Syntactic Analysis of L2 Learner language:

Looking closer at the Noun Phrase

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Abstract
This paper is a study of the noun phrase construction in L2 learner language and the base for the study are the tools for measuring syntactic maturity presented by Kellog W. Hunt (1966). Hunt and other scholars have used T-units, the smallest terminable unit in language, to analyze L2 learner language. This study however, analyzes the construction of the noun phrase instead of T-units. Although the focus differs there are many similarities between the method used in this study and in those analyzing T-units. This means that the study tries to create indexes which we can use as tools for measuring syntactic maturity and complexity among L2 learners, by measuring consolidation and postmodification. The outcome of the study shows that it is possible to measure consolidation of the noun phrase and that this figure may very well function as a tool for measuring language development. Furthermore this paper investigates opportunities for teachers to teach syntax and concludes that there are ways of improving L2 teaching by utilizing knowledge about L2 learner syntax.

Keywords: Noun phrase construction, L2 learner language, syntactic development, syntactic maturity, T-units
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Preface

I would like to thank Christine Johansson for all the help with this paper. Without her determination to help me and all the invaluable advice she has given me this paper would not have existed. I would also like to seize the opportunity to thank Simon Hedman for all the great conversations about syntax and approaches to second learner language.
Introduction

Teaching English to second language learners (abbreviated L2 learners from here) offers a great many challenges to the teacher. Students must attain knowledge in several parts of a language to be able to utilize the language to its full potential and it is this task, to make sure they are able to do this, the teachers are trusted with. When it comes to students' language development and syntactic maturity there are several ways of measuring at what level of L2 development a student is, from the holistic point of view to the more syntactical. This could come down to whether or not the student writes consolidated sentences using a descriptive and complex language, to what length he or she uses subordinate clauses, or simply, subjectively analyzing to what extent the student writes with vividness and force of expression. All of these examples are ways of determining what level of performance a student is operating at. The latter however does not dissect language into parts for the analysis, something which is problematic because of the unavoidable subjectivity that follows such an analysis. When measuring syntactic maturity and language development teachers need tools adding objectivity to the analysis. Therefore scholars have been developing ways of dissecting language down to smaller units which can be used in different kinds of measures of syntactic development and capacity. One influential scholar on this matter is Kellog W. Hunt who argues that sentence length is an insufficient measuring tool for syntactic maturity and instead presents us with the concept of T-units. T-units are, as he describes, ”the minimal terminable unit” and a single T-unit consists of a main clause and any subordinate clauses attached to it or embedded within it (Hunt 1966: 737). The T-unit is a very useful tool for syntactic analysis and has been used in several papers that analyze texts from the relatively new learner English corpus called ULEC (see Johansson and Geisler 2009).

The concept of T-units has been very influential and has been used for over four decades. The focus of this paper will, however, not be on T-units. Instead the study will deal with the noun phrases in Swedish L2 learner writing. More specifically, how students form noun phrases and whether or not they tend to use subordinate clauses as postmodifiers when they write. When using T-units in a syntactic analysis you also calculate how many words are in them but the distribution of different kind of items within the clauses is not measured. Since the use of modification of nouns, among other things, could be a sign of descriptive and complex language it would be very interesting to analyze the noun phrase as a measurement of syntactic complexity. It is not fair to say that this particular area has been overlooked but further research of L2 learners’ noun phrases is needed.
Reasons for a syntactic study of learner English

As it is a method by which we explain language, grammar will inevitably be brought up when teaching a foreign language. Popular belief also has it that grammar is not particularly popular with students learning a language. However, a recent study asking students if they liked grammar, showed that more than half of the participants answered yes (Isaksson 2006). The problem remains, how do we teach grammar in a way that helps students improve their spoken and written language? There are of course many ways of looking at this and many scholars have written about these issues, among those are Ellis and Barkhuizen (2005) and Ellis (2006).

If you study how grammar teaching is carried out you will eventually end up looking at either an inductive method or a deductive one. The deductive and the inductive methods can, in other words, be described as explanatory grammar teaching vs. exploratory grammar teaching (Harmer, 2007:203-208). The deductive method presents a set of rules which are then practiced in the form of grammar exercises. From the knowledge hopefully derived from them students are expected to write and speak according to their acquired knowledge. The inductive way of teaching grammar is about contextualizing and working from a needs analysis. An example of this is Rohm (2006) who gives us a method for working with grammar from students’ texts. Students are given assignments and write about a subject and after several drafts the essential grammar errors from the final versions are then highlighted and presented to the students which then work with their own errors. This method, which aims at including grammar teaching in the process of writing, gives the teacher a way of working with things the students actually have problems with instead of imposing the teacher’s ideas on what areas students should have problems with. While you cannot force a particular method onto a teacher it is important that teachers have an understanding of what language development actually looks like through the years of school. Furthermore, if a teacher has this perspective when planning lessons or marking texts, it would add another dimension beyond subjectivity.

Furthermore, the Swedish Curriculum for the non-compulsory school system (Skolverket, 1994) states that it is the school’s responsibility to ensure that every student who completes “a national or specially designed programme or an individual programme combined with vocational education during employment i.e apprenticeship training within the upper secondary school or upper secondary adult education […] can use English in a functional way in vocational and daily life and for further studies” (Skolverket 1994:11). While these guidelines may seem fairly clear they do not state how teachers should teach in order to get there. Moreover, these guidelines do not stress correct writing. Instead we have to look at the criteria for the English C course which is the only course that mentions this in its criteria description. Since this is an elective course only selectable by students at academic programs it means that not all students receive education in writing correctly. Of the four language skills; speaking, listening, writing and reading there is no separating one from another since language acquisition progression is made by practicing each one alongside the others. Integrating all four skills in multilayered exercises is probably the best
way of achieving progress (Harmer, 2007:265f). However, since writing is such a big part of the second language acquisition process and practicing writing is also the best way to learn about advanced English syntax, it is important to assure that teachers know how to teach this in the best possible way. Otherwise there is a risk that students without the ability to select the English C course will be left with insufficient knowledge of syntax, insufficient enough not to reach the general goals for English in the curriculum. However, with the knowledge attained from studying syntax and by using information gained through it, teachers should be able to produce exercises and assignments that better develop the students’ own syntax.
Aim and scope

As mentioned earlier, teachers struggle with questions such as what language education should look like and how to assess students’ writing in the best possible way. If there is a way to improve the situation by finding new and better tools to work with when planning lectures and grading texts produced by students it would be very valuable for teachers. This paper will suggest one kind of tool for measuring syntactic development and complexity. To do this study has three aims.

Specific aims and questions of the study

- To analyze, investigate and evaluate the noun phrase construction of 29 senior high school students. One group of eight first year students and one group of seven third year students from a high proficiency school, will be compared to each other and also compared to two control groups consisting of students from year 1 and 3 of an average upper secondary school. All groups have an even distribution of male and female students. The comparison aims to unfold differences and/or similarities between or within groups to give teachers new outlooks on teaching grammar and determining language maturity.

- To look at the different parts of the noun phrase and try to see in what ways the noun phrase construction of L2 learners can function as an indication of maturity and complexity.

- To provide some new ideas and input on measuring students’ syntactic maturity and development.

With this study I hope fill possible knowledge gaps in the field of L2 syntax and hopefully add new information to this scientific field. When analyzing T-units scholars have looked at how long or short they are in order to determine language maturity and development (see e.g. Johansson and Geisler, 2009 and forthcoming, Bergman 2010). To do this they have looked at error free T-units and thus possibly excluded material which could be of importance in a study. This study, with its focus on the noun phrase will look at every noun phrase without paying heed to whether it is erroneous or not and therefore open up for a wider collection of data that may tell us
something else or possibly add something to the studies already made on L2 learners’ T-units. It is also worthwhile to mention that, to the best of my knowledge, no study of L2 learner noun phrases has yet been undertaken. The subject has been touched at some points but has never fully been taken into consideration in an analysis.

Furthermore it is worthwhile to mention more specifically what is meant by ”language maturity”. The general consensus within the field of syntactic studies is that maturity to a somewhat large extent means more advanced writing. There are however discrepancies in what scholars views as advanced language. Hunt (1966) views it, among other things, as depending on the average length of T-units while Johansson and Geisler (2009 and forthcoming) specifies it as more depending on the correct use of subordinate clauses. Bergman (2010) adds the notion of consolidation within clauses and sentences as an important factor, something Hunt also mentions but their views differ somewhat. As postmodification often is carried out in the form of a subordinate clause it is not altogether implausible, in line with Johansson and Geisler (2009 and forthcoming), to view texts with a great deal of modification (in the sense of modifying a noun), as complex and written by a student with a high level of syntactic maturity. This paper, which analyzes the entire noun phrase, also adds premodification to the investigation to determine if this factor has statistical significance.

**Delimitations**

Hunt’s method of analyzing L2 language resembles the method used in this study to a large extent and it is therefore viable to use his research as a platform for analyzing the noun phrase construction. However his T-units will not be used as a tool in this analysis since they focus on clauses. The calculations I have done are however bases on and inspired by Hunt’s ways of using collected data. Instead of looking at clauses, the paper will go within the clausal structure down to its phrasal sublevel, where I will analyze complexity. Furthermore this type of study requires the texts to be studied very carefully and thoroughly which motivates the relatively few texts (29) included. Analyzing texts on a broader scale would however without doubt be very fruitful but it would require more persons involved and significantly more time.
Previous research and theory

While this paper may, still to the best of my knowledge, be the first to investigate the noun phrase in particular with English L2 learners, it is in no way the first to investigate and evaluate learner English. Instead this is a field in English syntax which has been explored to a large extent by Johanson & Geisler (2009 and forthcoming) and several teacher students at the Department of English. Several meta-studies amassing data from several studies of L2 syntax, among which Polio (1997) and Ortega (2003) are notable, have also been written. L2 learner syntax is a well documented field and therefore my paper just adds to the data already collected through previous surveys. Some of the theories have already been highlighted in earlier sections but some scholars with research adjacent to this particular study need to be mentioned.

As mentioned previously a T-unit is a main clause and any subordinate clause in front, after or embedded within it. According to his theory sentence length is not a very good measurement of syntactic development, complexity and maturity. This is because, once in a while, an immature writer will stack main clauses after each other using coordination in the form of an ”and”, instead of writing in main clauses ending with a full stop. An analysis of such sentences will inevitably be faulty because this will indeed produce long sentences but immature and non-complex ones (Hunt 1966:737). Instead he measures the number of t-units per sentence and, among other things, the average length of each one to come to a more precise result. However the full T-unit analysis uses the following tools; ”Subordinate clause index” which is the number of clauses in every T-unit, ”Average clause length” which is the number of words in every clause, ”Average T-unit length” which is mentioned above and aims to give an indication of the complexity of each T-unit, ”Average sentence length” which indicates how many words each sentence has and the ”Main clause coordination index” which measures how many sentences each T-unit is comprised of. With the use of this measuring system we can come to conclusions on what syntactic maturity is and how it appears in learner English. Moreover there is one thing which deserves a comment and it is the concept of syntactic complexity as something good in itself, a sort of virtue. This is not necessarily an absolute truth since many studies use standardized tests as the basis for their analyses and this is bound to have some effect on the material used (Gaies 1980:56f). This means that students might not be performing at a level which is representative of their own maturity when the frame of an assignment is narrow and possibly unfitting for some students. This is however a situation which is to some extent resolved with the use of the ULEiC corpus which uses authentic material. Many interesting studies have been made in this field using the outlines provided by Hunt (1966) and some of them are given extra attention below.

One interesting study written by Johansson and Geisler (forthcoming) investigates language complexity in the same fields as this paper. In that paper they reach conclusions such as:
• The problems in measuring due to unreliable tools
• That subordination is used very little in junior high school
• That subordinate clause index is the most reliable measurement
• That language development can be seen by looking at age but that gender is insignificant and has no correlation to whether the learner has a complex language or not.

Another study within the field of L2 learner syntactics written by Bergman (2010) brings up the significance of looking at consolidated sentences in addition to measuring T-units. To measure consolidation, according to Bergman, means looking at what is inside a clause and looking at how much information can be stored in a single clause. This can then be used as an indication of language maturity. This can be illustrated by the following sentence which is an immature one and also one with low complexity "The whale is big and the and the whale is long and the whale is white". This could be written as: "The big white whale is long" will result in fewer T-units but more complex ones. Consolidation can also be achieved by changing verbs to ones that hold more meaning, with fewer words but more complexity as a result.

Grammatical background

Among scholars, there is no final agreement on the exact structure of the noun phrase or on what elements should or should not be included in the concept. However, this study uses the definitions and the analysis put forward by Greenbaum & Quirk (2007). The noun phrase is described by them as comprised by three elements. The first element is the head, "around which the other components cluster and which dictates concord and other kinds of congruence with the rest of the sentence outside the noun phrase" (Greenbaum & Quirk 2007:363). The second element is the premodification, "which comprises all the items placed before the head – notably, determiners, adjectives, and nouns." (Greenbaum & Quirk 2007:364) It is worth noticing that this study treats determiners as a unit by itself and not a part of the premodification. Moreover we have the last and third element which is the postmodification which takes on the role of "comprising all the items placed after the head – notably, prepositional phrases, nonfinite clauses, and relative clauses" (Greenbaum & Quirk 2007:364). Apart from the position in relation to the head, the two other elements can also be viewed in terms of permanent or temporary. Greenbaum and Quirk suggest that premodifiers contain information which is permanent. This is not always the case and as such premodification can also be explained in terms of containing information with characteristic features. While the permanency of the premodification may suggest that postmodification is temporary, this is not altogether true. A postmodifier, while able to take on many aspects, often comes in the form of a wh-relative clause and since the nature of relativizers (see explanation below) is to emit signals of relativity or in other words, temporariness. Therefore the information contained within a postmodifier tends to be not as definite as the information
contained within a premodifier. In other words, “those adjectives which cannot premodify, have a notably temporary reference” (Greenbaum & Quirk 2007:365).

Since this study, among other things, aims to look at the use of subordinate relative clauses as postmodifiers, a general run-through of the different relativizers used as subordinators along with the different kinds of postmodification will follow. When it comes to relativizers, the most common ones are:

- which
- who
- whose
- when
- why
- where
- that
- whom

Whom is nowadays slightly archaic and the use of it has very formal implications. The reason for its decline in use is according to Schneider the loss of case endings in English (Schneider, 1992:437). Whenever postmodification of a head comes in the form of a relative clause the clause itself can be any of the following: nonrestrictive relative clause, restrictive relative clause or a sentential relative clause. There is also postmodification by appositive clauses which are characterized by Greenbaum & Quirk (2007:371) as a clause which describes an abstract noun or fills it with meaning e.g.:

(1) the old saying that absence makes the heart grow fonder is definitely true.

However sometimes it is not a question of abstraction such as in the case of the following example; *Hillary Clinton, the president is here*. From this we learn that there are two types of apposition with the latter being a form of coordination (Greenbaum & Quirk 2007: 382f). Postmodification can also take on the form of nonfinite clauses. This is recognized by the -ed and -ing participle or by infinitive to clauses. It can also be slightly simpler such as the prepositional phrases used as postmodification e.g. the house near the church or with the genitive of-construction e.g. a man of few words (Greenbaum & Quirk 2007:372ff). Furthermore it is possible for a single head to have more than one postmodifier as shown in example (2):

(2) things that I never hear [when the sun is shining] (female student, aged 15, academic program)
Greenbaum and Quirk also notes that multiple modification often make sentences ambiguous. According to them the \(-s\) genitive is often a cause for this and they make a point of using the \(of\)-genitive instead because writers then avoid discontinuity in their sentence structure (Greenbaum & Quirk 2007:381).

Although we already mentioned premodifiers as a part of the noun phrase there are some elements to it which is important to relate to when analyzing noun phrases. A premodifier consists of determiners, adjectives and adjectives with participle endings (\(-ing\)), regular nouns, nouns with the \(s\)-genitive and adverbials. Heads can also be subjected to multiple modification by premodification as in the following example; *His last brilliant book* (Greenbaum & Quirk 2007:388f). However this paper will only consider the number of words in each premodifier rather than determining whether the head is subjected to multiple modification by premodification. The same applies for quantifiers within premodifiers which will also only be counted without paying any special heed to them other than considering them as words within a premodification.
Method and design

The main part of the data which is analyzed in this paper comes from two different classes in year 1 and 3 at a high achieving senior high. Students who attend this school have above average grades and they perform very well on national tests. The data from this school has been contributed by two teachers. These have in turn made a selection within the classes resulting in eight texts from year 1 and seven texts from year 3 with an even distribution between males and females. In turn, this data has been incorporated into the ULEC, an English learner corpus compiled at the Department of English at the Uppsala University, to be used in further studies. The corpus is comprised of about 136.000 words with 19.000 words produced by students in the junior high school and 117.000 from students in the senior high school but it is growing as more and more essays are added to it (Johansson & Geisler 2009:181).

While analyzing texts written by high achieving students may very well be interesting, it is not certain that we can draw any real conclusions about Swedish L2 learner language from such a group. To make the study more representative another group had to be included. The other group of students represents the average L2 learner in Sweden and their texts come from the ULEC. Seven texts from year 1 of senior high school and seven from year 3 have been taken from the ULEC. This group will be referred to as the ”Control group”.

The nature of the corpus makes it a solid base for a quantitative study and a researcher can chose the amount of text he or she wants to investigate, it is of course also possible for other scholars to study the exact same texts opening up opportunities for more substantiated results. However, there is currently no other option than to analyze data manually due to the complexity of the human mind and the number of syntactic anomalies produced by it. No computer program of today is able to do the analyses currently conducted by scholars of syntax and therefore studies are often limited to a certain amount of data, a number manageable for the researcher.

Statistical analysis of the data

The paper focuses mainly on the number of words within each noun phrase but adding to this there are several items also taken into the investigation. For every text, items are counted and this then becomes the statistical basis of the study. The items counted in every text are;

- The number of heads of noun phrases and the average length of the noun phrase
- The total number of postmodifiers and the average length of the postmodification
- The total number of premodifiers and the average length of the premodification
• The number of lone determiners. Lone determiners are determiners that have no premodification following them

• The number of relative clauses, appositive clauses, non finite clauses and prepositional phrases as postmodifiers, each given a separate value

Calculations on average premodifier length are done by dividing the number of words in each premodifier by how many premodifiers there are. This is done without including determiners. The postmodifier average is done in the same way. All words are included, counted and then divided by the number of postmodifiers. To get the average noun phrase length, all words within noun phrases (determiners, quantifiers, modifiers, and counting contractions as two) have been counted and then divided by the number of total noun phrases in each text. However, for the sake of clarity the reader should be aware that coordinated heads of noun phrases such as in examples (3) and (4) are only counted as one head because of its connotations.

(3) Silver's courage and strength in getting through the hard times in her life (female student, aged 16, academic program)

(4) Scary movies and books and programs (male student, aged 16, academic program)

Every head in the texts is not counted. Heads that are not counted are: pronouns without modification, such as he or she but also indefinite pronouns such as everything and anything when there is no modification of them. The reason for this is that they do not represent the kind of complexity I am looking for in this study. The data would also not be representative of noun phrase construction in learner English since pronouns like the ones mentioned are often impossible to build a complex noun phrase on. The reader might also wonder why determiners that are not related to premodification are counted. The answer is quite simple, to get a measurement on how much effort goes into premodifying an item compared to how many items are just given a determiner. Theoretically there could be texts heavily weighted down by postmodification but without premodification and vice versa. Therefore all factors regarding this should be included into the analysis. Moreover there are some issues related to resolving the number of postmodifiers tied to a certain head. Consider example (5):

(5) A myth about a place which people called "the paradise", [an island that nobody could get to] (male student, aged 16, academic program)

The head, a myth is modified by two phrases, a preposition phrase and an apposition, but the entire unit is also one postmodifier. The definition issue revolves around the second postmodifier which modifies the paradise but we still count it because it is inseparable from the first head. For the sake of measuring students' language complexity it would not be fair not to include the
apposition in the calculations and as such it will add to the number of postmodifiers used. This means that every postmodifier is being counted even though they are a part in a multiple modification of a single head. It is also important to highlight the fact that there exist good reasons for looking at averages in a syntactic analysis since texts vary in length.

Furthermore, I would like to raise the issue of authentic material and error margins. Since this is actual material written by students and the paper, unlike many others of its kind, includes incorrect use of language, there is bound to be sentences and phrases which are incorrect. In such cases I have been forced to try and correct them for the sake of the analysis. This is done in such a way that the initial meaning e.g. which phrase the student aimed to use (consciously or not), is kept. Example (6) illustrates this.

(6) the cliff face to their front door (female student, aged 16, academic program)

While the correct grammar would have been ”the cliff facing their front door”, giving us a non-finite phrase, the indicators that this was supposed to be non-finite are there. In this case it is possible to suggest that there has been a loss of an ed-participle in the word ”face(d)”. Another example would be to have a Ø relativizer, in this case between thing and we. An example of such a case is example (7)

(7) A thing [that] we people long for

Although it is hard to determine the student's actual intentions, hints such as these provide an opening for a fairer and more correct analysis of the data when dealing with authentic material. Moreover there is the question of context. A student who makes one error like this in an otherwise seemingly flawless text should have the knowledge of how to procure correct phrases and therefore we must not disregard the faulty phrases since this would make the data collection skewed and thus providing a defective result. A study like this is still sufficiently accurate for us to draw conclusions about L2 learner English.

Ethics

When working with anything produced by students the question of discretion and anonymity is bound to be brought up. In this paper some of the material comes from an English learner corpus where students and teachers collect texts for use in analyses by language scholars. Each text in the corpus is coded and marked with linguistic categories. These are year in school, register, type of program (high school), gender of the student, age of the student and finally date of production (Johansson and Geisler 2009). The students are anonymous and the texts provided from the high proficiency senior high school have also been decoded to generate complete anonymity for them as well.
Statistical analysis

In this section the statistical analyses of four groups of students are presented. First are the high proficiency year 1 academic program students followed by the year 3 high proficiency students. Last is the analysis of texts from the control group picked from the corpus representing year 1 and 3 of senior high school. After that follows figures showing the use of different types of postmodification in each respective group followed by a summary of that data for the entire text selection. The analysis section is divided into different headings covering the different groups. After each group has been presented a summary and a comparison will follow. The texts analyzed from year 1 high proficiency students is a book review, year 3 high proficiency is a debate article, year 1 and 3 of the control group (also an academic program) is a text on whether or not they believe in ghosts. What binds these texts together is that they all force the students to express their own opinions. The data in the tables shown in the analysis derive from a complete survey of the texts included in the study. More information on each text is shown in the appendix.

Abbreviations used in the statistical analysis

- NPs = Number of noun phrases
- Word/NPs = Number of words in noun phrases
- Post. = Number of postmodifiers
- Pre. = Number of premodifiers
- Det. = Number of single determiners
- Avg Post. = Average length of postmodification
- Avg Pre. = Average length of premodification
- Avg NP. = Average noun phrase length
- Embed. = Noun phrase embedding percentage
Year 1 high proficiency group

The first table, Table 1, is a summary of the data collected from the 8 texts of the year 1 high proficiency group. Within Table 1 there are nine categories. From left, the first five categories show the total number of noun phrases (NPs), the total number of words within noun phrases (Word/NPs), the total number of postmodifiers (Post.), the total number of premodifiers (Pre.) and the total number of determiners which are not part of any modification of a head (Det.). Below the total numbers are the corresponding averages per text of each language item. The next three categories show the average length of postmodification (Avg Post.), premodification (Avg Pre.) and noun phrases (Avg NP) for the year 1 high proficiency group. The last category (Embed.) shows how much of the total number of noun phrases that was embedded in modification.

Table 1. Totals and average numbers of the year 1 high proficiency group. Average modifiers and noun phrases of each student are added up and then divided by the number of students in the group.

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</tr>
</thead>
<tbody>
<tr>
<td>Tot.</td>
<td>434</td>
<td>1672</td>
<td>160</td>
<td>117</td>
<td>180</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Avg.</td>
<td>54.2</td>
<td>209</td>
<td>20</td>
<td>14.6</td>
<td>22.5</td>
<td>4.77</td>
<td>1.21</td>
<td>3.86</td>
<td>63.8%</td>
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</table>

In Table 1 we learn that the students of the year 1 high proficiency group wrote a total of 434 noun phrases containing a total of 1672 words. The average student in the year 1 high proficiency group wrote 54.2 noun phrases per text with an average of 209 words contained within noun phrases. They also wrote a total of 160 postmodifiers and 117 premodifiers resulting in an average of 20 postmodifiers and an average of 114.6 premodifiers per text. Table 1 also shows that the number of determiners which are not part of any premodification (180) is a lot more than the number of premodifiers in the texts (117). This means that there were many noun phrases simply consisting of a determiner and a head or a noun phrase consisting of a determiner and a head which was followed by a postmodifier. In table 1 there are also figures showing the average length of postmodification, which was 4.77 words per postmodifier, significantly more than the average premodifier which consisted of 1.21 words. This means that premodification was often carried out with a single word while postmodification, on the other hand, was carried out using several words. In table 1 we can also see that the year 1 high proficiency wrote an average of 3.86 words per noun phrase. Because this is less than the average postmodifier (4.77)
we can assume that these students often kept to smaller noun phrases, but when a head needed further explanation, they developed heavier postmodification. Another figure, to the far right in Table 1, in the category called “Embed.” the embedding percentage is shown. This number is calculated adding together the average number of post- and premodifiers and then dividing that by the average number of noun phrases written per text. In the year 1 high proficiency 61.6% of the noun phrases were embedded in modification. This means that about 1/2 of the heads of noun phrases were elaborated into carrying more information than a single head and its default connotations.

Even though it does not show in the statistics of table 1, observation has made clear that the year 1 high proficiency group had a very correct use of the language and made few grammatical and spelling errors. To illustrate some of these findings four examples of particular interest will be discussed. Example (8) below shows a medium level of complexity with two modifiers to the head and in example (9) further down, a high level of complexity with four postmodifiers connected to one head can be seen.

(8) A murder mystery novel that follows the 15-year old boy Christopher Boone (male student, aged 16, academic program)

Example (8) is a sentence from a male student in year 1 showing a head modified by more than one postmodifier. This sentence contains a relative clause which in turn contains an appositive clause, giving us two postmodifiers to one head and also a fairly high complexity. Example (9) is also from a male year 1 student and shows a high level of complexity.

(9) Babel Dark, a local nineteenth-century man, who lives two lives, a public one surrounded by darkness and a private one caught in a beacon of light. (female student, aged 16, academic program)

While it may seem like the last two phrases, “a public one [...]” and “a private one [...]” modify the two lives it is actually a long series of modifiers to the capital noun “Babel Dark” with this structure; apposition, relative clause, apposition and apposition. Besides showing just complexity it shows how you can fill a noun with a huge amount of information with the use of postmodification.

The year 1 high proficiency group also showed a high average in noun phrase length with 3.86 words per noun phrase (Table 1). They also wrote long postmodifiers and also long premodifiers, the average premodifier measurement being very sensitive to even the slightest change because of how few words a typical premodifier contains. In examples (10) and (11) we can see how premodification with more than 1 word could look like in the year 1 high proficiency group.
(10) a *murder mystery* novel (male student, aged 16, academic program)
(11) a *very interesting* person (male student, aged 16, academic program)

It seems like the average premodification also could have something to do with the assignment and the subject of it. Writing about *murder mystery* books will yield that particular premodifier several times.

In the next section the year 3 high proficiency group will be presented and discussed.

**Year 3 high proficiency group**

Table 2 below displays the data for the year 3 high proficiency group. From left, the first five categories show the total number of noun phrases, the total number of words within noun phrases, the total number of postmodifiers, the total number of premodifiers and the total number of determiners which are not part of any modification of a head. Below the total numbers are the corresponding averages per text of each language item. The next three categories show the average length of postmodification, premodification and noun phrases for the year 3 high proficiency group. The last category displays the embedding percentage of the year 3 high proficiency group.

Table 2. Totals and average numbers of the year 3 high proficiency group. Average modifiers and noun phrases of each student are added up and then divided by the number of students in the group.

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tot.</td>
<td>362</td>
<td>1207</td>
<td>106</td>
<td>112</td>
<td>131</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Avg.</td>
<td>51.7</td>
<td>172.4</td>
<td>15.1</td>
<td>16</td>
<td>18.7</td>
<td>4.35</td>
<td>1.05</td>
<td>3.36</td>
<td>60.1%</td>
</tr>
</tbody>
</table>

From Table 2 we learn that the students in the year 3 high proficiency group wrote a total of 362 noun phrases with an average of 51.7 noun phrases per text. Table 2 also shows us that the same group wrote 1207 words into noun phrases and their average was 172.4 words in noun phrases per text. Moreover, the year 3 high proficiency group wrote a total of 106 postmodifiers, with an average of 15.1 postmodifiers per text, and a total of 112 premodifiers giving us an average of 16 premodifiers per text (Table 2). This indicates a balance between the two and it points towards modification of a head of a noun phrase often being carried out with both pre- and
postmodification. Right next to the average premodifiers is the category showing that 131 determiners were not part of any modification and the average text of the year 3 high proficiency group contained 18.7 determiners outside modification. The rather low number of determiners not being a part of modification indicates that modification was part of the majority of the noun phrases. This is also shown when looking at the embedding percentage displayed to the far right in Table 2, which is 60.1%. This means that almost exactly 2/3 of the noun phrases in the texts contained modification and heads were evolved beyond their default connotations in many cases.

As displayed in Table 2, the year 3 high proficiency group wrote short noun phrases with an average of 3.36 words per noun phrase (Table 2). However, the length of postmodification, which was 4.35, in the year 3 high proficiency was quite substantial. The postmodification length dwarfed the average noun phrase length and the average premodifier length (1.05) indicating that focus was on describing and altering connotations of heads after they were mentioned, rather than before in the premodifier.

In the next section the data from the year 1 control group will be presented and discussed along with some examples of how they constructed postmodifiers.

**Year 1 control group**

This section will present the data collected from the texts of the year 1 control group. The data is presented in Table 3 and then explained and discussed below. In the same way as Table 1 and 2, Table 3 displays the results of the analysis of the data collected from the year 1 control group.

Table 3. Totals and average numbers of control group year 1. Average modifiers and noun phrases of each student are added up and then divided by the number of students in the group.

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tot.</td>
<td>142</td>
<td>495</td>
<td>60</td>
<td>37</td>
<td>42</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Avg.</td>
<td>20.28</td>
<td>70.71</td>
<td>8.57</td>
<td>5.28</td>
<td>6</td>
<td>3.71</td>
<td>1.03</td>
<td>3.50</td>
<td>68.2%</td>
</tr>
</tbody>
</table>

Table 3 shows us that the year 1 control group wrote a total of 142 noun phrases and the average text contained 20.28 noun phrases. As shown in Table 3, each student had 70.71 words inside noun phrases and the group as a whole had 495 words within noun phrases. The low count of words in noun phrases is a result of the texts in year 1 control group being very short in
comparison to the texts of the year 1 and 3 high proficiency groups. Table 3 also shows that the year 1 control group wrote a total of 60 postmodifiers with an average of 8.57 postmodifiers per text. The same group also wrote a total of 37 premodifiers resulting in an average of 5.28 premodifiers per text. Postmodification in the year 1 control group dominates over premodification in frequence as well as in length as shown further right in Table 3 where the average length of the postmodifiers written by the year 1 control group is displayed. Moreover, the total number of determiners not being part of premodification for the year 1 control group is 42 and the average number per text is 6 (Table 3). This indicates that there were comparatively few noun phrases which were not premodified and this indication is also visible in the embedding percentage shown to the far right in Table 3. The embedding percentage of the year 1 control group was 68.2%. This means that the heads of the noun phrases were in almost 7/10 of the cases embedded and evolved beyond their default connotations. Because the year 1 control group wrote short texts and still had a high embedding percentages there an indication that they wrote in a concise manner, not mentioning a lot outside the given frame of the exercise and describing that being mentioned quite thoroughly.

Furthermore, through observation it is clear that the year 1 control group had many grammar errors, especially with the use of prepositions and the forming of prepositional phrases. These errors can be illustrated with example (12).

(12) one *in the relative has died (female student, aged 15, academic program)

Example (12) shows an incorrect postmodifier. Both the preposition and the definite article in this context are wrong and if corrected the sentence also misses the plural s. However, since this study chooses to look not only on error free language and the correct sentence should read of my relatives, we end up with a prepositional phrase as postmodifier. There are also examples of students in the year 1 control group repeating the same postmodifier several times with little change made to it. This does not really indicate complexity and inventiveness but rather a recycling of old constructions. In examples (13)-(15) we can see this phenomenon. The examples are taken from a single student in the year 1 control group.

(13) weird noises in their house [at night] (female student, aged 16, academic program)
(14) weird noises in the nights (female student, aged 16, academic program)
(15) the church yard at night (female student, aged 16, academic program)

The student uses mostly prepositional phrases as postmodifiers and does it in a recycling manner. In and at are prepositions used frequently and the construction looks almost the same all the time, evident from the three sentences. All of them also follow on top of each other with only few clauses in between. Furthermore, there are other types of recycling in these texts, namely the use
of the expression ”some kind of”, which could be interpreted as part of the premodification, but examples (16) and (17), *kind* is interpreted as the head of the noun phrase.

(16) some kind of *sky photoing* (male student, aged 16, academic program)
(17) some kind of *strange symbols and figures* (male student, aged 16, academic program)

This leaves us with prepositional phrases which generate a higher value in the average postmodifier section while still not being overly complicated.

The next section will present and discuss the results of the year 3 control group along with examples on how they constructed post- and premodifiers.

**Year 3 control group**

This section presents and discusses the data of the year 3 control group. Table 4 presents the data of the year 3 control group with the same structure and categories as Tables 1-3.

Table 4. Totals and average numbers of control group year 3. Average modifiers and noun phrases of each student are added up and then divided by the number of students of each group.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tot.</td>
<td>187</td>
<td>725</td>
<td>76</td>
<td>45</td>
<td>77</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Avg.</td>
<td>26.71</td>
<td>103.57</td>
<td>10.85</td>
<td>6.42</td>
<td>11</td>
<td>4.59</td>
<td>1.10</td>
<td>3.85</td>
<td>64.6%</td>
</tr>
</tbody>
</table>

They year 3 control group wrote short texts which is indicated in the two leftmost categories. They wrote a total of 187 noun phrases with an average of 26.71 noun phrases per text with a total of 725 words in noun phrases resulting in an average of 103.57 per text. Table 4 also shows that the year 3 control group wrote more postmodifiers than premodifiers, 76 vs 45. This is calculated to an average of 10.85 postmodifiers per text and 6.42 premodifiers per text. This is an indication that the students in the year 3 control group preferred to describe heads of noun phrases after they were written instead of before they were written. This is also backed up by the fact that the year 3 control group wrote short premodifiers (1.10) and very long postmodifiers (4.59). The average number of determiners that were not included in modification of a head (11) was on par with the average number of postmodifiers (10.85) and substantially higher than the average number of premodifiers per text. This indicates that the year 3 control group was prone to write short noun phrases without modification but when modifying a head they did so heavily.
The year 3 control group wrote noun phrases that had an average length of 3.85 (Table 4) and the embedding percentage was 64.6% meaning that slightly more than 2/3 of the noun phrases contained modification.

Furthermore, through observation it is clear that the year 3 control group made a lot of grammar and spelling errors while still reaching a standard that made the texts readable. The most notable syntactic observation made while looking at this group was the number postmodifiers together with the idiomatic expression such as "the kind of". Furthermore the group showed a tendency to put indefinite pronouns as heads of noun phrases sometimes giving the texts a more colloquial style as with example (18).

(18) somebody who saw you  (female student, aged 18, academic program)

In the next section a discussion which compares significant and interesting data and examples from the four groups will follow.

Summary and comparison

In this section I will summarize and discuss differences and similarities between the groups. Focus will lie on comparing the two high proficiency groups and after that examples from the control groups will show how they produced language.

In the analysis there was one group that distinguished itself from the other groups and showed indications of a higher complexity in almost all categories of the analysis. As previously mentioned the year 1 high proficiency wrote fluently and without making severe grammar or spelling errors. The year 1 high proficiency group showed the highest average noun phrase length with 3.86 words per noun phrase (Table 1), on par with the year 3 control group which had 3.85 words per noun phrase (Table 4). However, when it comes to noun phrase length the groups did not vary that much with the highest average being only 0.5 words per noun phrase higher than the lowest average. The year 1 high proficiency group wrote the longest postmodifiers (4.77, Table 1) and also the longest premodifiers (1.21, Table 1). The premodification length is in this case interesting because most of the students wrote 1 word per premodifier resulting in, for example, 1.05 words per premodifier for year 3 high proficiency (Table 2) and 1.03 for year 1 of the control group (table 3). The only one to come close to the year 1 high proficiency regarding premodification length was the year 3 control group with 1.10 words per premodifier (table 4). To better show what premodification usually looked like, two examples, (19) and (20) are displayed below. The examples contain 1 word per premodifier.
However, in one category the year 1 high proficiency group was surpassed by both the control groups, namely embedding percentage which indicates how much of the total number of noun phrases that contained modification. The year 1 high proficiency group had an embedding percentage of 63.8% (see Table 1), the year 3 high proficiency group had 60.1% (see Table 2) the year 1 control group had 68.2% embedding (see Table 3) and the year 3 control group embedded 64.6% of the heads of the noun phrases in modification (see Table 4). There is no other explanation for this than the length of the texts. The control groups wrote short and concise texts without the need to use lots of short noun phrases and with the opportunity to focus on a few particular noun phrases these two groups reached a higher embedding percentage. This means that the length of a text must be kept in mind when looking at the embedding percentage.

The year 3 high proficiency group also distinguished itself to a certain extent. While not having as high numbers as their counterpart in year 1 the texts of this group proved to be a rich source of interesting data for the analysis. Similarly to the year 1 high proficiency group the year 3 high proficiency group seems to have put their effort into postmodification with an average of 15.1 postmodifiers per text (Table 2), which in comparison to the other groups (20, 10.85, 8.57 displayed in Tables 1, 2 & 4), is the second highest number. The year 3 high proficiency do, however, not have the longest average postmodifiers with their 4.37 words per noun phrase average (Table 2) and if we compare them to the other groups they rank third (4.77, 4.59, 4.37, 3.71 displayed in Tables 1, 2 & 4).

If we compare the year 3 high proficiency group with their counterpart in year 1 high proficiency they came up with overall lower results in all categories except in number of premodifiers (14.6 vs. 16, displayed in Tables 1 & 2), this despite the fact that they are two years older and should be able to construct (if not more complicated sentences) sentences at the same level as the year 1 group. Observation also made clear that the year 3 high proficiency group did not make grammar errors to the same extent as the control groups did. The language was fluent and in most cases very understandable and adequate.

Even though the two high proficiency groups produced results that differed at some points they were much more similar in a comparison to the two control groups. This is mainly due to the high level of correct language, both syntactically and grammatically, in the high proficiency groups versus the often syntactically and grammatically incorrect language of the control groups.
Because this analysis has included incorrect language it does not discriminate against the control groups and therefore, when looking at the statistics, it may seem like they are producing language which is similar to the high proficiency groups. However, this is not the case as we can see when looking at, for example, the construction of premodification among the control groups.

When looking at premodification among the 14 students in the control group it is clear that premodification by more than one word is not common. Several of the students had an average of 1 words per premodification and the student with the highest words per premodifier rating had 1.33 (see appendix Table 15). These findings could be a sign of authentic L2 language not being subjected to heavy premodification and that meaning and context is found after the head, first the students mention something, then they explain it.

Furthermore, the two control groups wrote about whether or not they believed in ghosts and lots of examples indicate a recycling of the word “supernatural” as showed in examples (21-24).

(21) some other supernatural phenomena (female student, aged 16, academic program)
(22) the supernatural phenomena (female student, aged 16, academic program)
(23) a supernatural experience (male student, aged 18, academic program)
(24) supernatural things (female student, aged 16, academic program)

The word supernatural is by far the most frequently used word in a premodifier within this group. This indicates that they might have recently learnt this expression or that it was given to them as a part of the instructions for this written exercise. This follows the pattern explained and exemplified above, where the subject, writing about a certain genre of books for instance, heavily affects premodification. It is possible that without this particular exercise the control groups would have produced even shorter premodifiers. Premodification was also mainly carried out by the use of adjectives. There were also some examples of multiple modification with coordinated adjectives as shown in examples (25) and (26):

(25) any right or wrong answer (male student, aged 16, academic program)
(26) a good or a bad thing (male student, aged 18, academic program)

Examples (25) and (26) are however not that common since the statistics in Tables 3-4 show that premodification is not a particularly large part of the noun phrase with the students in the control group since most premodifiers consisted of only 1 word. As a comparison, students in the year 1
high proficiency group are less inclined to write short premodifiers and instead write an average of 1.21 words per premodifier (Table 1).

In the next section detailed information and percentages of the usage of different kinds of postmodifiers will follow.

**Use of different kinds of postmodifiers**

This section shows the use of different kinds of postmodifiers in all four groups. The data will be presented in Tables 5-8 where first the total of each kind of postmodifiers will be shown and beneath them their corresponding percentage of the total number of postmodifiers. After each group has been presented Table 9 will give information postmodifier use for all 29 students. Together with the presentation of all the students in Table 9 will there will also follow examples and discussion on the use of each kind of postmodifier.

Table 5. The use of different kinds of postmodifiers for the year 1 high proficiency group.

<table>
<thead>
<tr>
<th></th>
<th>Relative clause</th>
<th>Prep.phrase</th>
<th>Apposition</th>
<th>Non-finite clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>43(150)</td>
<td>69(150)</td>
<td>24(150)</td>
<td>14(150)</td>
</tr>
<tr>
<td>Average</td>
<td>28.6%</td>
<td>46%</td>
<td>16%</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

In Table 5 it is clear that the most common type of postmodifier in the year 1 high proficiency were prepositional phrases (46%). After prepositional phrases the relative clauses come second as postmodifiers with a 28.6% of the total number of postmodifiers. After relative clauses comes apposition, with 16%, as the third most common way of postmodifying a head and last of all come the non finite clauses with a frequency of 9.3%. In the next table, Table 6, data on the year 3 high proficiency group is presented.

Table 6. The use of different kinds of postmodifiers for the year 3 high proficiency group.

<table>
<thead>
<tr>
<th></th>
<th>Relative clause</th>
<th>Prep.phrase</th>
<th>Apposition</th>
<th>Non-finite clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>16(106)</td>
<td>66(106)</td>
<td>9(106)</td>
<td>15(106)</td>
</tr>
<tr>
<td>Average</td>
<td>15%</td>
<td>62%</td>
<td>8.5%</td>
<td>14.4%</td>
</tr>
</tbody>
</table>
As displayed in Table 6, postmodification by prepositional phrases was very common in the year 3 high proficiency group reaching a frequency of 62%. Use of relative clauses as postmodifiers was not very common with a frequency of 15% (Table 6). Interestingly, relative clauses and the non-finite clauses as postmodifiers had roughly the same frequency with the non-finite clauses reaching 14.4%. The least frequently used type of postmodifier was apposition with only 8.5% of the total number of postmodifiers. Since non-finite clauses as postmodifiers are quite rare it could mean that they are harder to fit into sentences and therefore they might be a sign of maturity.

Tables 5-6 concludes the use of different kinds of postmodifiers for the high proficiency groups but in Tables 7-8 the data on the two control groups will be presented.

Table 7. The use of different kinds of postmodifiers the year 1 control group.

<table>
<thead>
<tr>
<th></th>
<th>Relative clause</th>
<th>Prep.phrase</th>
<th>Apposition</th>
<th>Non-finite clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>20(60)</td>
<td>30(60)</td>
<td>4(60)</td>
<td>6(60)</td>
</tr>
<tr>
<td>Average</td>
<td>33.3%</td>
<td>50%</td>
<td>6.6%</td>
<td>10%</td>
</tr>
</tbody>
</table>

The year 1 control group had a relative clause frequency of 33.3% and their use prepositional phrases as postmodifiers reached 50% of the total number of postmodifiers (Table 7). Table 7 also shows us that the year 1 control group used few appositions (6.6%) and also rather few non-finite clauses as postmodifiers (10%).

Table 8. The use of different kinds of postmodifier for the year 3 control group.

<table>
<thead>
<tr>
<th></th>
<th>Relative clause</th>
<th>Prep.phrase</th>
<th>Apposition</th>
<th>Non-finite clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>32(76)</td>
<td>32(76)</td>
<td>8(76)</td>
<td>4(76)</td>
</tr>
<tr>
<td>Average</td>
<td>42.1%</td>
<td>42.1%</td>
<td>10.5%</td>
<td>5.2%</td>
</tr>
</tbody>
</table>

As shown in table 8, apposition, with a frequency of 10.5% and non-finite clauses with 5.2%, have given way to prepositional phrases and relative clauses as postmodifiers. Relative clauses reached a frequency of 42.1% and prepositional phrases also had a frequency of 42.1%.

In the next table a summary of all the texts in the study will be presented and discussed together with examples of how different postmodifiers were formed.
Table 9 summarizes all of the postmodifiers used by students in the study. Data from Tables 5-8 has been added together to form the overall totals and averages.

Table 9. Summary of different kinds of postmodifiers used by all students in the study.

<table>
<thead>
<tr>
<th></th>
<th>Relative clause</th>
<th>Prep.phrase</th>
<th>Apposition</th>
<th>Non-finite clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>111(392)</td>
<td>198(392)</td>
<td>45(392)</td>
<td>39(392)</td>
</tr>
<tr>
<td>Average</td>
<td>31.6%</td>
<td>50.2%</td>
<td>11.4%</td>
<td>9.9%</td>
</tr>
</tbody>
</table>

Overall we can see that prepositional phrases are by far the most common type of postmodification with 50.2% of the total number of postmodifiers (Table 9). This indicates that students tend to describe direction (to, in, at etc) or ownership in cases where the of-construction has been used. In cases of multiple postmodification to a single head prepositional phrases can be placed anywhere in the chain of postmodification, probably also a reason to why they are so common. However, prepositional phrases as postmodifiers are often placed early in the the postmodification as we can see in examples (28) and (29) below.

(28) a man in his twenties [who is as I mentioned earlier obsessed with football and Arsenal]
(male student, aged 16, academic program)
(29) a group of women [who exercised by climbing stairs]
(female student, aged 18, academic program)

What examples (28) and (29) along with the statistics on the use of prepositional phrases tell us is that the information conveyed prepositional phrases, such as direction and ownership, is more important than what is being told in the relative clauses. However, there are exceptions. Prepositional phrases were also placed in the end, as we can see in example (30), but ever so often they could also be stacked on top of each other as we can see in example (31).

(30) something cool and very strange [which could give us new information] about what to do on the earth (male student, aged 16, academic program)
(31) the middle of an advancement [of your career] (male student, aged 18, academic program and it is followed by the use of relative clauses as postmodifiers. Apposition and non-finite clauses were both quite uncommon.

Relative clauses come second in the summary of postmodifiers with a frequency of 31.6% (Table 9). This was expected since subordination is in the nature of the English language. The relative clauses were followed by apposition which had a frequency of 11.4% (Table 9) and then last of all
are the non-finite clauses with a frequency of 9.9% (Table 9). Apposition ratings are comparably high which indicates a high level of abstract nouns which have then been concretized by the postmodifier. Last of all, non finite clauses were created using the *ing*-form or the *ed*-participle as shown in examples (32) and (33).

(32) a crowd *running up and down the stairs* [non-finite](female student, aged 18, academic program)
(33) machines *designed to fit the human body* [non-finite] (female student, aged 18, academic program)

In the next section some aspects of gender in relation to L2 learner language will be discussed.

**Male and female aspects of L2 learner language**

This section contains two tables, Tables 10 and 11, which show data on each gender. To get the numbers in Tables 10 and 11 each male and female student in the respective groups have had their noun phrases, postmodifiers and premodifiers added together to reach an average per gender and group. They have also had their pre- and postmodifier length added together to get an average of the respective group. Table 10 shows data on the year 1 and 3 high proficiency students and table 11 shows data on the year 1 and 3 control groups.

<table>
<thead>
<tr>
<th>Year/Gender</th>
<th>NPs</th>
<th>Post.</th>
<th>Pre.</th>
<th>Avg Post.</th>
<th>Avg Pre.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 M</td>
<td>63.75</td>
<td>24.75</td>
<td>17.75</td>
<td>4.42</td>
<td>1.22</td>
</tr>
<tr>
<td>1 F</td>
<td>44.75</td>
<td>15.75</td>
<td>9.00</td>
<td>5.13</td>
<td>1.21</td>
</tr>
<tr>
<td>3 M</td>
<td>44.00</td>
<td>13.00</td>
<td>12.00</td>
<td>4.17</td>
<td>1.29</td>
</tr>
<tr>
<td>3 F</td>
<td>62.00</td>
<td>18.00</td>
<td>21.39</td>
<td>4.59</td>
<td>1.17</td>
</tr>
</tbody>
</table>

In Table 10 we see that year 1 males showed higher values than the females in every category except average length of postmodification, 4.42 vs 5.13. Looking at year 3 it is clear that the females instead showed higher values in almost all categories, except average length of premodification 1.29 vs 1.17 (Table 10). At first glance it would seem as boys start out writing rather technically advanced and then as they progress, get worse. For females it would seem as they started out writing technically inferior texts only to go on to becoming what the males were in year 1. However, this makes no sense at all. It is instead more reliable to assume that this has
to do with individual differences between students and groups and that it also has to do with choice of writing assignment. The only thing that could counter the argument of choice of writing assignment is that it could be possible that males and females choose to interpret assignments differently and by doing so produce different kinds of language. However there is no data in this study which could support such an assumption.

In Table 11 below data on the performance of each sex in the control groups are presented.

Table 11. Summary of year 1 and 3 control group students showing gender variation.

<table>
<thead>
<tr>
<th>Year/Gender</th>
<th>NPs</th>
<th>Post.</th>
<th>Pre.</th>
<th>Avg Post.</th>
<th>Avg Pre.</th>
</tr>
</thead>
<tbody>
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<td>6.33</td>
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<td>1.08</td>
</tr>
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<td>4.50</td>
<td>3.65</td>
<td>1.06</td>
</tr>
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<tr>
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<td>4.27</td>
<td>1.08</td>
</tr>
</tbody>
</table>

In Table 11 we see that the year 1 control contained few differences between males and females. They wrote about the same number of noun phrases (19.00 vs 21.25) and also about the same number of postmodifiers (7.33 vs 9.50). The females wrote slightly more postmodifiers but instead the males wrote more premodifiers (6.33 vs 4.50). Table 11 also shows that both length of postmodification and premodification varied extremely little between males and females in the year 1 control group. The situation for the year 3 control group is also very similar, males and females varied only slightly in their language composition. The only real differences between males and females in the year 3 control group were the amount of premodifiers (8.50 vs 4.66) and the average length of postmodification (4.84 vs 4.27) (Table 11). This means that the males of the year 3 control group produced more premodifiers and slightly longer postmodifiers.

**Summary**

From the data gathered in this study it is very hard to come to any conclusions regarding differences between male and female writing. Instead there are more similarities in the way that they produce text than there are differences. It also seems as if age is a much more significant factor for separating groups of L2 learners. This is however not as clearly visible in the two high proficiency groups which are both rather similar regardless of age and gender. Instead it becomes visible in the control groups. In almost every category the year 3 control group shows higher numbers than the year 1 control group. They write more and they write longer. This is however
not without an exception. This exception is premodification which is independent of age or gender. Because premodification stays the same from age 16 to 18 it could indicate that it is learnt early on in language development and that it stays the same into and throughout adolescence. This is also not altogether incomprehensible since premodification consists of instant and direct classification such as numerals and adjectives. These are the kind of words we must learn to be able to communicate. Postmodification, on the other hand, we learn to better communicate and it also gradually becomes more advanced.
Discussion

Language complexity and syntactic maturity are two things which are complicated to measure and which variables to look at when measuring complexity and maturity also offers a challenge for the scholar of syntax. This study has looked closely at the construction of noun phrases in L2 learner language and from what I have learnt through studying the texts it seems as if a modification index generated by looking at embedding of heads can show us a lot when it comes to measuring language maturity and development, complexity and consolidation of the noun phrase. However, to get to this conclusion there is a lot of previous research that had to be considered. In this section I will discuss some of the research that has been done and also discuss problems with measuring syntactic development from different points of view. Later in this section some reflections on how to use this knowledge in teacher-student relations will be presented.

Challenges and ways of measuring development

For a considerable amount of time, syntactic research has focused on length. In the case with subordination and T-units there are, however strong, really only indications that long T-units and a high subordinate clause index are signs of students’ language maturity (Hunt 1966 and Johansson & Geisler 2009 and forthcoming). These indications are also based on studies of error free language. An analysis of error free T-units could, for example, exclude items with the following errors;

- Subject verb agreement
- Article usage (generic reference)
- Capital letters (spelling)
- The ‘s-genitive
- Prepositions
- Verb form

(Johansson and Geisler, 2009:184)

Since this paper includes every noun phrase in the texts, it opens up for new interpretations. For instance, it could be that studies of written L2 language overlook advanced syntactic constructions due to small and insignificant errors. If only error free language had been included in this study the control group would have been incomparable to the high proficiency group because of their many errors, especially with prepositions, article usage and subject verb agreement. If we chose to look at written language by L2 learners using two perspectives at the
same time we would end up with different categories of students. One category could be those who have the ability to construct syntactically advanced sentences, or in this case noun phrases, while still being able to maintain a high level of grammatical correctness. Another category could be those who are unable to write grammatically correct sentences while still writing complex sentences from a syntactic point of view. To only look at error free language is in my opinion to set the bar a bit too high. Especially if you would want to use the analysis in a teacher-student environment, with the purpose of helping students using the data collected as a needs assessment.

However, the problem of which variables to look at when measuring complexity and maturity still remains. When Hunt discusses the subordinate clause index and how students progress through the years of school he shows us that longer is better, or at least a sign of maturity (Hunt, 1966:733). He also states that older students reach higher levels of succinctness, throwing away unnecessary words and clauses while adding more information to every single clause. This results in consolidated sentences or expressions consolidated into “a larger, more comprehensively organized, unit of thought” (Hunt, 1966:735). If consolidation and length are signs of maturity when looking at clauses, the same would theoretically apply for the noun phrase. Furthermore, as both e.g. Johansson and Geisler (2009 and forthcoming) and Hunt (1966) agree that subordinate clause index is the most important sign of development, and taken into account that postmodification often is extremely similar to subordination, we could have our first variable to consider. One aspect of similarity between postmodification and subordination is the mentioning of something followed by the explanation, clarification or determination of that something, as in example (34).

(34) [the view] that students should know earlier how they rank in various subjects and that grade levels should be more. (female student, aged 18, academic program)

This postmodification (34) of the word view contains two coordinated appositive clauses filling the word with meaning. The sentence would also go into the calculation of subordinate clause index if this was a T-unit analysis. To calculate postmodification length and then use it as a tool to describe maturity thus functions in basically the same way as a T-unit analysis. An analysis of phrases, however, also counts phrases within clauses which gives us more data to analyze. In theory it means splitting up clauses into smaller units where we can show a student’s ability to write maturely, without having to rely solely on his or her clause construction.

So what can be concluded about the postmodification use of the students in the study? From Table 1 and 3 we learn that the average postmodification length of the year 1 high proficiency group was 4.79 and 3.71 for their corresponding year 1 control group. For year 3 the figures from Tables 2 and 4 tell us that the average length of postmodification was 4.35 for the year 3 high proficiency group and 4.59 for the year 3 control group. If we assume that age is a reliable factor
for determining progression and maturity these figures are somewhat confusing. The two control
groups show a rise from 3.71 to 4.59 words per postmodification but the high proficiency group
showed a slight decrease, from 4.79 to 4.35 words. This could indicate regression in the third year
but it is probably due to individual differences between the two groups. It is also possible that the
subject which they are writing about produces these differences. Both control groups were given
the same assignment but because I wanted to study even more authentic material, material which
the students will be graded on, it was impossible to have the two high proficiency groups do the
same assignment. The idea that the subject of the assignment or exercise alters the statistics
becomes even more solid when considering the improvement across school years for the control
groups. If we consider this to be true, then postmodification length could be a sign of language
maturity. However, there are other ways of looking at maturity and complexity which might give
us better insight into Swedish L2 syntax.

Hunt (1966) mentions consolidation of clauses as a sign of maturity. If we were to assume that
this is also the case for the noun phrase we could procure some very interesting figures. But
before we delve deeper into this matter it is worth mentioning that consolidation within phrases
differs from consolidation of clauses. Consolidation of the noun phrase means adding meaning
to a head without relying on its previous connotations. It also means doing this without
explaining a head of a noun phrase in several clauses. If we look at the noun acting as head of a
noun phrase as this single unit given meaning by its modifications, we could measure how much
weight of the text goes into the noun phrase as modification. A metaphor that comes to mind is a
seesaw, where the head is the center point and the two individuals using it are the pre- and
postmodifiers. Since premodification seems to be carried out mainly with a single word you could
say that this seesaw is being used by a full grown adult and a toddler. Weight lies within the
postmodification and follows the pattern previously mentioned where students mention
something (the head) and then explains it (the postmodification). Premodification, which would
be the toddler, is not sensitive to age and contains only direct classification, which is often done
by using just one word. If we add the number of postmodifiers to the number of premodifiers
without paying attention to the length of either, and then divide it by the total number of heads,
we get a percentage showing how big a part of all noun phrases are embedded in some sort of
modification. It is also here it gets interesting. Using the results showed in the statistical analysis
we have 61.6% embedding for the year 1 high proficiency (Table 1) and 63.8% for year 3 (Table
2). For the control group we have 68.2% for year 1 (Table 3) and 64.6% for year 3 (Table 4).
Surprisingly the figures are fairly similar except for the deviation of the year 1 control group. If
embedding of heads means explaining things by using fewer clauses this could very well be a
measurement of consolidation of the noun phrase and with further studies, probably an
dication of development and maturity. However, this type of measure would produce more
accurate data if it was done in an analysis of error free modification of noun phrases. For
example, even though they have the highest modification index, the year 1 control group showed
many signs of immature language, such as incorrect spelling, wrong prepositions and verb forms and thus they show that they have not matured enough to avoid both simple and more grave errors. This is problematic since in this study this group is not discriminated against. Although the percentages might be a bit skewed because of this it is very interesting to see that each group had about 2/3 embedding of the noun phrase, something which tells us a lot about the phrasal structure of upper secondary students’ language. This means that the embedding percentage can be used as modification index and as I said in the beginning of this section, I sincerely propose that we use it to measure development.

While these percentages tell us about how much of the total noun phrase construction consists of modification it does not tell us anything about the length or complexity of noun phrases and modification, only to what extent the students use modification and how much of the total number of noun phrases that are embedded in modification. Even though length is not proved to be an absolute reliable factor there would certainly not be any harm in taking it into account to get a broader definition of what language maturity and complexity really is. One such measurement could be the average total words used in modification divided by the number of noun phrases. This would generate an index where 1 is zero words per modification and the rest is average modifying words per noun phrase. If we try this we get an average 2.05 modifying words per noun phrase for year 1 high proficiency and 1.59 for year 3. For year 1 control group we get 1.83 and 2.12 for year 3. This is not altogether without problems. The figures for this data do not internally correspond to age or proficiency. There could be many reasons for this. One of them might be the subject of the assignment given to the students; another one could perhaps be that what we write about affects our way of constructing phrases. It could also come down to a regression among the year 3 high proficiency. This would mean that students in year 3, for various reasons, are not performing at the same level as they did back in year 1. Furthermore, the fact that this study does include incorrect language could also be a factor. If we excluded all syntactically incorrect language from the study it would probably result in lower scores for the control groups. Last of all it may also come down to individual differences in skill between groups.

Although this measurement gives us results which are difficult to interpret they could very well be of significance for another study, perhaps one that analysys error free language. However, there are other things we can look into, the use of different kinds of postmodification for instance. Among the groups in the study postmodification varied somewhat but prepositional phrases (50.2%) was the most common. This was expected since this type of postmodification is the most common in English (Greenbaum & Quirk, 2007:375). The second most common type of postmodifier was relative clauses (31.6%) followed by apposition (11.4%) and non-finite clauses (9.9%). The percentages are taken from Table 9 and represent all groups added together. Johansson and Geisler (2009 and forthcoming) have pointed out that subordinate relative clauses are important as part of measuring development. I have also found relative clauses to be
important, primarily since it is such a common type of postmodifier. However, much of the more advanced modification, compared to for example the of-genitive, is carried out by use of apposition and non-finite modification. This is shown in examples (9) (32) and (33) below which are repeated for convenience.

(9) Babel Dark, a local nineteenth-century man, who lives two lives, a public one surrounded by darkness and a private one caught in a beacon of light. (female student, aged 16, academic program)
(32) a crowd running up and down the stairs (female student, aged 18, academic program)
(33) machines designed to fit the human body (female student, aged 18, academic program)

To acknowledge students who try to use more difficult constructions of postmodification I would like to propose that we also add some kind of variation index as a counterweight to the, in my opinion, somewhat overrated relative clause which is appraised by many as a sign of maturity. The reason for this would be to acknowledge variety as opposed to, for example, texts using recycled constructions over and over.

Furthermore, there is the question of gender. In year 1 high proficiency males performed better in all but one category, assuming of course that more is better. In year 3 this did not apply and males were outperformed by females. In the control group the results were much more similar between genders though it was clear that year 3 outperformed year 1, something which was not the case with the high proficiency groups. Taking into account that Johansson and Geisler (2009 and forthcoming) did not find anything statistically significant that could prove gender-related differences I am careful not to reach any drastic conclusions on this matter.

All of this is certainly interesting for a scholar of syntax and linguistics but there are also reasons for teachers to look into these subjects and these kinds of studies. In his study Recent Measures in Syntactic Development Hunt clearly states that he thinks teachers who understand the concept of syntactics to bring this knowledge into the classroom (Hunt, 1966: 736). Hunt argues that teachers do not look at consolidation of sentences and this knowledge would help teachers in their assessment of the students. He also goes as far as saying that clause consolidation is a phenomenon which should be studied at the language arts programs. I am inclined to agree with Hunt on this matter. If a teacher would use a similar method when analyzing written language produced by his or her students, new and previously unrecognized information about the students’ writing could be uncovered. A teacher could, given this information, focus on what the students need to learn. It could be that a student has grasped the syntax of English and that he or she knows how the construction works only to fail when it comes to use of, for example, the correct prepositions. Thus this information could be a very good basis for a needs assessment of students. In his Process Writing with Grammar Teaching (2006) Rohm describes a way of working with grammar in relation to written exercises. Through the process of drafting and correcting Rohm collects grammatical errors and then the students themselves work with these errors. This
makes him able to focus on what they need to learn thus making it an inductive way of teaching grammar. If we were to include a syntactic analysis in such a process writing concept, we could teach students how to work with their own syntactic errors or, if they are already writing in a syntactically complex way we could focus on what makes their language incorrect. This would also help reach the aims and goals of the Swedish upper secondary school curriculum.
Conclusion

The study has generated results which show that the students have a reasonably good knowledge of syntax, in the sense that they know how to build sentences and clauses. What many of the students do not know is how to use language items like prepositions and verbs, not to mention the issues many of them have with spelling. Metaphorically speaking they come forth as an uneducated librarian arranging books on a shelf. They know where the books go but they lack knowledge of their contents. I should mention that this mostly goes for the control group but it is that fact which makes things problematic. In general, this has resulted in very equal results between the groups even though the control groups wrote at a grammatical level far below the high proficiency groups. This tendency was most visible in year 1 of the control group but also existed in year 3. Therefore it is hard to make any final judgment from the data collected and in further studies, using syntactically error free language would be preferred.

Similar to analysis of Johansson and Geisler (2009 and forthcoming), where the subordinate clause index was found the most reliable tool for measuring maturity and development, the most accurate measure is the modification index, previously also named embedding percentage. The things that have been changed are noun phrases instead of main clauses and modification instead of subordination. I think that if this was done in a study of error free noun phrases it would generate results which would be much more accurate. Also the problem of complexity and measuring length could be ignored to a somewhat large extent if we knew the noun phrases included were correct. The other measurements presented, such as modifying words per noun phrase, need to be tested further to become useful.

When it comes to gender, there were differences in some categories, mostly in the high proficiency group, but not enough data of statistical significance has been collected to pass a final verdict on the matter. Furthermore, it has been proven by scholars (see e.g. Hunt 1966, Johansson and Geisler 2009 and forthcoming) that a T-unit analysis can measure development and syntactic maturity and I am of the opinion that a noun phrase analysis can do the same thing, albeit a bit differently. Whether it is more accurate or not is hard to answer because it answers different questions although I am sure the modification index would correspond to a subordinate clause index. What is certain is that the noun phrase is of importance when analyzing L2 learner language.

Last of all, I find that syntactic studies can be a viable help for teachers when working with their students, if not only as an insight into L2 syntax but also as a way of coming up with new ways of teaching grammar. It is likely that students’ language proficiency would increase if they were to practice syntax. By giving students assignments where focus lies on building sentences from knowledge of clauses and modification of nouns they could improve their syntax. I think it is not merely enough to tell students that subordination and modification exist, we should also
tell them exactly how to use it by continually giving examples on how to construct clauses and modifiers. It is possible that, in between the commonly used *of*-constructions of the control groups to the more complex appositions and non-finite postmodifiers of the high proficiency groups, lies only a simple instruction telling them about new ways of modifying nouns and clauses. It is all about having the students think syntactically.
Reference section


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Johansson, Christine & Geisler Christer 2009. The Uppsala Learner English Corpus: A new corpus of Swedish high school students' writing, Uppsala University: Department of English

Johansson, Christine & Geisler, Christer forthcoming. Syntactic Aspects of Learner English Uppsala University: Department of English


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Appendix

Detailed tables of raw data gathered from all of the groups:

Table 12. Statistical analysis of year 1 high proficiency students.

<table>
<thead>
<tr>
<th></th>
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Table 13. Statistical analysis of year 3 high proficiency students.

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Table 14. Statistical analysis of year 1 control group.

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Table 15. Statistical analysis of year 3 control group.

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