Pre-and Postmodification in Noun Phrases:
A comparison of monolingual, bilingual and multilingual male learners of English in Sweden

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Abstract

Students in Sweden are exposed to English education in the classroom from a very young age. This paper sets out to see whether bilingual or multilingual students perform better than monolingual students when acquiring English as a second or third language in Sweden. The research questions look at whether or not complex noun phrase structures can be connected to the language background of the students. The Dynamic Model of Multilingualism along with Second Language Acquisition theories suggest that students who have already acquired a second language have achieved a multilingual competence that monolingual speakers do not have, and that this multilingual competence can benefit a learner in acquiring additional languages. 64 students submitted language background surveys and essays. 12 essays were chosen to represent three different language categories: monolingual, bilingual and multilingual. The method of comparing the essays was based on the use of complex noun phrases. Two analyses were carried out: 1) on the modification of noun phrases at phrase level, and 2) on the embedding and modification of embedded noun phrases at the clause level. The results of the study are not statistically significant, but they may indicate that bilingual students create the most complex noun phrases, though the monolingual students were not far behind. The multilingual students used the least modification and also the least embedded noun phrases. Further research in this area is warranted based on the results found here.

Keywords: Simple and Complex Noun Phrases, Premodification, Postmodification, Embedded Noun Phrases, Embedded Modification, Second Language Acquisition (SLA), Multilingual Competence, Third Language Acquisition (L3A), Dynamic Model of Multilingualism
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1. Introduction

Swedish law requires children to attend school from the autumn the year they turn seven, though the vast majority of children actually begin attending school the year they turn six. Children who arrive at school without an understanding of the Swedish language are placed in special classes to help them learn Swedish as a second language (Svenska som andraspråk, SVA). The goal with SVA is to help the child acquire Swedish as quickly as possible because an understanding of Swedish is essential for mastery in all school subjects. Within the state-established course syllabus for Swedish as a second language at the upper secondary level, one of the educational aims is that "students should also be given the opportunity to reflect on their own plurilingualism and their capacity to master and develop a functional and rich second language in Swedish society" (Skolverket, Swedish as a second language, 2012: 1). According to this goal, Swedish is not seen as a substitute for their first language, rather the acquisition of Swedish is understood as enhancing a student's multilingual competence.

Students in Swedish schools are required to have English as a scheduled subject by the time they are in the third grade, around nine years of age. Most children are introduced to English from the first year in school, and many have already been exposed to English in pre-school. Depending on which classroom scenario you step into, one teacher may teach English to a classroom full of students who speak Swedish at home while another teacher may have a class where not a single student speaks Swedish at home. Regardless of the language background of the students, English is a required subject and the criteria defining what is to be taught in the classroom are clearly delineated in both the compulsory school curriculum and the upper secondary school curriculum. National tests in English are taken from the sixth grade partially to ensure that all students are receiving the same education.

This paper investigates texts written by upper secondary students with different language backgrounds: monolingual, bilingual and multilingual. The goal is to see whether there is a connection between a student's language background and more advanced structures in English texts as verified within the noun phrase.
2. Background

This research paper will examine how monolingual, bilingual and multilingual learners of English in Sweden modify noun phrases. It is, therefore, essential to examine the situation of students in Sweden as well as to review the English noun phrase, its structure, and possible manifestations of modification. The language background categories monolingual, bilingual and multilingual will be examined in the section on theoretical perspectives.

2.1. English in Sweden

English is not officially recognized as a first or second language in Sweden, which means that according to most definitions English is considered a foreign language (EFL). However, there is another term used which focuses on the international use of English between non-native speakers, English as a Lingua Franca (ELF). A particular case in point supporting the rise of ELF is Europe. Mesthrie and Bhatt state four reasons that they attribute to the rapid spread of English in Europe: firstly, the relatively small size of Europe; secondly, the birth of the European Union; thirdly, cultural similarities within “the western world”; and finally, the popularity of the American youth sub-culture. This final reason, which includes Hollywood’s influence in general, together with the super power shift following the Second World War has led to the American variety gaining a stronger foothold in Europe than the British equivalent (Mesthrie and Bhatt 2008: 213). Mesthrie and Bhatt place Sweden among those countries where "English plays a role mainly for international rather than intra-national purposes" (Mesthrie and Bhatt 2008: 5).

However, Jenkins, places the Netherlands and the Scandinavian countries in a unique group that stand apart from the general European community because "English is increasingly being used for national purposes" (Jenkins 2009: 16). Jenkins bases this observation partially on the fact that higher education in Sweden is increasingly offered in English, and even in elementary and upper secondary education there are a growing number of schools that offer education of several of the core subjects in English (Jenkins 2009: 17). In a world where there are more non-native speakers of English than native speakers of English (Jenkins 2009: 16), it is increasingly problematic to try and define the role of English in countries based solely on whether or not English is used intranationally or internationally.

Jenkins' special recognition of the value of English in Sweden may be due to the fact that English was already established as a mandatory subject in the Swedish school curriculum long before the birth of the European Union. It has been more than half a century since English was
added as subject to be taught in the fourth grade (Läroplan för grundskolan 1962). Yet globalization and technology have pushed English education beyond the classroom and new research shows that Extramural English, interaction in English in domains outside of the classroom, particularly in playing online interactive games has a positive effect on both oral proficiency and vocabulary development (Sundqvist 2009: 101).

The expectations that students should have a functioning ability to construct English texts can be verified by the knowledge requirements that must be fulfilled in order to receive a passing grade during the first year of upper secondary school:

- In [written] communications of various genres, students can express themselves in relatively varied ways, relatively clearly and relatively coherently. Students can express themselves with some fluency and to some extent adapted to purpose, recipient and situation. Students work on and make improvements to their own communications.

- In [written] interaction in various, and more formal contexts, students can express themselves clearly and with some fluency and some adaptation to purpose, recipient and situation. In addition, students can choose and use essentially functional strategies which to some extent solve problems and improve their interaction.

(Skolverket, 2012a).

2.2. The Noun Phrase

Crystal (2004: 114) defines the noun phrase (NP) as a group of words working together as a clause element. Noun phrases are very versatile as they can function as any of the clause elements excepting the verb (subject, object, complement, or adverbial). When a child begins to write, she may begin with a single noun phrase followed by a verb. However, as the child advances in her language skills, she will invariably use "a larger ratio of nouns over verbs ... [which] indicates that more semantic case functions are being expressed: e.g. not just subject (only one noun with one verb), but also object and indirect object (a total of three nouns)" (Saville-Troike 2012: 61). An NP can consist of a single word as in (1), or it can consist of a head noun modified by any combination of words and phrases, as in (2). NPs are, thus, “indefinitely complex” (Greenbaum and Quirk 2010: 363).

(1) Girls sang.

(2) The blonde Swedish girls who studied English sang.

(My own examples)

NPs are traditionally divided into four constituents: determiners, premodification, head noun, and postmodification. Each of these four constituents can be further divided into subcategories that can be filled with a variety of grammatical units, see Appendix 1. A general rule is that the head noun is the only word that cannot be removed from the phrase. In a complex NP, there are
additional words that help to qualify or modify the head noun. The modification is understood as being “an optional constituent” (Yule 2010: 101). Modification preceding the head is called the premodification while modification following the head is called the postmodification. Table 1 shows how the noun phrases that act as the subjects in (1) and (2) can be divided into their constituent parts.

Table 1. Noun Phrases: Simple vs. Complex

<table>
<thead>
<tr>
<th></th>
<th>Subject</th>
<th>Predicate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple NP</td>
<td>-</td>
<td>Girls</td>
</tr>
<tr>
<td>Complex NP</td>
<td>The blonde Swedish girls who studied English</td>
<td></td>
</tr>
</tbody>
</table>

In (2), also shown as the Complex NP in Table 1, the head noun girls is modified by adding two separate premodifiers (two adjectives, blonde and Swedish) and one postmodifier (a relative clause, who studied English). The ability to consolidate units of information in this way is a sign of advanced language skills. A child initially learning to write will oftentimes use separate sentences to convey the same meaning: “The girls sang. The girls are Swedish. They have blonde hair. They studied English.” A person who uses modification effectively provides the reader with the same information packaged in a single noun phrase. Word reduction is neither the ultimate goal nor the only achievement; the complex noun phrase is more detailed and interesting.

When it comes to the ratio between nouns and verbs, examples (1) and (2) both have a ratio of 1:1, since both sentences include a subject and a verb. While the noun-to-verb ratio reveals advancement in clause structure, it does not reveal the advancement happening within a single clause element, such as the use of pre- and postmodification. This paper will examine the ratio of nouns-to-verbs in student essays, but will more particularly examine how and to what extent learners of English in Sweden use premodification and postmodification to create complex noun phrases.
3. Literature Review

This section will look at previous research regarding various measurements of complexity in noun phrases, particularly with regard to examining embedded noun phrases and embedded modification. Theories regarding Second Language Acquisition (SLA) will also be discussed.

3.1. Previous Research

3.1.1. Complex Noun Phrases

One of the first to analyze the stylistic significance of the complexity of noun phrases was Aarts (1971). He observed that there is a difference in the placement of what he called light versus heavy NPs. Light NPs consisted of a determiner and a noun. Aarts's investigation found that light NPs were more frequently found within the subject clause element of the sentence while heavy NPs were more common in non-subject position. Pronouns and proper names were almost invariably light NPs as they are seldom modified. Light NPs are more commonly referred to as simple noun phrases while heavy NPs are often referred to as complex noun phrases. However, there are some discrepancies in the way the terms simple and complex are defined, for example, Jucker (2012), delineates a noun phrase as being complex when there is multiple modification (more than one modifier). This distinction in classification means that it is important to notice that the terms simple and light or complex and heavy are not always interchangeable; an NP with a single modifier would be a heavy NP according to Aarts, while it would be a simple NP according to Jucker. In this paper, I follow Crystal (2004: 113) and classify NPs with a single modifier as complex.

The premodifier slot can be filled with various elements: an adjective phrase, a lexical noun or a non-finite verb clause. Oftentimes when one thinks of premodification, adjectives such as beautiful, old, and friendly come to mind, however, another word class that frequently appears in the premodifier is lexical nouns. These often take on the role of classifying and tend to immediately precede the head. An example would be race horse, where both race and horse are lexical nouns but the noun race is serving to indicate a particular quality about the horse. Where there are instances of multiple premodification, the various elements within the premodifier are oftentimes divided into semantic categories and examined based on proximity to the head noun. The general rule is that the closer the modifier is to the head noun, the more connected it is to the noun (Keizer 2007: 220). Thus, we can say the brown race horse but could not be *the race brown horse. The adjective brown is simply describing an outer quality while the term race is used to define something more acutely connected to the type of horse. As language evolves, lexical nouns that were once classifying become so closely connected with the noun that they eventually build a compound as in raceway. In addition to adjectives and lexical nouns, non-finite verb forms, such as the infinitive...
or the participle, can appear in premodifying positions, as in *the singing Swedes*, however, this is uncommon.

Postmodification is most frequently achieved by adding clauses. De Haan (1989) examined the distribution of various types of postmodifying clauses and found that three of the most common forms of postmodification are finite clauses (primarily relative clauses and appositive *that*-clauses), non-finite verb clauses (participle and infinitive clauses) and non-verbal postmodifiers (of which the most common are prepositional phrases). There is a general understanding that postmodifiers are more explicit than premodifiers. For example, the premodifiers *blonde* and *Swedish* in example (2) do refer to particular features associated with the girls, but it is the postmodifier *who studied English* that more clearly hones in on an even smaller group of these blonde Swedish girls. In addition there appears to be an accepted explicitness hierarchy of the three main types of postmodifiers (Greenbaum and Quirk 2010: 366). The common consensus is that finite verb clauses reveal the most as the verb includes both an action and specific tense information and next in the hierarchy are the non-finite verb clauses which reveal an action but without any tense. The least explicit postmodifiers are the non-verbal postmodifiers, the most common being the prepositional phrase (Jucker 2012: 68). While prepositional phrases may not add the same degree of explicitness as verbal postmodifiers, they are "3 or 4 times more frequent than either finite or nonfinite [verbal postmodifiers] such as relative clauses and that-appositive clauses" (Greenbaum and Quirk 2010: 375).

While non-finite verb forms are not frequent in the premodifying position, they appear quite frequently in postmodifiers, as in *the Swedes singing in the hallway*. This could technically be understood as a reduced relative clause where the relative pronoun *who* has been removed, but expanding the clause to a relative clause would also involve inserting the correct form of the verb *be* since there is an ambiguity the Swedes are singing or were singing or had been singing, all of which would be viable options depending on the context. The non-finite clause *singing in the hallway* is ambiguous in reference to aspects of time, and it is, therefore, best categorized as a non-finite postmodifier. Less frequently postmodifiers include postponed adjectives or appositive noun phrases.

Theoretically there is no maximum number of modifiers that can be combined within a single noun phrase and thus there is "no upper boundary to the complexity that is possible within noun phrases" (Jucker 2012: 80). Since modification in NPs could theoretically be unlimited in number, there are those who have recommended utilizing word counts to indicate complexity (Hunt 1966). However, it is problematic to use this method as the only measure of advancement. An example of this would be the verb *put* which requires both a direct object and an adverbial; in the noun phrase *the book that was put over on the table* the prepositional phrase *over on the table* cannot be left out as it would be impossible to say *the book that was put*.

Hunt (1966) describes adjectival premodification as a sign of syntactic development for students with English as a first language. For learners of English, that is those who acquire
English as a second language, the use of relative clauses is considered a sign of advanced language competence (Cook 2008). Johansson and Geisler (2011) have confirmed that among Swedish students, the use of relative clauses certainly did increase in proportion to the number of years that the student had studied English in school. Another observation, made by Parrott, is that learners of English tend to use fewer non-finite clauses as postmodifiers when compared to first language speakers of English (Parrott 2010: 427). This may particularly be the case when the student’s first language (L₁) does not use non-finite verb clauses as postmodifiers.

3.1.2. Embedded Noun Phrases and Embedded Modification

A recent study was carried out in Britain to examine the role of noun phrase complexity in various styles of journalism. In order to do this, Jucker chose newspapers that are geared towards different groups in society. In his study he refers to the up-market, mid-market or down-market newspapers. The primary difference in the newspapers was not the topics addressed in the articles, but rather the socio-economic status of the readerships associated with the different newspapers. The up-markets were geared toward academics and professionals, the down-markets were geared towards persons at the lower end of the socio-economic scale. In between these two extremes, were the mid-markets. Jucker examined 43,000 NPs from various British newspapers and proved that complex noun phrases (NPs with multiple modification, see 3.1.1.) were used to a greater extent in the newspapers geared toward a more academic readership.

In his study, Jucker also examined three separate categories that he felt revealed structural complexity in noun phrases. First he counted the frequency of concatenated modification in NPs. Concatenated modification exists when a head noun is modified by more than one modifier. Secondly, Jucker looked at the frequency of embedded NPs, where NPs were nestled within postmodifiers (Jucker 2012: 80). Thirdly, he looked to see if there was embedded modification by noting if embedded NPs were themselves heads in complex noun phrases.

This can be further elucidated by looking at the noun phrase in example (3).

(3) The blonde Swedish girls who studied English at a prestigious university sang.

(My own example)

The head girls is modified by three separate modifiers: blonde, Swedish and who studied English. These are concatenated modifiers.

There are also two embedded NPs within the relative clause that act as the postmodification: the word English acts as the object of the relative clause and the word university acts as the head of the prepositional phrase which is the adverbial of the relative clause. Example (3) also has an example of embedded modification as university is premodified by the word prestigious. A standard clause-level analysis of this sentence would examine the subject as a single NP and the two NPs embedded within the postmodifier would not be further evaluated, meaning
that statistics concerning premodification would show that the head girls was premodified by blonde and Swedish but would not show that the word university was premodified by the word prestigious.

Quirk, Greenbaum, Lech and Svartvik refer to embedded NPs as "pushdown elements" since the NPs are no longer a part of the top-level clause structure (Quirk et al 1985: 1298). However, Huddleston warns against not analyzing them by saying, "[s]trictly speaking, the modifiers should not be analysed (immediately) as words but as phrases, for although they are most frequently single words, there is in general the potential for them to have their own dependents" (Huddleston (1984) cited in Jucker 2012: 60).

The results of Jucker's study showed that nearly 30% of the noun phrases in the down-market newspapers are modified, while mid-markets modify at almost 35% and up-markets at 40%. Jucker interpreted his data as indicating that modification in noun phrases in newspapers can be understood as a stylistic syntactic marker that reveals assumptions regarding the socioeconomic background of the general readership associated with that newspaper. Jucker claims that there is a connection between complexity in NPs and stylistically advanced writing. If this connection is true, then NP complexity could be used to measure advancement in writing.

Jucker is not the only one to claim that NP complexity can be used to measure syntactic advancement. Parkinson and Musgrave have looked specifically into the complexity of NPs in L2 language development and conclude that complex NPs may be an accurate way of measuring language development among learners acquiring a second language (2014). In their study, they show that "for university students [...] the ability to pack meaning into the noun phrase, and to make their text nominally rather than clausally complex, becomes increasingly important" (Parkinson and Musgrave 2014: 48). Their study found that while attributive adjectives are more common among the group of less proficient writers, premodifying nouns and possessive nouns as well as postmodifying prepositional phrases and relative clauses are more frequent among texts produced by more proficient writers (Parkinson and Musgrave 2014: 58). This indicates that not only is modification a measure of complexity, but even which type of modification is used can indicate advancement in writing.

3.2. Theoretical Perspectives

Linguists have long been interested in understanding the process of how humans acquire language as language is one of the key features that characterize the human race and set us apart from other species on our planet. Language acquisition has been divided into two categories: First Language Acquisition and Second Language Acquisition (SLA). If a child grew up in a monolingual society and then at age 10 moved to a new society and acquired that new language system, this became the child's second language (L2). If a child grew up in a multilingual society, learning several languages simultaneously from an early age, these languages were all considered the first languages. Thus, the distinction between first and second language acquisition does not
refer to the "number" of languages acquired but rather to the "order" of acquisition. Accordingly, a language acquired early in life was labeled "L₁" and any language acquired later was labeled "L₂". (Sundqvist 2010: 108).

### 3.2.1. First Language Acquisition

Chomsky is one of the leading names in first language acquisition studies. His theories have changed the foundation of language acquisition theories since the late 1950’s. His most prominent theory, Universal Grammar (UG) attempts to describe the innate ability that humans have to learn language. Chomsky described this theory as having two parts: principles (the rules that are universal to all languages) and parameters (language-specific boundaries of language use). (Saville-Troike 2008: 47)

The theory that we have some innate ability to learn language is difficult to prove empirically, and equally difficult to disprove. Chomsky believed that what is most important is “language competence”, which is the learner’s underlying knowledge. But this knowledge is never completely revealed because “language performance”, or what the learner actually produces in a specific situation, only partially reflects the learner’s underlying knowledge (Saville-Troike 2008: 51).

One of the reasons that Chomsky developed his notion of UG is “the logical problem of language learning” that children are quickly able to arrange sentences that they have never heard uttered. This paradox, Chomsky felt, proves that children have an underlying system that interprets what is heard and enables infinite combinations of language. This paradox explains both the production of correct speech that children utter and also explains why children during their language development process sometimes make morphological mistakes by creating words that they have never heard in real life (Saville-Troike 2008: 47).

### 3.2.2. Second Language Acquisition (SLA)

Krashen extends Chomsky's theory of UG into the realm of Second Language Acquisition in his own theoretical framework known as the Monitor Model. Krashen makes a distinction between learning a language and acquiring a language. Acquisition is what happens naturally and unassisted, while learning is a conscious effort that takes place mainly in the classroom (Saville-Troike 2008: 45). Acquisition happens as a result of learners having a language acquisition device comparable to Chomsky’s concept of innate knowledge. While Chomsky argued that UG has a “best before date”, (some say it gradually begins to shut down after puberty, others allow for a slightly longer time span), Krashen believed that the language acquisition device could be activated as long as there was enough comprehensible input and that there was nothing actively preventing the subconscious processing of the input. Classroom instruction immediately shuts down the language acquisition device because the process of analyzing the input becomes
conscious rather than innate. Immersion, rather than instruction, would automatically bring about second language acquisition.

Research has shown that people learning English who have different L1’s, appear to follow a general order of acquisition of the principles and parameters of the English language, and this could be seen as evidence that Krashen's theory is correct (Saville-Troike 2008: 44).

At the other end of the continuum of theories of SLA is Functionalism. While functionalists may not completely deny that there is some innate ability that allows children to acquire their first language with relatively little difficulty, the focus of functionalism is on production. Learning a second language is all about communication and a person will only learn a target language by producing that language. Functionalism makes little or no distinction between a learner's "performance" and a learner's underlying "competence" (Saville-Troike 2008: 53). Rather than focusing on acquiring a new set of rules that govern the target language, functionalism shows that learners simply acquire new ways to "fulfill the same functions as already acquired and used in L1" (Saville-Troike 2008: 54).

3.2.3. Multilingual Competence

While there are many theories about the differences in how first and second languages are acquired, in some respect the processes are similar. Learning a language can be divided into three states: the initial state, the intermediate state, and the final state. These three states are apparent in both first language (L1) acquisition and SLA, though the states include different steps and the learner proceeds through the various stages at vastly different speeds. However, when beginning to learn a second language, the learner has already reached the final state in the acquisition of his or her L1. So while learning the L2, the learner has already achieved native competence in the L1. This means that the L2 is not learned in isolation as the first language was, rather it is added to a system that has already identified certain principles and parameters that exist within the L1. This is a crucial difference as the L2 is learned in a way that reflects comparison and contrast with the fully developed structure of the L1. While the final state in learning a first language is being recognized as a native speaker, most researchers agree that the vast majority of second language learners will never obtain native speaker abilities in their second language (Saville-Troike 2008: 17).

Rather than reaching native competence, the final state in SLA is called multilingual competence. Multilingual competence is not simply understanding two languages, it is defined by a constant interaction involving comparison and translation between the two languages. More than this, research indicates that multilingual competence offers bilingual learners "certain advantages with respect to general language proficiency and therefore [may] be able to acquire a third language more easily than a monolingual learns a second language" (Hoffman 2001: 8)

For decades third language acquisition (L3A) was referred to as a special case of second language acquisition (Jaensch 2013: 73). It is only in the past ten years that research has begun to
focus on whether or not there are indeed differences between learning a second language and a third or subsequent language. Jessner is among those researchers who suggest that it is a misnomer to apply the term SLA to all language acquisition simply on the basis of its being subsequent to learning one's L₁. Jessner uses a Dynamic Model of Multilingualism (DMM) to show that individuals learning a third language have, not only linguistic competence from their L₁ and their L₂, but also a metalinguistic competence that factors in to their multilingual competence. Thus, in Third Language Acquisition (L₃A - this abbreviation is used by Jaensch 2013), learners do not merely acquire language in a linear or consecutive manner, but rather in a more dynamic way. Jessner refers to one of the key components of multilingual competence as cross-linguistic interaction (CLIN) (Jessner 2012: 33). The model is dynamic because as the individual develops his or her languages, there is a constant increase in the contact between the languages and thus an influx in the individual's multilingual proficiency.

Jessner describes four different routes of acquisition for an individual who has acquired three languages:

1) The three languages can be acquired simultaneously;
2) the three languages can be learnt consecutively;
3) two languages are learnt simultaneously after the acquisition of the L₁;
4) two languages are acquired simultaneously before the learning of the L₃.

(Jessner 2006: 12).

This oversimplified description does not take into account the domains in which the languages are used, the society in which the person lives, the amount of attrition (or language subtraction) that has taken place, etc. Further research regarding these areas and how they can be accounted for in a person's language background is already underway, but suffice it to say that acquiring a second language provides different conditions for acquiring a third language.

By dividing the students into three different language background groups, it may be possible to observe whether or not there is any indication that there is a greater multilingual competence among those students who are either bilingual or multilingual prior to beginning their acquisition of English.
4. Aim and Research Questions

Jucker shows that multiple and embedded modification is a syntactic marker of advanced grammar in newspapers. Parkinson and Musgrave show that noun modification can be used to measure advancement in language acquisition among L2 learners of English. Theories regarding second and third language acquisition indicate that multilingual competence may be enhanced in bilingual and multilingual learners when compared with monolingual learners. The aim of this research paper is to examine the complexity of noun phrases in learner English produced by high school students and then to compare the results from students within three different language background categories (monolingual, bilingual and multilingual). By doing this, the goal is to answer the following research questions:

- How do learners of English in Sweden modify nouns in descriptive writing?
- Are complex noun phrases more common among students within a particular language background group?
- Can the frequency of noun modification or type of noun modification be used as a measure to reveal multilingual competence?
5. Method

5.1. Collection of Student Essays

During February-March 2014, four high school classes submitted essays that serve as the general sample for this research project. Students were not prompted in advance as to the topic of the essay or what grammatical features were going to be examined. Each student was given an individually coded website address and through this process the essays were simultaneously added to the Uppsala Learner English Corpus (ULEC), a corpus that grows steadily and has now reached over 170,000 words written by junior and senior high school students in Uppsala (Geisler 2014). The only instructions regarding the essay were those instructions on the website interface: "Write about your best vacation memory. Where did you go? What did you see? What did you do? The text doesn't have to be long - 200-300 words."

Altogether 71 essays were submitted; however, only 64 students completed both the essay and the complementary language background survey. Of these 64 students, 35 were enrolled in their first year at high school (aged 16-17) and 29 students were enrolled in their third year (aged 18-19).

<table>
<thead>
<tr>
<th>1st Year Students</th>
<th>35 (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd Year Students</td>
<td>29 (8)</td>
</tr>
<tr>
<td>Total:</td>
<td>64 (9)</td>
</tr>
</tbody>
</table>

The number in parenthesis indicates the number of female students. Among the first year students there was only one female student which resulted in the decision to eliminate all essays written by female students, see the discussion in Section 5.7.

5.2. Collection of Supplemental Language Background Information

Since the aim of this paper is to compare noun phrases constructed by students of various language backgrounds, the students were asked to complete a Language Background Survey (Appendix 2). This survey was necessitated in part by the fact that schools in Sweden do not maintain records of a student's language background. The survey, which was in Swedish, consisted of 18 questions regarding the student's first language, as well as the language spoken by their father and mother, along with questions regarding whether or not they had previously lived in an English-speaking country. There was also an open question asking if there was any other reason why their English might be better than their fellow students. Each survey was coded with the same code used for inputting the essay into the ULEC web interface and thus the surveys could be manually paired with the essays. The information coded into ULEC concerning
individual authors is limited to the date written, school year, high school program, level of English study as well as the writer's age and gender. Ideally there would have been a larger number of student essays to draw from but as language background is not preserved in ULEC, it was only possible to use the essays collected specifically for this research project. Information regarding language background was kept completely separate from ULEC and is not available for use outside of this study.

5.3. Subcorpus Defined

In the end, 12 student essays were chosen for closer analysis: six from each school year, of which two represented each language background category.

The students were assigned language background categories based on the languages spoken in the home by their father and mother:

1) "Monolingual" indicates that both parents spoke Swedish.
2) "Bilingual" indicates that one parent spoke Swedish and one parent spoke a language other than Swedish.
3) "Multilingual" indicates that both parents spoke languages other than Swedish.

Table 2 shows the total number of essays and surveys collected by male students revealing the language background as well as grade level. It is from these 55 essays that the subcorpus was chosen.

<table>
<thead>
<tr>
<th></th>
<th>Monolingual</th>
<th>Bilingual</th>
<th>Multilingual</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year</td>
<td>23</td>
<td>6</td>
<td>5</td>
<td>34</td>
</tr>
<tr>
<td>3rd Year</td>
<td>18</td>
<td>2</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>Totals (%)</td>
<td>31</td>
<td>8</td>
<td>8</td>
<td>55</td>
</tr>
</tbody>
</table>

As grade and age are factors that could affect writing maturity, I wanted the students to represent both age groups. Among the third year male students, there were only two bilingual students and this became the determining factor in how many essays could be selected from each language group and age group. Thus I chose two essays from each language background category and each grade.

The specific language backgrounds of the 12 students who have authored the subcorpus essays is shown in Table 3.
Without further investigation it is impossible to know the exact routes of language acquisition among the students; for this paper I have made the following assumptions regarding the order of acquisition based on the limited language background information I had available.

I use the term *monolingual* to refer to students who were born in Sweden and both their parents speak Swedish. English is a core subject in the Swedish school system from the second or third year in school, however, the majority of Swedish children are introduced to English during pre-school. English is assumed to be the second language learned (L₂) for the monolingual students.

The term *bilingual* is used to refer to students who have one parent who spoke Swedish in the home and one parent who spoke a different language in the home, which would imply that they have acquired their L₁ and L₂ simultaneously. Three of the four bilingual students were born in Sweden while the fourth student was born in Ukraine but has lived in Sweden for the past 12 years. The languages other than Swedish spoken in the homes of the bilingual students were: Bulgarian, Finnish, Filipino and Russian.

The term *multilingual* refers to students who do not have a parent who speaks Swedish in the home which implies that the L₁ and Swedish (L₂) were acquired consecutively. Three of the multilingual students had two parents who spoke the same native language: Armenian, Russian, and Hungarian. The fourth student's parents each spoke one of the two official languages of Afghanistan. All four of the multilingual students were born outside of Sweden and the average length of time they had been in Sweden at the time of the study was 8.5 years.

Each student essay was assigned a code that began with a letter ("S" for monolingual Swedish students, "B" for bilingual students, or "M" for multilingual students) followed by a number representing if they were in their first or third year of upper secondary school.
5.4. Material Processing and Methods of Analysis

Noun Phrases (NPs) within the 12 student essays were manually tagged. There were two analyses performed on each text: a phrase-level analysis and a clause-level analysis. In the phrase-level analysis, NPs were examined for pre- and postmodification: both frequency and type of pre- and postmodifications were recorded. The number of modified nouns was compared to the total number of NPs. In the clause-level analysis, the ratio of nouns to verbs was recorded and the heads of NPs were divided into categories of lexical and nonlexical heads. Complex NPs at the clause level were further analyzed to see if they were subject to multiple modification or if they contained embedded NPs. The clause-level analysis was influenced by the analysis performed by Jucker and reviewed in the background.

This two-step analysis was performed because without both analyses, important information about modification and NP complexity would be overlooked. A clause-level analysis, as in (4) does not reveal the pre- and postmodification within the embedded NPs.

(4) My grandmother served me an outrageously good desert comprised of enormous cookies and cakes from Alaska.

(My own example)

At the clause level we count three head nouns: the subject (grandmother), the indirect object (me), and the direct object (desert). Looking at modification at the clause level, we would say that desert is premodified (outrageously good) and postmodified (comprised of enormous cookies and cakes from Alaska). However, we would not take into account the premodification in the embedded NP enormous cookies nor would we count the postmodification in cakes from Alaska.

On the other hand, a phrase level analysis considers all NPs to be equal and thus may conceal a more advanced structural unit. By re-examining the direct object from (4) as a single unit, we see the complex structure of the postmodifier which includes two modified embedded NPs, as shown in example (5).

(5) an outrageously good desert [ comprised of [ [ enormous cookies ] and [ cakes [ from Alaska ] ] ] ]

(My own example)

In this investigation coordinated nouns were counted as two separate phrases. The coordinated NPs in (5) could be interpreted as a single unit: enormous [cookies and cakes] from Alaska. or, as I have chosen to consider them, as two separate noun phrases: enormous cookies and cakes from Alaska.

Appendix 3 shows an example of the data compiled from one individual's text.
5.5. Ethical Considerations

The Swedish Research Council (2014) provides information concerning ethical rules and guidelines for research done within the humanities. One of the prime issues that they address is the need for researchers to provide their informants with anonymity. Within ULEC, all personal data is eliminated making it impossible for others to identify the writer of the text. However, in this research project, additional information regarding the language background of the students writing the essays has been collected. While this information provides extended background of the language abilities possessed, it has been coded in a way so as to ensure the anonymity of the writers. The information regarding ethnicity is not used in any way that would be used to promote stereotypes that could be detrimental to the identities of particular ethnic minorities. All examples taken from the corpus are specifically selected to highlight particular linguistic patterns pertinent to this research project.

5.6. Reflections on Corpus Method and Material Subsample

The best way to see how students actually develop their language skills would be to follow the same students as they progress. The majority of students were enrolled in the Technology ("Teknik") program, however, two of the third year students were enrolled in the Natural Sciences ("Naturvetenskap") program. The results from their writing may not be representative of students within other study preparation programs. Language competence is also highly individual and the limited sample size of the subcorpus means that each individual’s essay impacts the results decidedly. This, too, was stipulated by the time constraints as it would not have been possible to analyze all of the essays that were collected.

5.7. Limitations of the Study

Some limitations of the study relate to the sample group and others to the results. Regarding the sample group, the matters of age and ethnicity I discuss below. These limitations directly affect what material was collected. Other limitations of the study relate to choices that, upon reflection, may have affected how the results were interpreted. Two primary examples of this are defined below.

The students were either in their first year (aged 16-17) or in their third year (aged 18-19) but the age of the respondents has not been taken into account in the figures presented in this paper. Age would normally be an aspect seen as impacting language development, particularly when the distinction in age further means that for the first year students, English is a compulsory subject, but for the third year students it is an elective course that gives merit points ("meritpoäng") when applying for college. The implication is that third year students are not representative of the general student body in that they chose English as their elective. However,
the goal of this study was to examine how students with different language backgrounds modify nouns, and thus the category of age, apart from in the sub-corpus selection process, has been ignored.

It is also impossible to know how representative the percentage of students with various language backgrounds was in these classes compared with the entire student body. In an interview, the principal of the high school estimated that the percentage of students with a foreign language background was probably similar to the overall percentage of people with foreign background throughout the entire municipality of Uppsala, which he believed to be approximately 25% (Nilsson 2013). In the corpus material collected in this research, only 12.5% of the students had a foreign language background. This may be because the students having a foreign language background are underrepresented in the college preparatory programs.

The research in this essay has focused on what students do in their writing, though there has intentionally been a blind eye to errors. The standard in corpus linguistics is to work based on error free data, however there is a great deal in subjectivity in determining what is an error and what is non-standard or non-native. This essay has chosen to include as much data as possible and the only omissions were due to not being able to understand the student's intention. Noun phrases including wrong prepositions and even subject-verb agreement errors within postmodifiers have not been eliminated. Eliminating errors may have made the text samples remaining in the various groups more varied, but no comments can be made concerning this as errors have not been counted but rather ignored.

Many students began their essays with "My best vacation memory is/was...". I suspect that the students used this lexical chunk because the instructions stated "Write about your best vacation memory." As this statement contains both an adjective and a lexical prehead, it could potentially affect my results when counting premodified nouns. A neutral title such as "A vacation memory", may have resulted in various adjectives being used, perhaps even pejorative adjectives like "My worst vacation memory". This title was chosen because essays with this title have been previously collected for ULEC and by retaining the title and description one hopes to allow for future research comparing larger student samples. However, in terms of this study which focuses on modification, the wording in my instructions could be understood as influencing an overuse of this particular phrase. In light of this, I chose to count this phrase as a modified noun phrase but not to consider it for evaluation as multiple modification.
6. Results

Each of the twelve essays in the subcorpus was subject to two separate analyses, as exemplified in Appendix 3. The analysis of pre- and postmodification at phrase level helps to show the frequency of modification in general, while examining embedding and multiple modification at the clause level shows a more accurate picture of structural complexity. General information concerning the student essays is presented in 6.1 followed by the results for the phrase level analysis in 6.2 and the clause level analysis in 6.3.

6.1. The Student Essays

Table 4 shows the word counts for each individual essay along with the Noun-to-Verb Ratio.

Table 4. Student Essays

<table>
<thead>
<tr>
<th>Code</th>
<th>Word Count</th>
<th>Clause Level</th>
<th>Phrase Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Noun-to-Verb Ratio</td>
<td>Total NPs</td>
</tr>
<tr>
<td>S3A</td>
<td>187</td>
<td>3.11</td>
<td>59</td>
</tr>
<tr>
<td>S3B</td>
<td>211</td>
<td>2.82</td>
<td>77</td>
</tr>
<tr>
<td>S1A</td>
<td>159</td>
<td>1.79</td>
<td>50</td>
</tr>
<tr>
<td>S1B</td>
<td>222</td>
<td>1.67</td>
<td>65</td>
</tr>
<tr>
<td>B3A</td>
<td>208</td>
<td>2.83</td>
<td>65</td>
</tr>
<tr>
<td>B3B</td>
<td>159</td>
<td>2.65</td>
<td>53</td>
</tr>
<tr>
<td>B1A</td>
<td>232</td>
<td>1.88</td>
<td>62</td>
</tr>
<tr>
<td>B1B</td>
<td>172</td>
<td>2.08</td>
<td>52</td>
</tr>
<tr>
<td>M3A</td>
<td>183</td>
<td>2.11</td>
<td>57</td>
</tr>
<tr>
<td>M3B</td>
<td>295</td>
<td>2.37</td>
<td>83</td>
</tr>
<tr>
<td>M1A</td>
<td>127</td>
<td>2.71</td>
<td>46</td>
</tr>
<tr>
<td>M1B</td>
<td>204</td>
<td>2.06</td>
<td>64</td>
</tr>
<tr>
<td>Averages</td>
<td>197</td>
<td>2.34</td>
<td>61</td>
</tr>
</tbody>
</table>

Table 4 shows that nonlexical heads account for an average of 43% of the NPs, though in one of the essays (S1A) that percentage is closer to 60%. Since pronouns and nonlexical heads are usually unmodified, these nonlexical heads increase the Noun-to-Verb Ratio, but lower the percentage of modified NPs. On average, approximately one-third of all noun phrases were modified.

Table 5 further shows the frequency and the ways in which the individual students used premodification, postmodification and a combination of the two in NPs at phrase level.
Table 5. Modification in Noun Phrases in the Individual Texts

<table>
<thead>
<tr>
<th>Code</th>
<th>Total NPs</th>
<th>Total Modified (%)</th>
<th>Modified Noun Phrases</th>
<th>Pre + Head</th>
<th>Head + Post</th>
<th>Pre + Head + Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>S3A</td>
<td>59</td>
<td>27 (46%)</td>
<td>6</td>
<td>13</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>S3B</td>
<td>79</td>
<td>23 (29%)</td>
<td>11</td>
<td>8</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>S1A</td>
<td>50</td>
<td>11 (22%)</td>
<td>1</td>
<td>6</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>S1B</td>
<td>65</td>
<td>15 (23%)</td>
<td>5</td>
<td>9</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>B3A</td>
<td>65</td>
<td>19 (29%)</td>
<td>3</td>
<td>10</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>B3B</td>
<td>53</td>
<td>21 (40%)</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>B1A</td>
<td>62</td>
<td>29 (47%)</td>
<td>10</td>
<td>11</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>B1B</td>
<td>52</td>
<td>15 (29%)</td>
<td>5</td>
<td>9</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>M3A</td>
<td>57</td>
<td>14 (25%)</td>
<td>2</td>
<td>9</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>M3B</td>
<td>83</td>
<td>29 (35%)</td>
<td>7</td>
<td>14</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>M1A</td>
<td>46</td>
<td>12 (26%)</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>M1B</td>
<td>64</td>
<td>19 (30%)</td>
<td>4</td>
<td>13</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>735</strong></td>
<td><strong>233</strong> (%)</td>
<td><strong>66</strong></td>
<td><strong>115</strong></td>
<td><strong>52</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Percentages</strong></td>
<td></td>
<td><strong>32%</strong></td>
<td><strong>29%</strong></td>
<td><strong>49%</strong></td>
<td><strong>22%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 shows that the average number of NPs modified was 32%, but the spread is considerable. One of the monolingual Swedish students used modification in just 22% of his NPs, while one of the bilingual students used modification in 47% of his NPs. Regarding where the modification was placed in reference to the head, 49% of the NPs had only postmodification, while 29% had only premodification and 22% had both pre- and postmodification.

6.2. Phrase Level Analysis

In Table 6, we see the summarized results from Table 5 sorted by language background.

Table 6. Modification of Noun Phrases based on Language Background

<table>
<thead>
<tr>
<th>Number of NPs</th>
<th>Modified NPs (%)</th>
<th>Type of Modification at Phrase Level</th>
<th>Pre + Head</th>
<th>Head + Post</th>
<th>Pre + Head + Post</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monolingual</strong></td>
<td>251</td>
<td>76 (30.3%)</td>
<td>23 (30.2%)</td>
<td>36 (47.4%)</td>
<td>17 (22.4%)</td>
</tr>
<tr>
<td><strong>Bilingual</strong></td>
<td>232</td>
<td>84 (36.2%)</td>
<td>26 (31.0%)</td>
<td>37 (44.0%)</td>
<td>21 (25.0%)</td>
</tr>
<tr>
<td><strong>Multilingual</strong></td>
<td>250</td>
<td>73 (29.6%)</td>
<td>17 (23.3%)</td>
<td>42 (57.5%)</td>
<td>14 (19.2%)</td>
</tr>
<tr>
<td><strong>Totals</strong> (%)</td>
<td><strong>735</strong></td>
<td><strong>233</strong> (31.7%)</td>
<td><strong>66</strong> (28.3%)</td>
<td><strong>115</strong> (49.4%)</td>
<td><strong>52</strong> (22.3%)</td>
</tr>
</tbody>
</table>

The multilingual students used modification 73 times (29.6%) and the monolingual students used modification 76 times (30.3%), showing that these two groups used modification equally. It is interesting to see that the bilingual students used modification considerably more often than each of these groups, with a total of 84 modified NPs out of 232 possible, a percentage of 36.2%.
Example (6) shows a bilingual student using both pre- and postmodification:

(6) One great memory I have from the vacation in Spain was when we climbed a big mountain and saw an amazing view over the city.

(B3B - bilingual male, aged 18)

By combining the number of NPs with postmodification and pre- and postmodification, it is possible to calculate that the bilingual group also uses more postmodification 58 times (25%) when compared with either the Swedish students who use postmodification 53 times (21%) or the multilingual students who use postmodification 56 times (22%). However, the differences between all three groups are minimal.

Example (6) shows the head noun memory premodified by great and postmodified by the relative clause I have from the vacation in Spain. However, there is an additional postmodification within the postmodifier where the noun vacation is postmodified by the prepositional phrase in Spain. Since Spain itself is not modified, it is not counted in the figures shown in Table 6. Table 7 shows the breakdown of postmodification based on type, including postmodifiers within postmodifiers and this accounts for the difference in postmodification frequency between Table 6 and Table 7.

Table 7. Types of Postmodification Based on Language Background

<table>
<thead>
<tr>
<th>Types of Postmodification</th>
<th>Finite Clause</th>
<th>Nonfinite Clause</th>
<th>Prepositional Phrase</th>
<th>NP in Apposition</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monolingual</td>
<td>13</td>
<td>7</td>
<td>47</td>
<td>16</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>16%</td>
<td>8%</td>
<td>57%</td>
<td>19%</td>
<td>19%</td>
</tr>
<tr>
<td>Bilingual</td>
<td>18%</td>
<td>16%</td>
<td>49</td>
<td>6</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>18%</td>
<td>16%</td>
<td>59%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Multilingual</td>
<td>13%</td>
<td>4%</td>
<td>50</td>
<td>8</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>18%</td>
<td>4%</td>
<td>68%</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Totals</td>
<td>41%</td>
<td>23%</td>
<td>146</td>
<td>30</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>17.1%</td>
<td>9.6%</td>
<td>60.8%</td>
<td>12.5%</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

My results confirm the proposition that prepositional phrases are the most common type of postmodification (Greenbaum and Quirk 2010: 375). This is confirmed by all three language background groups. Jucker states that prepositional phrases are the least explicit form of postmodification (2012: 68), and thus it is interesting to note that the multilingual students use prepositional phrases almost 10% more frequently than the bilingual students. This could indicate that the multilingual students use the simplest and least complex form of postmodification. However, Jucker's caution that some verbs can demand the prepositional phrase as a modifier must be heeded, and without a semantic analysis it is difficult to draw conclusions regarding the significance of this 10% gap.
Also regarding the types of postmodification, the number of non-finite clauses seemed particularly high for the entire subsample; indeed, the bilingual students used non-finite clauses for almost one out of six postmodifiers. In Example (7), a monolingual student uses an infinitive clause as a postmodifier and in (8) a bilingual students uses coordinated infinitive clauses in the same noun phrase.

(7) It was a beautiful morning to see animals on and we all were super excited.

(S1B - Monolingual, aged 16)

(8) It was sure an experience to be there and to be independent for ones (sic).

(B1B - Bilingual, aged 16)

While differences in the frequency and type of postmodification at the phrase level were interesting, statistical testing using the chi-square method revealed that language background was not a significant factor at the phrase level analysis.

6.3. Clause Level Analysis

The clause level analysis was used to find complex structures of embedded NPs. Table 8 shows that of the 735 noun phrases altogether, 252 of them were embedded or roughly 34%. We also see that embedded NPs are most frequent among the bilingual students, with embedded NPs occurring 10% more frequently than in the texts authored by monolingual students.

Table 8. Top-Level versus Embedded Noun Phrases Based on Language Background

<table>
<thead>
<tr>
<th>Language Background</th>
<th>Top Level NPs (%)</th>
<th>Embedded NPs (%)</th>
<th>Total NPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monolingual</td>
<td>176 (70%)</td>
<td>77 (30%)</td>
<td>253</td>
</tr>
<tr>
<td>Bilingual</td>
<td>140 (60%)</td>
<td>92 (40%)</td>
<td>232</td>
</tr>
<tr>
<td>Multilingual</td>
<td>167 (67%)</td>
<td>83 (33%)</td>
<td>250</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>483 (66%)</strong></td>
<td><strong>252 (34%)</strong></td>
<td><strong>735</strong></td>
</tr>
</tbody>
</table>

However, when it comes to modification within embedded NPs, Table 9 shows that it is in fact the monolingual students that use modification in embedded NPs to a greater extent than either the bilingual or the multilingual students. There are not many percentage point differences between these three groups, but it is interesting to note that all three groups use modification in
more than half of the embedded NPs.

Table 9. Modification of Embedded NPs Based on Language Background

<table>
<thead>
<tr>
<th></th>
<th>Non-Modified Embedded NPs</th>
<th>Modified Embedded NPs</th>
<th>Total Embedded NPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monolingual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>42.9%</td>
<td>44</td>
<td>77</td>
</tr>
<tr>
<td>Bilingual</td>
<td>42</td>
<td>50</td>
<td>92</td>
</tr>
<tr>
<td>45.7%</td>
<td>54.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multilingual</td>
<td>41</td>
<td>42</td>
<td>83</td>
</tr>
<tr>
<td>49.4%</td>
<td>50.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>116</strong></td>
<td><strong>136</strong></td>
<td><strong>252</strong></td>
</tr>
<tr>
<td><strong>%</strong></td>
<td><strong>46.0%</strong></td>
<td><strong>54.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>

In Table 9, a closer look at embedded NPs is shown, comparing the frequency of modification in embedded NPs to the total number of embedded NPs. In Table 10, we compare the frequency of modification in top level NPs and embedded NPs.

Table 10. Modified NPs Based on Language Background

<table>
<thead>
<tr>
<th></th>
<th>Modified Top Level NPs</th>
<th>Modified Embedded NPs</th>
<th>Total Modified NPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monolingual</td>
<td>32</td>
<td>44</td>
<td>76</td>
</tr>
<tr>
<td>42.1%</td>
<td>57.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bilingual</td>
<td>34</td>
<td>50</td>
<td>84</td>
</tr>
<tr>
<td>40.4%</td>
<td>59.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multilingual</td>
<td>31</td>
<td>42</td>
<td>73</td>
</tr>
<tr>
<td>42.5%</td>
<td>57.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>97</strong></td>
<td><strong>136</strong></td>
<td><strong>233</strong></td>
</tr>
<tr>
<td><strong>%</strong></td>
<td><strong>41.6%</strong></td>
<td><strong>58.4%</strong></td>
<td></td>
</tr>
</tbody>
</table>

These results are the closest of all the results, with only a two-percent difference between all three groups. However, it is interesting to note that once again the bilingual students stand out as being the group that does not follow the trend. Both monolingual and multilingual students modify more frequently in top level NPs than the bilingual students, while the bilingual students modify more frequently in the embedded NPs than either of the other two language groups.

To summarize the results from the clause level analysis, the monolingual students have a greater frequency of modification within embedded NPs, while the bilingual students have a higher percentage of embedded NPs. When subject to chi square testing, these results were not statistically significant.
7. Discussion of Results

The aim of this paper was to answer three research questions:

- How do learners of English in Sweden modify nouns in descriptive writing?
- Are complex noun phrases more common among students within a particular language background group?
- Can the frequency of noun modification or type of noun modification be used as a measure to reveal multilingual competence?

Despite the limitations of the research and the limited number of surveys used, the numbers do reveal some interesting results. The results are not statistically significant and thus it is impossible to draw general conclusions beyond the scope of this research paper. However, at times the differences between the language background groups were as large as 10- percentage points, and this can still be understood as a showing tendencies considering the limited size of the texts analyzed.

7.1. NPs in Student Essays

The analysis revealed that the male students examined in this report used modification in nearly one-third (32%) of the NPs. More than 4 of 10 NPs consisted of nonlexical heads which do not allow modification, which means that of the 67% of NPs consisting of lexical nouns, half of these were modified in some way. Postmodifiers were more common than premodifiers, and prepositional phrases were by far the most common postmodifiers. Embedded NPs, another complex NP structure examined, accounted for 252 of the 735 NPs. Consider (9) where no fewer than four embedded noun phrases can be found in the direct object:

(9) [...] and because we had pre-booked our tickets we managed to sneak past the endless lines of people waiting with the hopes of the opportunity for some extra tickets.

(M3A - Multilingual, aged 18)

The top-level head noun lines is followed by a series of embedded NPs: the embedded head noun people being modified by the nonfinite clause waiting with the hopes; the noun hopes in turn is modified by the prepositional phrase of the opportunity and the word opportunity is further modified by the prepositional phrase for some extra tickets. A diagram connecting the head nouns to their postmodifiers in Figure 1 shows how the structure of the sentence deepens with each new embedded NP.
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Deep within the structure of embedded NPs in Example (9), the student has added a premodifier to the final noun phrase. In one sense, this is similar to the opening noun phrase; *endless lines* and *extra tickets*, both are premodified with a single adjective phrase. However, the noun *tickets* is not merely dependent on the top-level noun but also on all of the other nouns in between. One could almost say that the word *lines* has four levels proceeding after it while the word *tickets* as four levels preceding it.

In Example (10) we have the direct object *shop* followed by a relative clause with no fewer than three premodifiers within the embedded NPs. The premodifiers are in italics.

(10) The same evening that day we found [ a shop [ that sold [ Spanish and Greek spices ] and [ different [ mixes of [ them both. ] ] ] ] ]

(B1A - bilingual, aged 16)

Jucker’s results showed that the up-market newspapers had embedded nouns roughly 40% of the time. The results from this subcorpus were just slightly more than 30%. However, half of the embedded NPs are also modified. Perhaps it is the descriptive genre of the essays that accounts for the high use of embedded NPs; both (9) and (10) have a natural flow in the description that is achieved by having one NP stacked on top of another, as if a red carpet of description is being unrolled.

7.2. Multilingual Competence Revealed?

The second research question related to whether or not there was a distinction in the ways the students in the various language background categories used modification or embedding of NPs in their writing. According to Jessner’s Dynamic Model of Multilingualism, one would anticipate that the bilingual and multilingual students would outperform the monolingual students. While it was true that the bilingual students outperformed the monolingual students, the multilingual
students used the least modification, used prepositional phrases the most, and had the fewest embedded NPs as well as the lowest embedded modification. While the bilingual students had the highest averages, there was generally a very insignificant difference between the monolingual and bilingual students. The greatest distinction was in the amount of embedded NPs where the bilingual students had embedded NPs that accounted for 40% of the total number of NPs in comparison to 30% among the monolingual students. There was only one point where the Swedish-speaking students outperformed and that was in the percentage of modification within embedded NPs (57%).

For the purposes of this paper, I have assumed that the bilingual students have acquired both Swedish and a second language simultaneously prior to learning English, and that the multilingual students have learned English after learning Swedish which was acquired after their respective first languages. The results of the research seem to indicate that those students who acquired two languages simultaneously had a greater multilingual competence. This may be due to several reasons, but one major difference between the two groups is the aspect of time. The bilingual students had a multilingual competence dating from their earliest childhood. The multilingual students had been in Sweden on average 8.5 years. Another difference could be the difference in the quality of the second language acquisition. If the multilingual students were exposed to English after only a short time acquiring Swedish, then the students most likely had not gone through all three stages of language acquisition of their L₂ before beginning the initial stage of acquiring their L₃. If this is true, then the order of acquisition would not be truly consecutive, but would rather be acquiring two languages simultaneously after acquiring the L₁. Additional information regarding the routes of acquisition could provide a more clear picture as to why the multilingual students were the ones who produced the least complex noun phrases.

Jessner’s study revealed a considerable variation between students with multilingual competence that this study did not find. This may be due to the fact that noun phrase modification is not a good way to measure syntactic development. However, it may also be due to the fact that the monolingual Swedish students were exposed to English so early that they, too, have developed a multilingual competence similar to that of students growing up in bilingual families. This study contradicts previous studies in that it appears that the language group with the strongest disadvantage are actually those third language learners of English who have Swedish as a second language. This may be due to the fact that their Swedish has not yet been fully acquired and the gaps in their second language are contributing to a difficulty in acquiring a third language. Perhaps, then, it is the sequence of acquisition that is leading to a lower multilingual competence among multilingual students.

Another viable interpretation of the results is to examine the relative insignificance in differences between the bilingual students and the monolingual students. This seems to indicate that the Swedish students also benefit from a multilingual competence, almost to the same extent as children growing up in bilingual families. This could be understood as proof that Sweden, as
Jenkins claims, is a special case with students being exposed to English at such a young age that English is more understood as their second language than as a foreign language.

The results are unfortunately too insignificant to state positively whether or not NPs can be used as a definite measure of multilingual competence. Parkinson and Musgrave's research was clearly more conclusive in regards to NPs revealing language advancement than this study was able to show. This being said, for the students in this report, the bilingual students outperform the monolingual and multilingual students on all points except one. It is, however, uncertain whether these results could be understood as universally applying outside the limits of this study.

7.3. Ignoring Errors

It is not unproblematic to say that an increased number of postmodifiers is directly equivalent to an advanced usage of the language. In (11), we see an extensive noun phrase with several embedded noun phrases.


(S1A, monolingual, aged 17)

While the noun phrase is not completely error-free, there is no difficulty understanding what the student is trying to express. With the multiple layers of modification and embedded noun phrases, it is clear that the student has developed some understanding of how to effectively use postmodification. However, this example is clumsy and rather than giving the impression of advanced writing skills we observe elementary phrase-stacking completely different than the natural flow of NPs observed in examples (9) and (10) above.

With any corpus, the researcher must make decisions about what is to be considered - is all material to be evaluated or only the language that is error-free? While the sentence examined in example (10) contains a spelling error and an incorrect preposition, these errors do not affect either the syntactic structure of the noun phrases or the ability to understand the author's intention. In this study I have chosen to include all noun phrases at the phrase level, and to also look at the multiple modification in cases where there was little or no ambiguity regarding clause structure. Since this is learner language, there are a considerable number of errors of a similar nature to those seen in (10); however, there are only a few instances in the corpus where analysis has not been possible due to ambiguity.

In my analysis, errors were marked with an * as is standard; however, they were not eliminated from the results. Therefore, it is impossible to speculate whether errors were more common among one of the language background groups. This additional information may have provided additional insight regarding multilingual competence particularly if the elimination of
nonstandard phrases would have led to statistically significant differences in the categories that were examined.
8. Concluding Remarks

My aim was to examine modification in NPs within texts written by monolingual, bilingual multilingual learners of English in Sweden. I wanted to see whether language background could be connected to the frequency of modification or the use of more complex NP structures such as embedded NPs and embedded modification. The results of the phrase-level and clause-level analyses both pointed to the bilingual students creating more complicated NPs and using modification more frequently. This lines up with Jessner's Dynamic Model of Multilingualism that claims that a learner that already has acquired a second language will have an easier time acquiring a third due to the addition of the multilingual competence already achieved in the final stage of acquiring the L2. However, the multilingual students, who would also be expected to perform better according to this theory, were clearly outperformed by the Swedish students. The closeness in results between the monolingual and bilingual students seems to indicate that the monolingual students also have a degree of multilingual competence, which may be a direct result of early exposure to English both within the classroom and within Swedish society.

8.1 Future Research

Overall, the differences between the students based on their language background lacked statistical significance and it is impossible to draw general conclusions. Having a larger subcorpus would clearly have added to the investigation. It would also be interesting to compare not only male but also female students with different language backgrounds to see if there are any observations to be made within groups and not only between groups.

It would also be interesting to compare students as they progress in their education. Time to follow the same group over time and collect more writing samples would allow a more accurate picture of syntactic development in the acquisition of English as a second or third language. The amount of time that a student has lived in Sweden is noted but does not affect the way the student is included in the statistics. However, it could be deemed that there are significant differences within the group of multilingual students considering one of the students has lived in Sweden for only five years while another student has lived in Sweden for twelve years.

While the Dynamic Model of Multilingualism states that multilingual students should have an advantage in acquiring a third language, it would also be helpful to have a more complete understanding about how extramural English affects the process of acquisition. One can also speculate how the results would have been different if the language the students were trying to acquire was a foreign language other than English, since English is a language that is clearly more accessible within the Euro English community than other modern languages. The fact that the
results of the study were not statistically significant may reveal more about the status of English as a global language and more particularly about the impact the English language has had within Sweden. Perhaps the main result verified in this research project is that the monolingual students are exposed to English at such an early age that they are able to benefit from a multilingual competence almost parallel to bilingual students.
References


Jaensch, Carol (2013) "Third Language Acquisition: Where are we now?" *Linguistic Approaches to Bilingualism*. 3:1. 73-93.


Uppsala Learner English Corpus.


Appendix 2 - Language Background Survey

I undersökning ingår även att skriva en kort text (200-300 ord) om din favoritsemester. Texten ska skrivas på ENGELSKA. Denna text skriver du på en hemsidan. Länken för din uppsats är:

http://www2.engelska.uu.se/uppsats/uppsats.php?id=______________(bokstäver)


Enkät:

1. Kön:
   kvinna man

2. Skolår:
   1 2 3

3. Gymnasieprogram:
   __________________________________________

4. Programmet undervisas i följande språk:
   ________________________________

5. Har du tidigare gått på ett annat program?
   Ja Nej

6. Om du svarat "Ja", vilket program gick du på tidigare?
   __________________________________________

7. Född i (land):
   ________________________________

8. Födelsedatum:
   ________________________________

   __________________________________________

10. Bott i Sverige (antal år):
    ________________________________
11. Moderns modersmål: (Elaborated during class to specify "language mother speaks at home")

12. Faderns modersmål: (Elaborated during class to specify "language father speaks at home")

13. Bor tillsammans med följande familjemedlemmar:

(Skriv inte personernas namn utan hur du "hör ihop" med dem, t ex mamma, en äldre bror, en yngre syster och morfar)

14. Har du bott i ett engelsktalande land?
Ja  Nej

15. Om du svarade "Ja", hur länge bodde du där?
____________ months ___________ years

16. På en skala 1-5, hur duktig är du på SVENSKA?
1  2  3  4  5

17. På en skala 1-5, hur duktig är du på ENGELSKA?
1  2  3  4  5

18. Finns det något annat som kan ha påverkat just dina kunskaper i engelska?
(T.ex, Du bodde utomlands där du gick på en engelska skola, hade en bekant som talade engelska, etc.)

*This language background survey was inspired by a survey in Social Networks and Proficiency in Swedish (Wiklund 2002)
Appendix 3 - Multi-Level Analysis

The following charts are based on the following text written by Student "S1A":

4-5 years ago (I think) I went to Tenerife. It was the first time I travelled to another country that had another climate than here in Sweden. What I loved the most about the climate was the palms and the moist air. I loved the feeling when we walked around at the evening when we searched for some restaurant that we wanted to eat at. But the ocean and the beaches was incredible too. The water wasn’t as warm as I expected, probably because Tenerife lies out in the sea. But the waves were huge and it was so fun to bath and play in the water. I hope I can return there or somewhere else where there is as big waves as it was over there. We were there for one week, I didn’t want to go home when we did. But you can’t stay forever, then it wouldn’t be as fun to return there again some time.

1) Phrase Level Analysis

- Nonlexical Head: 26
- Proper Names: 3
- Lexical Head: 21
- Modified NP: 10 (20%)
- All Noun Phrases: 50
- Total Words: 159

Modified NP's: 10
- Pre + Head: 2 (20%)
- Head + Post: 6 (50%)
- Pre + Head + Post: 2 (30%)

Modified NPs

<table>
<thead>
<tr>
<th>Det</th>
<th>Premod</th>
<th>H</th>
<th>Postmod</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4-5 years ago, I think</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>another country that had another climate than here in Sweden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>another climate than here in Sweden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>what I loved the most about the climate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>the moist air.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>the feeling when we walked around at the evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>evening when we searched for some restaurant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>restaurant* that we wanted to eat at</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>somewhere else where there is as big waves as it was over there</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>big waves</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 3, cont’d

2) Counting Heads by Clause Level Analysis

**SUBJECT:** I /

**VERB:** loved /

**OBJECT:** the *feeling* [ when *we* walked around ] [ at the *evening* ] [ when *we* searched for some *restaurant* ] [ that *we* wanted to eat at ]

**SUBJECT:**

Top Level: Nonlexical head (*I*)

**OBJECT:**

Top Level: Lexical Head (*feeling*)

Embedded: Nonlexical Heads (*we, we, we*)

Lexical Heads (*evening, restaurant*)

3) Counting Embedded Modification by Clause Level

<table>
<thead>
<tr>
<th>Top-Level Noun Phrase</th>
<th>Embedding Level 1</th>
<th>Embedding Level 2</th>
<th>Embedding Level 3</th>
<th>Embedding Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>the feeling</td>
<td>when <em>we</em> walked around</td>
<td>in the <em>evening</em></td>
<td>when <em>we</em> searched for some <em>restaurant</em></td>
<td><em>we</em> wanted to eat at</td>
</tr>
</tbody>
</table>

**Top Level Noun:**

feeling

**Top Level Noun Phrase Modification:**

feeling *when we walked around in the evening* (postmodification: finite clause)

**Embedded Noun Phrases:**

we, evening, we, restaurant*, we

**Embedded Noun Phrase Modification:**

*evening when we searched for some restaurant* (postmodification: finite clause)

*restaurant* *we wanted to eat at* (postmodification: finite clause)