the input of children. Krashen (1982) developed this assumption in the field of SLA creating the Monitor Model. He proposed five different theories within this model: the input hypothesis, the acquisition-learning hypothesis, the monitor hypothesis, the affective filter hypothesis and the one who will be more relevant to the present study: the natural order hypothesis. According to this last theory, the rules which govern a certain language or, in this case, the grammatical morphemes that a certain language contains are acquired in a predictable order regardless

of the way in which they are taught in classrooms (see Figure 1). This was due to the Interlanguage (IL), an interim state in the acquisition of an L2 which is characterised by the exclusive usage of the rules of the Target Language (TL) (as cited in Khor, 2012).

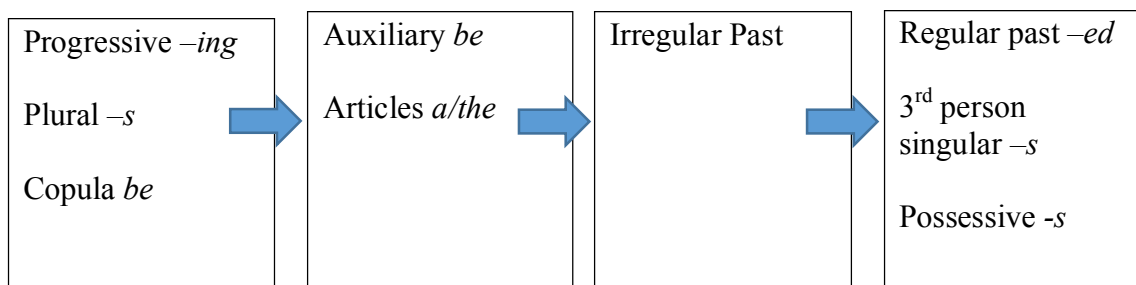


Figure 1. "Average" order of acquisition of grammatical morphemes for English as a second language (children and adults). Adapted from Krashen (1982).

MOS started being conducted in the field of First Language Acquisition (FLA). The pioneers as well as the most noteworthy names of this sphere are Brown (1973) and de Villiers and de Villiers (1973) (as cited in Kwon, 2005). Later, Dulay and Burt delved into the same issue from the perspective of SLA.

From then on, many researchers have conducted MOS, also known as natural order studies, in order to ascertain whether there exist other factors which influence acquisition, such as their mother tongue or the specific features of those morphemes, or, otherwise, learners do actually acquire morphemes in a predictable order. MOS mainly focused on grammatical morphemes, which were also called functors.

2.1. MOS: EARLY PERSPECTIVES IN L2

As previously mentioned, MOS came into sight when Brown (1973) decided to investigate the accuracy with which 3 English children acquired morphemes in their L1. He discovered that the 3 children followed a similar pattern when acquiring them. This hypothesis related to the existence of a natural order in the acquisition of L1 morphemes was extended to SLA studies in the same year. Dulay and Burt (1973) proposed that there could be a certain universal sequence in the acquisition of L2 English morphemes regardless of the L1. These authors published an article which outlined two sequential

studies carried out in the same year. In the first study, making use of the Bilingual Syntax Measure (BSM), 151 Californian L1 Spanish children of 5-8 years arranged in 3 different groups were tested on the acquisition of L2 English morphemes. The instrument consisted of seven colourful cartoon images and 66 questions (33 Spanish questions and 33 English questions). It was adapted to promote avoidance of English morphemes. The results revealed that there were certain differences in the accuracy with which children of different groups acquired the target morphemes. Nevertheless, the global rank order of the functors was really similar among all participants independent of their background. Dulay and Burt also found that the pattern that the participants followed differed from the order proposed by Brown (1973) in the L1 (as cited in Goldschneider & Dekeyser, 2001). They claimed that ‘the older L2 learner need not struggle with the same kinds of semantic notions already acquired in earlier childhood’ (Dulay and Burt, 1973, p.252; as cited in Goldschneider & Dekeyser, 2001).

The second study conducted by Dulay and Burt was based on the results obtained in the first one. In this case they focused on ascertaining whether there exists a certain order of acquisition when acquiring L2 English morphemes. They also tested Spanish L1 learners using the BSM. Dulay and Burt found that even though there were certain differences among subjects regarding the functors used, all of them followed a similar order when developing those functors (Dulay and Burt, 1973; as cited in Schuwerk, 2004). This last study, dated in 1973, supports another complementary study that these same linguists accomplished the following year, in which they tested learners with different L1s. The Spanish and Chinese learners of English who were examined showed a similar pattern in the acquisition of morphemes (Dulay and Burt, 1974; as is cited in Schuwerk, 2004). Figure 2 presents the functors examined by Dulay and Burt (see Figure 2).

Morphemes
1. Plural <i>-s</i>
2. Progressive <i>-ing</i>
3. Copula <i>be</i>

4. Auxiliary <i>be</i>
5. Article
6. Irregular past
7. Third person singular <i>-s</i>
8. Possessive <i>'s</i>

Figure 2. Dulay and Burt's morpheme order for L2 students. (Adapted from Goldschneider and Dekeyser, 2001).

After that, Bailey, Madden and Krashen (1974) examined a group of adult (Spanish and non-Spanish) learners to determine, firstly, if they found the same difficulties when acquiring morphemes, and secondly, if they followed a similar pattern to children when learning English as an L2. The use of morphological structures such as the progressive *-ing*, articles and the third person *-s* (among others) were analysed. They also used BSM to extract data from oral production. Bailey, Madden and Krashen compared their research to the one conducted by Dulay and Burt (1973 and 1974), and they realised that non-Spanish speakers showed a similar pattern of morpheme accuracy as the children of Dulay and Burt's studies (1973 and 1974), especially in the acquisition of the progressive *-ing*, articles and third person *-s*. The results concerning native Spanish speakers were quite alike although they showed a higher accuracy for articles than the progressive *-ing* (as cited in Schuwerk, 2004).

Dulay and Burt (1975) proposed another acquisition hierarchy dividing morphemes into four different categories. They assumed that at least L2 learners of English acquire morphemes in that predictable sequence (see Figure 3).

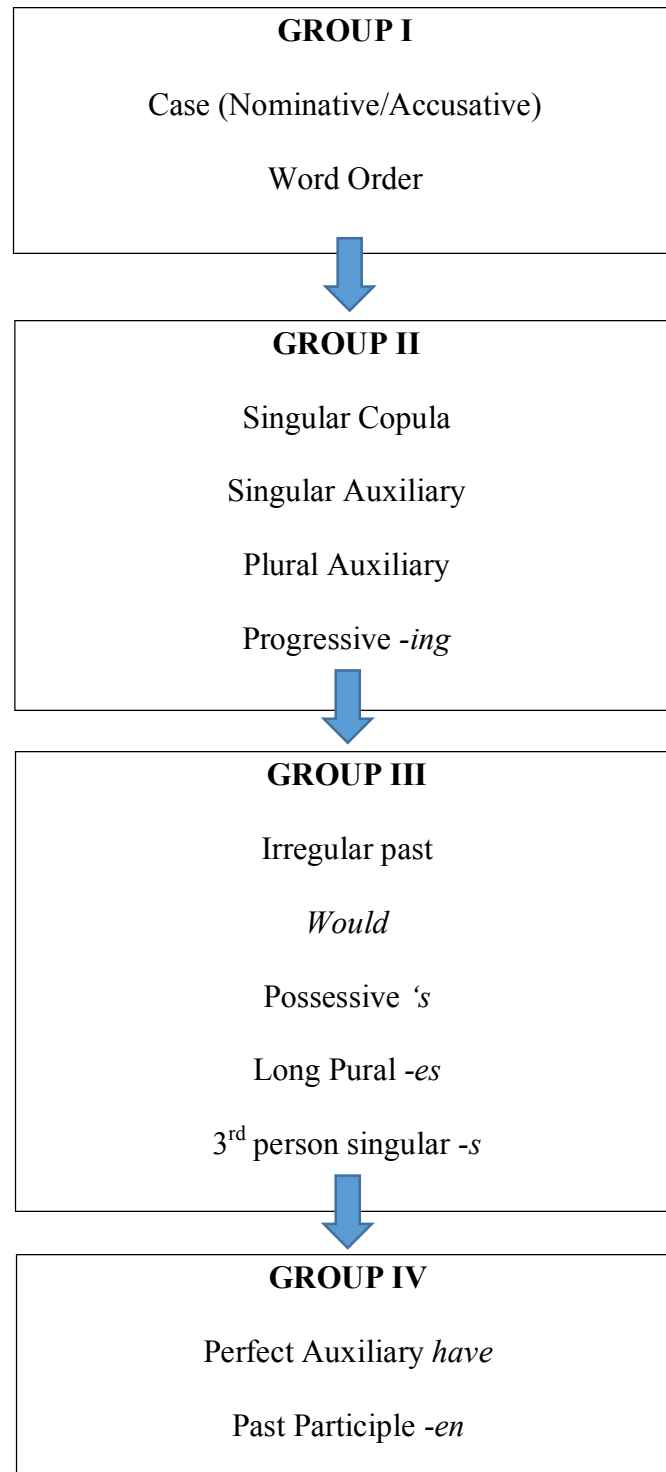


Figure 3. Acquisition hierarchy. (Adapted from Dulay & Burt, 1975).

Dulay and Burt (1975, p. 239) pointed out:

The chart shows that the items in Group I are acquired before all the items in the Groups below. Items in Group II are acquired after those in Group I, but before those in Groups III and IV, etc. The reverse is also true. Namely, the acquisition

of items in Group IV implies the acquisition of the items in Groups I—III.

Larsen-Freeman (1975) did research on the same topic but employing tasks other than speaking, such as writing, imitating, listening or reading. The results of this study revealed that all participants acquired English morphemes in the same order, even though there were some variations among the different tasks (as cited in Goldschneider & DeKeyser, 2001). Larsen-Freeman also conducted another study together with Perkins in the same year. As in the study carried out by Dulay and Burt (1974), they tested Spanish and Chinese learners of English on the acquisition of the progressive *-ing*, indefinite articles, definite articles, third person *-s*, and four other morphemes. They used two instruments: a translation exercise and a short video that the participants had to comment on in English. The findings obtained in this study were not very consistent since subjects tended to avoid the target morphemes in the second task. The question that arose here was if those subjects were committing real errors or they were not simply sure about the correct form of the word (Larsen-Freeman & Perkins, 1975; as cited in Schuwerk, 2004). In the same year, Fathman (1975) presented the SLOPE (Second Language Oral Production English) test which was designed to assess 20 different morphosyntactic items, including the functors proposed by Dulay and Burt (1973) as shown in Figure 2. The results of this test in children (Fathman, 1975; Kijarsgaard, 1979) and in adults (Krashen, Sfer-lazza, Feldman, & Fathman, 1976; Fuller 1976) showed that in spite of the differences in the task and the scoring procedure, all these L2 learners acquired the English morphemes in a similar order (as cited in Goldschneider & DeKeyser, 2001).

Larsen-Freeman (1976), based on the studies conducted by Dulay and Burt (1974), Bailey, Madden, and Krashen (1974) and her collaborative article with Perkins (1975) attempted to find out if the same fixed order of acquisition of morphemes was followed with different data collection methods. This study combined five different tasks administered to 24 adult ESL learners of different backgrounds: Arabic, Japanese, Persian, and Spanish. The results revealed that morpheme acquisition in native speakers' speech was crucial for the the oral production of morphemes when learning an L2 (as cited in Schuwerk, 2004). In 1983, Pica took into consideration both the natural and the formal setting, and she found that different conditions of L2 exposure do not vary the accuracy order of morpheme acquisition (Pica, 1983; as cited in Goldschneider & DeKeyser, 2001).

2.2. MOS REVISITED: NEW STUDIES ON THE FIELD

The innatist perspective that L2 learners acquire morphemes in a predictable order is not a matter of the past. In recent years, several linguists in the field have obtained very revealing findings which endorse MOS. Some of these will be discussed in this section.

Weitze, M., McGhee, J., Graham, C. R., Dewey, D. P., & Eggett, D. L. (2011) conducted a study to ascertain to what extent L1 can influence the developmental order of certain grammatical morphemes. All participants were adult students in an Intensive English Program (IEP) with different L1 backgrounds: Chinese, Korean, Japanese, Portuguese and Spanish. In order to examine these subjects on the acquisition of L2 English morphemes, the researchers used a background questionnaire and another test which was administered in a computer lab. The task consisted in repeating a series of sentences that they would hear through their headphones. The findings were really surprising since mixed results were obtained. Korean and Japanese L1 learners were influenced by their mother tongue when acquiring English morphemes since they acquired plurals and articles at a late stage, and according to the natural order described by Luk and Shirai (2009)¹, both are acquired at an early stage. This may be because these structures are not instantiated either in Japanese or in Korean. On the contrary, according to the data that the researchers gathered, Spanish and Portuguese L1 learners acquired the target morphemes of the study following the predictable or natural order. Furthermore, the results concerning Chinese L1 learners were unexpected. Chinese was thought to follow the Japanese and Korean pattern because of the nature of the language, but it followed the Spanish and Portuguese order, obeying the natural order of acquisition.

In the same year, Behjat & Sadigi (2011) aimed to confirm Andersen's (1978) and Hawkins' (2001) results in claiming that different L1 learners at different ages and under different conditions of learning follow a similar pattern in the development of L2 English grammatical morphemes. Behjat and Sadigi selected 70 Iranian ESL learners studying at different levels of education, in a Junior High School, in an Iran Language Institute and in Abade Islamic Azad University. These students learned English under different conditions: they had different course books, different teachers who followed different

¹ This study will be discussed more deeply in section 3.1. THE ROLE OF THE L1.

methodologies... The instrument of the study was a grammaticality judgement test in which subjects had to distinguish between grammatical and ungrammatical sentences and correct the ungrammatical ones. The results revealed that almost all learners regardless of their age or the centre in which they studied failed to correct the errors concerning the 3rd person singular *-s* and the plural *-s* morphemes. Both morphemes were acquired in late stages according to the order of acquisition proposed in Hawkins (2001).

As can be observed in the last two updated pieces of research, some linguists still nowadays rely on this behaviourist approach to morpheme acquisition, which was laid out four decades ago. Besides, Ortega (2009, p. 1) in a recent SLA textbook stated that:

The accuracy order has been shown to be relatively similar for both young and adult L2 learners, for both naturalistic and instructed learners, and regardless of L1 background or whether the data are collected orally or via writing (as cited in Murakami, 2013).

In spite of the evidence found in the previous studies in favour of the existence of a common and natural order of morpheme acquisition, other linguists still disagree with this perspective. They found that the learners they tested did not follow accurately the natural order of acquisition and they claimed that other factors such as the role of the L1 or other putative determinants may account for these results. In the next section, these factors will be analysed in detail.

3. MOS: ALTERNATIVE APPROACHES

3.1. THE ROLE OF THE L1

One of the factors which has been deeply studied in SLA is the role of the L1. This factor is related to the assumption that the ease or difficulty that we find when acquiring L2 rules or morphemes are product of the similarities and differences of the L1, and that this process is not subject to a natural order which learners pass through (Goldschneider & DeKeyser, 2001).

Fathman (1975) compared the way in which Spanish and Korean children aged six to fourteen acquired English morphemes. He found that they differed notably on the acquisition of articles, Spanish children acquired them much earlier than Korean ones. The role of the L1 accounts for this outcome since articles are a feature present in Spanish but absent in Korea (as cited in Kwon, 2005). Similarly, Hakuta (1976) carried out a longitudinal in which Japanese learners of English do not acquire the articles and the plural morpheme until late because Japanese lacks this features (as cited in Kwon, 2005). Wode (1977) also found evidence in his study regarding L1 transfer. His German subjects did not place verbal negation in some English sentences until the last stages of development since this feature is not present in German syntax (as cited in Kwon, 2005). Mace-Matluck (1979) conducted a study to test several ESL students from different backgrounds (Cantonese, Spanish, Tagalog and Ikonako) on their acquisition of the following English morphemes: progressive *-ing*, contractible copula, irregular past, *in*, *on*, possessive, articles, plural marker, third person regular, regular past *-ed* and third person irregular. Students with similar L1s followed more or less the same pattern when acquiring morphemes. However, learners of different language backgrounds did not acquire these morphemes in the same way. For instance, Spanish learners did not master the possessive morpheme until sixth in the sequence while Cantonese learners acquired it in the third stage. This led Mace-Matluck to the assumption that there must have been a difference in the nature of first and second language acquisition (as cited in McFerren, 2015). Zobl (1982) compared a group of Spanish learners of English to another one composed of Chinese learners of English. He claimed that transfer could alter the order of acquisition of morphemes when he realised that Chinese children, but not Spanish children, used the demonstrative *this* when the article *the* was required (as cited in Kwon, 2005). This was due to the fact that Chinese does not make use of articles as Spanish does.

Over time, the consideration of L1 as a main factor when determining the natural order of morpheme acquisition has started to be shared by many recent linguists. Izumi and Ishara (2004) wanted to prove the reliability of the natural order hypothesis so they tested several Japanese ESL learners on their use of English morphemes. They found several differences comparing the order that these Japanese students followed when acquiring morphemes to the natural order proposed by Dulay & Burt (1973). Articles and the plural morpheme were acquired later and the possessive 's earlier than the natural

order predicted. They inferred that many of these differences were mainly due to students' L1. English article system, for instance, is quite complex in comparison to Japanese and this made students have trouble developing this morpheme at an early stage of acquisition. Luk & Shirai (2009) outlined various L2 English morpheme studies of learners with different backgrounds (Chinese, Japanese, Korean and Spanish). The results of the different studies led them to the conclusion that L1 transfer played a major role in the acquisition of L2 English morphemes. The absence of a plural morpheme in Chinese and Japanese made these participants acquire this functor later than the natural order predicted. Besides, both Japanese and Korean students had more difficulties in mastering the functors which are supposed to acquire easier, such as articles, than those ones that are ranked relatively high, as the possessive 's. This is because Korean and Japanese do not have any system of articles but they have an equivalent structure to the English possessive 's. Conversely, Spanish learners had trouble mastering this last functor since in Spanish, unlike in English, the possession can only be marked before the possessor: *El coche de mi padre* vs. **De mi padre el coche*.

Khor (2012) selected 6th and 7th Swedish graders learning English as an L2 and asked them to write several computer written texts. Khor found in these essays that the errors that these students committed were different to the ones found in other studies with different L1 participants. Therefore, she reached the conclusion that the L1 had a major impact on the acquisition of L2 English morphemes and there could be an order within one language group but not a universal pattern of morpheme acquisition. With the same purpose, Murakami (2013) tested students of seven different backgrounds (Japanese, Korean, Spanish, Russian, Turkish, German and French). The purpose was to see if the L1 interfered in the order in which they acquired English morphemes. The results revealed that Japanese and Korean learners struggled to mark the plural since they do not do it in their L1, in contrast to Russian. On the contrary, Spanish speakers found more problems concerning the possessive 's since in Spanish possession is marked after the noun, as we have observed in Luk & Shirai's (2009) study. Furthermore, Germans acquired the progressive *-ing* so late since it is not instantiated in their mother tongue. Therefore, taking into account the clustering approach adopted in this study, there was a clear influence of the L1 in the order of acquisition of English morphemes. Seog (2015) aimed to prove whether the same English morpheme acquisition order was followed in different groups of elementary students with the same L1 Korean background. Taking as

reference Dulay & Burt's hierarchy of acquisition, students mastered the irregular past and the possessive 's really soon, but they had problems with the auxiliary *be* since it is not a type of auxiliary used in Korean. Seog concluded that L1 Korean learners of English acquired morphemes in a different order than the one that the natural order proposed.

Murakami & Alexopoulou (2016) also investigated L1 influence on morpheme acquisition. They wanted to provide a large and varied set for comparison, so they selected L1 Japanese, Korean, Spanish, Russian, Turkish, German and French learners of English. The morphemes that they targeted in the study were the ones that were most often used in morpheme order studies, the ones included, for instance, in Goldschneider and DeKeyser (2001): articles, past tense *-ed*, plural *-s*, possessive 's, progressive *-ing*, and third person *-s*. The corpus that Murakami and Alexopoulou used was the Cambridge Learner Corpus (CLC), examples of learners' exams of Cambridge English Language Assessment. They focused on the writing part, which covers different text types as an article, an essay, a letter, and a story. The sub corpus consisted of five proficiency levels from A2 to C2 in accordance to the Common European Framework of Reference (CEFR). They conducted a clustering analysis taking into account Spearman's rank-order correlation. Results showed not only variation in the accuracy order between the different L1 backgrounds but also within-L1 stability of the order in which they acquired morphemes in the different proficiency levels. The absence of the equivalent form of a certain L2 structure in participants' L1 always caused an inaccurate use of that precise L2 structure. Even at the proficiency level, learners struggled to achieve accuracy on those forms of morphemes not instantiated in their mother tongue, therefore the impact of L1 transfer on morpheme acquisition was undeniable. Moreover, when they could assist to their L1 because the target morpheme was present in their mother tongue, they used to succeed in the use of that morpheme in the L2. They also found that the natural order was only respected by Spanish L1 learners of English, this finding corroborates one hypothesis that Shirai (2009) suggested: 'the natural order is merely the reflection of the order of acquisition by Spanish learners of English' (as cited in Murakami & Alexopoulou, 2016, p. 24). However, the key finding in this study was the assumption that morphemes have different degrees of sensitiveness to L1 influence (see Figure 4).

Highly affected by L1 influence	Mildly affected by L1 influence	Relative immunity to L1 influence
Articles	Plural <i>-s</i>	Possessive 's
Progressive <i>-ing</i>		3 rd person singular <i>-s</i>

Figure 4. Target morphemes arranged by degree of L1 influence (adapted from Murakami & Alexopoulou, 2016).

3.1.1. OTHER PUTATIVE DETERMINANTS

Several other researchers have suggested that, apart from the role of the L1, there are other determinants which could also have an impact on the acquisition of L2 morphemes. Among others, Andersen (1978), Brown (1983), Rosado (1986), Pak (1987), Pienemann and Johnston (1987) (as cited in Goldschneider & DeKeyser, 2001) and Kwon (2005) investigated the influence of these determinants. These researchers claimed that all learners pass through similar stages in the acquisition of an L2. According to them, the order of morpheme acquisition is determined by these stages since as to master one functor, learners need to leave the previous stages of it behind by overcoming all the constraints which block that functor (Goldschneider & DeKeyser, 2001). Pienemann and Johnston (1987) pointed out that the mastery of rules of a certain stage implicates the mastery of the rules of the previous stages (as cited in Goldschneider & DeKeyser, 2001). In addition to this, Andersen (1978) explained that the classification of morphemes in different stages could be ascertained by the inherent properties of those morphemes, for instance, the free/bound distinction. Those morphemes which can be alone, such as articles, would all be acquired at a certain stage different from those which need to be attached to another morpheme, as the progressive *-ing*, which would be grouped altogether in another stage (as cited in Goldschneider & DeKeyser, 2001). Goldschneider & DeKeyser (2001) listed some of the most relevant determinants which influence the order of acquisition of L2 morphemes:

- **Perceptual salience:** it refers to the ease with which a given structure is heard or perceived (Goldschneider & DeKeyser, 2001). Brown (1973, p.410) stated that

‘the child will not learn what he cannot hear’. As McFerren (2015) explained, the progressive *-ing*, for instance, is acquired relatively fast in both L1 and L2 since the sound [ŋ] is too easy to recognise.

- **Semantic complexity:** it refers to the extent of meanings that can be expressed by a particular form. The morpheme *-s* can express the plural form or the 3rd person singular form in the present simple tense (Goldschneider & DeKeyser, 2001). According to Brown (1973) forms with more meanings should be more difficult to acquire than forms with fewer meanings.
- **Morphophonological regularity:** it makes reference to the extent to which morphemes are affected by the phonological environment. The more phonologically regular a functor is, the earlier it will be acquired (Goldschneider & DeKeyser, 2001). For instance, the past regular *-ed* can be harder to learn since its pronunciation varies between [t] and [d] (McFerren, 2005).
- **Syntactic category:** it refers to the properties of each functor from the perspective of the Functional Category theory. ‘Grammatical complexity’ also plays a role in the acquisition of English morphemes (Goldschneider & DeKeyser, 2001).
- **Frequency:** a grammatical item which appears frequently in the input of the learner will be acquired faster and more easily than another one which is hardly ever heard by this learner (Goldschneider & DeKeyser, 2001).

Kwon (2005), in addition to ‘perceptual salience’, ‘semantic complexity’ and ‘frequency input’, also included in his study two other properties of morphemes which could be determinant in the acquisition of L2 morphemes.

- **Syllabicity:** whether a morpheme is syllabic or not (Kwon, 2005).
- **Lack of exception:** the possessive *'s* has no exception in its usage, whereas the past tense morpheme *-ed* does not apply to all verbs, some of them are irregular. The former will be acquired faster than the latter (Kwon, 2005).

It is worth mentioning that both Goldschneider & DeKeyser (2001) and Kwon (2005) considered L1 transfer another putative determinant which should be taken into consideration when determining the possible factors influencing the order in which L2 morphemes are acquired.

4. THE STUDY

4.1. OBJECTIVE AND RESEARCH QUESTIONS

Due to the lack of a unique approach which could ascertain how and in which order learners acquire morphemes in their L2, I have conducted a small piece of research to confirm or refute the previous theories which attempted to fill that gap in research. The main objective of the study is to determine if the sample of the study follows the same natural order of acquisition proposed by Krashen (1982) as well as find out to what extent the role of the L1 can influence the natural order of morpheme acquisition. I have selected Krashen's (1982) developmental order since it is one of the earliest in the literature and, as it can be seen in the previous sections, because many studies have used it as a reference.

Therefore, by making use of a learner corpus, this study will aim to answer the following questions:

1. Do L2 learners pass through the same predictable stages of acquisition as Krashen (1982) suggested (see Figure 1)?
2. What is the effect of the L1 on the acquisition of L2 morphemes?

4.2. PARTICIPANTS

The subjects selected for the study attend an English academy in Ermua (Vizcaya). This centre trains them for the Cambridge examinations while instructing them in the four skills (reading, listening, writing and speaking) as well as in grammar and vocabulary. The sample of this study is made up of 24 students from two different classes, 12 in each. Learners of both groups are instructed in a formal setting and they are Spanish learners of English, except for two participants who have both Spanish and Basque as their mother

tongue. Apart from Spanish, they also speak Basque and English as second and third languages. Therefore, they speak the same languages and they share the same L1: Spanish. However, there are other factors in which the two groups differ and which will be relevant for the present study: proficiency level, age, and gender (see Figure 6).

PROFICIENCY LEVEL	AGE	GENDER	
		FEMALE	MALE
B1 class	12-15 years	8	4
B2 class	16-19 years	10	2

Figure 6. Participants' background information.

4.3. INSTRUMENT AND PROCEDURE

In order to elicit information for this cross-sectional study, I have resorted to a mock exam that students completed in class before the actual Cambridge examination. The B1 class took a Preliminary English Test (PET) and the B2 group a First Certificate in English (FCE) exam. All students passed this simulation exam, so it can be assumed that they all have the level of proficiency in which they had been tested (see Figure 7 and 8).

B1 STUDENTS:	R&W (max. 50)	LIS (max. 25)	SP (max. 25)	R&W	LIS	SP	TOTAL SCORE
Participant 1	31	18	24	62%	72%	96%	73%
Participant 2	36	15	20	72%	60%	80%	71%
Participant 3	35	17	20	70%	68%	80%	72%
Participant 4	29	15	20	58%	60%	80%	64%
Participant 5	44	17	20	88%	68%	80%	81%
Participant 6	25	18	20	50%	62%	80%	63%
Participant 7	36	19	20	72%	76%	80%	75%
Participant 8	40	15	20	80%	60%	80%	75%
Participant 9	34	17	18	68%	68%	72%	69%
Participant 10	39	16	19	78%	64%	76%	74%
Participant 11	45	20	20	90%	80%	80%	85%
Participant 12	44	17	20	88%	68%	80%	81%

Figure 7. B1 level students' marks in the mock exam.

B2 STUDENTS:	R&U (max. 70)	WR (max . 20)	LIS (max . 30)	SP (max . 30)	R&U	WR	LIS	SP	TOTAL SCORE
Participant 13	33	12	21	14	47,14%	60%	70%	70%	58,86%
Participant 14	50	16	26	12	71,43%	80%	86,67%	60%	73,9%
Participant 15	33	15	20	14	47,14%	75%	66,67%	70%	61,19%
Participant 16	35	12	21	14	50%	60%	70%	70%	60%
Participant 17	50	15	29	18	71,43%	75%	96,67%	90%	80,9%
Participant 18	48	15	20	16	68,57%	75%	66,67%	80%	71,76%
Participant 19	39	15	26	16	55,71%	75%	86,67%	80%	70,62%
Participant 20	32	15	28	16	45,71%	75%	93,33%	80%	67,95%
Participant 21	41	11,5	27	15	58,57%	57,5%	90%	75%	67,93%
Participant 22	57	12,5	19	19	81,43%	62,5%	63,33%	95%	76,74%
Participant 23	62	15	30	17	88,57%	75%	100%	85%	87,43%
Participant 24	23	14,5	25	16	32,86%	72,5%	83,33%	80%	60,31%

Figure 8. B2 level students' marks in the mock exam.

As can be observed in the two previous figures, in B1 level, the mock exam was made up of three parts: firstly, a part which included the reading and the writing tasks, then the listening and, finally, the speaking. On the other hand, in B2 level, the exam was divided into four parts: reading and use of English, writing, listening and speaking. For the study, I have only focused on the writing part of the exams where learners are more likely to make use of the morphemes under study.

In the B1 level exam, participants had to complete in 1 hour and 30 minutes the reading part, a rephrase activity and two writings:

- In the first task, the students were asked to write a short card addressed to a friend talking about their experience while staying at his home for a week, in past tense. The card should have around 35-45 words.
- In the second task, which should contain 100-word-long and, in this case, the students had the chance to choose between:
 - An informal letter replying to a friend's request:
For my homework project I have to write about a special day that people celebrate in your country. Which special day should I write about? What information should I include?
 - A story which started: *Jo looked at the map and decided to go left.*

Out of 12 students, 11 chose the informal letter and 1 the short story. The letter had to be written in present tense but the story in past tense.

In the B2 exam, students also had to write two different essays, in this case in 1 hour and 20 minutes, both 140-190-word-long and in the present tense:

- An essay answering the following question: *'Teenagers are too young to teach other people about anything'. Do you agree?*
- And then, they could choose to write :
 - An article about unusual objects.
 - A reply to an e-mail from an English-speaking friend.
 - A story for a magazine. They were provided with the beginning of the story: *Jerry read the email and decided to go to the shopping centre immediately.*
 - An essay related to the play *Macbeth* by Shakespeare.

All participants wrote the reply to an e-mail except for one who wrote the story for the magazine.

After having analysed the essays, I gathered all the errors that students committed when using the target morphemes and I arranged them in the nine categories proposed by Krashen (1982) (see Figure 9). The higher the number the errors in one functor, the later the morpheme is supposed to be acquired.

MORPHEMES
progressive <i>-ing</i>
plural <i>-s</i>
copula <i>be</i>
auxiliary <i>be</i>
articles
irregular past
regular past <i>-ed</i>
3 rd person singular <i>-s</i>
possessive <i>'s</i>

Figure 9. Functors targeted by Krashen (1982).

In the next section, I will present the results that I obtained from this analysis and then, I will draw some conclusions that could provide an answer to my previous research questions.

4.4. RESULTS AND DISCUSSION

The first research question aims to determine whether the students followed Krashen's (1982) natural order when acquiring L2 English morphemes. On the basis of the number of errors they committed in each functor (see Figure 10) and considering both proficiency levels, the subjects of this study could have followed the acquisition sequence illustrated in Figure 11 (see Figure 11). Besides, Figure 12 displays all the errors committed by the learners arranged in the nine categories.

Functors:	B1 LEVEL	B2 LEVEL
Present progressive <i>-ing</i>	-	1
Plural <i>-s</i>	1	1
Copula <i>be</i>	-	-
Auxiliary <i>be</i>	1	-
Articles	2	1
Irregular past	13	4
Regular past <i>-ed</i>	7	-
3 rd person singular <i>-s</i>	3	1
Possessive 's	-	2

Figure 10. Number of errors regarding the target morphemes in both levels.

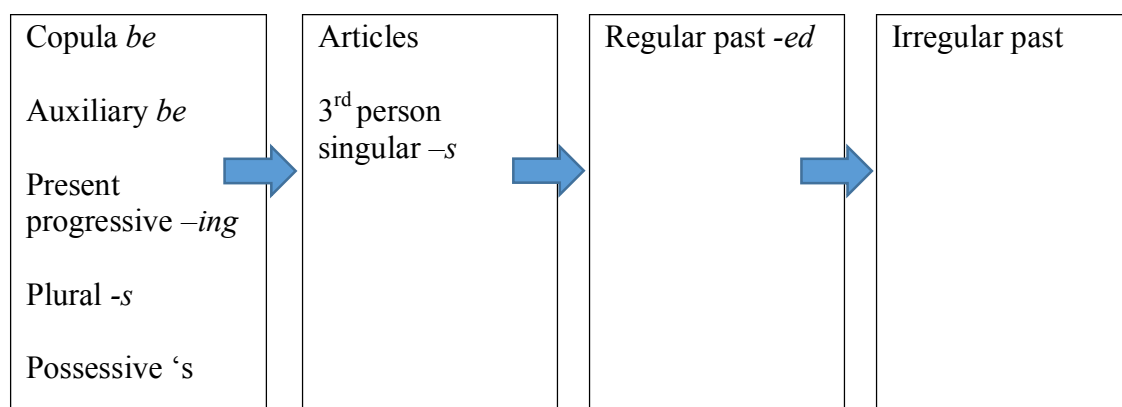


Figure 11. Stages of morpheme acquisition in this study.

Funcutors:	B1 LEVEL	B2 LEVEL
Present progressive <i>-ing</i>	-	‘[...] Teenagers are lack(ing) of experience [...]’
Plural -s	‘They give present(s) to all of their family members.’	-
Copula be	-	-
Auxiliary be	‘I (am) going to be very happy.’	-
Articles	‘I enjoyed a lot of with you because you are (an) amating girl.’ ‘But when I went back, we had problems at (the) airport’	‘[...] I would do my best on (the) stage [...]’
Irregular past	‘Last week I went to Brasil. I have (had) a good time there.’ ‘I recived your letter yesterday, but I don’t (didn’t) have time to write you the last day.’ ‘I de (did) many things and the British food is (was) very delicious.’	‘So if I am (was/were) you I will (would) participate in the concert [...]’ ‘This can be easily be teached (taught) by a teen.’ ‘He took the keys from the house and run (ran) away.’

	<p>‘I am (was) some happy this holiday, because my journey back to my house is (was) incredible. It’s (was) a lot of funny and my stay is (was) incredible am (was) some relax, on the house was a pool is (was) incredible.’</p> <p>‘In Australia I go (went) to a very long beach to do surf, I swim (swam) under the see. I do (did).’</p>	<p>‘Jerry run (ran) to the parking that was downstairs [...]’</p>
<p>Regular past -ed</p>	<p>‘I enjoy(ed) all of this stay, the food were the best’</p> <p>‘I enjoy(ed) a lot staying in your house. I like(d) speaking with you a lot and playing with you.’</p> <p>‘I enjoyed the food my friend prepare(d) me’</p> <p>‘Hear I stay(ed) wery well.’</p> <p>‘I miss(ed) the rain and the markets there.’</p> <p>‘I enjoyed a lot and I watch(ed) a lot of things.’</p>	<p>-</p>

<p>3rd person singular -s</p>	<p>‘On the last day of the year normally everyone stay(s) with their family’</p> <p>‘I’m going to speak about the day when one man, that her name here in Spain is Papa Noel give(s) presents.’</p> <p>‘On the last day of the year normally everyone stay(s) with their family and then have a family dinner’.</p>	<p>‘It help(s) us to socialize with people from other countries [...]’</p>
<p>Possessive ‘s</p>	<p>-</p>	<p>‘In that moment, Veronica(?s) eyes started to cry blood and her die corpse fell down.’</p> <p>‘[...] teenargers’ knowledgment is becoming more popular.’</p>

Figure 12. Errors concerning the target morphemes in participants’ writings.

The results indicate that learners acquired the copula *be*, the auxiliary *be*, the present progressive *-ing*, the plural *-s* and the possessive *’s* in the first stage of acquisition since they committed no errors or very few ones. Then, they acquired articles and the 3rd person singular *-s* and in the last stages the irregular and regular past as they are the functors with the highest number of errors. If we compare these results to the natural order proposed by Krashen (1982) on the basis of the errors committed, we can see how the participants of the present study do not follow that pattern accurately (see Figure 13).

Stages	Krashen (1982)	This study
1°	Progressive <i>-ing</i> Plural <i>-s</i> Copula <i>be</i>	Progressive <i>-ing</i> Plural <i>-s</i> Copula <i>be</i> Auxiliary <i>be</i> Possessive <i>'s</i>
2°	Auxiliary <i>be</i> Articles	Articles 3 rd person singular <i>-s</i>
3°	Irregular past	Regular past <i>-ed</i>
4°	Regular past <i>-ed</i> 3 rd person singular <i>-s</i> Possessive <i>'s</i>	Irregular past

Figure 13. Stages of morpheme acquisition in Krashen's (1982) study and in this study.

In line with Krashen (1982), the present progressive *-ing*, the plural *-s* and the copula *be* are acquired at the first stage of acquisition, before articles which are acquired at the second stage. However, according to Krashen's (1982) order, the auxiliary *be* is acquired at the second stage but in this study it seems to be acquired earlier. Concerning the acquisition of the possessive *'s*, there is a significant difference between the two orders since Krashen (1982) placed it in the last stage of acquisition and, in this study, it has been placed in the first stage. Krashen (1982) also claimed that the most common forms of irregular past, such as *came*, are acquired before the regular *-ed*, but in this study there is no evidence of that since most of the incorrect instances are forms of highly frequent irregular verbs such as: *to do*, *to have* or *to be* (see Figure 12). For this reason, it has been assumed that the regular past *-ed* has been acquired earlier than the irregular past. Finally, according to the natural order hypothesis, the 3rd person singular *-s* is a functor which is mastered at a late stage and in this study it is acquired earlier.

It is noticeable how learners of B2 level have committed fewer errors than students of B1 level in almost all target morphemes, possibly due to an increase in the level of proficiency and the difference in age between both groups. However, it is crucial to take into account the dissimilarities in the type of task that participants received. In B1 level, students were obliged to write the first writing in the past whereas in B2 level all the

writings were in the present tense. This distinction between the tasks could explain the significant difference between the two levels concerning the incorrect use of the past tense. There are also some cases in which B2 level students level does not seem to have performed better than B1 level students, for instance in the plural *-s*, where there is an equal number of errors. Besides, in the progressive *-ing* and in the possessive *'s* B2 students were less accurate than B1 students.

These results led me to the assumption that there may exist several factors, such as the role of the L1, which influence the natural order of morpheme acquisition. For this reason, I have gathered all the errors associated with L1 transfer and overgeneralization in order to determine the influence of the L1 Spanish on these students and, in this way, give an answer to the second research question (see Figure 14 and 15).

Error type:		B1 LEVEL	B2 LEVEL
Transfer errors			
Subject omission	Omission of referential subjects	5	2
	Omission of expletive subjects	-	-
Transfer of plural <i>-s</i> (e.g. adjectives)		1	1
Different number in Spanish nouns and in English nouns (e.g. people)		1	3
Overuse of articles		-	11
Overgeneralization errors			
Inflection after auxiliaries		-	1
3 rd person singular <i>-s</i> in English plural subjects		1	1
Double plural (e.g. 'childrens')		1	-
Use of regular instead of irregular past		-	1

Figure 14. Overgeneralization and transfer errors in participants' writings.

Error type:	B1 LEVEL	B2 LEVEL
Transfer errors		
Subject omission	<p>‘With this I have finished, sorry if (it) isn’t enough.’</p> <p>‘The next time you have to come with me (it) is a very beautiful experience’</p> <p>‘(I) am some relax, on the house was a pool is incredible.’</p> <p>‘However (they) are more special days hear in my country.’</p> <p>‘I don’t know why we celebrate this day but (it) is special and funny.’</p>	<p>‘He took the keys from the house and (he) run away.’</p> <p>‘[...] they ask are very strange but (they) are normal because they don’t know anything.’</p>
Transfer of plural –s (e.g. adjectives)	‘His eyes were blues.’	‘[...] too young people for example explain differents subjects [...]’
3 rd person singular –s in English plural subjects but Spanish singular subjects (e.g. people)	‘I think that the most important day at Spain are (is) Christmas.’	<p>‘Many people think(s) that teenagers [...]’</p> <p>‘[...] people knows how is it [...]’</p>

Overuse of articles	-	‘[...] on the television.’ ‘These days, the teenagers are usually [...]’ <i>9 more instances of ‘the’ overuse in one writing.</i>
Overgeneralization errors		
Inflection after auxiliaries	-	‘[...] I would understood (understand) it.’
3 rd person singular –s in English plural subjects	‘When whe goes.’	‘[...] teenagers loves music [...]’
Double plural (e.g. ‘childrens’)	‘Becouse I like young childrens.’	-
Use of regular instead of irregular past	-	‘This can be easily be teached (taught) by a teen.’

Figure 15. Errors concerning L1 transfer and overgeneralization errors in participants’ writings.

Errors generated by L1 interference are especially remarkable. There are many instances of subject omission in B1 level due to the fact that Spanish is a pro-drop language whereas English is not. This means that in Spanish inferential subjects can be omitted, but in English, they must appear overtly in sentences. For instance, the first example of subject omission errors: ‘With this I have finished, sorry if (it) isn’t enough’ would be correct in Spanish without the subject: *Con esto yo he terminado, lo siento si (esto) no es suficiente*. It is also interesting to know that all subject omissions involved absence of pronouns, not lack of expletives. In B1 level, students did not make use of expletives, but in B2, they did and they tended to use them correctly, e.g. ‘But **it** is true that teenagers are too young to explain things’, ‘I think that **it** is amazing to play the guitar’. Then, as in Spanish adjectives take the plural marker -s, learners did the same with English adjectives, and this leads us to the second common transfer error. The

overuse of articles in B2 level is also quite surprising in comparison to B1 level, since in the former there are plenty of errors while in the latter there are none. Students in B2 level, who have already mastered articles, now use them when in English are not needed but in Spanish they are, as we can see in the last category of transfer errors.

The overgeneralization errors commonly occur when a learner masters a certain rule and applies it even in some contexts where the rule does not apply. It is noticeable in the four categories above. The error concerning the use of regular instead of irregular past in B2 level can be explained by the U-shape theory. Learners are likely to commit errors adding the regular *-ed* to irregular verbs. When they acquire the regular past morpheme, they tend to overgeneralise it and apply it to all verbs, even to verbs whose past tense form they had previously mastered.

The errors related to the target morphemes can be justified by the assumption that participants have not mastered those morphemes yet, that is, they have not overcome all the constraints blocking that specific functor in order to be able to acquire it. The presence of these errors proves that learners do not follow the natural order, and the existence of transfer errors determines that that natural sequence of acquisition is not respected due to L1 transfer.

4.5. CONCLUSIONS AND IMPLICATIONS

The first purpose of this paper has been to analyse critically MOS. After a brief but thorough analysis of the different theories proposed in the literature to determine the order of L2 morphemes acquisition, it can be observed that none of them has become universal. Nowadays, there are still innatist linguists who defend the existence of a natural sequence of acquisition, such as Bejhat & Sadigi (2011) or Weitze et. al. (2011) and others who opt for a more behaviourist perspective defending that the order of morpheme acquisition is influenced by the L1, as Murakami & Alexopoulou (2016). Due to the lack of a prevalent theory, it would be worthwhile outlining the conclusions which can be drawn from the piece of research conducted in this paper.

In line with the previous results and providing an answer to the first research question, it can be concluded that the subjects of this study did not pass through the stages

proposed by Krashen (1982) in the order he established. The sample students acquired the auxiliary *be* slightly later than Krashen (1982) predicted and 3rd person singular *-s* and the possessive *'s*, which are supposed to be acquired at the latest stage of acquisition, are acquired much earlier. Concerning the regular and irregular past, the results are particularly tentative. According to Krashen (1982) some instances of irregular past are acquired before the regular past *-ed*, and later an overgeneralization process arises in which learners tend to apply the regular past morpheme to irregular verbs, as explained in the previous section when dealing with the U-shape theory. After that, the remaining forms of irregular past are acquired. Following the results of this study, the regular past *-ed* seems to be acquired earlier than any irregular past form since the incorrect forms of this last functor are very frequent in speech. Nevertheless, there is not enough evidence to claim that these students had not acquired any form of the irregular past before the regular past *-ed*, therefore, Krashen's predictions may be true. In addition to this, the fact that the B1 learners wrote one of their writings in past tense whereas the B2 learners did not write any must be taken into account when interpreting these results.

As regards the second research question and taking into account that the participants did not follow accurately the natural order, at least the one proposed by Krashen (1982), it can be assumed that there exist some other factors which determine the order of acquisition. The high number of errors caused by transfer in learners' writings evidences that L1 transfer is a significant factor in L2 acquisition, that is, L1 transfer is of these factors which determine the order in which learners acquire L2 morphemes. Therefore, it is quite likely that students acquire faster those structures which are instantiated in their L1 than those ones which are not. This would explain why learners committed fewer errors regarding the plural *-s* than concerning the regular or irregular past morphemes, for instance. The plural in English is marked in the same way than in Spanish but the English morphemes used for the past tense differ from the Spanish ones.

Taking both pieces of evidence into consideration, it can be concluded that learners are influenced by their L1 when acquiring L2 morphemes since L1 transfer is the main factor which determines their order of acquisition. The results obtained in this study could be used in order to provide counterarguments to those who agree with the natural order hypothesis. Furthermore, they can also contribute to improving the published teaching material. Given the fact that learners can be influenced by their native language

in L2 acquisition, teachers and material developers can strengthen the teaching of those morphemes that are not instantiated in learners' L1. For instance, in this case, it could be beneficial for L1 Spanish learners of English to work on the regular and irregular past morphemes more than on the progressive *-ing*, the copula *be* or the plural *-s*. Likewise, it could be equally advantageous for students to be aware of this issue for their grammar self-study. The consideration of the outcomes of this study could give rise to a more successful and efficient learning process.

4.6. LIMITATIONS AND FURTHER RESEARCH

It is important to bear in mind that the study presented in this paper is mainly descriptive, no statistical analysis has been carried out, and therefore our results provide tentative evidence of the acquisition of morphemes in English as L2. Specifically, correlational analysis would have helped us establish possible connections between variables. Furthermore, it would also have been interesting to consider not only the correct instances of use of the target morphemes, but also the matter of avoidance. Some learners may have avoided the use of several target morphemes in certain contexts, not because they had not acquired them but because they were not confident enough with the correct form of the word containing the target morpheme. This issue falls outside the scope of this paper, as some more advanced tools and techniques would have been required to approach it.

In addition to this, the reduced number of participants is also an important factor to take into consideration, as only two classes of 12 students were selected. Although I understand that a bigger example would have provided more robust results, it has been difficult for me to find larger groups. Apart from this, some relevant variables, such as gender or age, have not been considered. Mixed-gender groups have been tested, and even though participants of both groups were in the same age range, there were sometimes differences of 3 years between some students of the same level.

Another limitation of this study has to do with the differences in the tasks administered to the participants. In B1 level, students wrote a card and, apart from that, they could choose between a reply to an e-mail or a short story. The card and the short story should be written in past tense. On the other hand, in B2 level, they wrote an opinion

essay and then, a story for a magazine or an e-mail. The three tasks were in the present tense. The fact that B1 level students were asked to write most of the tasks in the past tense, whereas B2 level students wrote their essays in the present tense made the former commit more errors related to the regular past –ed and the irregular past than the latter. This is an extremely important factor that cannot be overlooked since it could have influenced some of the results obtained in relation to the past tense.

Despite these limitations, this study has aimed to offer a descriptive account of MOS in English as L2. It has presented some evidence concerning the order in which L2 learners acquire English morphemes and to what extent other factors, such as the L1, can influence their acquisition. Further research will help us delimit some of these results in more detail.

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