

# Grammatical Proficiency in Media-induced SLA: The Impact of Psycholinguistic Factors

A Comparison of Flemish and Walloon Pupils, Aged 10 to 12

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I hereby declare that, in line with the Faculty of Arts' code of conduct for research integrity, the work submitted here is my own original work and that any additional sources of information have been duly cited.

## Preface

For almost a decade, I have been interested in language teaching. Therefore, at the age of 18, I decided to start a teaching programme at the Haute Ecole Louvain en Hainaut (HELHa). The teachers there taught very interesting material, and I am especially grateful to Christian Seront, who has always been prone to help me with language issues. However, at the end of the programme, I felt the need for something more challenging. As a consequence, in September, 2015, I started a linking programme to the master of arts in linguistics and literature. In the beginning, I put myself and my capacities into question, as university is quite different from Belgian high-schools. But after a while, I became more confident and got steadily more motivated to study further. The renewed motivation and the interest in language teaching motivated the reasons why I started the master of advanced studies in linguistics. I was particularly lucky at that time as a new programme focusing on multilingual and foreign language learning and teaching started that same year. So, this new programme was appealing, as it matched my motivations. A couple of months later, I had to decide on a topic for my master's dissertation. The reflection did not last long, as I already knew that I wanted to work on media-induced SLA. In the past, I had already been supervised by Prof. Dr. Mieke Van Herreweghe, who coined this new learning type. Fortunately, she was prone to do so for a third time. Therefore, I am particularly thankful to her. Moreover, despite her busy schedule as a vice-rector, she could still arrange some meetings.

During the master of advanced studies in linguistics, I also met new professors. One of these was Prof. Dr. Piet Van Avermaet, who teaches the *Language Policy and Practice in Multilingual Contexts* course. I really enjoyed the discussions we had in class. He made me realise that in a research project, it is of interest to have several perspectives on a language issue. As a consequence, I asked him whether he would like to supervise my master's thesis and he was glad to do so. Without his valuable advice this master's dissertation would not have been possible. Next to that, I would like to thank Prof. Dr. Elke Peters for her useful comments during the topic presentation. She shed light on some methodological issues, which I tried to solve.

Next, I owe a debt of gratitude to the teachers, the principals and the pupils of the following schools: Collège de la Lys, Castel Saint-Henri, Athénée Royal Fernand Jacquemin, Ecole Communale de Comines, Ecole Communale de Warneton, Institut Saint-Henri Houthem, De Horizon, De Kleine Prins and De Graankorrel. Without their participation, this study would not have been possible.

Last but not least, I am thankful to my parents for their never-ending support. On a very personal note, I wish my grandparents were still among us to witness I am pursuing my goals in life.

Finally, with such a rich help from experts and family members, one might expect that all the imperfections and flaws were amended by the end of the process. Much to the contrary, I am aware of some shortcomings, all of which are my own responsibility. Therefore, any comments or suggestions are most welcome.

*Quentin Decourcelle*  
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*3 June 2018*

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## Abstract

In SLA literature, it is commonly argued that psycholinguistic factors, such as motivation, attitude or self-ratings of L2 proficiency, are predictors of successful L2 learning. Next to that, children are steadily more exposed to English(-spoken) media in the last decade. As a consequence, some studies set in Belgium and the Netherlands (e.g. Koolstra & Beentjes, 1999; Berns *et al.*, 2007; Van Herreweghe, 2015) found that an extensive media exposure coupled with positive L2 attitudes and high-levels of motivation enhanced lexical acquisition in a setting of media immersion. However, up to now, the grammatical aspect has been left apart. Therefore, by means of an explanatory model, this exploratory study aims to gain insight into L2 English grammar proficiency by young native-speakers of French or Dutch in a setting of English (-spoken) media immersion. This study has a psycholinguistic stance and focuses on six English grammatical categories, including three morphological markers (i.e. plural *-s*, third person singular *-s*, and *-ing* marker) as well as the formation of negations, *wh*-questions and SVO sentences. The results are divided into three phases. The first phase shows the differences in motivation, attitudes, L2 self-ratings and English-spoken media input between Flemish and Walloon pupils, aged 10 to 12. The second phase concerns the correlations between the aforementioned four factors and the six grammatical categories. The last phase sheds light on the differences in story-telling responses between high and low-proficiency speakers of L2 English. The results first show that all the pupils acquired some L2 English grammar proficiency through English media exposure. Second, they clearly suggest that an extensive media exposure, positive attitudes, high motivation and high self-ratings of L2 proficiency enhance the grammatical proficiency of children, irrespective of their L1. Third, Flemish pupils outperformed their Walloon counterparts because they were more motivated to learn L2 English, had a more positive attitude towards L2 English, rated themselves as better speakers of L2 English and were exposed to English (-spoken) media more frequently than the Walloon pupils. However, as this study is an exploratory study, further research will have to corroborate or contradict the results.

### Key Words

Second Language Acquisition (SLA), English as a Second Language, Morphosyntax, Grammar Proficiency, Media-induced SLA, Productive Language Knowledge

## Introduction

The study focuses on the acquisition of grammar in a setting of media immersion, hence media-induced SLA (Van Herreweghe, 2015). Previous studies on media-induced SLA dealt with lexical acquisition, but grammar acquisition in such a setting has not been investigated yet. Therefore, this study will provide a broad view on the grammatical proficiency in media-induced SLA by Dutch and French-speaking pupils, aged 10 to 12. The approach used in this study will mainly be a psycholinguistic one, i.e. individual learner differences. Further research should focus on systemic and pedagogical variables in media-induced SLA.

The theoretical framework will provide some background information on cross-linguistic influences (section 2), including theories such as behaviourism, contrastive analysis, markedness and L1-L2 transfer. These theories have been widely used in formal and informal settings of L2 acquisition, but the acquisition of grammar through media exposure has been left apart. However, it seems that frequent grammatical features, which are unmarked (e.g. SVO word order), tend to be acquired early (Ellis, 2012). It also seems that typological closeness facilitates the acquisition of L2 grammar (Ringbom, 1987; Ringbom, 2007; Collins, 2002; Collins, 2004; Kellerman, 1979). It remains questionable whether these statements also apply to media-induced SLA as it has been argued that media-induced SLA is a third type of learning, which is different from instructed and naturalistic learning (Van Herreweghe, 2015). It differs from instructed learning because media-induced SLA does not take place in a typical classroom setting and it differs from naturalistic learning because it does not take place in a natural setting (see also section 4 about implicit learning).

Similarly, most theories about the development of learner language (e.g. UG, connectionist theories, morpheme studies) have neglected the new opportunities for acquiring global English (section 3). In our Western societies, the access to English(-spoken) media grew rapidly and young children usually spend a lot of time on the computer, watching TV, listening to music and so on. Nowadays, these new sources of English input are, for most children, easily retrievable. In fact, multilingualism has become the norm, children being no exception. Therefore, it should be investigated whether these different kinds of input also facilitate the acquisition of L2 English grammar. Yet, the above-mentioned theories provide a useful insight into the development of grammar and therefore deserve some attention. Special attention will be paid to the acquisition of six grammatical categories, i.e. SVO word order, plural markers, negatives, *wh*-questions, third person *-s* marker and present progressive *-ing* marker, as these grammatical features are the focus of this study.

The last section of the theoretical framework is devoted to the individual learner differences (section 5). Scholars commonly argue that the combination of different variables, such as motivation, aptitude, age or attitude, rather than one of the variables enhances L2 learning. However, some variables seem to be more impactful than others. For instance, aptitude and motivation (Skehan, 1989) are commonly considered to be the two best predictors of successful L2 learning.

The complete absence of studies on grammatical proficiency in a setting of media immersion motivated this dissertation. As aforementioned, this study will deal with the impact of psycholinguistic variables on the L2 English grammatical proficiency of French and Dutch-speaking children in media-induced SLA. Therefore, an explanatory model is used. On the one hand, the quantitative analyses are based on questionnaires measuring motivation, attitude, frequency of input and self-ratings of proficiency. Second, the grammatical proficiency of the children, aged 10 to 12, are measured by means of a newly designed grammar test assessing SVO word order, plural markers, negatives, *wh*-questions, third person *-s* marker and present progressive *-ing* marker. On the other hand, the qualitative analyses are performed on the basis of stories, which are subjected to error analysis. A mixed methods approach displays the advantage of allowing for firmer conclusions. The participants were 119 pupils enrolled in Flemish primary schools and 145 pupils enrolled in Walloon primary schools. The results were divided into three phases. The first phase (section 7) concerns the media-induced SLA variables, which were subjected to factor analysis. The first phase also deals with differences between the Flemish and Walloon pupils. In the second phase (section 8), the correlations between the factors and the grammatical features are explored. In the last phase (section 9), the stories produced by the Walloon and Flemish pupils are analysed and compared to one another. The method used for this last phase is error analysis.

In section 10, the findings are discussed in the broader context of SLA research. Special attention is paid to the psycholinguistic variables in SLA. Then, some ideas for further research as well as a conclusion are proposed.

# Theoretical framework

## 1. Main Concepts and Terms

Since this study concerns English media-induced second language acquisition of productive knowledge by Belgian children, I shall start by defining some key terms, which will be used throughout this dissertation.

*Second Language Acquisition*, usually referred to as SLA, is the scholarly field of research that studies the “human capacity to learn languages other than the first” (Ortega, 2009: 1). Since the 1960s, there has been a growing interest in *L2 acquisition*, that is the process of acquiring a second language, including its sounds (phonetics and phonology), grammatical signs (morphology), sentences (syntax) and meanings (semantics). *L2 acquisition* can only take place if children have already acquired their mother tongue, that is, their L1. Child language acquisition, hence *first language acquisition* is usually defined as follows:

First language acquisition occurs when the learner – usually a child – has been without a language so far and now acquires one. (Klein, 1986: 4)

In other words, *first language acquisition* is usually set in early childhood and is the first language acquired by children. However, bilingualism or multilingualism have become worldwide norms. In fact, monolingual speakers are now minorities, as indicated by Ortega (2009). For instance, hundreds of thousands of children grow up as bilingual speakers who acquire two languages simultaneously in the first years of life. In the case when more than two languages are acquired in early childhood, the term multilingualism is preferred because it implies the acquisition of more than two languages during childhood (Ortega, 2009). In contrast to bilingualism, SLA occurs later in life, i.e. late childhood, adolescence or adulthood. It is also worth noting, that the term *second* is commonly used to refer to “any language other than the first language” (Ellis, 1994). This perspective will be adopted in this study.

In the 1980s, Krashen attempted to distinguish *acquisition* from *learning*. Krashen describes *learning* as “conscious knowledge obtained through grammar study” and *acquisition* “as the incidentally developed ability to use an L2 fluently and naturally” (Ortega, 2009: 137). Basically, Krashen (1982) uses the term *acquisition* for children developing proficiency in their L1, which is a subconscious process, and the term *learning* to refer to conscious knowledge of a second language (i.e. metalinguistic knowledge or “knowing about”). However, contemporary research hardly ever makes this distinction (cf. Ellis, 1994; Ortega, 2009), but in

the case of media-induced SLA, it should still be appropriate to use the term *acquisition* as defined by Krashen because media-induced SLA is characterized by subconscious language developments and processes.

Further clarification is needed for the distinction made by SLA researchers between the mother tongue and the additional language that is acquired. *Mother tongue, first language, or L1* are used to describe a language (or languages, in case of bi/multilingualism) that children acquire from their parents or caretakers in the first years of life; whereas *additional language, second language, or L2* typically involve languages acquired later in life (Ortega, 2009:6). In contrast to *child language acquisition*, which occurs in natural settings, SLA can take place in natural or instructed settings. Naturalistic learners develop their L2 “through informal opportunities” (ibid.). For instance, L2 learning will arise from an informal conversation with a penfriend. Conversely, instructed learners learn their language through formal tuition, such as French or Dutch classes. However, in our globalized world, a third possibility arises, that is, media-induced SLA (Van Herreweghe, 2015). This new kind of L2 acquisition denotes L2 acquisition through extensive media exposure coupled with positive L2 attitudes.

Finally, *interlanguage* is a term coined by Selinker (1972). It entails “the structured system which the learner constructs at any given stage in his development” (Ellis, 1985: 47). Moreover, it refers “to the series of interlocking systems” (ibid.) that constitutes language acquisition. To put it in other words, the concept *interlanguage* involves the mental representations of a learner’s L2 grammar at any point in time.

## 2. Cross-linguistic influences

By definition, second language learners are already proficient in at least one language. In other words, L2 learners “possess complete knowledge of an L1” (Ortega, 2009: 31). As a consequence, it is likely that this previous linguistic knowledge will be a source of linguistic transfer and will therefore influence L2 learning. In this section, I shall deal with the notion of linguistic transfer starting from early SLA views, including behaviourism and contrastive analysis, to more recent perspectives, such as functional typology and markedness theory.

### 2.1. Early SLA: From Behaviourism to Contrastive Analysis

In the late 1950s, language theories were derived from general learning theories. For example, behaviourism views learning as a formation of *habits* and correction of *errors* (Ellis, 1985). According to psychologists (e.g. Skinner and Watson), habits come into existence when a

specific stimulus becomes “regularly linked with a particular response” (Ellis, 1985: 21). A habit can be acquired through *imitation* or *reinforcement*. The former refers to a stimulus that is reproduced numerous times by the learner so that it becomes automatic, and the latter includes a reward or a punishment depending on whether the response to the stimulus is appropriate or not. In behaviourist language theory, errors are old habits that hinder the learning of new habits (ibid.). It is worth mentioning that, in early SLA, errors are commonly referred to as *interferences*, meaning that the L1 grammatical apparatus interferes with the acquisition of a second language (cf. Bright & McGregor, 1970).

Interference occupies a preponderant place in behaviourist accounts of SLA. Basically, an interference is the result of *proactive inhibition* (Ellis, 1985), which prevents the learning of new habits to take place because previous habits would inhibit the new habits. For instance, L1 and L2 share similar meanings but express it in different terms. According to behaviourist learning theory, an error is likely to arise because the learner will transfer the L1 structure into the L2 structure. A native speaker of French might, for instance, use the sentence *I have cold* (i.e. *j'ai froid*) to express the idea of being cold. This would be the result of negative L1 transfer. In other words, *negative transfer* occurs when there is proactive inhibition. In contrast, *positive transfer* will take place when the L1 and L2 habits are the same, which implies the absence of errors.

Building further on behaviourist learning theory, and especially the potential to predict errors, Lado (1957) argued in favour of Contrastive Analysis (CA). At this point in time, there was the need for an efficient pedagogic tool that would improve language learning. Within this framework, Contrastive Analysis Hypothesis (CAH) states that errors would arise where the L1 and L2 are different, while an errorless L2 will arise if the L1 and L2 are similar. As such, this hypothesis is close to behaviourist learning theory, but the CAH exists in a *weak* and a *strong* form, which makes it different from behaviourism. The *strong* form claims that L1-L2 comparisons allow to predict the errors that learners may make; whereas the *weak* form claims that cross-linguistic comparisons allow to identify, and hence to explain, the errors learners may make. In other words, the *weak* form allows to identify the possible L1 interferences. Following this interest in CA, the preferred research method in the 1960s was *Error analysis* (EA) and later *Performance Analysis* (cf. Long & Sato, 1984). At this time, EA was an interesting method because it gave insight into the process of acquisition, and hence about interlanguage.

As for any language theory, there were some critics on CA. Criticisms are of three main types. First, several scholars question the predictability of errors. For example, fierce criticism came from Dulay & Burt (1973), who found that only three percent of the errors produced by Spanish-speaking children learning English could be attributed to interferences. However, other studies found percentages of interferences closer to 33 per cent (cf. Ellis, 1985 for a full review). These figures clearly suggest that there are no clear definitions “for establishing which grammatical utterances are the result of language transfer” (Ellis, 1985: 29). Second, Chomsky’s mentalist view also challenges the notion of transfer. In fact, mentalist views argue that learning cannot be explained “in terms of habit-formation” (ibid, 30). This perspective on language learning is in stark contrast to the CAH which states that L1 habits are transferred into the L2. The third criticism is more practical in nature. Referring to Lado (1957), CA was said to be a powerful tool to predict errors that learners are likely to make, but in practice, most of the discovered errors are superficial and already well-known by language teachers.

As CA showed to be less innovative and effective than expected, there was the need for a new approach to language learning. Therefore, in the 1970s, Scholars, such as Corder (1971) and Selinker (1972), argue that second language learners develop their own version of the target language (TL). As a consequence, these scholars defended a mentalist view on learning and agreed on a clear and well-defined definition of interlanguage:

Interlanguage is the term given to the mental system developed by L2 learners that enables them to produce and understand utterances of the TL

*Eckman, 2012: 94*

This perspective has been a major development for modern SLA theory and research. This new view on SLA and the demise of EA launched forth the study of L2 grammar acquisition.

## 2.2. Interlingual Identification

A common idea in the late 1970s and early 1980s was that ambiguous L1 – L2 similarities are a source of learning difficulties. Wode (1976) refers to this principle as the Crucial Similarity Measure. Similarly, Roger Anderson (1983) argues that not only the L1, but also the L2, could be a source of misperception of language similarities, which he calls the principle of Transfer to Somewhere.

Next to that, early SLA researchers concluded that cross-linguistic influences could not only be explained by external language comparisons, but with learner’s internal perceptions of language



(dis)similarities. Odlin (2003) states that *interlingual identification* is a sine qua non condition in order to make language transfer possible. Odlin (2003, cited in Ortega, 2009: 33) defines it as “the judgement that something in the native language and something in the target language are similar”. Singleton (1987) reports a case-study of Philips, a native speaker of English who had learnt some French in a natural setting. Singleton found 154 transfer errors of which one third were accompanied by hesitation, laughter or apology (i.e. conscious reactions). Further retrospective reactions produced by Philips clearly indicate that he was aware of the mistakes he made, as illustrated in the following quote:

I knew that it probably wasn't right, but it was the nearest I could get to something that might be right

*in Singleton, 1987: 335*

However, interlingual identifications does not necessarily require consciousness, as interlingual identifications might also occur subconsciously. As mentioned previously, interlingual identification is an internal process, and might, thus, be difficult to express.

### 2.3. Markedness and L1 Transfer

Markedness is a common concept in Functional Typology (FT), which is the comparative study of the world languages (Saville-Troike, 2012). This language theory consists of classifying the world languages and their specific features into categories, also referred to as “types” (hence the denomination of “typology”). The main aim of FT is to delineate the similarities and differences across the languages and to identify which patterns occur more or less frequently, or in other words, which patterns are more or less marked (ibid.). It is worth noting that functional typology involves the analysis of language structure, meaning and use, hence the denomination “functional” (ibid.).

FT is relevant for SLA when it comes to the developmental stages of L2 acquisition, as it seems that some L2 features, such as SVO word order, are less difficult to acquire than others, for example, the third person -s marker in English. In that respect, the concept of *Markedness* is particularly relevant. Saville-Troike (2012: 59) defines markedness as follows:

the notion of markedness deals with whether any specific feature of a language is “marked” or “unmarked.” A feature is “unmarked” if it occurs more frequently than a contrasting element in the same category, if it is less complex structurally or

conceptually, or if it is more “normal” or “expected” along some other dimension. The concept applies to all levels of linguistic analysis.

In other words, unmarked features are simple and frequent across languages, whereas marked features are complex and infrequent across languages. As mentioned by Saville-Troike, the concept of markedness can apply to the different levels of linguistic analysis. But, for the purpose of this study, I shall deal with examples involving grammatical features (cf. Ortega, 2009; and Saville-Troike, 2012 for other examples). For instance, from a syntactical point of view, the basic word order SVO (Subject-Verb-Object) occurs more frequently (i.e. unmarked) in the world languages than the SOV word order (marked). Another area of syntax to which the concept of markedness has been applied is relativization, commonly referred to as the Noun Phrase Accessibility Theory (Keenan & Comrie, 1977). According to Keenan & Comrie, the hierarchy should apply to all human languages. The hierarchy consists of six different relative clauses, based on the function of the relative pronoun (i.e. subject, direct object, indirect object, object of preposition, genitive and object of comparison). Ortega (2009: 130) reviewed several studies using this theory as a framework and concluded that “the evidence is particularly robust for subject, direct object and object of preposition types, whereas evidence on the other three types is more scarce and difficult to interpret”. Ortega’s conclusion implies that other factors, such as ease of cognitive processing or physical constraints, might play a role, and as a result, markedness alone cannot provide a sufficient explanation.

FT and CA are to some extent comparable, as both deal with L1-L2 comparisons to predict or explain linguistic transfer. However, as argued by Saville-Troike (2012), functional typology also involves abstract patterns, principles and constraints, which is not the case of the CA approach, which is limited to surface-level structural contrasts. Moreover, FT has one major implication. If some linguistic features are more difficult to learn than others, it also implies that some languages are more difficult to learn than others, which is in stark contrast with the traditional claim made by linguists, who usually argue that languages are equally difficult to acquire without exception (ibid.).

#### 2.4. Transferability

Building further on the notion of transfer, Kellerman (1979) introduced the notion of *transferability*, which refers to the intuition (either conscious or subconscious intuition) learners display about how transferable certain linguistic phenomena are. According to Kellerman, marked features, i.e. language specific features, are unlikely to be transferred; whereas

unmarked features, which are per definition universal, are more likely to be transferred. In other words, L1 marked features are less likely to be transferred to the L2 than L1 unmarked features.

I shall now explain a common example of transferability, that is, the acceptability of transitive and intransitive meanings of verbs. Eric Kellerman (1979) investigated the acceptability of the transitive and intransitive meanings of the verb *break* and its Dutch counterpart *breken*.

(1) a. He broke his leg.

*Hij brak zijn been.*

b. The cup broke.

*Het kopje brak.*

The sentences 1.a. and 1.b. are grammatically correct in both languages. In his study, Kellerman used similar sentences with native speakers of Dutch learning English as a second language. The first group, that showed limited English proficiency, accepted both transitive and intransitive meanings in almost all cases (i.e. close to 100 per cent). The second group, with intermediate English proficiency, accepted all transitive uses of the verbs, but only accepted 60 per cent of the intransitive uses. The last group, with the highest English proficiency, also accepted all the instances of transitive items, and accepted 80 per cent of the intransitive items. In other words, the intermediate and advanced speakers of L2 English obtained lower scores than the low-proficiency group. Kellerman proposed that low-level proficiency L2 speakers do not possess a well-developed L2 metalinguistic knowledge. As a consequence, these learners naturally rely on their L1 knowledge and transfer this L1 knowledge to the L2. In contrast, more advanced L2 speakers of English only transfer the less marked option (as in 1.a.) to the L2, as these learners judge the intransitive meanings as too marked, or to put it in other words, too Dutch-like, to be transferable. In short, Kellerman's study showed that language transfer is not restricted to L1-L2 comparisons, but that other systemic or psycholinguistic factors play a role in linguistic transfer.

## 2.5. Avoidance, Underuse and Overuse

Most errors discussed up to now are the result of negative transfer which are clearly identifiable in the L2 output. Those errors are known as "errors of commission" (Ortega, 2009: 39). However, L1 negative transfer does not necessarily result in identifiable errors or "ungrammaticalities" (ibid.). Learners can consciously or unconsciously avoid specific language features, which is commonly referred to as "errors of omission" (ibid.) or *avoidance*. Jacqueline Schachter (1974) was the first researcher to identify the concept of avoidance. She

found that Chinese and Japanese speakers of L2 English make fewer errors in relative clauses than Persian and Arabic speakers of L2 English. She also noted that the Chinese and Japanese writers use fewer instances of relativization than their Persian and Arabic counterparts. In fact, relativization in Japanese and Chinese works in a different way than in English; whereas Arabic and Persian relativization is closer to the English relativization pattern. A tempting conclusion is that Chinese and Japanese writers consciously or unconsciously avoid relative clauses, which in turn results in few mistakes. As argued by Ortega (2009: 40), “a consequence of avoidance is that it may lead to more accurate production”. However, predictions about L1 positive or negative transfer cannot only be made on external cross-linguistic similarities or differences (ibid.). Odlin (2003) mentions that three main factors play a role in transferability. A learner first makes a judgement about what is transferable and what is not; Second, it depends on the proficiency of the learner; and finally, it depends on the complexity of the L2 subsystem.

Recently, there has been a shift from the avoidance proposal to the *underuse* and *overuse* approach (Ortega, 2009). Basically, the L1 knowledge can inhibit some L2 features (i.e. underuse) and prime other ones (i.e. overuse). Underuse and overuse are mainly used in corpus linguistics. Therefore, I shall not explain those terms in more detail.

## 2.6. Positive L1 influence

In the previous sections, little has been said about the positive L1 influences on L2 learning rate. This is because it is usually easier to identify occurrences of negative L1 transfer than positive ones. If a learner produces a mistake, it will alert the teachers or the researchers. If learners positively transfer a linguistic feature from their L1 to their L2, teachers will most likely not pay attention to it, as it is a correct target form. In line with that, some scholars, such as Ringbom (1987, 2007), argue that relevant L1 knowledge enhances the L2 learning rate. Ringbom’s studies focused on school-aged L2 learners of English. Several of his studies (1987, 2007) took place in Finland, where two different populations can be found. Ringbom explains that the first group, a majority, are native speakers of Finnish and learn Swedish as a second language; the second group, a minority, are native speakers of Swedish and learn Finnish as a second language. He showed that the second group has a great advantage over the first group, when it came to L2 English learning. He attributes his findings to “genetic and typological closeness of Swedish to English” (Ortega, 2009). Swedish and English are both Germanic languages; whereas Finnish is a Finno-Ugric language. The underpinning idea is that Swedish

and English, belonging to the same language family, share many typological features, which in turn, enhance the L2 learning rate.

Next to that, it also seems that a specific L1 feature impacts differently on the L2 learning rate, as illustrated by Collins (2002; 2004). She found that native speakers of French experience some difficulties when acquiring the simple past in English. In French, there is only one form (i.e. le passé composé) whereas English has two forms (i.e. the present perfect and the simple past). In her study, it seems that L1 French speakers of English are overusing the present perfect tense, which results from overlap between the two languages. In fact, L1 French speakers tend to use the present perfect in sentences in which the simple past should be used (e.g. *\*I have studied English two years ago* versus *I studied English two years ago*). However, when compared to other L1 groups, such as Japanese speakers of L2 English, the French speakers are the first ones to master the present perfect tense because of their overuse of this tense. In other words, as the L1 speakers of French learning L2 English use the present perfect more frequently, they tend to acquire it more rapidly than other L1 groups.

A last example of positive L1 transfer is the aforementioned study by Kellerman (1979). Some verbs, as *break* or *breken* in Dutch, accept both transitive and intransitive meanings. The typological closeness between English and Dutch favours positive linguistic transfer. Most of the participants in his study, regardless of the proficiency, used some L1 knowledge to judge whether the uses of the verbs were correct or not in L2 English.

## 2.7. Cross-linguistic influences across several languages

In the previous sections devoted to cross-linguistic influences, the main focus was on L1-L2 comparisons, but little was said about L3 or L4 acquisition. Therefore, I shall now deal with cross-linguistic influences across multiple languages. According to Ortega (2009), having some knowledge in more than one language accelerates the acquisition of additional languages (L3, L4, and so forth). However, it is worth noting that L3 acquisition is a much more “complex” phenomenon than second language acquisition is because it involves multiple languages (Gass & Selinker, 2008) as well as some other variables including age, typological closeness between the different languages, proficiency of the users, and so forth (ibid.). For the purpose of this study, I shall narrow the focus to morphosyntax (cf. Gass & Selinker, 2008 for examples on vocabulary). For instance, Klein (1995) investigated prepositional stranding (i.e. the separation of prepositions as in “*What are you waiting for?*”) by multilingual speakers of L3 English. The multilingual group outperformed the L2 learners of English. This finding could be explained

through markedness. In fact, prepositional stranding is a marked linguistic feature as it is infrequent across world languages. Multilingual speakers are more likely to already know a language that uses preposition stranding than L2 English speakers who have a more limited cross-linguistic knowledge. In line with that, it seems that not only the first language influences transfer, but all the known languages do (Ortega, 2009). Furthermore, the linguistic features that will be transferred are not randomly selected. As above-mentioned, typological closeness (Flynn *et al.*, 2004; Odlin & Jarvis, 2004) can possibly explain which linguistic features are transferred, but it also seems that L3 learners are more likely to transfer aspects of a language they are more proficient in (Ortega, 2009). Likewise, other SLA scholars (e.g. Selinker & Baumgartner-Cohen, 1995) note that the order of acquisition of the languages plays a major role in linguistic transfer. In other words, the most recently learned language is likely to influence the L3 most. In short, proficiency in multiple languages seems to enhance the acquisition of additional languages implying in turn that the L1 is not the only source of transfer.

## 2.8. Conclusion

In short, L2 learning, or additional language learning, takes place after L1 acquisition. Moreover, the native language as well as the previously known languages influence the acquisition of an additional language. Next to that, transfer is a complex phenomenon, as cross-linguistic differences cannot account for all the interlanguage differences. Other factors including universal constraints, psychological perceptions of transferability, L2 complexity, proficiency level of the learner and linguistic distance clearly influence additional language learning.

## 3. Development of Learner Language

A main focus in SLA is L2 competence, especially L2 development. Therefore, in this section, I shall focus on the development of L2 grammar. In 1972, Selinker coined the term interlanguage to refer to the “language system that each learner constructs at any given point in time” (Ortega, 2009: 141). This natural language is systematic and shows high degrees of variability (*ibid.*). Moreover, learner language can be studied from two main perspectives, that is, the formalist approach and the cognitivist approach. The differences between the two approaches will be the starting point of this section.

### 3.1. Formalist approach

In stark contrast to behaviourism, the nativist approach argues in favour of innateness, which implies that some aspects of language learning are innate (Gass & Selinker, 2008). A well-discussed nativist approach is Universal Grammar (UG). The UG approach assumes that children cannot rapidly acquire a language without the help of an innate language organ. As a consequence, the central concern for UG is a learnability problem (ibid.). In order to solve this problem, the UG approach states that there is a “guiding force” that governs child language acquisition (Gass & Selinker, 2008: 160). UG posits that language input alone cannot be sufficient for successful L2 learning. Therefore, generativists claim that there is an innate language module that limits the possible cross-linguistic variations. In other words, “it specifies the limits of a possible human language” (ibid., 161). If such an innate capacity exists, learning should be facilitated. UG theorists commonly use the term Language Acquisition Device (LAD) to refer to the innate language capacity.

UG theory includes *parameters*, which vary across languages, and invariable *principles*, which are “abstract principles that characterize core grammars of all natural languages” (Gass & Selinker, 2008: 161). In other words, the UG approach aims to explain the similarities between all human languages (i.e. principles) as well as their distinctive characteristics (i.e. parameters) (Mitchell *et al.*, 2013). These principles and parameters highly constrain language learning, which in turn makes language learning much more “manageable” for children (ibid.). An often-cited principle concerns the structure-dependency theory. Basically, this theory states that small units, such as morphemes, are reorganised into bigger units, such as words, which are in turn reorganised into sentences. Another common example is that all human languages have heads and modifiers. A commonly discussed parameter concerns the place of the modifier, which can change cross-linguistically (e.g. head first or head last languages). From an acquisitional perspective, this means, for instance, that children do not need to learn the principle of structure-dependency, as they already know that all human languages are ordered in relation to the head (ibid.). The only linguistic feature they have to acquire is the parameter setting (head-first or head last). According to UG theory, the input serves to set the correct value to the head parameter and very few instances are needed to do so (ibid.).

However, from a second language acquisition perspective, some issues arise. Unlike children acquiring their mother tongue, L2 learners are cognitively mature, they master at least another language and they might have different motivations for L2 learning (Mitchell *et al.*, 2013).

These L1-L2 differences have some implications, which are a source of debate among generativists. There are three major point of views, i.e. *Full Access*, *Partial Access* and *No access* (ibid., 83). The full access proposal posits that the “whole UG is available to L2 learners” (ibid.). The second proposal, i.e. partial access, states that “some parts of UG are not available any longer” (ibid.). This means that functions, which have not been activated in the L1 are no longer available, and hence, are unlikely to be acquired. Advocates of the third proposal, i.e. no access, claim that the second language is not constrained by the UG principles and parameters (ibid.). Each proposal attempts to explain the huge variations in L2 competence. In line with that, the *ultimate attainment* in L2 learning is a source of scholarly debate as well. In fact, adult L2 learners often fail to reach native-like competence even in optimal contexts (cf. section 5.1. for an overview of age-related issues in SLA).

### 3.2. Cognitivist approaches

Not only the field of linguistics, but also the field of psychology influenced SLA. In this section, a short overview of the connectionist, or emergentist, approaches, as well as four interlanguage processes (such as simplification, overgeneralization, restructuring and U-shaped behaviour) will be discussed in this section.

Connectionist models put the emphasis on usage (Gass & Selinker, 2008). Unlike UG theory, connectionist theories state that there is no such innate organ, but learning rather relies on “the extraction of regularities from the input” (ibid. 219). As such, connectionist theories do not distinguish language learning from any other kind of learning (e.g. learning to drive or learning to play tennis). Regarding language learning, the best-known connectionist approach is the *Parallel Distributed Processing* theory, or PDP, which is described as follows:

processing takes place in a network of nodes (or “units”) in the brain that are connected by pathways. As learners are exposed to repeated patterns of units in input, they extract regularities in the patterns; probabilistic associations are formed and strengthened.

*Saville-Troike, 2012: 84-85*

In other words, the network consists of nodes which are connected by pathways. The strength of those pathways mainly depends on their activation or use (Gass & Selinker, 2008). In line with that, Ellis’s frequency accounts (2012) claim that patterns, by being used numerous times, become strengthened. In this model, learners extract some patterns from the input. In turn, the numerous instances, which are the result of input, will reinforce the connections in the learners’



brains. Ellis (2005: 142) argues that connectionist theories rely on “an elaborated network of nodes and internode connections of varying strengths that dictate the ease with which specific sequences or rules can be accessed”. However, the PDP approach has had little influence on SLA and little research has been conducted from this perspective (Saville-Troike, 2012). Yet, this approach was mentioned in this section because Larsen-Freeman (1976) suggested that frequency had a major effect on the acquisition of second language morphology. She argued that the more frequent a morpheme was, the stronger the connections were in the brain. The morpheme studies are explained in section 3.3.

Next to that, as is generally the case for SLA theories, the cognitivist theories first focused on the L1 and later on the L2. For instance, Slobin (1973) who argued that children are guided by universal principles, introduced the *Operating Principles*. Slobin listed 40 statements that children “look for” (Ortega, 2009: 113) in the input in order to learn L1 grammar. For example, one such principle states that learners first pay attention to the end of words, as children tend to acquire suffixes before prefixes (Ortega, 2009). A decade later Anderson revisited the *Operating Principles* and proposed similar statements for L2 grammar learning (cf. his *One to One Principle* in 1984). More recently, VanPatten (2002) proposed his *Input Processing Theory*, which is an attempt at compiling psycholinguistic principles for English language acquisition. According to VanPatten, language learners first process content words. Second, they process lexical encodings before their equivalent grammatical encodings (e.g. the adverb *yesterday* before the morphosyntactic marker *-ed*). At the same time, they process semantic encodings before formal encodings (e.g. the third person pronouns *he* or *she* before the morphosyntactic marker *-s*). Third, learners consider the first noun in a sentence as the subject of the sentence (*The girl eats the apple*; “girl” is the doer).

Next to that, cognitivist approaches distinguish four interlanguage processes: *simplification*, *overgeneralization*, *restructuring* and *U-shaped behaviour*. Firstly, simplification refers to “a process that is called upon when messages must be conveyed with little language” (Ortega, 2009: 116). Simplification is a common process in the early stages of L2 acquisition, especially in natural learning setting. Klein and Purdue (1997) conducted a longitudinal and cross-linguistic study with forty adult immigrants in five European countries. Their study resulted in a 15,000 pages L2 oral transcriptions. They found that all the learners developed a basic, but systematic interlanguage system, which they called the *Basic Variety* (Klein & Purdue, 1997). Table 1 briefly summarizes the most relevant features of the *Basic Variety*.

<i>Area of analysis</i>	<i>Main findings</i>
<i>Phrasal constraints on utterance structure</i>	<ul style="list-style-type: none"> <li>• There are no complex structures.</li> <li>• Utterances can be verbless or with a non-finite (non-conjugated) verb</li> <li>• Verbless utterances are made up of a noun phrase (NP) followed by another constituent</li> <li>• Non-finite utterances can appear in three basic forms: (1) NP plus verb; (2) NP plus copula plus another element; (3) verb or copula plus NP</li> </ul>

*Table 1 The Basic Variety (adapted from Ortega, 2009; see also Klein & Purdue, 1997)*

Secondly, overgeneralization refers to “the application of a form or rule not only to contexts where it applies, but also to other contexts where it does not apply” (Ortega, 2009: 117). Overgeneralizations are sometimes referred to as intralingual errors. As such, overgeneralizations are developmental errors, as they “represent incomplete learning of L2 rules” (Saville-Troike, 2012: 42). Overregularization is a common developmental error in morphology acquisition. For instance, children tend to overuse the *-ed* (i.e. simple past marker) to irregular verbs. It is worth noting that overgeneralization usually appears when children have already developed some language proficiency because “it presupposes that learners have at least partially figured out some regularity” (Ortega, 2009: 117).

Thirdly, restructuring is a common concept in *Information Processing* (IP), which slightly differs from the connectionist approach. Connectionist theories “focus on the increasing strength of associations between stimuli and responses”, while IP rather focuses on the “inferred abstraction of rules or on restructuring” (Saville-Troike, 2012: 84). Thus, restructuring is a “process of self-reorganization of grammar knowledge representations” (Ortega, 2009: 117). In fact, second language learners go progressively through several systematic stages. Yet, the development of L2 is not a smooth process, as there are some “abrupt changes in the interlanguage system” (Saville-Troike, 2012: 186). These changes reflect the reorganization of linguistic features. For instance, the L2 input can be in conflict with the learners’ existing knowledge, which means that reorganization, or restructuring, of the mental processes should take place. Noteworthy, restructuring is not the same as increased accuracy (Ortega, 2009), which is illustrated by the next concept.

Fourthly, U-shaped behaviour is a specific instance of restructuring. According to this concept, learners first use correct forms, such as the plural *feet*, then an incorrect form *foots*, and finally learners readopt the plural *feet*. In this example, the learners first acquire the plural *feet* as an unanalysed word. They, then, overgeneralize the regular plural formation rule +s. Finally, they have come to the linguistic knowledge that the word *feet* is an exception to the plural inflection rule (Saville-Troike, 2012). Drawing on the concept of restructuring, in this example, the learner restructures his or her linguistic knowledge twice. However, the first restructuring process, from *feet* to *foots*, does not result in increased accuracy. Another typical example of U-shaped behaviour is Kellerman's study on the acceptability of transitive and intransitive meanings of verbs (such as "break") discussed in section 2.4.

### 3.3. The Natural Route of Development: Morpheme studies

Building on Chomsky's mentalist views, most morpheme studies were performed in the 1970s and early 1980s. In fact, the morpheme studies arose out of criticism on earlier work about linguistic transfer (discussed in section 2). The focus of such studies was on the order of acquisition of grammatical functors. In other words, the order in which learners acquire specific grammatical features (e.g. possessive pronouns, tenses) (Ellis, 1985).

Brown (1973) was the first scholar to investigate the acquisition order. He conducted a longitudinal study in which he observed three American children, from various backgrounds, acquiring their L1 English. He found that the acquisition order of 14 grammatical morphemes was similar for the three children. Other scholars (for instance, de Villiers & de Villiers, 1973) confirmed Brown's results on the acquisition order of English grammatical morphemes in first language acquisition.

Brown's ground-breaking study was extended by Dulay & Burt (1974) to SLA. Dulay and Burt promoted a mentalist approach to SLA (Gass & Selinker, 2008). As for Chomsky, they argued in favour of an innate language module, which led them to assume that all the languages (i.e. L1, L2, L3, etc.) are acquired in the same way. This view needed empirical verifications, which was the onset of the morpheme studies. So, Dulay & Burt investigated whether an acquisition order also existed in L2 acquisition. Morpheme studies were performed in a consistent way, focusing, in a first stage, on oral data, and in a later stage, on written data. Dulay & Burt used the Bilingual Syntax Measure (BSM) to elicit L2 speech. BSM consists of a set of pictures which are to be described by the language learners. According to the researchers, this method is an accurate method to collect natural speech. They, then, calculated a score for each

grammatical item, which allowed them to rank the tested grammatical items, hence *accuracy order*. They concluded that most errors were developmental and, as such, were not subject to L1 interferences. They concluded that the acquisition orders were similar for different learners regardless of their native language. Dulay & Burt's study was replicated with adult L2 learners (Bailey *et al.*, 1974) and written data (Krashen *et al.* 1978), but all found strikingly similar accuracy orders.

In contrast, Larsen-Freeman (1975) was more nuanced in her findings and was sceptical regarding the use of the BSM. Therefore, she used a different methodology. Her study included 24 adult learners (with various L1s) of L2 English at university. She used a battery of tests including reading, writing, listening, speaking and imitating tasks to test the acquisition of grammatical features. Her study resulted in three major findings. She first found that the L1 did not impact on the acquisition order, which was in line with the previously mentioned studies. Second, she found that different tasks resulted in different acquisition orders. However, the speaking and imitating tasks (i.e. oral production) agreed with Dulay and Burt's results. Finally, she found that frequently produced morphemes are ranked higher in the acquisition order. In other words, frequent morphemes in native-speakers' speech tend to appear first in the acquisition order.

In the eighties Krashen made a synthesis of the morpheme studies. Krashen's natural order hypothesis (1982) is commonly used as a reference. It is illustrated in table 2. The order comprises four ranks, ranging from the morphemes acquired early (stage 1) to morphemes acquired late (stage 4).

1	Morpheme	Illustration
	-ing	The boy is <i>eating</i> an apple.
	Plural -s	The girl and the boy love <i>apples</i> .
	<i>Be</i> copula	He <i>is</i> the one.
↓		
2	<i>Be</i> auxiliary	John <i>is</i> fishing.
	a/the	She takes <i>an</i> apple. She takes <i>the</i> apple.
↓		
3	Irregular past	Mary <i>took</i> the bread.



4	Regular past – <i>ed</i>	Paul <i>jump<u>ed</u></i> on the bed.
	Third person – <i>s</i>	He <i>steal<u>s</u></i> a bread.
	Possessive – ‘ <i>s</i> ’	I lost Mary’ <u>s</u> book.

Table 2 Acquisition Order of English Morphemes according to Krashen 1982 (Examples are mine).

Much more recently, Decourcelle (2017) investigated the receptive English knowledge of Belgian pupils with various L1s (i.e. French and Dutch). The study focused on incidental English acquisition through digital-media immersion. The results were in line with previous studies, as he found no variation in accuracy order on the basis of the L1. He also found that frequently used morphemes are mastered earlier, and hence ranked higher in the accuracy order, than less-frequent grammatical features. Similarly, Mitchell and Myles (cited in Luk & Shirai, 2009: 723) state that:

[...] the basic argument that both child and adult learners of English as a second language developed accuracy in a number of grammatical morphemes in a set order, no matter what the context of learning (classroom, naturalistic, mixed) survived the critique [...] The existence of such an order suggested that second language learners are guided by internal principles that are largely independent of their first language; this was a serious blow for any proponents of Contrastive Analysis.

In short, there is evidence for the invariability of the accuracy order, irrespective of context of learning, L1 backgrounds, internal and external factors.

#### 3.4. Emergence and systematicity

The morpheme studies were mainly based on the concept of emergence and systematicity. The former refers to “the first productive use of a given word order” (Ortega, 2009). The latter refers to the interlanguage that “is governed by rules which constitute the learner’s internal grammar” (Saville-Troike, 2012). In fact, these rules change and evolve over time, i.e. “at any particular point or stage of the development” (ibid.). These rules can be studied by looking at the language produced by learners at particular points in time. It is then possible to analyse and interpret what they can produce (ibid.). It should be mentioned that emergence should not be confounded with ultimate attainment, which refers to the “final, steady state of the interlanguage system” (Gass & Mackey, 2012). Ultimate attainment is a synonym for *end state*, while emergence is the first

use of a grammatical feature. In order to illustrate these concepts, two different examples will be discussed. The first example deals with the acquisition of negatives in L2 English and the second one concerns the acquisition of questions in L2 English.

The acquisition of negatives in English is characterized by systematicity, as there are well-defined predictable stages. In the first stage, young L2 English learners show a clear preference for pre-verbal negation (i.e. usually the negative particles *no* or *not*) regardless of the L1 backgrounds (Hyltenstam, 1977; Ravem, 1968; Cancino *et al.*, 1978). However, differences attributed to typological closeness are observed in the rate of development (Ortega, 2008). For instance, Italian, Spanish and French, all have pre-verbal negation which involves that the first stage might last longer for L1 speakers of one of these languages than for native speakers of Japanese whose L1 requires post-verbal negation. It is worth noting that each stage is based on *emergence* of a given linguistic feature. The second stage is characterized by internal negation. In most cases, learners use the particle *no* or *not* in a post-verbal position (Ellis, 1985). The third stage involves the emergence of negatives in restricted contexts with modal verbs (e.g. *can't* or *won't*) (*ibid.*). In the final stage, learners use the target-like feature. To put it in other words, they use the post-verbal English negation in all contexts (*ibid.*).

A second well-known example of emergence and systematicity is the developmental order of the emergence of word order in English questions (Pienemann *et al.*, 1988). Pienemann and colleagues identified six stages. As for the acquisition of L2 English negation, the learning rate of the developmental path can vary, but the stages remain the same irrespective of the L1 backgrounds of the learners. The first stage is characterized by fragments with rising intonation (e.g. *a boy?*). In the second stage, learners typically use the canonical word order with a rising intonation (e.g. *Boy eats apple?*). Next, L2 learners of English start using a fronting strategy, that is, “they build questions by placing question markers in front of statements” (Ortega, 2008: 35), such as in “*Where you go?*”. The fourth stage is characterized by the emergence of inversion (e.g. *Where is boy?*). The last two stages are target-like questions. However, it seems that target-like *wh*-questions (stage 5: e.g. *Where do you go?*) are acquired before special cases (stage 6), such as embedded questions (e.g. *I wonder where they went?*) or question tags (e.g. *It is a nice place, isn't it?*).

### 3.5. Conclusion

Both the formalist and the cognitive approaches attempt to define L2 competence and L2 development. It seems that former research on morphology (e.g. morpheme studies) and syntax

(e.g. the basic variety) could identify some clear instances of interlanguage. It further seems that the stages are systematic, but that there are some differences in the L2 learning rate.

#### 4. Implicit versus explicit knowledge

##### 4.1. Implicit and explicit learning

Drawing further on the cognitivist approaches, implicit learning, or “learning without rules” (Ortega, 2008: 99), is another major area of research in SLA. This interest is legitimate as children acquire their L1 without any rules and many L2 speakers can use the L2 but have little knowledge of the L2 rules. The first researcher to deal with the notion of implicit learning was the psychologist Arthur Reber, who defines it as “a process during which subjects derive knowledge from a complex, rule governed stimulus domain without intending to and without becoming aware of the knowledge they have acquired” (Reber, cited in Rebuschat & Williams, 2011: 829). This definition highlights two main characteristics of implicit learning: it is an unconscious process and it results in abstract knowledge. At this point, it is worth noting that media-induced SLA is a typical instance of implicit learning (Van Herreweghe, 2015). In contrast, explicit learning is characterized by conscious acquisition of grammatical rules. Rebuschat and Williams (2011: 829) define it as follows:

The term explicit learning is usually applied to learning scenarios in which subjects are instructed to actively look for patterns, that is, learning is intentional, a process that tends to result in conscious knowledge.

For instance, a classroom setting with a teacher explaining grammatical rules is a typical example of explicit learning.

##### 4.2. Acquisition-Learning Distinction: A Question of Interface

Krashen perceives *acquisition* and *learning* as two separate and independent ways of developing a second language as explained in the following quote:

The first way is language acquisition, a process similar, if not identical, to the way children develop ability in their first language. Language acquisition is a subconscious process; language acquirers are not usually aware of the fact that they are acquiring language, but are only aware of the fact that they are using the language for communication. The result of language acquisition, acquired competence, is also subconscious. We are generally not consciously aware of the rules of the languages we

have acquired. Instead, we have a "feel" for correctness. Grammatical sentences "sound" right, or "feel" right, and errors feel wrong, even if we do not consciously know what rule was violated [...] The second way to develop competence in a second language is by language learning. We will use the term "learning" henceforth to refer to conscious knowledge of a second language, knowing the rules, being aware of them, and being able to talk about them. In non-technical terms, learning is "knowing about" a language, known to most people as "grammar", or "rules". Some synonyms include formal knowledge of a language, or explicit learning.

*Krashen, 1982: 10*

Krashen's position will later be referred to as the *noninterface position* because it excludes any transfer from implicit to explicit knowledge. This position has three implications. It, first, states that implicit and explicit knowledge are stored in different parts of the brain (Ellis, 2005). Second, it claims that different acquisitional processes are at play, and third, it implies that explicit and implicit knowledge are accessed by different processes (ibid.).

In stark contrast to Krashen's distinction, there is the *strong interface position*, which posits that implicit knowledge can become explicit knowledge and vice versa (ibid.). For instance, explicit knowledge can become implicit knowledge through intensive practice. DeKeyser (1997) argues in favour of this position, as he argues that language learning is similar to any kind of learning. A learner will first be exposed to declarative knowledge, or "knowing *that*" (Gass & Selinker, 2008: italics in original), and then to procedural knowledge, or "knowing *how*" (ibid.). Declarative knowledge is the result of observations and verbal instruction (i.e. explicit learning); while procedural knowledge is the result of some performance, for example using and producing the language. However, a lot of practice is needed to allow the procedural knowledge to become automatic and internalised, that is to say, to become implicit knowledge (Ellis, 2005).

Finally, the *weak interface position* claims that explicit knowledge can become implicit but with some restrictions on when or how this transfer takes place (Ellis, 2005). Gass and Selinker (2008: 247) commented on an example of implicit-explicit cooperation given by Ellis (2005):

As fluent native speakers, we rarely think about our speaking except when we stumble (e.g., when we can't find the right word). In his view [i.e. Ellis's view] conscious and unconscious processes are involved at all steps of the way in any cognitive task, language being no exception.



Basically, native speakers do not think or reflect about what they are saying (i.e. implicit) unless they make a mistake (i.e. explicit). In short, implicit and explicit knowledge are “dissociable but cooperative” (Ellis, cited in Gass & Selinker, 2008: 246). They interact with one another, or cooperate, on specific instances.

## 5. Individual learner differences

Differences in ultimate L2 attainment can arise out of individual learner differences, such as age, sex, language aptitude, motivation, cognitive style, personality, and learning strategies. However, not all these learner differences are of equal relevance for this dissertation. In the next four sections, some attention will be paid to age, aptitude, sex, motivation and personality (for further detail about the remaining individual differences, see Saville-Troike, 2012).

### 5.1. Age & aptitude

Age and aptitude will only be briefly addressed. A common belief in SLA, is that younger learners are usually more successful at language learning than adult learners. The differences in ultimate language attainment have commonly been attributed to “physiological changes [which] cause the brain to lose its plasticity” (Saville-Troike, 2012: 88), generally referred to as *critical period*. Eric Lenneberg (1967) was the first researcher to speculate on the existence of a critical period in SLA. According to him, this should be an explanation for why adult L2 learners have a foreign accent and often fail to reach native-like L2 proficiency. However, Lenneberg’s speculations should be nuanced as proposed by Saville-Troike:

younger learners are probably more successful in informal and naturalistic L2 learning contexts, and older learners in formal instructional settings (2012: 89)

There is indeed evidence that younger learners can acquire a language implicitly, such as in naturalistic or informal L2 contexts, while adult learners usually need a degree of explicit instruction in their language learning process (cf. Bialystok, 1994; Abrahamsson & Hyltenstam, 2008; Schmidt, 2010). In line with that, age is often put in relation to language aptitude, which is basically a special talent for language learning (Saville-Troike, 2012: 90). For instance, Abrahamsson & Hyltenstam (2008) found that Spanish immigrants, who moved to Sweden before the age of twelve, are able to attain native-like L2 proficiency irrespective of their aptitude. In contrast, adult Spanish immigrants with low aptitude, who moved to Sweden after twelve, experience more difficulties in the acquisition process and struggle to reach native-like

Swedish proficiency. Yet, adult immigrants with high aptitude can still attain native-like proficiency. Finally, Schmidt summarizes the age and aptitude issues as follows:

The fundamental difference between first language acquisition and adult language learning, is that child first language acquisition depends on implicit learning, which is unaffected by differences in aptitude, while adult language learning depends more on explicit learning, which is affected by aptitude.

*Schmidt, 2010: 732*

## 5.2. Sex

It is a common belief in Western cultures that females tend to surpass males in the language faculty. For example, Berninger and colleagues (2008) found that females outperformed males in articulation, grammar, vocabulary, spelling and reading. In contrast, Saville-Troike (2012) reviewed several gender studies and concluded that the results are usually mixed. She argues that the aforementioned common belief “is probably primarily a social construct, based on outcomes which reflect cultural and sociopsychological constraints and influences” (ibid. 90). However, for the purpose of this dissertation, a study by Ewa Piechurska-Kuciel (2011) among 126 polish boys and 267 polish girls enrolled in grammar schools deserves some attention. In her longitudinal study, she put gender in relation to anxiety and found that girls and boys experience similar degrees of anxiety in the first year of grammar school, but girls tend to experience higher levels of anxiety in year two and three. She attributes these differences in year two and three to social pressure. As females in Western societies are generally expected to score higher at language courses than males, they are, in turn, more sensitive to high anxiety because they want to reach these expectations (ibid. 142).

## 5.3. Motivation

Motivation is a well-discussed factor in SLA (cf. Ortega, 2008; Saville-Troike, 2012; Gass & Selinker, 2008). Saville-Troike (2012: 91) lists five components, that define the concept of *motivation*:

- Significant goal or need
- Desire to attain the goal
- Perception that learning L2 is relevant to fulfilling the goal or meeting the need
- Belief in the likely success or failure of L2 learning
- Value of potential outcomes/rewards

One major underlying concept of motivation is *integration*. This concept was already introduced in the early seventies by Gardner and “refers to an individual’s disposition toward the L2 group and the extent to which he or she desires to interact with and even become similar to the group” (Gass & Selinker, 2008: 426). In other words, *integrative motivation* (IM) is a special interest or desire to learn a foreign language in order to be able to communicate with the L2 community. It is worth noting that IM is driven by “affective factors” (Saville-Troike, 2012: 92). Another common source of motivation is *instrumental motivation*, which denotes “a utilitarian goal” (Gass & Selinker, 2008: 427), such as increasing the opportunities of obtaining a job or enhancing the social prestige. Other sources of motivation come from the incentive theories (cf. Birch and Veroff, 1966; see also Maslow’s Hierarchy of Needs Theory, 1968), which state the existence of *intrinsic motivation* and *extrinsic motivation*. On the one hand, intrinsically motivated learners are motivated because they enjoy the activity they are doing and also because they want to gain some knowledge (Ortega, 2008). In other words, intrinsic motivation comes from a self-desire to become a better self. On the other hand, extrinsically motivated learners want to attain some external ends (ibid.). In this case, the motivation comes from some external pressure, such as avoiding a punishment or obtaining a reward. This external pressure is the source of the motivation.

A second important underlying concept of motivation is the *attitude* towards the L2 community. According to Ortega (2008: 174), the attitudes towards the L2 are mainly driven by “collective values, beliefs, attitudes and [...] behaviours that are rewarded and modelled for the learner in the communities in which he or she participates”. In that respect, Belgium is an interesting case. In fact, Belgium has three different linguistic communities, that is, the Flemish community (mainly Dutch-speaking), the French-speaking community, and the German-speaking community. Due to former legislation, there have been many tensions between the two main linguistic communities, i.e. the Flemish and French communities. These tensions have resulted in complex L2 attitudes in Belgium, as stated by Mettewie and Janssens (2007: 126):

In a linguistically divided country such as Belgium, where languages have a highly symbolic value because of historical, cultural, political and economic reasons, language attitudes function as a mirror for the status of a language and as a barometer for the relationship between language communities.

In their study, it seemed that students enrolled in a teacher training programme displayed different attitudes towards their own linguistic community than towards the other linguistic community. They found that Walloon students have a positive attitude towards their L1 French

and that Flemish students show a positive attitude towards their L1 Dutch. In other words, students display a highly positive attitude towards the language of their own linguistic community. In contrast, the students show negative attitudes towards the language of the other linguistic community. They also evaluated the attitudes towards the English language, which is a third language in Belgium, and found that Walloon and Flemish students have a more positive attitude towards English than towards the language of the other linguistic community. In contrast, Dutch-French bilingual students and French-Dutch bilingual students do not display the same negative attitudes and are rather positive towards the other linguistic community. In short, it seems that bilingual students have a more open behaviour than their monolingual counterparts.

#### 5.4. Personality

*Personality* is generally used as a synonym for *learning style*, which refers to “the preferences that an individual has of obtaining, processing, and retaining information” (Gass & Selinker, 2008: 432). Many different personality styles can be identified. Saville-Troike (2012) provides a summary of the most studied personality traits, which are summarized in table 3.

**Most studied personality styles in SLA research**

Anxious	-	<b>Self-confident</b>
Risk-avoiding	-	<b>Risk-taking</b>
Shy	-	<b>Adventurous</b>
Introverted	-	Extroverted
Inner-directed	-	Other-directed
Reflective	-	Impulsive
<b>Imaginative</b>	-	Uninquisitive
Creative	-	Uncreative
<b>Empathetic</b>	-	Insensitive to others
<b>Tolerant of ambiguity</b>	-	Closure-oriented

Table 3 Personality traits adapted from Saville-Troike (2012: 95). Personality traits in bold (in original table) indicate positive correlations.

As shown in table 3, some studies found positive correlations between some personality traits and L2 proficiency (in table 3 marked in bold). So, it seems that being self-confident, risk-

taking, adventurous, imaginative, empathetic or tolerant of ambiguity correlates positively with L2 proficiency (Saville-Troike, 2012). In contrast, introverts or inner-directed people do not seem to be more successful language learners than extroverts or other-directed people (ibid.). The results seem to be robust as they do not change over time. The correlations are similar for adult L2 learners and young L2 learners (ibid.).

#### 5.5. Conclusion

Differences in language learning can be the result of individual differences such as age, sex, aptitude, motivation or personality. However, psycholinguistic research suggests that not only one factor is at play, but rather, the interplay between the individual differences influence the L2 proficiency.

## Part 1: Written English Grammar Proficiency

### 6. Method

#### 6.1. Introduction

As discussed in the theoretical framework, there is firm evidence for systematicity in the acquisition of productive L2 grammar knowledge in formal learning. It further seems that there are clear developmental patterns in L2 grammar learning. In contrast, informal learning seems to depend more on psycholinguistic factors (e.g. age, motivation, attitude), on typological closeness and input. Therefore, this study will deal with psycholinguistic factors and input as media-induced SLA is informal, implicit learning. In the last couple of years, lexical acquisition in media-induced SLA has had a lot of attention (Houthuys, 2011; Duyck, 2013; Van Herreweghe, 2015; Simon & Van Herreweghe, in press), but hardly no research has focused on the acquisition of grammar in a setting of media immersion. In fact, there is only one master's thesis by Decourcelle (2017), which dealt with grammar acquisition in media-induced SLA. Decourcelle suggested that there can be universal developmental patterns in the acquisition of L2 English grammar in a setting of media immersion. So, in order to fill this gap, there is the need for further research on grammar acquisition through media, such as television, video games and computers.

It is worth noting that this study will build further on Decourcelle (2017). As a consequence, it aims to shed light on the productive aspects of media-induced acquisition of L2 English. This study presents data from questionnaires, which attempt to outline the attitude and behaviours of Belgian children towards the English language, and data from productive tests (written tasks). The tests were designed in order to evaluate the knowledge of six English grammatical categories (i.e. the formation of plural markers, negatives, questions, word order, third person singular *-s* and progressive marker *-ing*) by Walloon and Flemish pupils. In respect to that, the participants were pupils, aged 10 to 12, who were all enrolled in Walloon or Flemish schools. The pupils had no former English formal tuition. The focus on children was appealing as English is steadily used more frequently in European media and children get to hear English from an early age in Belgium (Berns *et al.*, 2007).

However, this sole study cannot account for strong conclusions. The field of media-induced SLA, and especially the acquisition of grammar, should be explored further. This study should

be perceived as an exploratory study, which attempts to give some insight into the field of media-induced SLA.

## 6.2. Research questions and Predictions

The following research questions were formulated to address the acquisition of productive L2 grammar proficiency in a setting of media immersion:

1. Which factors (i.e. learner characteristics) influence the grammatical English L2 proficiency of Dutch and French-speaking children enrolled in Belgian schools in a setting of media immersion?
2. How do these factors of media-induced SLA relate to learners' scores on different English grammatical categories (i.e. the formation of plural markers, negatives, questions, word order, third person singular *-s* and progressive marker *-ing*)?
3. Are there differences between native speakers of Dutch and native speakers of French with respect to the first two research questions?
4. Are there differences in story-telling responses across lower and higher proficiency learners that may reflect differences in grammatical proficiency?

Previous studies already showed that the media accounts for a “substantial amount” of English contact (Berns *et al.*, 2007: 113). English contact through music has been attested as first major source of media-induced L2 English acquisition in several studies (cf. Berns *et al.*, 2007; Van Herreweghe, 2015; Decourcelle, 2017; Simon & Van Herreweghe, in press). Since the early two-thousands, computers and the access to the Internet have become easier, which, in turn, granted an easier access to English or American popular culture (e.g. through YouTube or Facebook). Therefore, it is not surprising that computers are the second major source of English contact in Europe (Berns *et al.*, 2007). As a result, it is hypothesised that listening to English music and using the computer in English, i.e. a setting of media immersion, would enhance the acquisition of L2 English grammar.

Next to that, Decourcelle (2017), who investigated L2 receptive knowledge in media-induced SLA, showed that Flemish pupils outperformed their Walloon counterparts on a receptive test. However, the developmental patterns remained the same and did not vary despite the differences in native languages (i.e. Dutch and French). Next to that, Duyck (2013) studied the acquisition of English vocabulary in a setting of media immersion by Walloon pupils. She concluded that there were individual differences resulting from attitudinal and motivational factors as well as differences resulting from the frequency of English contact. In fact, pupils

with high motivation, positive attitudes towards English or who used English media frequently know, on average, more English words than pupils with low-motivation, negative attitudes or who used English media infrequently. Similarly, Houthuys (2011) studied the acquisition of English vocabulary in a setting of media immersion by Walloon and Flemish pupils. Basically, her results were similar to Duyck's results. However, the comparison of Walloon (i.e. L1 French) and Flemish (i.e. L1 Dutch) pupils allowed her to argue that, on average, the Flemish pupils outperformed their Walloon counterparts on a vocabulary test. So, previous studies tend to show that lexical acquisition through media immersion is possible. As a consequence, it is expected that Belgian pupils also develop some L2 English grammar proficiency in a setting of media immersion. Previous research clearly shows that a second language can be acquired in informal settings, for instance, Klein & Purdue (1997) on immigrants, Abrahamsson & Hyltenstam (2008) also on immigrants, Berns and colleagues (2007) on media immersion. In short, this study has a wide scope and attempts to shed light on the dimensions that underlie the emergence of English grammar in a setting of English media immersion.

### 6.3. Participants

The participants were 264 children (133 males and 131 females) enrolled in Belgian primary schools. 119 pupils were enrolled in a Flemish primary school (i.e. 47 pupils in year five and 72 pupils in year six) and 145 were enrolled in a Walloon primary school (i.e. 38 pupils in year five and 107 pupils in year six). It is also worth noting that 28 Walloon pupils were taking an immersion programme in French and Dutch (i.e. Content and Language Integrated Learning, usually referred to as CLIL). In total, there were five Walloon schools set in the Comines-Warneton region (Hainaut) and three Flemish schools set in Wervik or Menen (West-Flanders). The population of the schools ranged from lower-class to middle-class children (cf. table 4).

Next to that, only seven pupils did not attend preschool and went to school for the first time in primary school year one. Moreover, 207 pupils (78.4%) did not repeat a year, 44 pupils (16.7%) repeated a year in primary school and the remaining 13 pupils (4.9%) reported to repeat a year in preschool. The parents were also asked to report on their highest degree obtained. This is summarized in table 4, which indicates that most of the parents attended secondary school education, vocational training or obtained a bachelor's degree. It should also be noted that the parents of the Flemish participants and the parents of the Walloon participants had similar degrees. A correlation analysis on the parents' degree revealed that the degree obtained by the



father and the degree obtained by the mother were significantly correlated ( $r=.58$ ,  $p<.001$ ). Basically, mothers and fathers tended to have similar degrees.

<i>Highest degree obtained</i>	<b>Percentage father</b>	<b>Percentage mother</b>
<i>No degree</i>	4.2%	3.2%
<i>Primary education (age 12)</i>	2.8%	1.8%
<i>Secondary school education (age 14)</i>	5.6%	6.3%
<i>Secondary school education (age 18)</i>	26%	22.5%
<i>Vocational training (age 18)</i>	34%	31.1%
<i>Bachelor degree</i>	21.4%	27%
<i>Master degree</i>	6%	8.1%
<b>Total</b>	100%	100%

Table 4 Highest degree of the parents in percentage

Concerning former English tuition, six pupils reported that they had some formal English tuition. Therefore, those six pupils were removed from the dataset as this study deals with pupils who had no former English tuition. Next to that, another pupil was removed from the sample because he only spoke foreign languages at home (including his or her father, mother, brothers and sisters). 180 pupils out of the 257 remaining pupils were monolingual at home (i.e. French or Dutch depending on the region). The other 77 pupils were bilinguals. These pupils reported to speak French or Dutch in combination with other home languages (e.g. Italian, Polish, Arabic). Yet, all the pupils reported to speak French or Dutch with their siblings at school. It is also worth noting that all the children were born in Belgium ( $n= 212$ ) or in France ( $n= 35$ ), except for nine pupils who were born in another country. Pupils born in France or in another country were not removed from the sample because they had been enrolled in the Belgian education system since early childhood (i.e. preschool or early primary education). Comines,

Warneton, Wervik and Menen are all located close to the French border, which explains why some pupils were born in France but attended Belgian primary schools.

#### 6.4. Instruments

An extensive questionnaire, including three sub-questionnaires, and a written English grammar proficiency test were used to obtain several measures of the L2 English grammatical proficiency of the participants. The questionnaire elicited responses to background variables (i.e. biographical, well-being at school, origin, language background and test anxiety) and to media-induced SLA variables. The first sub-questionnaire dealt with social factors. The biographical section of this first questionnaire was designed in order to provide background information about the participants' age, gender, date of birth, school and other biographical facts, such as repeating a year, information about preschool tuition and the jobs of the parents. It is noteworthy that the parents had to give their formal consent and were also asked to provide information about their degrees. The well-being section, the test anxiety section, the origin section and the language background section were designed by Fauve De Backer for the ongoing MULAE project in Ghent<sup>1</sup>. The well-being section sought information about the pupils' well-being at school and included six items (e.g. *I think that most lessons are annoying*, *I think that going to school every day is nice*). This was rated on a 5-point Likert-scale, ranging from *strongly disagree* to *strongly agree*. The reliability of these six items was high ( $\alpha=0.8$ ). The same scale was used for the test anxiety section of the questionnaire, which covered four items (i.e. *I feel at ease when I take a test*, *I feel worried about the difficulty of a test*, *I am afraid of having bad marks on a test*, and *I am worried about omitting things when I take a test*). Again, the reliability analysis indicated good reliability,  $\alpha=0.71$ . The origin section was designed in order to seek information about the pupils' birthplace and the birthplace of their parents and grand-parents ( $\alpha=0.81$ ). For this purpose, the pupils had to tick the box corresponding to their birthplace as well as the birthplace of their parents and their grand-parents. The language background section of the first questionnaire also elicited information about the home languages (parents, brothers and sisters) and the languages spoken with their siblings at school and outside school. The 5-point scale ranged from *always French/Dutch* to *always another language* ( $\alpha=0.78$ ). A last set of three questions was designed in order to control for former English tuition (close questions). These different sections were always completed before the English grammar proficiency tests. Finally, after the written English grammar proficiency test, the pupils had to provide some

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<sup>1</sup> See also: <https://research.flw.ugent.be/nl/node/30438> for an overview of this project on multilingualism in Ghent.

feedback on the difficulty of the written test. This was done by using a 10-point scale (1= very easy, 10= very difficult) and by using three questions about the test difficulty elicited on a 5-point Likert-scale ( $\alpha=0.79$ ).

The second and third sub-questionnaires were always completed just after the written English grammar proficiency test. The second questionnaire was designed in order to assess the frequency of English contact, ranging from *never* to *always* elicited on a 5-point scale. The items measured frequency of English contact through music, video games, reading, computer and television. This questionnaire yielded a high level of reliability ( $\alpha=0.83$ ) and will therefore be used as one overall measure of *frequency of English input* (i.e. factor 1). The third questionnaire was designed to measure media-induced SLA variables. These variables were measured on a 6-point scale, ranging from *totally agree* to *totally disagree*. The media-induced SLA variables were subjected to a factor analysis, which will be explained in section 7.3. Some of the items in the second and third sub-questionnaires were based on previous literature (Berns *et al.*, 2007; Decourcelle, 2017). However, most of the items were specially designed for this study.

The written English grammar proficiency test (WEGP) was created in order to test six different grammatical categories, i.e., plural markers, negatives, word order, 3<sup>rd</sup> person singular *-s*, *wh*-questions and present progressive markers. The grammatical categories were selected on the basis of the study on English grammar proficiency in a setting of media immersion by Decourcelle (2017). As this was a newly designed test, some reliability analyses were performed. A first Cronbach's alpha was computed on the whole test, which showed high reliability ( $\alpha=0.95$ ). Therefore, a total score out of 145 was computed. This score intended to measure the *overall English grammar proficiency* of the children and was used in the subsequent analyses. However, this study deals with six different grammatical categories. Therefore, the WEGP test was subjected to a factor analysis as well in order to control for the six categories. So, a principal component analysis (PCA) was conducted on the 42 items with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis,  $KMO = .92$  ('superb' according to Field, 2009). Barlett's test of sphericity  $\chi^2 (861) = 9127.41$ ,  $p < .0001$ , indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Eight components had eigenvalues over Kaiser's criterion of 1 and in combination explained 74.6% of the variance. However, the scree plot, which is a graphical representation

of the eigenvalues, showed an inflexion that would justify the retention of six components.<sup>2</sup> Given the fact that these six components corresponded to the expected six grammatical categories, the six components, explaining 69.3% of the variance, were retained. The items that cluster on the same components suggest that component 1 represents the emergence of word order in English questions, component 2 the plural markers, component 3 the third person marker *-s*, component 4 the present progressive marker *-ing*, component 5 the negative markers and component 6 the SVO word order. Table 5 is the summary of the exploratory factor analysis with varimax rotation. It should be noted that the only item loading onto two different factors was item 13. As mentioned below table 5, coefficients below .4 were removed. This item loaded onto the factor *Questions* and the factor *Negatives*. However, this item was designed to assess the negation and therefore was considered as such.

Item	Questions	Plural	3 <sup>rd</sup> person <i>-s</i>	Present progressive <i>-ing</i>	Negatives	SVO word order
Item 26	.71					
Item 27	.76					
Item 28	.78					
Item 29	.79					
Item 30	.72					
Item 31	.80					
Item 32	.77					
Item 33	.77					
Item 34	.82					
Item 35	.81					
Item 36	.80					
Item 37	.79					
Item 1		.70				
Item 2		.53				
Item 3		.68				
Item 4		.61				
Item 5		.53				
Item 6		.73				
Item 7		.75				
Item 8		.73				
Item 9		.74				

<sup>2</sup> For clarity's sake, a scree plot is a graphical representation of the eigenvalues. There are as many eigenvalues as there are variables. The scree plot allows to identify prominent eigenvalues. Usually, there are few factors with high eigenvalues and many factors with low eigenvalues. So, this graph has a characteristic shape: there is a descent in the curve, which is followed by a tailing off. The point of inflexion is situated where the slope of the line changes. Usually, the cut-off point for factor selection is situated at this point of inflexion (cf. Field, 2009 for more detail).

Item 10		.66				
Item 16			.78			
Item 17			.80			
Item 18			.82			
Item 19			.82			
Item 20			.80			
Item 38				.78		
Item 39				.79		
Item 40				.81		
Item 41				.83		
Item 42				.79		
Item 11					.81	
Item 12					.81	
Item 13	.41				.70	
Item 14					.81	
Item 15					.79	
Item 21						.76
Item 22						.71
Item 23						.80
Item 24						.85
Item 25						.86
Eigenvalues	14.92	4.32	3.30	3.16	1.98	1.42
% of variance	35.5	10.29	7.86	7.53	4.72	3.4
Cronbach's $\alpha$	.96	.87	.95	.95	.94	.89

Table 5 Summary of exploratory factor analysis results for the WEGP test (N= 257). Coefficients below .4 were removed. 'Item' refers to the items in the WEGP test.

The emergence of word order in questions (component 1) was graded on the basis of the six-stages model defined by Pienemann *et al.* (1988). However, there were no embedded questions and as a consequence, there were only five stages in this study. As discussed previously, the first stage is characterized by use of fragments (e.g. *a boy?*). In the second stage, learners use the canonical word order (e.g. *Boy eats apple?*). Then, L2 learners of English use a fronting strategy, such as in “*Where you go?*”. The fourth stage is characterized by the emergence of inversion (e.g. *Where is boy?*). Stage five involves the emergence of target-like *wh*-questions (e.g. *Where do you go?*).

Next to that, the emergence of negatives was based on previous research as well (Hyltenstam, 1977; Ravem, 1968; Cancino *et al.*, 1978). In the first stage, learners use a pre-verbal negation (e.g. *No, come*). The second stage is characterized by internal negation (e.g. *I not come*). The third stage involves the emergence of negatives in restricted contexts with modal verbs (e.g. *I can't come* or *I won't come*). In the final stage, the learner uses the target feature and uses the post-verbal English negation in all contexts (e.g. *I did not go to the swimming pool*).

Concerning the plural marker, the third person marker *-s*, the present progressive marker *-ing* and the word order, new codings were created. The plural marker was graded out of three corresponding to three different stages. Stage one was a bare noun, stage two the noun + a morphosyntactic marker (e.g. *-en*, *-ent*), and stage three the target morphosyntactic feature. Next, the third person marker *-s* was also coded out of three. Zero stood for *to+verb*, one for the absence of morphosyntactic marking (i.e. bare infinitive), two for the use of an incorrect morphosyntactic marker and three for the use of the correct morphosyntactic marker *-s*. A similar scale was used for the present progressive marker *-ing*. Finally, the SVO word order items were coded on a binary scale, that is, incorrect word order and correct word order.

The last task of the test was a story-telling task. The pupils were asked to produce a short story (i.e. at least 20 words) on the basis of three pictures. The first picture described a child who was packing his clothes, while his mother was warning him about the time. The second picture described the same boy who was running to catch his bus. The final picture represented the mother and the boy, who missed the bus and instead took a taxi. The pupils were free to use any grammatical forms they wished. However, for the purpose of this study, the focus will be on the six grammatical items which were discussed previously.

Finally, it is worth noting that I was the only rater. Ideally, there should be some other raters in order to control for intra- and inter-rater reliability. However, as aforementioned, the reliability of the test and the reliability of the questionnaires were good. Regarding content and construct validity, all the questionnaires and the two tests were checked by two supervisors (Prof. Mieke Van Herreweghe and Prof. Piet Van Avermaet). It is also worth mentioning that the study was first piloted with one Walloon child. Some of the items were rewritten in order to enhance the comprehensibility of the questionnaire and the grammar test. Concerning the questionnaires, some words (e.g. “anglophone”, “BBC”) were not understood by the pupil. So, the sentences, in which there was a lexical problem, were paraphrased. Concerning the test, some instructions were not clear. The pupil was sometimes confused about what to do. Therefore, in a second version of the test, shorter instructions with frequent words were used. Next, in the first version of the test, there was no place to give some feedback at the end of the test. This was changed in the second version. The aim of these changes was mainly to ensure validity.

## 6.5. Procedure and data analysis

The participants were tested in their own schools. The questionnaires and the WEGP test were performed in class. The section about the background variables was always completed before

the WEGP test. The frequency of English input section of the questionnaire and the media-induced SLA measures of the questionnaire were completed just after the WEGP test. The total test lasted for approximately 90 minutes. However, there was no time pressure as the pupils could use more time if needed but no one exceeded 120 minutes.

Next, the data analysed in this study were the participants' responses to two different questionnaires about media-induced SLA variables. In section 6.4., it was already mentioned that the first factor was the *frequency of English input*, which was based on the second section of questionnaire. For clarity's sake, the results are divided into three phases. The first phase (i.e. section 7) deals with preliminary analyses about school differences and learner differences. It also covers the general results of the WEGP test. Next to that, the third section of the questionnaire, that is, the media-induced SLA variables were subjected to factor analysis and are discussed in phase one as well. Then, in the second phase (i.e. section 8), the relationship between the grammatical items, the overall English grammatical proficiency, and the different media-induced SLA variables were explored using Pearson correlations. As correlations only indicate associations between two variables and do not indicate differences between these variables, a series of independent samples *t*-tests were also performed. Finally, in a third phase (i.e. section 9), the differences in grammatical proficiency between low- and high-proficiency learners were explored in an error analysis. As aforementioned, this study presents both, quantitative and qualitative data, hence the use of an explanatory model.

## 7. Results: phase 1

### 7.1. Preliminary analyses

In this section, I shall briefly explain the preliminary analyses that were performed in order to ensure that the Flemish and Walloon groups were homogenous and comparable. It should be noted that the dependent variable used in the following statistical analyses was the score on the WEGP test. Firstly, it was mentioned that the participants involved in this study were either in grade five or grade six. Therefore, an independent samples *t*-test was performed and explored the differences between the pupils in year 5 and the pupils in year 6. It indicated no significant differences in mean scores between pupils in year 5 and 6 ( $p > .16$ ). Secondly, there was a total of eight different schools that participated in the study. In order to control for differences across schools, two preliminary one-way ANOVAs were performed. The first one-way ANOVA

concerned the five Walloon schools and did not indicate mean differences between the different Walloon schools ( $p > .1$ ). The second one-way ANOVA concerned the three Flemish schools and did not indicate mean differences between the Flemish schools ( $p > .2$ ). These two analyses indicated that both groups were homogenous, and thus, comparable. Thirdly, another one-way ANOVA was used in order to examine whether the scores varied significantly depending on the highest degree obtained by the parents (i.e. no degree, primary education, secondary school education (age 14), secondary school education (age 18), vocational training, bachelor degree and master degree). Again, this test did not yield significant results ( $p < .05$ ). Fourthly, a next one-way ANOVA showed that the pupils born in a foreign country were not noticeably different from the rest ( $p > .05$ ). Fifthly, a preliminary analysis indicated that there were no significant differences in mean scores on the WEGP test between pupils who felt well at school and pupils who did not. Another preliminary examination suggested that there were moderate differences between monolinguals and bilinguals (i.e. French or Dutch in combination with another language). In fact, an independent samples  $t$ -test indicated that there were marginally significant differences in mean scores,  $t_{(255)} = -2.05$ ,  $p < .05$ . The monolingual pupils ( $M = 71.7$ ) scored slightly lower on average than the bilingual pupils ( $M = 79.6$ ) on the WEGP test. However, as the differences in mean scores were only marginal the bilingual pupils were not removed from the sample. Finally, a last preliminary ANOVA controlled for test anxiety. This last test was highly significant ( $p < .01$ ) indicating that there was a difference in mean scores between pupils who were more anxious and pupils who were less anxious about taking a test. The anxious pupils scored, on average, lower on the grammar test. Therefore, anxiety will also be addressed in the discussion (cf. section 10.2.).

## 7.2. Overall scores on the WEGP test (RQ 2 and 3)

The second research question first aimed to unravel differences between L1 speakers of French and L2 speakers of Dutch. It also addressed the correlations between the factors mentioned in section 7.3. and the scores obtained on the WEGP test. However, before performing some correlations analyses, some attention will be devoted to the overall results of the pupils. As mentioned in the previous sections, the maximum score that one could obtain on the WEGP test was 145. So, in order to shed light on the differences in mean scores between the two regions, an independent samples  $t$ -test was performed. It yielded highly significant results ( $p < .001$ ). In fact, the average score of the Flemish pupils ( $M = 92.9$ ,  $SD = 23.26$ ) was higher than the average score of the Walloon pupils ( $M = 57.8$ ,  $SD = 21.08$ ),  $t_{(255)} = -12.71$ . In other words, the L1 speakers of Dutch outperformed the L1 speakers of French on the WEGP test. The scores



of the Walloon pupils ranged from 14 to 119; while the scores of the Flemish pupils could be found between 38 and 140. The scores suggested that all the pupils acquired some English grammatical proficiency through media-induced SLA. The results of the analyses are shown in figure 1.

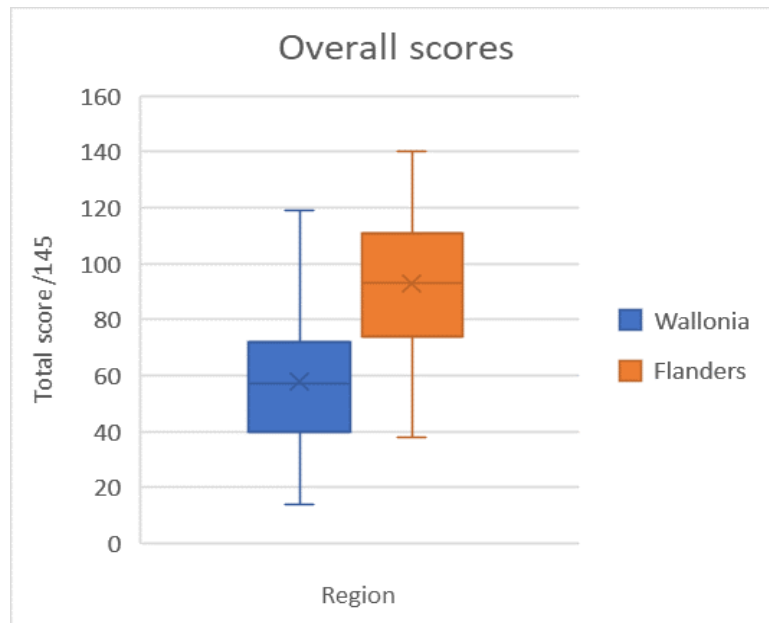


Figure 1 Overall scores on the WEGP test (out of 145) versus region

Next, six other independent samples *t*-tests were performed, i.e. one for each grammatical category. However, to ensure the clarity of the next graph, the scores for each grammatical item were recomputed out of 100. As suggested by figure 2, there are substantial differences between Flanders and Wallonia. A first *t*-test measured differences in mean scores on the plural variable between the pupils of the two regions. It indicated that the mean score of the Walloon pupils ( $M= 71.6, SD= 17.99$ ) and the mean score of their Flemish counterparts ( $M= 79.7, SD= 8.93$ ) differed significantly ( $p < .001$ ). As Levene's test for equality of variances was significant, the degrees of freedom were adjusted from 255 to 207,  $t_{(207)}= -4.65$ . In other words, the Flemish pupils scored higher on the plural variable than the Walloon pupils. A second independent samples *t*-test, comparing the mean scores of the Walloon and Flemish pupils on the grammatical category *negation*, was performed. It yielded highly significant differences in mean scores. As suggested by figure 2, the mean score of the Walloon pupils ( $M= 21.9, SD= 22.29$ ) was lower than the average score of the Flemish pupils ( $M=55.9, SD= 24.09$ ),  $t_{(255)}= -11.75, p < .001$ . A third test, including the variable word order, indicated non-significant

differences in mean scores between the two regions,  $p > .05$ . Moreover, the mean scores ( $M_{\text{Flanders}} = 93.8$ ,  $M_{\text{Wallonia}} = 88.4$ ) on this grammatical item were the highest among the six grammatical categories, which suggested that word order was acquired by both L1 French/Dutch speakers in this study. As shown in figure 2, the fourth independent  $t$ -test covered the 3<sup>rd</sup> person marker *-s*. It yielded highly significant differences in mean scores between the two regions. The Flemish pupils ( $M = 32.1$ ,  $SD = 29.89$ ) scored on average higher than their Walloon counterparts ( $M = 11$ ,  $SD = 20.24$ ),  $t_{(203)} = -6.5$ ,  $p < .0001$ . However, Levene's test for equality of variances was significant, therefore, the degrees of freedom were adjusted from 255 to 203. Next, the fifth grammatical category, i.e. *wh*-questions, was subjected to an independent samples  $t$ -test, which also indicated highly significant differences in mean scores between the two regions. Like the other significant tests, the mean score of the Flemish pupils ( $M = 67.3$ ,  $SD = 22.33$ ) was higher than the mean score of the Walloon pupils ( $M = 34.3$ ,  $SD = 26.71$ ),  $t_{(255)} = -10.8$ ,  $p < .0001$ . Finally, the last of six independent samples  $t$ -tests concerning the *-ing* marker yielded highly significant results as well, indicating that mean scores differed across both regions. On average, the 138 Walloon pupils ( $M = 35.2$ ,  $SD = 19.92$ ) scored lower than their 119 Flemish counterparts ( $M = 53.2$ ,  $SD = 21.46$ ),  $t_{(243)} = -6.93$ ,  $p < 0.0001$ . As Levene's test for equality of variances was significant, the degrees of freedom were adjusted from 255 to 243. In short, five in six independent samples  $t$ -tests were highly significant. The Flemish pupils scored higher than the Walloon pupils on the plurals, negatives, third person *-s*, *wh*-questions and *-ing* marker. As such, these findings confirmed that in this study the Flemish pupils outperformed the Walloon pupils in L2 English grammar proficiency in a setting of media immersion.

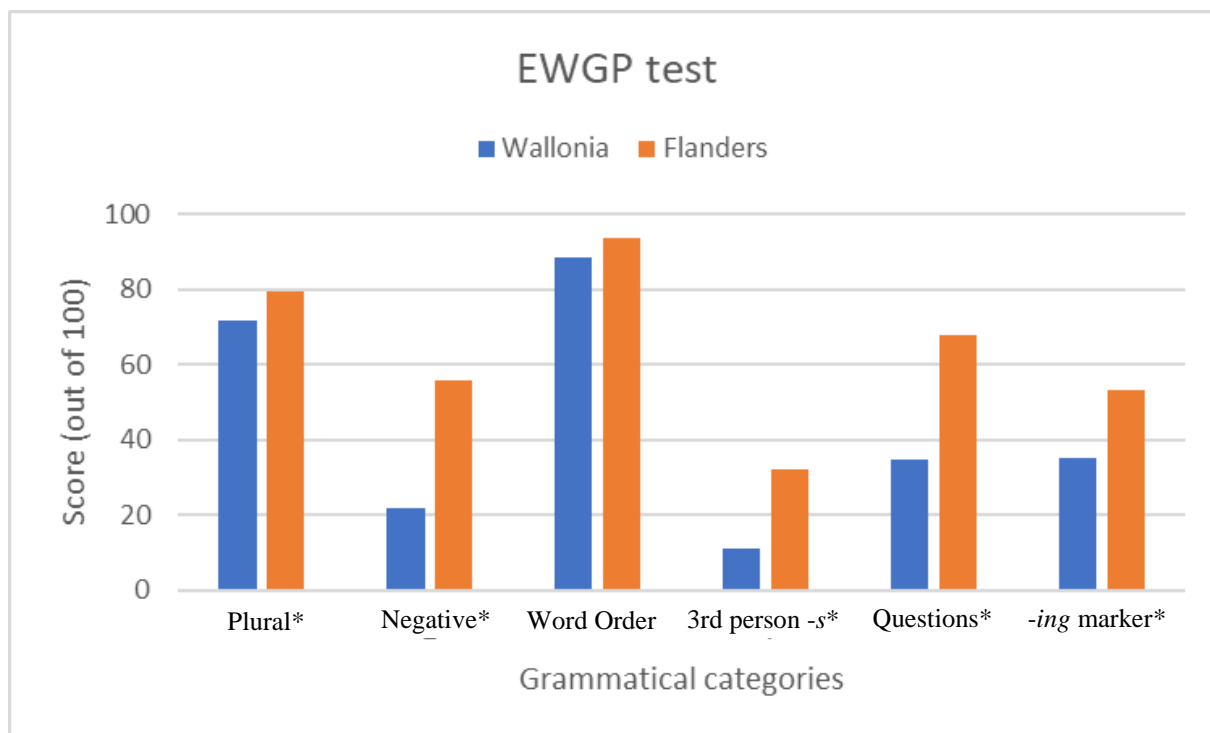


Figure 2 Grammatical categories versus region. Note: the asterisk indicates significant results ( $p < .001$ )

### 7.3. Media-induced SLA variables (RQ1)

The first research question aimed to determine the underlying dimensions of English grammatical proficiency in a setting of media immersion. One factor was already identified and labelled as *frequency of English input*. This factor was identified through section two of the questionnaire. Section three of the questionnaire was subjected to factor analysis. So, the participants responses to the 22 media-induced SLA variables were subjected to an exploratory (principal components) factor analysis. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis,  $KMO = .83$  ('great' according to Field, 2009). Barlett's test of sphericity was also significant ( $p < 0.001$ ), suggesting the factorability of the correlation matrix. The principal components analysis yielded six components containing items with eigenvalues exceeding 1. However, a Monte Carlo Parallel Analysis indicated that only three eigenvalues were significant. Therefore, three components were preferred and were retained for further analyses, accounting for a total of 21 factor loadings. One item was removed because of low communality<sup>3</sup>. The final analysis (using an orthogonal rotation, i.e. varimax) yielded the best

<sup>3</sup> According to Field (2009), *communality* stands for *common variance*, that is to say, the amount of variance with the other variables. Communalities have a value which can be found between 0 and 1. A high communality value indicates that the variable has "no specific variance" (Field, 2009: 637), i.e. the variable clusters well with the other variables; while a low communality value indicates that the variable does not share any variance with the

three fit-to-data groupings available. These three components explained 47.4% of the variance. The factor groupings are summarized in table 6.

Item	Self-estimated English Proficiency	Motivation for learning English	Attitude towards L2 English
English is easy to understand.	.73		
English is easy to learn.	.72		
English is a nice language.	.69		
I can read English ads.	.64		
Speaking English is difficult.	.63		
Writing English is easy.	.61		
English is a beautiful language.	.60		
English is important for my future.	.44		
Reading English is difficult.	.42		
My favourite video games are in English.		.76	
I game in English in order to learn some English.		.73	
I like going to the cinema to watch English films.		.72	
I learn English when watching English films.		.68	
I learn English when watching TV.		.66	
I chat on Facebook, Twitter or Skype in English.		.63	
English(-spoken) TV-programmes are boring.			.74
I think that English films are not interesting.			.66
Everything which is written in English makes me angry.			.65
I prefer music in my mother tongue to English music.			.62
English video games make me feel bored.			.58
English music is boring.			.55
Eigenvalues	5.86	2.42	1.67
% of variance	27.93	11.53	7.96
Cronbach's $\alpha$	.83	.83	.72

Table 6 Summary of exploratory factor analysis results for the media-induced SLA questionnaire (N= 257). Coefficients below .4 were removed.

As shown in table 6, nine items loaded onto factor 1, six items onto factor 2 and six items onto factor 3. The items loading onto factor 1 had a common theme, that is to say, the difficulty or ease to learn some English, hence the label *Self-estimated English proficiency* ( $\alpha = .83$ ). Out of the six items loading onto factor 2, two (i.e. *My favourite videos games are in English* and *I*

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other variables. In factor analysis, the aim is to group variables into factors, that is why, variables with low communality are usually removed from a questionnaire (cf. Field, 2009: 637).

*chat on Facebook, Twitter and Skype in English*) seemed to reflect some sources of motivation to use English. The remaining four items loading onto factor 2 expressed some wishes to learn English. Therefore, factor 2 was labelled as *motivation for learning English* ( $\alpha = .83$ ). Finally, six items loaded onto factor 3 and all expressed some negative attitude towards the English language, hence the label *Attitude towards L2 English* ( $\alpha = .72$ ). It is worth noting that the three factors showed good levels of reliability. Next to that, multicollinearity issues were controlled. For this purpose, the variance inflation factor (VIF) was controlled in three separate regression analyses. Field (2009) mentions that a value above 10 indicates serious problems. However, the VIF values ranged from 1 to 1.33 indicating that multicollinearity was not an issue. Similarly, the tolerance statistic, which is the reciprocal of the VIF value, should not be below 0.1 (ibid.). This was not the case, as the values varied from .7 to .9, which also indicated that multicollinearity was not an issue.

So, the first research question was to identify the underlying dimensions of media-induced SLA in this study. Based on the factor analysis, three factors could be extracted, i.e. (1) self-estimated English proficiency, (2) motivation for learning English, and (3) attitude towards L2 English. These factors will be used in subsequent analyses. A fourth factor, i.e. frequency of English input, was already identified in section 6.4. and will also be used in further analyses.

## 8. Results: phase 2

### 8.1. Associations and correlations between English grammar proficiency and media-induced SLA variables (RQ 2 and 3)

As discussed in sections 6.4. and 7.3., the second questionnaire measured *frequency of English input*, while the third questionnaire, which was subjected to factor analysis, measured *Self-estimated English proficiency*, the *motivation for learning L2 English* and the *attitude towards L2 English*. Before performing the correlation analyses, four independent samples *t*-tests (i.e. one for each factor) were performed. The independent variable used in the four statistical analyses was the region, that is to say, Flanders versus Wallonia, and the dependent variables were the four aforementioned factors. In figure 3, the horizontal axis represents the four factors, i.e. proficiency, motivation, attitude and frequency of input. The vertical axis represents the mean scores per region, which were based on the Likert-scales in sub-questionnaires two and three (cf. section 6.4.). A total per pupil was calculated for each factor and then general mean

scores for Flanders (i.e. orange) and Wallonia (i.e. blue) were computed. Figure 3 shows that the Flemish pupils rated themselves as more proficient in English, were more motivated for learning English, had a more positive attitude towards English and had a more frequent input through English(-spoken) media than their Walloon counterparts. For purposes of comprehensibility, the scores are shown out of 100 in figure 3.

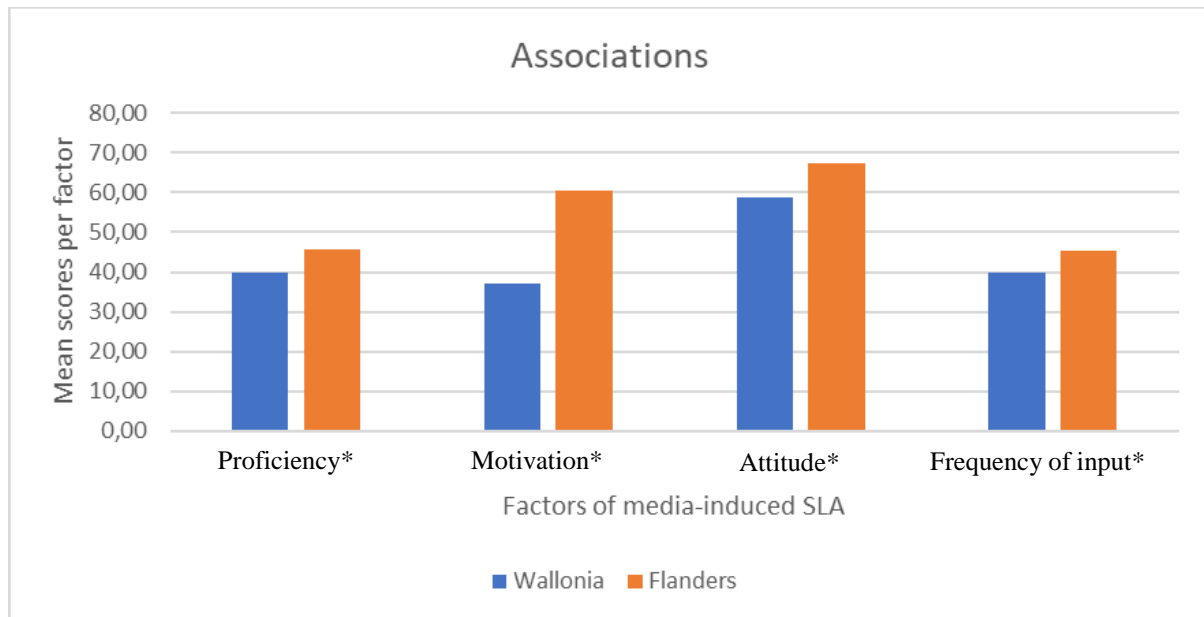


Figure 3 Mean scores per factor (out of 100) for Walloon and Flemish pupils. Note: the asterisk indicates significant differences in mean scores between Wallonia and Flanders ( $p < 0.01$ )

The first independent samples  $t$ -test on the factor *proficiency* yielded highly significant results. The Flemish pupils ( $M_{proficiency} = 45.5$ ), on average, rated themselves as more proficient in English than the Walloon pupils ( $M_{proficiency} = 39.8$ ),  $t_{(246)} = -2.77$ ,  $p < .001$ . Likewise, the second independent samples  $t$ -test on the factor *motivation* was also highly significant. The Flemish pupils ( $M_{learning} = 60.6$ ) were more motivated to learn L2 English than their Walloon counterparts ( $M_{learning} = 37.22$ ),  $t_{(244)} = -8.4$ ,  $p < .001$ . Similarly, the third independent samples  $t$ -test on the factor *attitude* also yielded highly significant. On average, the Walloon pupils ( $M_{attitude} = 58.6$ ) displayed a slightly more negative attitude towards L2 English than the Flemish pupils ( $M_{attitude} = 67.3$ ),  $t_{(242)} = -4.7$ ,  $p < .001$ . Yet, Levene's test for equality of variances was significant. Therefore, the degrees of freedom were adjusted from 243 to 242. The last independent samples  $t$ -test on the factor *Frequency of English Input* also indicated highly significant differences in mean scores between Flanders and Wallonia. As for the three other

tests, Flanders ( $M_{FreqInput}= 45.4$ ) scored, on average, higher than Wallonia ( $M_{FreqInput}= 39.9$ ). This last finding means that the Flemish pupils watched English(-spoken) TV programmes, listened to English music or played video games more frequently than their Walloon counterparts (see also footnote on page 76).

Next to that, the second research question asked what relationships existed between the four media-induced SLA factors and the English grammatical proficiency. Therefore, seven correlation analyses, which are summarized in table 7, were performed. Table 7 shows that the grammatical categories *plural* and *SVO word order* did not correlate significantly with any of the media-induced SLA measures. The overall English grammar proficiency, as well as the negation, the third person *-s* marker, the *wh*-question and the *-ing* marker categories, all correlated significantly with the four factors ( $r= .24$  to  $.38$ ,  $p < .001$ , in each case). However, correlation analyses did not explain differences in mean scores on the four significant grammatical categories, as well as on the overall score on the WEGP test. Therefore, the participants' scores for each of the four media-induced SLA factors that correlated significantly with the grammatical proficiency measures were submitted to a series of independent samples *t*-tests.

Grammatical categories	Proficiency	Motivation	Attitude	Frequency of Input
Overall grammatical proficiency	.37	.37	.35	.36
Plural	/	/	/	/
Negation	.29	.38	.26	.25
Word order	/	/	/	/
3 <sup>rd</sup> person <i>-s</i>	.38	.24	.31	.29
<i>Wh</i> -question	.29	.34	.30	.32
<i>-ing</i> marker	.36	.29	.38	.34

Table 7 Pearson correlations between four media-induced SLA factors and grammatical proficiency measures. Note: all correlations are two-tailed and only the significant correlations are rendered ( $p < .001$ ).

In each test, the dependent variable was a grammatical category: overall grammatical proficiency, negation, third person marker *-s*, *wh*-question and *-ing* marker. The independent variable was two levels of each media-induced SLA factor, determined by splitting the participants into two separate groups based on median scores. Unlike the previous *t*-tests, the next ones were not based on the region, but on the participants' scores on each media-induced SLA factor. There was a total of 20 independent samples *t*-tests, which are summarized in table 8.

Grammatical categories	Proficiency	Motivation	Attitude	Frequency of Input
Overall grammatical proficiency	$t_{(244)} = -4.51, p < .001$	$t_{(232)} = -5.23, p < .001$	$t_{(243)} = -5.69, p < .001$	$t_{(209)} = -5.23, p < .001$
Plural	/	/	/	/
Negation	$t_{(246)} = -3.57, p < .001$	$t_{(244)} = -5.32, p < .001$	$t_{(243)} = -4.50, p < .001$	$t_{(236)} = -3.97, p < .001$
Word order	/	/	/	/
3 <sup>rd</sup> person <i>-s</i>	$t_{(243)} = -4.51, p < .001$	$t_{(225)} = -3.68, p < .001$	$t_{(240)} = -4.838, p < .001$	$t_{(178)} = -4.19, p < .001$
<i>Wh</i> -question	$t_{(246)} = -3.18, p < .002$	$t_{(244)} = -4.62, p < .001$	$t_{(243)} = -5.14, p < .001$	$t_{(236)} = -4.55, p < .001$
<i>-ing</i> marker	$t_{(246)} = -4.83, p < .001$	$t_{(239)} = -3.47, p < .001$	$t_{(237)} = -6.16, p < .001$	$t_{(220)} = -5.21, p < .001$

Table 8 Summary of the *t*-tests exploring the effects of media-induced SLA factors on L2 English grammar proficiency

As shown in table 8, all the *t*-tests were highly significant. First, concerning the factor *proficiency*, pupils who rated themselves as proficient in English scored higher on the WEGP test than pupils who rated themselves as less proficient (56.4 versus 46.1). The same tendency held true when the grammatical categories were considered separately. So, pupils who rated themselves as more proficient in English scored, on average, higher on the four grammatical categories, i.e., negation (43.9 versus 31.2), third person *-s* marker (27.3 versus 13.4), *wh*-



question (55.6 versus 44.1) and *-ing* marker (50.1 versus 37.3) than those who rated themselves as less proficient in L2 English. The average scores are shown in figure 4.

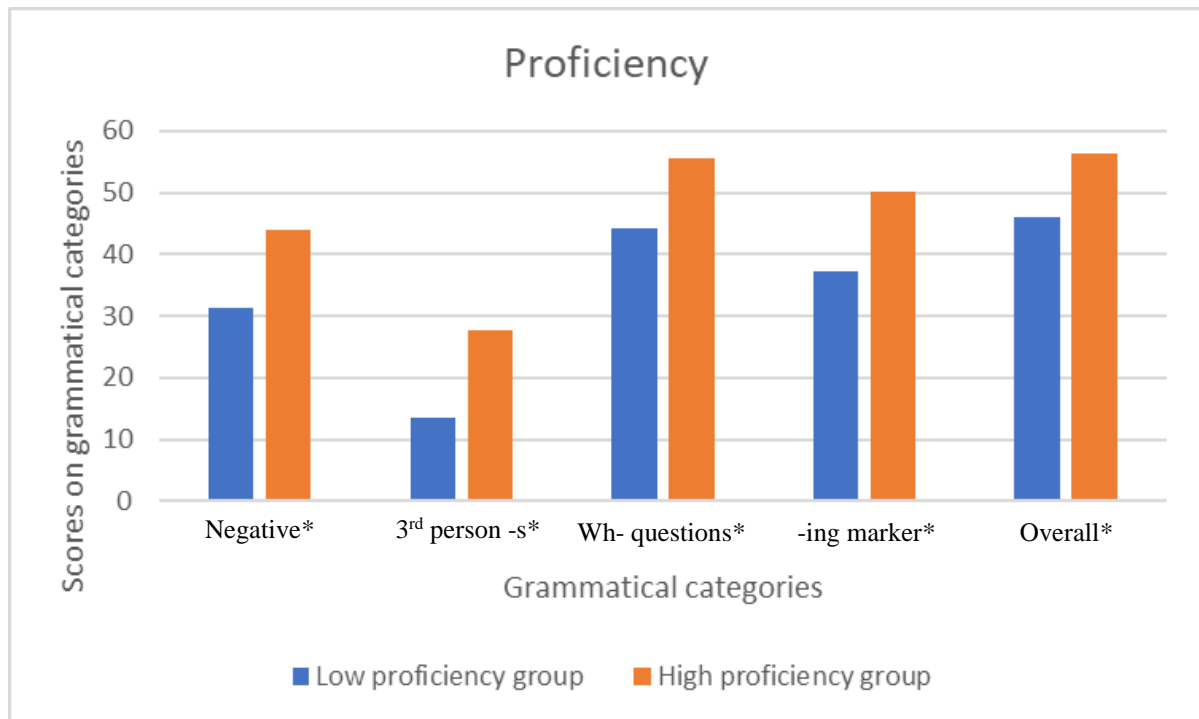


Figure 4 Graphical representation of the *t*-tests on the factor self-estimated English proficiency. Note: scores are out of 100, the asterisk indicates significant differences in mean scores.

Secondly, as shown in table 8, the five independent samples *t*-tests on the second factor, i.e. *motivation*, also indicated highly significant differences in mean scores. Pupils who reported to be motivated by learning English ( $M= 57.4$ ) scored, on average, higher than the pupils who were less motivated by learning some English in a setting of media immersion ( $M= 45.5$ ). Similarly, pupils who were highly motivated by learning some English in a setting of media immersion scored higher on the four grammatical categories, that were subjected to *t*-tests, than their low-motivated counterparts. The mean scores on the negative category were 28.5 versus 46.9, on the 3<sup>rd</sup> person marker 14.4 versus 26.9, on the *wh*-questions 41.8 versus 58.4 and on the *-ing* marker 39.2 versus 48.7. The results are summarized in figure 5.

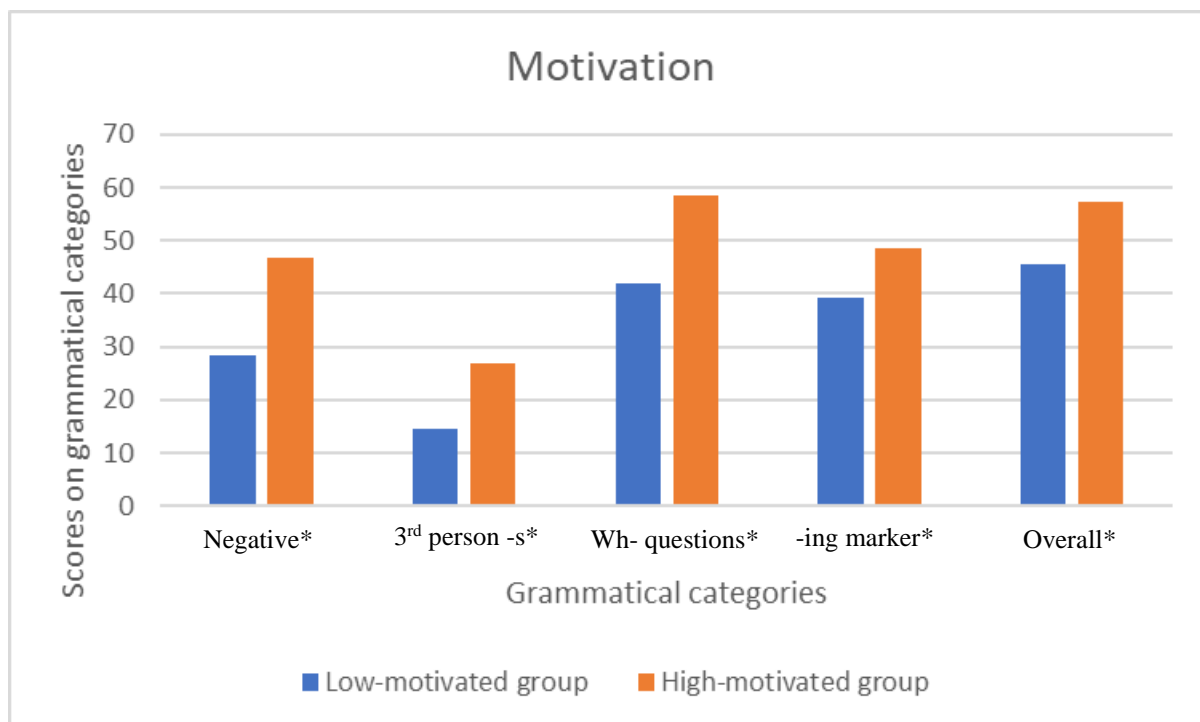


Figure 5 Graphical representation of the *t*-tests on the factor motivation for learning L2 English. Note: scores are out of 100, the asterisk indicates significant differences in mean scores.

Thirdly, the *t*-tests on the factor *attitude* indicated that pupils who claimed to have a positive attitude towards the English language scored higher than the ones who reported to have a more negative attitude towards English (55.5 versus 44.4). The high-attitude group scored higher on the negative (45 versus 29.1), on the 3<sup>rd</sup> person -s marker (28 versus 12), on the *wh*-questions (58.8 versus 40.3) and on the *-ing* marker (51.4 versus 35.2) than the low-attitude group. As mentioned previously, the results were highly significant and are reported in figure 6.

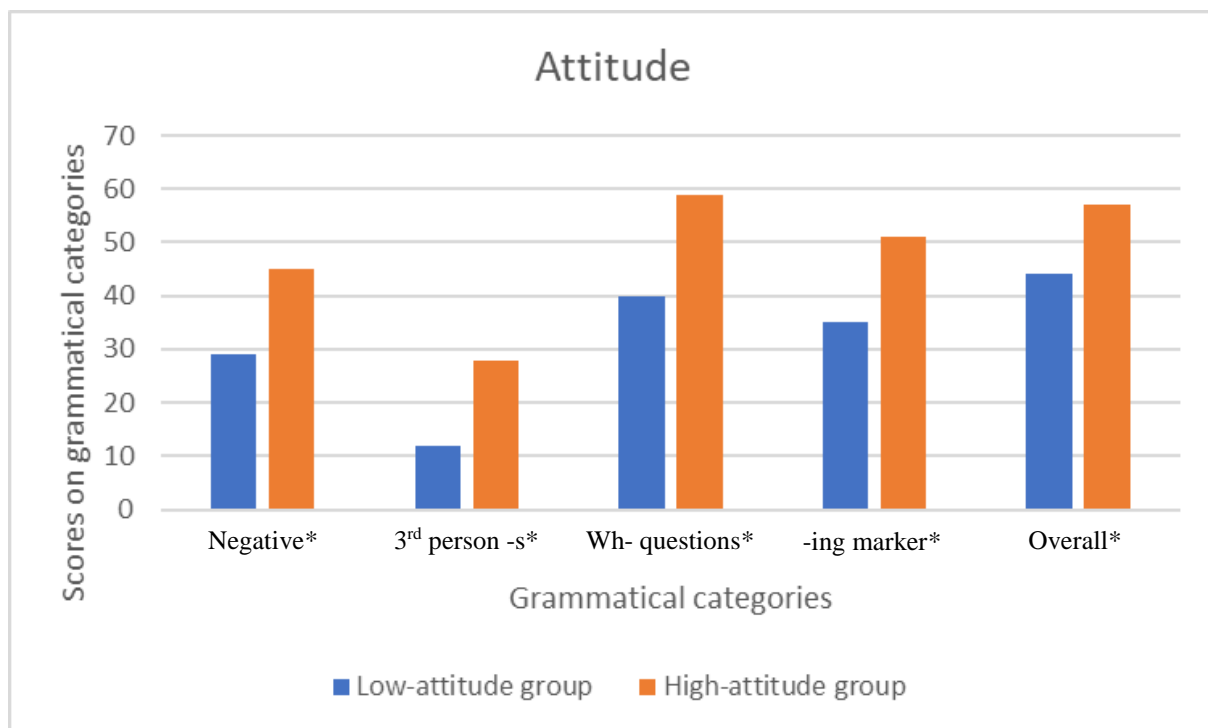


Figure 6 Graphical representation of the *t*-tests on the factor attitude towards L2 English. Note: scores are out of 100, the asterisk indicates significant differences in mean scores.

Finally, the last series of *t*-tests concerned the fourth factor, that is to say, the *frequency of English input*. As for the other factors, these independent samples *t*-tests were highly significant. In fact, the more one was exposed to English through media, including TV, gaming and music, the higher his or her score was on the WEGP test. On average (i.e. overall in figure 7), the low-frequency group had a mean score of 45.7, while the high-frequency group obtained a mean score of 58.3. Regarding the mean scores of the four grammatical categories, they were all higher for the high-frequency group than for the low-frequency group: negative 31.5 versus 45.7, 3<sup>rd</sup> person marker -s 13.4 versus 28.4, *wh*-questions 42.6 versus 59.3 and *-ing* marker 37.3 versus 51.3. Figure 7 is a summary of the last series of independent samples *t*-tests.

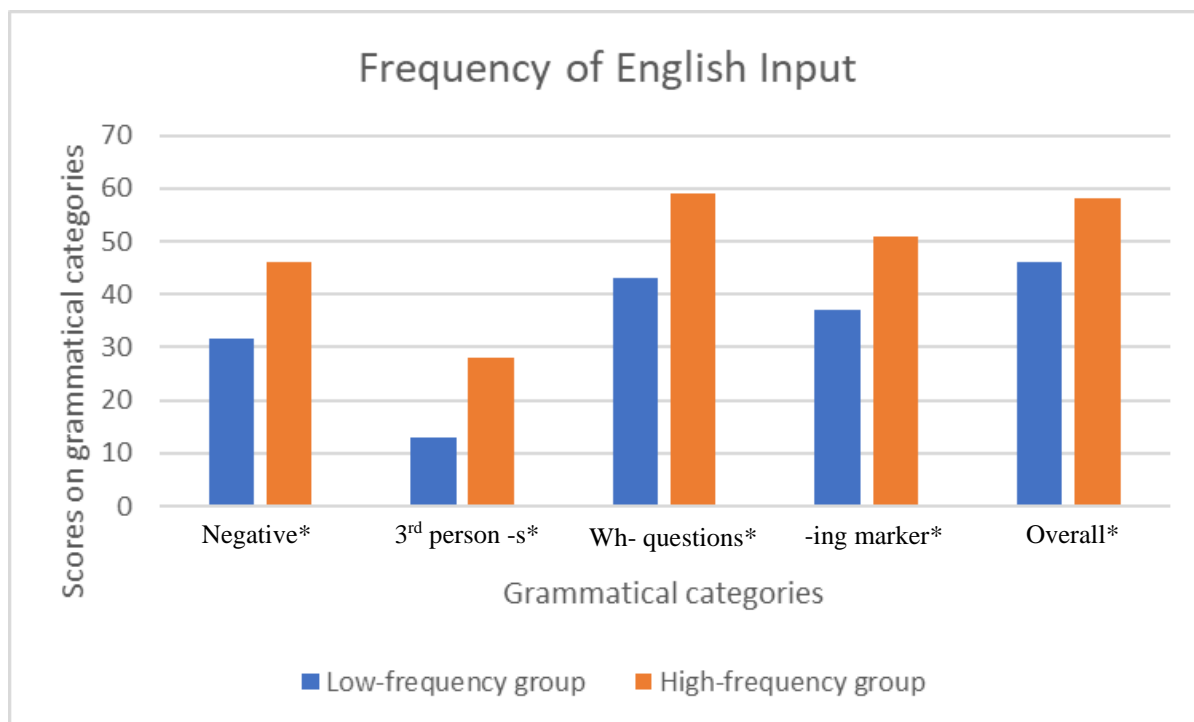


Figure 7 Graphical representation of the *t*-tests on the factor frequency of English input. Note: scores are out of 100, the asterisk indicates significant differences in mean scores.

In short, the significant Pearson correlations were subjected to independent samples *t*-tests, which all yielded highly significant results ( $p < .002$ ). So, these *t*-tests indicated highly significant differences in mean scores on four grammatical categories. The pupils in the high-groups always scored higher than the pupils in the low-groups. In other words, pupils who rated themselves as proficient in English, who were motivated for learning English, who displayed positive attitudes towards English or who used English(-spoken) media frequently scored, on average, higher on four grammatical categories, i.e. negation, third person *-s*, *Wh*-question and *-ing* marker, than pupils who rated themselves as less proficient in English, who were less motivated for learning English, who had a less positive attitude towards English or who used English(-spoken) media less frequently.

## 9. Results: Phase 3

### 9.1. Differences in grammatical proficiency across lower and higher proficiency learners (RQ 4: Wallonia)

### *Quantitative part*

The stories produced by the Walloon pupils will be discussed first. The independent variable used in the following *t*-tests was determined by splitting the participants into two separate groups based on the median score (i.e. 40). This resulted in a Walloon low-proficiency group and in a Walloon high-proficiency group. The low-proficiency group involved the French-speaking pupils who obtained a score on the WEGP test which was comprised between 0 and 39, while the high-proficiency group included the French-speaking pupils, who had an average score superior to 40. This resulted in 70 low-proficiency pupils and 68 high-proficiency pupils. The focus will be on the emergence of the six grammatical categories already discussed in the previous sections, that is to say, plurals, negatives, SVO word order, simple present, questions and present progressive. However, it is worth noting that this section does not only focus on the third person singular -s but rather on the simple present including the first, second and third persons. For each group, i.e. low- and high-proficiency groups, a total of correct and incorrect productions for each grammatical category was calculated. This is shown in table 9.

In general, the high-proficiency group produced longer texts and used more grammatical features than the low-proficiency group, as shown in table 9. However, it seemed that the six grammatical items were not equally-well distributed. In the story-telling task, there were only four instances of plural, which were all produced by the high-proficiency group. This suggested that the plurals were not emerging in the low-proficiency group. The same holds true for the present progressive tense. Moreover, not a single French-speaking pupil produced a question in the story-telling task. In contrast, there were many more instances of declarative sentences. Basically, correct or incorrect word order corresponded to grammatical or ungrammatical sentences. The low-proficiency group produced 54 sentences in total among which 25 were correct sentences (e.g. SVO word order) and 29 were incorrect sentences (e.g. VOS word order). The high-proficiency group produced 88 sentences including 53 grammatical ones and 35 ungrammatical ones. As mentioned above, the high-proficiency group tended to write longer stories than the low-proficiency group. This was confirmed by the independent samples *t*-tests which indicated that there were moderate significant differences in mean scores. In fact, the high-proficiency group ( $M= .8$ ) produced more correct sentences than the low-proficiency group ( $M= .4$ ),  $t_{(107)}= -2.3$ ,  $p < .03$ . The high-proficiency group ( $M= 1.3$ ) also produced more sentences than the low-proficiency group ( $M= .8$ ),  $t_{(119)}= 1.97$ ,  $p= .051$ , but the difference between the two groups with respect to the number of incorrect sentences ( $p < .05$ ) was not significant. As the high-proficiency group produced more sentences, they also used more verbs

	Low-proficiency group Wallonia			High-proficiency group Wallonia		
	Grammatical answers	Ungrammatical answers	Total low-proficiency group	Grammatical answers	Ungrammatical answers	Total high-proficiency group
Plurals	0	0	0	4	0	4
Negatives	0	1	1	0	1	1
Sentence word order	25*	29	54*	53*	35	88*
Simple present	8	24	32*	20	43	63*
Questions	0	0	0	0	0	0
Present progressive	0	0	0	0	5	5

Table 9 Distribution of the six grammatical categories in the story-telling task for the French-speaking pupils. The asterisks indicate significant differences ( $p < .05$ ).

conjugated in the simple present form (i.e. 63,  $M= .9$ ) than the low-proficiency group (i.e. 32,  $M= .5$ ). This was confirmed by an independent samples  $t$ -test, which indicated that the mean scores differed,  $t_{(112)} = -2.3, p < .02$ . No other significant differences were found.

### *Introduction to the qualitative part*

It should first be mentioned that spelling mistakes were disregarded as spelling and orthography were not the focus of this dissertation. As it is generally the case in Error Analysis (EA), the main aim of the qualitative part is to analyse some recurrent errors that were identified in phase one and two (i.e. quantitative part). Therefore, a small number of stories were selected. The selected stories contain examples of emergence of word order (i.e. SVO word order and word order in questions), negatives, plurals, and tense makers (i.e. 3<sup>rd</sup> person *-s* and present progressive *-ing* marker). For a complete overview of the categories used in the quantitative part, I refer to section 6.3. on item coding. It is also worth mentioning that the error analysis was carried out in order to:

- Identify strategies which learners use in a setting of media immersion
- Try to identify the causes of learner errors (e.g. linguistic transfer)
- Obtain information about common difficulties in media-induced SLA

(adapted from Richards & Schmidt, 2013)

Finally, for clarity's sake, all the examples used in the qualitative part are the complete stories produced by the pupils. It should also be noted that a majority of the pupils did not write a single word on their sheet.

### *Qualitative part: Wallonia*

I shall start with the shortest and least elaborated story and end with the longest and most complex story from a grammatical point of view.

#### 1. Pupil's production: *Run une car.*

The stories written by the low-proficiency group were mainly made of short chunks and incomplete sentences. This is shown in stories 1 and 2. Story 1 contains only one incorrect sentence written by a pupil who obtained a score of 26 out of 100 on the WEGP test. This pupil used the English verb *run* and the French determiner *une* and the English noun *car* to write his or her story. This sentence lacks a subject. In fact, with this single sentence, he just described one picture and did not write a full story about the three pictures.

#### 2. Pupil's production: *The boy cleans his bedroom.*

Story 2 contains one correct sentence produced by a pupil who had a similar total score to the previous pupil, that is 24 out of 100 on the WEGP test. He or she used the SVO word order. As mentioned in the quantitative part, SVO word order was acquired by most of the pupils (i.e. close to 100 per cent). Next to that, story 2 also illustrates a correct use of the simple present 3<sup>rd</sup> person -s by a pupil belonging to the low-proficiency group. These instances were scarce in the dataset, as there were only eight correct uses of the simple present in the low-proficiency group.

3. Pupil's production: *You not the time.*

Next, there were only two instances of negatives. One was produced by a pupil belonging to the low-proficiency group and the other one was produced by a pupil of the high-proficiency group. Production 3 contains the negative produced by the pupil belonging to the high-proficiency group. This pupil used the particle *not* in an internal position. This sentence could be a common example of the second stage in the acquisition of negatives. He or she probably meant that the boy was not on time as suggested by the first picture.

4. Pupil's production: *Is l'hore de coucher. Is de car. Is parti. Is le car. La, no le taxi.*

In contrast, the pupil in the low-proficiency group produced a typical stage 1 negative, i.e. a preverbal negation. He or she used the particle *no* at the beginning of the sentence. However, it should be noted that this pupil did not use a verb in his or her negative sentence. Regarding the three other sentences, he or she seemed to use chunks rather than sentences: usually the verb *to be* in the third person singular followed by an object. It is also worth mentioning that every sentence is introducing a new detail of the story.

5. Pupil's production: *John wash bedroom. He walk aan car. The mama taxi vont.*

Story 5 concerns inaccuracies regarding the 3<sup>rd</sup> person marker -s as well as inconsistencies in word order. This story was written by a pupil who had a score of 36 on the WEGP test, thus belonging to the low-proficiency group. The first two sentences are grammatically correct regarding word order. However, the third sentence is not grammatical as it follows the pattern SOV. It also shows that this pupil did not know about the third person -s in English as he or she did not use it at all.

6. Pupil's production: *A boy make zijn chlothes in zijn bag in run naar de bus. Zijn mom talk naar en boy en de bus is dar.*



The sixth story shows that the pupil, who had a total score of 60 out of 100 on the WEGP test, knew the plural *clothes*. Next to that, it is worth mentioning that the pupil used the Flemish plural possessive determiner *zijn* with the plural noun *clothes*. This pupil probably lacked some English proficiency and substituted the English possessive determiner *his* by the Flemish possessive determiner *zijn*. It should be remembered that the Walloon pupils were learning Dutch at school at this point in time. This is an instance of L2 transfer.

7. Pupil's production: *Mijn love, its fini. Yes mam. Wat mijn bus mam. Mijn bus partie. Yes, mijn love. Ik taxi mijn love. Ik bus partie.*

Story 7 was written by a pupil who had a total score of 51 on the WEGP test, thus still belonging to the high-proficiency group. However, this production should be placed in stark contrast with the former story as story 7 shows some ungrammatical sentence productions. To write his or her story, this pupil used some French words (e.g. *fini, partie*) and some Dutch words (e.g. *Mijn, Ik*), indicating that L1 and L2 linguistic transfer was taking place. This pupil did not produce any grammatical sentence. He or she tended to avoid the use of verbs, as in *Ik taxi* and *Wat mijn bus*. Basically, he or she was using a subject and an object. He or she used French verbs to indicate a result, as in *its fini, Mijn bus partie* or *Ik bus partie*. He or she used the French meaning of the 'passé composé' (usually indicating the result of an action in French), which he transferred to L2 English.

8. Pupil's production: *The boy cleans his coffer. The boy run to the car. The boy com to late, mar en taxi was hir.*

Story 8 was produced by a pupil who obtained a score of 57 out of 100 on the WEGP and belonged to the high-proficiency group as well. He or she wrote three sentences which are mainly basic sentences. For instance, the first sentence "*The boy cleans his coffer*" follows the usual English SVO word order and is an unmarked declarative sentence. He or she also used some more complex grammatical features such as complements indicating the direction, as in "*The boy run to the car*". This pupil produced correct (such as *cleans*) and incorrect instances (such as *run* or *com*) of the simple present. As in example 5, this pupil also used a simple past verb (*to be*). As a side note, it is worth mentioning that this pupil transferred several L2 Dutch words into L3 English (e.g. *coffer* meaning suitcase). Interestingly, this pupil was taking an immersion programme in Dutch. It is likely that this recently acquired language influenced his or her L3 English the most.

9. Pupil's production: *John is in. She's bedroom. She's run to the bus and she's got to the taxi for she's vacancy summer and she's say hello to friends and to she's dad and mam.*

The ninth production was written by a pupil, who obtained a score of 63 out of 100 on the WEGP test. This second pupil pluralized correctly the countable noun *friend*. Moreover, this story was one of the five instances of the use of the present progressive tense. This pupil attempted to produce *she is saying* but did not use the target-like *-ing* form. However, it showed that the pupil knows about the grammatical construction of the present progressive as he or she used the auxiliary *be* + the bare verb.

10. Pupil's production: *Lucas does his luggage for the fest. She ran to a taxi met his mom Anne. She says "bye" to his dad Philip and enter the taxi.*

Production 10 was a story written by a French-speaking pupil who had a score of 82 out of 100 on the WEGP test. In fact, this pupil obtained the highest score among the Walloon participants. This pupil produced three complex sentences. He or she did not use simple declarative sentences (i.e. SVO) but he or she rather used sentences with some complements (e.g. *met his mom*) and indirect objects (e.g. *to his dad*). It is worth mentioning that this pupil used some Dutch words in his or her production. As for example 8, this pupil seemed to transfer L2 Dutch features to his or her L3 English (e.g. *fest* referring to the Dutch noun *feest*, *met* meaning *with* in English). Story 10 also illustrates the use of the simple present. This pupil used the 3<sup>rd</sup> person *-s* correctly in the two following verbs: *does* and *says*. But he or she did not use it for the verb *enter*. Interestingly, he or she did use the simple past tense of the verb *to run*, while the other verbs were in the present tense. As a consequence, it is likely that the simple past was emerging in that pupil.

- 9.2. Differences in grammatical proficiency across lower and higher proficiency learners (RQ 4: Flanders)

### *Quantitative part*

I shall now turn to the Flemish pupils. As for the Walloon pupils, two groups were established on the basis of the median. However, as discussed in section 7.2., the Flemish pupils had a higher mean score than their Walloon counterparts. As a consequence, the median score (i.e. 64) was also higher. The Flemish low-proficiency group included pupils with a score ranging

from 0 to 64 and the Flemish high-proficiency group involved pupils with a score ranging from 65 to 100. 61 Flemish pupils made part of the low-proficiency group and 58 Flemish pupils belonged to the high-proficiency group. Similar to the French-speaking pupils, the stories were analysed according to the emergence of the six grammatical categories, i.e. plural, negative, word order, simple present, word order of questions and present progressive. Before analysing this dataset, it is worth mentioning that the Flemish pupils produced, on average, longer stories than the Walloon pupils (490 sentences versus 142 sentences). As a consequence, they also used more verbs in the simple present form (370 versus 95) and more verbs in the present progressive form (71 versus 5). Noteworthy, the differences in mean scores between Flanders and Wallonia were highly significant ( $p < .01$ ). Table 10 provides an overview of the distribution of the six grammatical categories in the stories produced by the Dutch-speaking children. The three most prominent grammatical features in Flanders were SVO word order, simple present and present progressive. The three other grammatical categories were almost absent from the productions. This suggested that SVO word order, simple present and present progressive had already emerged, while plurals, negatives and questions were still emerging. Next to that, it is also noticeable from table 10 that the low-proficiency group produced fewer grammatical sentences ( $t_{(117)} = -3.33, p < .001$ ), fewer correct instances of the simple present ( $t_{(106)} = -4.2, p < .001$ ) and fewer correct instances of the present progressive ( $t_{(74)} = -3.64, p > .001$ ) than the high-proficiency group did. Similarly, the low-proficiency group produced fewer sentences ( $t_{(117)} = -3.47, p < .001$ ), fewer verbs in the simple present tense ( $t_{(117)} = -2.6, p < .01$ ), and fewer verbs in the present progressive tense ( $t_{(117)} = -2.29, p < .03$ ) than the high-proficiency group did.

Low-proficiency group Flanders			High-proficiency group Flanders			
	Grammatical answers	Ungrammatical answers	Total low-proficiency group	Grammatical answers	Ungrammatical answers	Total high-proficiency group
<b>Plurals</b>	7	1	8	7	1	8
<b>Negatives</b>	1	2	3	2	0	2
<b>Sentence word order</b>	175*	30	205*	254*	31	285*
<b>Simple present</b>	62*	100	162*	133*	75	208*
<b>Questions</b>	1	4	5	1	4	5
<b>Present progressive</b>	7*	17	24*	34*	13	47*

Table 10 Distribution of the six grammatical categories in the story-telling task for the Dutch-speaking pupils. The asterisks indicate significant differences ( $p < .05$ ).

### *Qualitative part*

As the stories produced by the Flemish pupils were much longer, this section will only present some of their productions which were relevant to the topic of this thesis (cf. *Introduction to the qualitative part* in section 9.1.). The shortest productions, in which there are grammatical inaccuracies, are discussed first.

1. Pupil's production: *Ben you clear? Yes. Yes. Wait. Wait. I haf un trouble. Hello seur. Kan my boy met your my? Yes, salu.*

Story 1 was produced by a pupil who had a score of 49 on the WEGP test. Thus, this child belonged to the low-proficiency group. This example shows that the formation of questions was emerging in that pupil. For instance, the first question *ben you clear?* is grammatically correct. However, the use of *ben* shows that this pupil transferred his or her L1 knowledge about *zijn* to L2 English. It should also be mentioned that the adjective *clear* comes from the Dutch adjective *klaar*. The second question “*kan my boy met your my?*” was more complex to analyse. The pupil probably intended to produce the question “*Can my boy come with you?*”. It should first be noted that this question lacked the verb *come*, which was substituted by the English possessive determiner *my* in final position. In fact, this pupil transferred his or her knowledge about the Dutch adverb *mee* into English. In other words, he or she translated the Dutch adverb *mee* into the English determiner *my*. In Dutch, the sentence “*Kan mijn jongen met jou mee?*” would be grammatical. In short, this pupil translated the Dutch question straight into English. It should secondly be noted that the English question, as in “*Kan my boy met your my?*” followed the Dutch word order for questions “*Kan mijn jongen met jou mee?*”. Next to the emergence of word order in questions, this pupil produced a grammatical English sentence “*I haf un trouble*”. Interestingly, the pupil used a French object *un trouble*. It should be mentioned that the noun *trouble* exists in French and in English. As the L1 of this participant is Dutch, this sentence could illustrate a positive L2-L3 transfer.

2. Pupil's production: *You go to school! Where is main taxi? Ai the bus! Mam, I will met the car. Oef, I ame to time.*

In contrast to production 1, production 2 was a story written by a pupil who belonged to the high-proficiency group and who scored 72 on the WEGP test. This pupil only produced one grammatically correct question. As already mentioned, the high-proficiency group (i.e. 30) produced as many incorrect sentences as the low-proficiency group (i.e. 31). The sentence “*Mam, I will met the car*” was one of these incomplete sentences produced by someone in the

high-proficiency group. The sentence lacked the infinitive without to in order to make the simple future tense (e.g. *I will go*). However, it could suggest that the simple future tense started to emerge in that particular pupil.

3. Pupil's production: *Aim going to school en aim lait. Aim to lait en that is not ferry good. Ai somwan help mee en that is ferry good.*

Story 3 was written by a pupil belonging to the high-proficiency group, as he had a total score of 72. Despite the numerous spelling mistakes, the grammar used in his or her story was close to target-like grammar. For instance, this pupil produced a grammatical negative sentence (i.e. *that is not ferry good*). He also used the present progressive correctly, that is to say, he or she used the auxiliary *be* and the stem + *-ing*.

4. Pupil's production: *The mommy spreak a kids. The kids walk a the taxi. The taxi stopt ant the kids. The mommy give ant the kids one kiss.*

The fourth example comes from a story told by a pupil who had a score of 38 out of 100 on the WEGP test. As a consequence, this pupil belonged to the low-proficiency group. From a grammatical perspective, this example was interesting for several reasons (i.e. verb conjugation, subject-verb agreement and plural marking). Firstly, this pupil used the noun *kids* in the four sentences. The addition of the plural morpheme *-s* is grammatically correct. However, this child did not seem to be aware that he or she was using a plural as he or she used the indefinite article *a + kids* in the first sentence. The indefinite article does not accept a plural noun. In other words, he or she used the plural noun *kids* as its singular counterpart *kid*. It is worth noting that there was only one boy in the three pictures. Secondly, regarding the formation of the simple present, this pupil did not use the third person *-s* in sentence one (*spreak*) and four (*give*). However, it seemed that this Dutch-speaking child transferred his or her L1 knowledge about the Dutch verb *stoppen* to the English equivalent *to stop*, which are typologically close. In Dutch, the third person in the simple present requires the addition of a morpheme (i.e. *+t*) to the stem. He or she transferred this knowledge to English in order to produce the word *stopt*. This pupil seemed to confound English and Dutch due to typological closeness (i.e. negative transfer). Thirdly, the second sentence was much more controversial. If we consider that the plural noun *kids* is a plural noun, as it is normally, the subject verb-agreement would be correct, but this pupil was constantly using *kids* as a singular noun. In this case, the stem+*s* (i.e. *walks*, in other words the third person singular form) should be expected for more consistency. However, to confirm this hypothesis, a think-aloud or a stimulated recall task would be needed.

5. Pupil's production: *This boy is packing hi's cloths in. But hi's to late, the bus is already gone. But hi's mom haf take a taxi. O thear comes the bus. Now can he go.*

The fifth production was written by a pupil with an average score of 93 out of 100 on the WEGP test, which was among the highest scores for Flanders. This example was first interesting regarding the use of the plural, as he or she used the plural noun *cloths*, which is correct from a morphosyntactic point of view. However, this pupil probably meant to use the plural noun *clothes*, as described in the first picture, a linguistic subtlety, which was probably beyond the proficiency of the Dutch-speaking pupil. Story 5 was also interesting regarding word order, especially the last sentence *Now can he go*. Dutch is a typical V2 language and this pupil seemed to overgeneralize this linguistic particularity, as he or she transferred this L1 typicality to his L2 English. Concerning the formation of the simple present, this pupil seemed to know that English requires an *-s* for the third person singular. He or she also seemed to know that modal verbs, such as *can* or *will*, do not behave in the same way, as they usually do not add an *-s* for the third person. It should also be noted that this pupil seemed to rely on the way words are pronounced in order to write them. For instance, he or she wrote the possessive determiner *his* (i.e. *hi's*) as he or she wrote the third person of the verb *to be* (i.e. *hi's*). Finally, the first sentence "*The boy is packing hi's cloths in*" also shows a correct use of the present progressive tense.

6. Pupil's production: *The boy making his coffer. The mother coming in the room and say: "common, we must go." "Ok, mam." The boy are to late. The bus going to the station and he sitting not on the bus. The mother have them call a taxi and the taxi going to the station. The mother paying the driver of the taxi and the boy was not to late. The end.*

Story 6 was the production of a pupil who belonged to the low-proficiency group with a score of 60 out of 100 on the WEGP test. This example was mainly interesting for two reasons, i.e. the use of the negation and the use of the present progressive tense. This pupil produced a grammatically correct negative sentence and an incorrect one. The sentence "*he sitting not on the bus*" was categorised as a stage 2 production, as it involves an internal negation. The correct negative sentence "*The boy was not to late*" was ranked as a stage 4 production, that is to say, a target-like negative sentence. Next to that, this pupil was constantly using the present progressive tense without the auxiliary *be*.

7. Pupil's production: *There was a boy. His name was Lucas. That day, his gonna go to school, but ow noo... The boy was late. The boy see the schoolcar thats ridding away.*

*What can the boy now doing? Oooh, look Lucas hi's mom is there with a taxi and money. Lucas is happy. Yay! See you later friends. End.*

Production 7 was written by a pupil from the high-proficiency group with a score of 78 on the WEGP test. The question he or she produced is close to target-like questions. However, there are two inaccuracies. The first mistake concerns the place of the adverb *now*, which should be at the end of the sentence. The second mistake concerns the verb *do*. There is no need to use the *-ing* form in the question he or she produced. He or she was probably misled by the temporal adverb *now* which usually requires the use of the present progressive tense. Next to that, this pupil started to use the simple past of *to be*, but there are still some inconsistencies in his or her use of the simple present tense. For instance, he or she did not add the third person singular *-s* to the verb *see*. However, his or her use of the present progressive seems to be target-like, as in the sentence “*The boy see the schoolcar thats ridding away*”.

## 10. Discussion

### 10.1. Media-induced SLA as a complex psycholinguistic construct

The first research question was designed in order to identify the psycholinguistic factors that influence the L2 English grammar proficiency of Dutch and French-speaking children in a setting of media-immersion. Furthermore, special attention was paid to the production of L2 English grammar. Several studies (e.g. Berns *et al.*, 2007; Houthuys, 2011; Duyck, 2013; Van Herreweghe, 2015; Simon & Van Herreweghe, in press) already investigated the acquisition of vocabulary in a setting of media immersion. These studies agreed on the fact that high motivation, positive attitude and extensive media exposure influenced the acquisition of L2 English vocabulary in media-induced SLA. In SLA literature, these psycholinguistic factors have been widely discussed as well (cf. Gass & Selinker, 2008; Ortega, 2009; Saville-Troike, 2012). Motivation is considered to be the second strongest predictor of success in SLA, aptitude being the first one (Skehan, 1989). Similarly, the attitudes and the beliefs towards the L2 linguistic community are commonly perceived as predictors of L2 achievement (Gatbonton & Trofimovich, 2008; Gatbonton *et al.*, 2011). However, when it comes to grammar acquisition in a setting of media immersion, there is hardly nothing in the literature. In an exploratory study, Decourcelle (2017) suggested that motivation, attitude and media exposure were also key factors in the acquisition of grammar in media-induced SLA. Yet, further analysis should investigate the role of systemic and pedagogical variables, which were beyond the scope of this study. It can safely be assumed that not only individual differences influence media-induced



SLA, but also the extralinguistic social context plays a role in language learning, as explained by Halliday (in Saville-Troike, 57):

language acquisition . . . needs to be seen as the mastery of linguistic functions. Learning one's mother tongue is learning the uses of language, and the meanings, or rather the meaning potential, associated with them. The structures, the words and the sounds are the realization of this meaning potential. Learning language is learning how to mean.

Next to that, it is also worth mentioning that English is a global language. As a consequence, many people, and hence children are attracted by this dominant norm (cf. Bourdieu, 1977). Building further on Decourcelle's study (2017), the first main finding of this study was that there were possibly at least four psycholinguistic factors that influenced grammar acquisition in media-induced SLA. The first one was the *frequency of English input*, which is comparable to media exposure in other studies (such as Van Herreweghe, 2015; Simon & Van Herreweghe, in press). It is also worth mentioning that dubbing is prevalent in Wallonia, while subtitling is much more common in Flanders. With respect to that, Koolstra & Beentjes (1999) showed that pupils in grades four to six benefited the most from watching subtitled TV programs. The preference for subtitling in Flanders can, to some extent, explain the differences in grammar proficiency in a media-induced setting (see also Decourcelle, 2017). The second one was *self-estimated English proficiency*, which reflects the participants' ease or difficulty to learn English in a setting of media immersion. In contrast, Houthuys (2011: 63) already addressed this dimension but concluded that "the conception of English, be it difficult or easy, may be no factor that influences the L2 acquisition of Walloon and Flemish children" in media-induced SLA. However, it is generally argued that positive self-ratings of L2 proficiency positively correlates with successful L2 learning (e.g. Sampasivam & Clément, 2014). The third factor that could be identified was the *motivation for learning English*, which is concerned with why someone wants to learn English. The final factor was *Attitude towards L2 English*, which reflects the attitudes of the pupils towards English. As aforementioned, motivation is commonly described as one of the best predictors of successful L2 learning (cf. Gass and Selinker, 2008). Motivation and attitude are also essential factors in Belgium. For instance, Mettewie and Janssens (2007) showed that Belgians usually have positive attitudes towards English but display some prejudices towards the language of the other linguistic community, which in turn, implies that Belgian students are usually more motivated to learn L3 English than L2 French or Dutch. Next to this historical reason for learning English, the pupils were probably also attracted

by English being the dominant norm in our Western societies. More will be said about that in the following sections.

Previous research on media-induced SLA mainly focused on the effects of the aforementioned factors, as well as others, individually without paying attention to what these dimensions may have in common. Up to now, there were only three main factors that were identified in media-induced SLA, which has been defined as a third type of learning. Simon & Van Herreweghe (in press) argue that media-induced SLA is not naturalistic nor instructed learning, but rather a new kind of learning which is the result of extensive media exposure, positive attitudes and high motivation. However, the exploratory factor analysis in this study revealed that the range of variables that influenced the acquisition of English in a setting of media immersion could possibly be reduced to the above-mentioned four factors, suggesting that media-induced SLA might be a complex psycholinguistic construct. Further research will show whether other factors (i.e. systemic or pedagogical variables) can be added to the list.

#### 10.2. Media-induced SLA and L2 English grammar proficiency

As mentioned previously, the statistical analyses revealed there were significant correlations between the four factors and the L2 English grammatical proficiency. The grammatical categories that were explored included the formation of plural markers, negatives, *wh*-questions, SVO word order, the third person singular *-s* and the progressive marker *-ing*. However, the associations were not uniform across the four factors. The four factors had no associations with the emergence of plurals and SVO word order. In contrast, the four factors had positive associations with the emergence of the remaining grammatical categories, i.e. negatives, *wh*-questions, third person singular *-s* and the progressive marker *-ing*. As a consequence, pupils who used English(-spoken) media on a regular basis (factor 1), those who rated themselves as proficient speakers of L2 English (i.e. factor 2), those who had high-degrees of motivation (factor 3) and those who displayed positive attitudes towards L2 English (factor 4) scored higher on the WEGP test than the pupils who used English(-spoken) media less frequently, those who rated themselves as less proficient in L2 English, those who showed low-degrees of motivation and those who had more negative attitudes towards L2 English.

##### *No association*

The analyses revealed that there were no significant correlations between the four factors and the grammatical categories plural and SVO word order. As a result, there were no significant associations neither. In quantitative designs, researchers often neglect non-significant results,

but they still deserve some attention in this study. Previous research suggested that the regular plural marker *-s* and the SVO word order tend to be acquired early in SLA. Not only the morpheme studies in the seventies but also Decourcelle (2017) suggested this. Decourcelle also ranked these two grammatical categories as acquired early in a setting of media immersion. In his study, he observed a ceiling effect on the SVO word order. Most Belgian pupils aged 12 to 13 had already acquired that unmarked grammatical feature. Likewise, the plurals were acquired by most of the pupils. It is worth noting that a grammatical category was considered to be acquired when the average score on the grammatical category was 80% or above. In this study, the grammatical categories plural and SVO word order were acquired by nearly all the pupils. In fact, Walloon pupils were slightly below the 80% for the grammatical category plural. The differences between Flemish and Walloon pupils will be discussed later in this dissertation.

Next to that, there is firm evidence that the basic word order SVO occurs frequently in the world languages. In other words, the SVO word order is unmarked according to FT (cf. Ortega, 2009; Saville-Troike, 2012). All the pupils of this study shared Dutch or French as a common language, which both share the SVO word order in unmarked declarative clauses as in English. However, Dutch is more complex than English regarding word order, as it is considered to be an SvOV language by linguists (e.g. Zwart, 2011). The verb can occupy the three different positions: SOV in embedded and non-finite clauses, SVO in unmarked declarative clauses and VSO in finite clauses with a constituent preceding the subject. It is worth noting that the WEGP only contained unmarked declarative sentences. Similarly, the plural marker *-s* is a common feature in Germanic languages and Romance languages. For instance, Dutch, French and English all have the plural marker *-s*. So, the likelihood that these unmarked features were transferred to L2 English was high. Similarly, connectionist models (e.g. Gass & Selinker, 2008) would argue that the nodes, or associations, are formed and strengthened by usage. As a result, children, by hearing English regularly, have possibly formed and strengthened common grammatical categories such as the SVO word order and the plural marker *-s*. In his frequency accounts, Ellis (2012) also argues that patterns were strengthened by usage. He claims that learners extract some patterns from a regular and intensive input, which is, to some extent, similar to Krashen's input hypothesis (1982). As a consequence, learning should be facilitated if children are regularly exposed to L2 input. Likewise, Larsen-Freeman (1976) argues that frequent morphemes, such as the plural marker *-s*, are easily acquired because of their high-frequency in languages, which, in turn, reinforces the connections in the brain.

Clearly, it can be concluded that the effects of the four factors on the grammatical categories plural and word order are subtle and should therefore be interpreted with caution and should be studied further.

### *Positive effects*

In this study, the results revealed that there were positive associations between the four factors and the grammatical categories negation, *wh*-question, third person singular *-s* and progressive marker *-ing*. All the correlations were positive and moderate (ranging from .25 to .4). In other words, a regular English input<sup>4</sup>, a high self-estimated English proficiency, a high motivation and a positive attitude towards L2 English enhanced the acquisition of the aforementioned grammatical categories in a setting of media immersion in this study. The independent samples *t*-tests confirmed these findings as all tests indicated highly significant differences in mean scores. As a result, it seemed that the interplay of the four factors enhanced the acquisition of L2 English in a setting of media immersion. In other words, motivation alone does not suffice to enhance the acquisition of L2 English in such a setting, but rather the combination of motivation, attitude, frequency of input and self-estimated proficiency does. This finding confirmed the idea that media-induced SLA is a complex construct, which is characterized by several subdimensions, as motivation, attitude, media exposure, self-estimated proficiency and possibly other subdimensions, such as the quality of the input and the source of the input (cf. Decourcelle, 2017). Moreover, this finding was in line with SLA literature on individual learner differences in informal settings (e.g. Gass & Selinker, 2008; Saville-Troike, 2012), in which it is commonly argued that differences in L2 proficiency result from the interplay of the individual learner differences, such as age, sex, motivation, attitude or aptitude, rather than from one psycholinguistic factor.

As mentioned previously, the first factor, i.e. frequency of input, is essential for acquisition to take place in a setting of media immersion. However, the factor has been labelled differently from study to study: contact with English (Berns *et al.*, 2007) or English media exposure (Van Herreweghe, 2015). In SLA research, it is commonly argued that input is essential for successful L2 acquisition (Krashen, 1982; Piske & Young-Scholten, 2008; Ellis, 2012; Mitchell *et al.*, 2012), media-induced SLA being no exception. However, input only is not a sufficient

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<sup>4</sup> Decourcelle (2017) found that watching English-spoken TV programmes or English-spoken videos on YouTube at least two or three hours a week enhanced the English grammar proficiency in media-induced SLA. Listening to English songs on a daily basis also enhanced the L2 English grammar proficiency. On the basis of these previous findings, “regular English input” means watching English-spoken TV or videos at least three hours a week and listening to some English songs every day.

condition, as other psycholinguistic variables and systemic variables also enhance SLA: motivation (Dewaele, 2009; Dörnyei, 2014), attitude (Dewaele, 2009; Mettwie & Janssens, 2007; Piller, 2002), quality of the input (cf. Piske & Young-Scholten, 2008 for a full overview of the importance of input in SLA). In this study, grammatical proficiency seemed to be partially dependent on the amount of English input as well. Further studies should tell whether the quality of the input also plays a role in media-induced SLA.

The evidence for the second factor, i.e. self-estimated English proficiency, was scarcer. However, in Belgium, Flemings consider themselves as good speakers of L2 English, whereas Walloons usually do not think so. For instance, Ginsburgh & Weber (2006) carefully listed the linguistic proficiency of Belgians. Their statistical analyses revealed that 53 per cent of the Flemish population had some English proficiency. This percentage only reached 17 per cent for the Walloon population. It is commonly assumed that the main reason for this gap is the discrepancy between subtitling in Flanders and dubbing in Wallonia. Next to that, studies on second language confidence, hence L2C, agree on the fact that positive self-ratings of L2 proficiency have a positive effect on L2 learning when it is coupled with low-levels of anxiety (cf. Sampasivam & Clément, 2014). Other studies on personality also showed positive correlations between some personality traits, such as being self-confident, risk-taking or adventurous, and L2 proficiency (cf. Saville-Troike, 2012). According to the results of this study and the previous studies, it can safely be hypothesised that pupils who rate themselves as proficient in L2 English are also self-confident pupils, who possibly have lower levels of L2 anxiety and thus perform better on language tests. As mentioned previously, this sole factor, i.e. self-estimated L2 English proficiency, does not suffice to explain the differences in L2 grammatical proficiency. Further research should tell whether low-anxiety coupled with high self-ratings of L2 proficiency in a setting of media immersion positively correlates with L2 (grammar) proficiency.

There is abundant literature on the link between motivation and L2 acquisition (cf. Dewaele, 2009 for an overview). Basically, learners who are motivated to learn a language, either integratively or instrumentally motivated, usually have better results than L2 learners who have low-levels of motivation (Dewaele, 2009). However, it seems that the correlations are stronger between the level of integrativeness and SLA outcomes than between the level of instrumentality and foreign language measures (ibid.). In other words, integrative motivation is possibly a stronger predictor of L2 acquisition than instrumental motivation is. Yet, in this study, the factor *motivation* mainly dealt with instrumental ends. The significant positive

correlation between the factor *motivation* and the L2 English grammatical proficiency confirmed the results of previous studies. The pupils who wanted to learn English in order to be able to game, to listen to music or watch videos on YouTube in English scored, on average, higher on the grammar test than pupils who had no such sources of motivation. As suggested by Dewaele (2009), the correlations between the instrumental ends and the L2 outcomes are generally low. Nonetheless, our analyses proved to be highly significant. It should be mentioned that more recently, there was a shift from studies dealing with integrative motivation to studies dealing with the learner's self-concept as well as identification aspects (Dörnyei in Dewaele, 2009). From this perspective, someone imagines an ideal L2 self, i.e. what someone would like to possess (e.g. be a proficient L2 speaker) and an ought-to L2 self, i.e. "the attributes that one believes one *ought to* possess" (Dörnyei in Dewaele, 2009: 634). The source of motivation is the discrepancy between the actual self and the ideal or ought-to L2 selves (ibid.). This shift motivated the reason why the factor *motivation* in this study mainly dealt with instrumental motivation rather than with integrative motivation.

Finally, attitudinal factors, such as sociocultural, historical and political factors, are key features of motivation to learn a language (Dewaele, 2009). It is thus not surprising that the fourth factor, i.e. *attitude towards English*, showed significant correlations with L2 grammatical proficiency in this study. As for the three other factors, the correlations were moderate and highly significant. Again, it is worth noting that one sole factor does not suffice, but rather the combination of the four factors discussed in this study explains the differences in grammatical proficiency. In previous research (Mettewie & Janssens, 2007; Dewaele, 2009; Houthuys, 2011; Duyck, 2013; Van Herreweghe, 2015; Decourcelle, 2017), it was argued that Belgian children usually have positive attitudes towards L2 English. This study was not an exception in that respect. However, Flemish and Walloon pupils displayed different attitudes towards L2 English. These differences between Dutch-speaking and French-speaking children will be addressed in section 10.3. In line with the positive attitude towards L2 English, Piller (2002) used the term "language desire" to describe the attraction for speakers of global English. At this point, it should be noted that Flemish and Walloon pupils do not have to deal with the same language choices. For instance, French-speaking pupils can consciously choose for French in video games because most video games have French as a possible language setting. In stark contrast, Dutch-speaking children do not always have this choice because English videos games are not necessarily translated into Dutch. Worldwide, Dutch is not as influential as French is. Thus, the attraction to the French language by the Walloon pupils is legitimate. As a

consequence, the need for speaking English is not as essential in Wallonia as it is in Flanders. However, it remains questionable to what extent Dutch and French speakers display different attitudes towards L2 English. This will be addressed in the next section.

### 10.3. Differences between Dutch and French speakers of L2 English

There were significant mean differences between Flemish and Walloon pupils on the WEGP test. The Flemish pupils outperformed the Walloon pupils on the test. All but one independent samples *t*-test yielded significant results. There were no significant mean differences between the Flemish and Walloon pupils on the grammatical category SVO word order. As a reminder, the results are summarized in table 11. This table shows that SVO word order is acquired by the Flemish and Walloon pupils. This supported the numerous studies on acquisition order in the seventies (Brown, 1973; de Villiers & de Villiers, 1973; Dulay & Burt, 1974; Krashen *et al.*, 1978), which all found that word order was among the first acquired grammatical features irrespective of the L1. This was also supported by the theory of markedness. From this perspective, it is argued that SVO word order is a common word order across world languages, which implies that it is easily acquired (Ortega, 2009; Saville-Troike, 2012). In line with that, Ellis (2012) argues that frequent linguistic features tend to be acquired early and rapidly.

	Flemish pupils	Walloon pupils
<b>SVO word order</b>	93.8	88.4
<b>Plural</b>	79.7	71.6
<b>Wh-question</b>	67.3	34.3
<b>Negation</b>	55.9	21.9
<b>Present progressive marker -ing</b>	53.2	35.2
<b>3<sup>rd</sup> person marker -s</b>	32.1	11

Table 11 Summary of the results on the WEGP test. The figures are the mean scores in percentage obtained on the WEGP test by the Flemish and Walloon pupils.

Similarly, the category plural was close to the cut-off point we set for acquisition (79.7 versus 71.6). Similar to word order, plurals in *-s* are frequent in world languages and are easily acquired (Krashen *et al.*, 1978). In stark contrast, the 3<sup>rd</sup> person marker *-s* was not acquired at all. The qualitative part of this study also showed that the Flemish and Walloon pupils tended to omit

the morphological marker *-s*. Most pupils used the bare verb without any morphological marker. Only a couple of pupils with high scores on the WEGP test (80% or above) seemed to use this marker in a consistent way, which implied that this marker was possibly acquired late regardless of the L1. According to the mentalist views (Ellis, 1985; Chomsky, 1986; Mitchell *et al.*, 2013), all the languages (L1, L2, L3, etc.) are acquired in the same way because every human being is equipped with an innate language module. These three grammatical categories do indeed suggest that some grammatical features are acquired in a similar way across different languages. However, as shown in table 11, the grammatical categories, *wh*-question, negation and present progressive marker *-ing*, showed more variation. UG theorists (e.g. Mitchell *et al.*, 2013) state that only few instances are needed to set the correct value to the head parameter, but this study suggested that some grammatical features needed more than a couple of instances to be acquired. It can safely be assumed that the pupils already got to hear some instances of *wh*-questions, negations or instances of the present progressive marker *-ing*, but they seemed to fail to acquire them, suggesting that other factors were at play. Yet, these grammatical categories were emerging in the Flemish and Walloon pupils, as the average scores were not equal to zero. It should further be noted that for these grammatical categories, the Flemish pupils clearly outperformed their Walloon counterparts. The statistical analyses revealed that the Flemish pupils got to hear English more frequently than their Walloon counterparts, especially through English-spoken TV programmes. These differences in English(-spoken) media use can partially explain the differences in average scores on the remaining grammatical categories (i.e. *wh*-question, negation and *-ing* marker). In connectionist models, a more frequent use of a language seemed to reinforce the connections in the brain, implying that a regular and intensive input should result in more learning (Larsen-Freeman, 1976; Ellis, 2005). Moreover, the Flemish and Walloon pupils also obtained different results on the three other factors. On the one hand, the Flemish pupils showed high motivation for learning English. They displayed a positive attitude towards English and rated themselves as proficient speakers of English. On the other hand, the Walloon pupils showed lower levels of motivation for learning English and displayed a slightly more negative attitude towards English than their Flemish counterparts. However, the motivation of the Walloons was high and their attitudes were positive but not as high or positive as for the Flemish pupils. Furthermore, the Walloons rated themselves as average speakers of English. Yet, it should be mentioned that the main difference between the Flemish and Walloon pupils was the motivational factor, as this factor showed the highest eta-squared. The Flemish pupils seemed to be highly motivated to learn English in order to be able to play video games, to listen to music, to watch TV, etc. As mentioned in the previous section, Flemish children do



not always have the choice to go for their mother tongue in video games. As a consequence, they choose English by default and probably also for reasons of “language desire” (Piller, 2002). Moreover, the differences in motivation can possibly be linked to language policies as well. Flanders has subtitling; while Wallonia has dubbing. This major difference implies that Flemish people are urged to speak (or at least to understand) some English, whereas Walloon people are less encouraged to do so. In Wallonia, ban-dubbing campaigns have already been organised, but they were unsuccessful up to now. Yet, it is worth mentioning that language education policies differ between Flanders and Wallonia. Walloon children can start English in nursery schools, while Flemish children cannot do so, as they have to wait until secondary school to start English classes. This particular difference does not seem to influence the motivation of the children.

#### 10.4. Differences in storytelling task between low- and high-proficiency speakers

The stories of the Walloon and Flemish pupils will be discussed separately because the quantitative part showed that there was a major difference in grammatical proficiency between the Walloons and the Flemings.

The data about the Walloon pupils will be discussed first. Walloon low-proficiency speakers basically produced very short stories. These stories were usually made of one sentence with mostly correct word orders. They barely used the grammatical features that were investigated in this study. In contrast, the Walloon high-proficiency speakers used some grammatical features, mainly verbs (especially the verb *to be*) conjugated in the simple present. Instances of the third person marker *-s* were scarce, which confirmed the findings of the statistical analyses, which in turn revealed that this morpheme was acquired late. There were too few examples of the remaining grammatical features in order to draw some strong conclusions.

In contrast, Flemish pupils produced longer stories. As a consequence, they also used more grammatical features, especially conjugated verbs. From a grammatical perspective, the productions of the Flemish pupils were more accurate than the productions of the Walloon pupils. However, the Flemish high-proficiency group produced fewer grammatical inaccuracies than the Flemish low-proficiency group. Regarding word order, the productions of all the Flemish pupils were accurate confirming the findings of the quantitative part, that is, the early acquisition of unmarked declaratives. Using more verbs was directly linked to the fact that the stories were longer. Yet, the instances of the simple present tense were much more accurate in the high-proficiency group than in the low-proficiency group. Similarly, the high-proficiency

group used more correct instances of the present progressive tense than the low-proficiency group did. However, instances of plurals were scarce, which was surprising as the statistical analyses revealed that the Flemish pupils mastered this grammatical feature. It is likely that the pictures used in the story-telling task did not trigger the pupils to use plurals. Therefore, this finding should be interpreted with caution and should be studied further.

## 11. Limitations and further research

The findings of this study on grammar proficiency in a setting of media immersion are clearly not exhaustive, as this study is the first study to investigate the acquisition of L2 English grammar in a setting of media immersion. Therefore, it should be considered as an exploratory study with a broad view on the topic. It is also worth noting that caution was taken when interpreting the results. The only study that dealt with grammar acquisition in a setting of media immersion was the master's thesis by Decourcelle (2017). As a consequence, the results remain difficult to generalise to the Belgian population. Moreover, the items used in the factor analysis were mostly newly designed for this study. It could be interesting to use some validated scales to test the individual learner differences. In this study, four psycholinguistic factors could be identified, but it is likely that other variables such as systemic variables (e.g. quality of the input, kind of input) are at play as well. Moreover, age and aptitude were disregarded. Age-related issues in a setting of media immersion have not been investigated yet. Previous research on media-induced SLA (Berns *et al.*, 2007; Van Herreweghe, 2015; Decourcelle, 2017) mainly focused on young teenagers probably because implicit learning is commonly considered to be more successful with young learners (i.e. before puberty) than with adult learners (Bialystok, 1994; Abrahamsson & Hyltenstam, 2008; Schmidt, 2010). Up to now, research has also neglected very young learners (i.e. before the age of 10). However, children in Belgium, both Flemish and Walloon children, start to use tablets, smartphones or computers at a very young age. It seems fair to assume that most Belgian children already heard some English through YouTube or songs before the age of ten. Further research should tell whether these very young learners also develop some L2 proficiency in a setting of media immersion. Often linked to age, the notion of aptitude can also be important in media-induced SLA. Previous SLA research (Abrahamsson & Hyltenstam, 2008) showed that young learners can acquire a second language irrespective of their aptitude, which is not the case for adult learners. It could be interesting in further studies on media-induced SLA to focus on Belgian adult learners, as they probably show behaviour, which differs from child behaviour, towards L2 English.

Next, the grammatical categories plural and SVO word order showed no associations with the four factors. However, there were differences between Flemish and Walloon pupils with respect to the grammatical category *plural*. Therefore, it seemed that the differences were subtle and could possibly be linked to frequency of input. However, it remains questionable whether typological closeness could be a possible explanation for the differences between the Flemish and Walloon pupils. According to the theory of markedness (Ortega, 2009; Saville-Troike, 2012), unmarked features, such as the SVO word order and the plural marker *-s*, are easily acquired. The pupils in this study all spoke French or Dutch as an L1 (sometimes in combination with another language). These L1s are typologically close to English. As a consequence, further research should investigate whether distant languages show similar patterns in a setting of media immersion. For instance, in Belgium, there are many immigrants, who speak other languages and nothing has been said about this population. Turkish immigrants in Belgium also get to hear some English through media. So, it should be interesting to investigate whether L1 Turkish speakers, who have a different word order (SOV), also acquire the English word order easily or not in a setting of media immersion. In other words, it should be investigated whether L2 learning rate in a setting of media immersion would be influenced by the L1.

Some limitations also arise from a methodological point of view. L2C is a crucial aspect in successful L2 learning (Sampasivam & Clément, 2014). In this study, preliminary tests on anxiety indicated significant mean differences. These analyses revealed that pupils with high-anxiety tended to score lower than pupils with low-anxiety. In other words, it is likely that some pupils experienced some anxiety because of being tested. As a consequence, it is possible that this extraneous variable interfered with the pupils' performance on the EWGP test. In further studies, more attention should be paid to this dimension. Next to that, most of this study dealt with quantitative analyses. Therefore, it is worth noting that statistical analyses need to be interpreted. As such, it is perfectly possible that different researchers would make other choices in their analyses. However, the quantitative design was supported by a short qualitative part in order to illustrate the findings of the statistical analyses (i.e. explanatory model). The use of a mixed methods proved to be useful as stronger conclusions about some of the grammatical categories (i.e. SVO word order, present simple tense and present progressive tense) could be drawn. However, the story-telling task should be slightly revisited in order to elicit more instances of plurals, negations and questions. In the pupils' stories, these instances were too scarce to draw firm conclusions.

## 12. Conclusion

This study dealt with media-induced SLA, a term coined by Van Herreweghe (2015). It denotes the acquisition of a second language through extensive media exposure, positive attitudes and high motivation (*ibid.*). This study investigated English grammatical proficiency of Belgian pupils in a setting of media immersion by means of a mixed methods approach. The results first revealed that at least four psycholinguistic factors influenced the acquisition of English grammar in media-induced SLA: the combination of regular English input through media, positive attitudes towards L2 English, high motivation for learning L2 English and high self-ratings of L2 English proficiency equally enhanced the grammatical proficiency of Belgian pupils, aged 10 to 12. Those four factors had positive associations with four grammatical categories, i.e. negation, *wh*-questions, 3<sup>rd</sup> person singular marker *-s* and present progressive marker *-ing*. Two other grammatical categories, i.e. SVO word order and plural marker *-s*, were investigated but the analysis revealed non-significant correlations most likely due to a ceiling-effect. Second, the results revealed that the Flemish pupils (L1 Dutch) outperformed their Walloon counterparts (L1 French) on all the grammatical categories except for SVO word order. Flemish and Walloon pupils scored the highest on that grammatical category. All the pupils scored high on the plural marker and all the pupils scored low on the third person marker *-s*. The results were more mixed for the other grammatical categories, which challenged the notion of an established acquisition order (cf. Krashen *et al.*, 1978). Finally, the Flemish pupils outperformed their Walloon counterparts because they were more motivated to learn English, had a more positive attitude towards English, used English(-spoken) media more frequently and were more self-confident about their L2 English proficiency.

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# Appendices