

Adverbial Connectors in Advanced EFL Learners' and Native Speakers' Student Writing

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Bachelor Degree Project
English Linguistics

Spring 2010

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Abstract

Adverbial connectors join together sentences and units in a text to signal logical relations. Appropriately used, they can help the reader to make sense of the text. The usage of adverbial connectors can create problems for foreign language learners, and is often shown as under-, over- and misuse of connectors. In this study, a quantitative analysis of connector usage of advanced EFL learners' and native speakers' student writing is presented. For the current corpus-based study, three sub-corpora of the SUSEC (*Stockholm University Student English Corpus*) were chosen. The sample includes 164 linguistic essays from students at Stockholm University and 82 linguistic essays from students at King's College in London. The analysis, where the learners' connector usage is compared to that of native speakers, is based on 69 connectors. The results show that both the learners and the native speakers rely on a rather small set of these connectors in their writing. As a group, the advanced Swedish EFL learners underuse connectors in their written production. Additionally, the learners significantly overuse 12 and underuse 6 connectors. Similarities between the learners and the native speakers were found in the positioning of the connectors. Both groups prefer the most frequently used connectors in the medial position of a sentence, and prefer mostly the same set of connectors in the different positions of a sentence, although some differences in the positioning were also found. The findings create a basis for future research where a qualitative analysis of the connector usage could be carried out in order to increase knowledge of the interlanguage of the learners. The findings could also be used for pedagogical purposes.

Keywords

Adverbial connectors, advanced EFL learners, interlanguage, corpus-based study

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1. Introduction

Adverbial connectors signal logical relations in a discourse and help the reader to connect different units and paragraphs and this way make sense of the text. Several studies have tried to illustrate how connectors contribute to a better understanding of written discourse. The results have shown to be contradictory, but some studies have shown that appropriately used, connectors can facilitate text comprehension and have a positive effect on the clarity of a text (Altenberg and Tapper 1998: 80). In addition, it has been found that even if connectors do not necessarily improve a text's readability and coherence, they have a rhetorical effect and can make a difference with respect to the effect of the text (Mauranen 1993: 162–168).

Many studies have also looked into the question whether there is a significant correlation, between use of cohesive ties and coherence and whether these could then be linked to writing proficiency/development. The results of the studies have been contradictory i.e. no correlation has been found (Granger & Tyson 1996: 17). Nevertheless, the use of connectors is found to be problematic both for foreign language learners as well as native speakers, and is often shown as under-, over- and misuse of connectors in written products (see e.g. Bolton et al. 2002; Crewe 1990; Field and Yip 1992; Wei-yu Chen 2006). The use of connectors is sensitive to discourse type which might create problems especially for foreign language learners. Connector usage can vary also from one language to another and not all languages mark connectors explicitly in the way English does (e.g. Finnish, see Mauranen 1993).

The present study investigates the use of connectors by advanced Swedish learners in comparison to that of native speakers of English. The study is quantitative in character and the organization of this paper is as follows. First, the aim and the scope of the study are presented, then the classification of adverbial connectors is discussed along with some difficulties connector usage might cause for foreign language learners. In addition, an overview of previous research on connectors in learner writing is given. Finally, the results are presented together with the analysis and suggestions for future research are discussed.

1.1 Aim

The purpose of the present study is to investigate how English as a foreign language (EFL) learners use connectors in comparison to that of native speakers (NS) of English. This study draws on a similar study by Altenberg and Tapper (1998) where the use of adverbial connectors in advanced Swedish learners' written English is investigated. The aim is to present a quantitative analysis of the connectors found in the student essays. The research questions examined in the study are:

- How does the Swedish EFL learners' use of connectors compare to that of native English speakers in comparable written production?
- How does the EFL learners' use of connectors compare to what has been found in

previous research on Swedish EFL learners as well as learners with other language backgrounds? Specifically, do the Swedish students underuse or overuse certain connectors?

- Do the Swedish learners place their connectors in the same position in the sentence as the native English students?

1.1.1 Scope of the Study

As mentioned above, the present study draws on a similar study by Altenberg and Tapper (1998). However, the current one is larger in quantitative dimension. The corpora investigated are approximately five times larger than that of Altenberg and Tapper's. On the other hand, some dimensions of Altenberg and Tapper's study are not included here considering the scope of the study. The background variables such as age, sex, etc. are overlooked, as are the errors in connector usage. The terms 'overuse' and 'underuse' do not necessarily indicate incorrect usage of the connector in question, but are only used as descriptive labels.

2. Background

In this section, the definition of adverbial connectors is discussed and the classification used in the study presented. Additionally, the concept of interlanguage as a theoretical framework is discussed. Previous research within the field is also presented in this section.

2.1 Classification of Adverbial Connectors

Several alternative terms to 'adverbial connectors' have been used in previous studies. Grammarians and researchers label and categorize these cohesive devices differently. Connectors are variously referred to as 'connectives' (Crewe 1990; Pander and Sanders 2006), 'conjunctive adverbials' (Wei-yu Chen 2006) or 'conjuncts' (Quirk et al. 1985). Some grammarians also use the term 'sentence adverbials' in the case of 'conjuncts' since they can concern a sentence as a whole and relate one sentence to another (Quirk et al. 1985: 632). Furthermore, the terminology is not always clear since at times, the terms within one study may vary (see e.g. Altenberg and Tapper 1998, where adverbial connectors are also referred as 'conjuncts'). In this study, the term 'adverbial connector', or simply 'connector' is used throughout.

Adverbial connectors conjoin linguistic units, such as sentences, paragraphs and even larger parts of a text (Quirk et al. 1985: 631–632). They are either one word items (e.g. *however*, *therefore*) or fixed word combinations (e.g. *on the other hand*). With the help of connectors, the listener or the reader is able to connect units together and make sense of the text (Altenberg and Tapper 1998: 80). This way, connectors contribute to the clarity and comprehensibility of a text. That said, they are not always necessary in order to create

clarity. The use of connectors varies from one text type to another and reflects writers' opinion or his/her assessment on how s/he views the connection between two linguistic units (Altenberg 1999: 250; Quirk et al. 1985).

Classification of adverbial connectors is done differently in different studies (see e.g. Altenberg and Tapper 1998 and Bolton et al. 2002). In this essay, the classification of adverbial connectors is based on Quirk et al. (1985), dividing adverbial connectors into the following seven semantic roles:

- Listing connectors (e.g. *firstly, secondly*)
- Summative connectors (e.g. *(all) in all, in conclusion*)
- Appositive connectors (e.g. *for example, that is*)
- Resultive connectors (e.g. *hence, in consequence*)
- Inferential connectors (e.g. *in that case, otherwise*)
- Contrastive connectors (e.g. *however, on the other hand*)
- Transitional connectors (e.g. *by the way, in the meantime*)

(based on Quirk et al 1985: 624–636)

Listing connectors assign numerical labels to the items listed (e.g. *first, second, third*). In addition, they indicate relative priority and create integral structure to a text. They can also signal that an item has a similar force to a preceding one (e.g. *equally, similarly*) or, on the other hand, assess an item as adding greater weight to a preceding one (e.g. *above all*) (Quirk et al. 1985: 634–637).

Summative connectors precede an item which is to be looked at in relation to specific items that have gone before. The same applies also to *appositive conjuncts*, but while summative conjuncts introduce an item that embraces the preceding one (e.g. *all in all*), the appositive conjuncts rather express the content of the preceding item/s (e.g. *for instance*) (Quirk et al. 1985: 637).

Resultive connectors indicate a conclusion, summary, a result, etc. (e.g. *as a result, in conclusion*). In a similar way, *inferential conjuncts* indicate a conclusion that is based on logic and supposition (e.g. *in other words*) (Quirk et al. 1985: 638).

Contrastive connectors “present either contrastive words or contrastive matter in relation to what has preceded” (Quirk et al. 1985: 638) (e.g. *on the other hand, in contrast, however*). *Transitional connectors* are used to “shift attention to another topic to a temporally related event” (Quirk et al. 1985: 639). *By the way* and *in the meantime* are examples of this type

of connectors.

Quirk et al.'s classification of adverbial conjuncts has its strengths and weaknesses. One matter that can make the analysis of certain semantic roles problematic is that some of the connectors can be listed under several roles. For instance, the connector *thus* can be listed under *summative*, *appositive* and *resultive* roles depending on the context (see Quirk et al. 1985: 365–368). Since these roles share some features and are semantically connected, the exact classification of the connector might in some cases be difficult. Adhering to a classification that relies purely on this kind of pre-existing categories is sometimes questioned, since such lists of connectors are neither uncontroversial nor finite (Bolton et al. 2002: 171).

The seven main roles can be further divided into subcategories, which are not considered in the present study due to the scope and the aim of the study. A modified version of the classification used in the study is discussed in the Method section.

2.2 Adverbial Connectors and Interlanguage

As mentioned above, the use of adverbial connectors can be problematic for native speakers (NS), but especially so for speakers who have English as second (ESL) or foreign language (EFL). Since the material in the study contains student essays from EFL students, this term is used throughout the study, although the theories usually use the term ESL since it is closely connected to the concept of *Second Language Learning* and *Second Language Acquisition* (SLA). However, in the present study, the term 'learning' is seen more suitable concept to use in the case of adult university students.

The difficulties connector usage may cause for an EFL learner are due to several reasons. First of all, the use of connectors is connected with discourse type and register, which makes it more complicated for a learner to distinguish and learn to use the appropriate connectors used in different discourses. In order to know which connector to use in a given situation, a learner needs to know about different registers and text types. For instance, certain connectors belong to the formal registers (e.g. *therefore*, *thus*) whereas the resultive connector *so* and the contrastive connector *anyhow* can be seen in informal registers (Altenberg and Tapper 1998: 87; Quirk et al. 1985: 635–636). The other problem is that connectors are not always needed and moreover, there are differences between languages with respect to marking connectors explicitly. In addition, connector usage is connected to factors like the development of the learners' communicative competence and how language is taught (Altenberg and Tapper 1998).

Other processes that have an effect on difficulties in connector usage have to do with the EFL learner's *interlanguage* (IL). This concept refers to the separate linguistic system evidenced when a second language learner attempts to produce meanings in the language s/he is learning. According to Tarone (2006: 747–748), interlanguage is usually referred to

as characteristic of adult second-language learners, meaning learners who already have established their native language (NL) and passed puberty. In the current study, this theory of interlanguage is applied to EFL learners as well.

One central feature of interlanguage is that it ceases to develop at some point short of full identity with the target language (TL). However, this point, known as *fossilization*, has caused disagreement among researchers. They disagree about its inevitability as well as the causes behind it. Interlanguage is linked both to the learner's native language and the target language by interlingual identifications in the perception of the learner. In other words, it is no longer believed that second-language learner's language is solely shaped by transfer from the first language, but it is rather seen as a system consisting of native language transfer, overgeneralization of the target language rules, transfer of training, strategies of communication and strategies of learning (Tarone 2006).

The above-mentioned psycholinguistic processes shape learners' interlanguage (Tarone 2006). *Native language transfer* has to do with how language learners perceive certain units as the same in their NL, IL, and TL. So, for example, if NL 'table' is perceived exactly the same as TL 'mesa,' the learner can develop an interlanguage in which 'mesa' could erroneously be used in expressions like 'table of contents,' and so on. *Overgeneralization of target language rules* is a process that is also widely observed in child language acquisition. It refers to the learner showing evidence of having mastered a general rule, but not yet knowing all the exceptions to that rule. A common example of this is the past tense marker *-ed* when a learner applies the rule for all verbs, regular and irregular alike, e.g. 'walked', *'goed' . This error indicates evidence of progress, but it also shows that the learner is in the middle of a learning process that is not yet complete. *Transfer of training* occurs when rules learned from instructions are applied by the learner. This learning can be successful, but sometimes errors occur. For example, misunderstanding of a past perfect rule in a text book can result in a learner using the past perfect for all events that occurred long ago, regardless of their relation to any more recent event, e.g. *'My relatives had come from Spain in the 1700s'. When an EFL learner tries to resolve communication problems where interlanguage is not sufficient, *strategies of communication* are used. For example, when the linguistic item needed is not available, the learner can draw on different strategies of communication in order to make her/himself understood (e.g. 'an electrical cord' can be referred to as 'a tube,' or 'a kind of cord that you use for electric thing'). When a learner consciously attempts to learn the target language, for instance by using mnemonics to remember target vocabulary, it is referred as *strategies of learning* (Tarone 2006).

While all these strategies can be successful, they can also result in error. Moreover, these processes are not the only factors that affect interlanguage. Interlanguage seems to vary also in different social context or discourse domains. For instance, international teaching assistants may be more grammatical and fluent in talking about their academic field than when talking about some everyday topic (Tarone 2006).

2.2.1 Previous Research on Connectors in Learner Writing

A significant amount of previous research has been carried out on the analysis of patterns of connector usage in student writing (see Bolton et al. 2002). Several studies of EFL and ESL learners' use of connectors have shown that learners seem to over- and underuse connectors in their written discourse (see e.g. Altenberg and Tapper 1998). Also misuse of some connectors by ESL writers can be said to be an almost universal feature (Crewe, 1990). This section presents previous studies within the area of connector usage by EFL learners.

A study by Granger and Tyson (1996) on connector usage in essays written in English, where samples of 89,918 words (French EFL student essays) and 77,723 words (native students' essays) were investigated, showed no overall overuse of connectors. However, the results showed evidence of overuse and underuse of individual connectors. The learners seemed to overuse connectors that corroborate the argument, such as *indeed* and *of course*, as well as appositive connectors (*namely, for instance, e.g.*). The reinforcing connector *moreover* was also overused by the learners. The eight most underused connectors were *however, instead, though, yet, hence, therefore, thus, and then*. In addition, the position of the connectors was investigated and the results showed significant overuse of sentence initial connectors (Granger and Tyson, 1996).

Altenberg and Tapper (1998) studied the use of adverbial connectors by advanced Swedish EFL learners' written English, comparing it with comparable types of native Swedish and English writing. The overall results showed that Swedish learners used fewer connectors in their essays than the native English students. According to the researchers, their finding supports the impression of Swedish learners' tendency to underuse connectors in written English. Another finding was that of a variation in connectors used per essay, indicating that connector use is closely connected to individual writer's style and compositional technique rather than mere EFL proficiency (Altenberg and Tapper 1998: 83).

Altenberg and Tapper (1998) found the Swedish learners used more appositive connectors but fewer resultive and contrastive connectors than the native students. Overused conjuncts in Swedish learners' essays were *furthermore, for instance, still* and *of course*. The connectors that the learners clearly underused were *hence, therefore, thus, however, and though*. In terms of individual connectors, the Swedish learners and the native speakers relied on roughly the same types; seven of the listed connectors were identical in the two groups (*for example, however, of course, so, therefore, thus, that is (i.e.)*). In addition, the position of the connectors (whether clause-initial, medial, final, 'elliptic' or 'appositive' position) was investigated (see Altenberg and Tapper 1998: 88). It was found that the Swedish learners tended to overuse the English pattern, having the connector in an initial position. On the whole, Swedish learners were found to underuse conjuncts in contrast to

many EFL learners of other language backgrounds and they tended to avoid formal connectors and replace them by less formal ones (Altenberg and Tapper 1998: 84–93).

Narita, Sato and Sugiura (2004) found comparable results to Altenberg and Tapper's (1998) study when investigating Japanese EFL learners' use of logical connectors. They found that learners significantly overused *for example, first, moreover, in addition* and *of course*, whereas they underused *then, yet* and *instead*. In line with Altenberg and Tapper's (1998) study it was found that Japanese learners overused connectors in sentence-initial position, and that the learner students shared a common set of high frequency connectors with the English native students (Narita et al. 2004: 1171–1174). Learners' overuse of adverbial connectors has also been reported with respect to Chinese and Taiwanese learners (Fei 2006; Wei-yu Chen 2006).

In sum, all the above-mentioned studies have shown that, despite the differences in general frequencies, over- and underuse of individual connectors is a general pattern. The other common feature shown in many studies of learners' use of connectors is that learners seem to rely heavily on a rather small set of connectors in their writing and the ranking of most frequently used connectors is reported to be fairly similar to that of the native speakers (Altenberg and Tapper 1998; Bikeliene 2008; Bolton et al. 2002; Fei 2006; Granger and Tyson 1996; Narita et al. 2004; Tapper 2005; Wei-yu Chen 2006: 122).

3. Material

The corpus material used in the present study is part of the *Stockholm University Student English Corpus* (SUSEC). The whole corpus contains over one million words of student essays written by learners of English studying in the Department of English at Stockholm University and native speakers of English studying in the Linguistics Department at King's College, London. The learner papers come from students between their first and fourth term of study of English, and the native-speaker papers from students in their second or third year of university study. The essays are written by students studying general linguistics, English linguistics or English literature. The texts are final drafts of a student project or assignment but vary in length, level, and field (discourse, semantics, phonetics, sociolinguistics and corpus linguistics in general). All the texts in the corpus were contributed by the authors with full consent. The texts have been anonymized by removing all examples of the student names and other identifying information.

For the present study, eighty-three (83) linguistic essays from Swedish first term (A level) students (*SULing A*), eighty-one (81) linguistic essays from Swedish second term (B level) students (*SULing B*), and eighty-two (82) linguistic essays from King's College second and third year students (*KC*) were chosen. As mentioned above, connector usage is sensitive to style, so it was essential that the topic areas would be sufficiently similar to be used for the purpose of the study. This is why no literary essays were included in the study.

Table 1. Size of the sub-corpora used in the study

	Texts	Words
<i>SULing A</i>	83	81,873
<i>SULing B</i>	81	171,014
<i>KC</i>	82	247,435

The material is fairly new and has not been investigated previously. The learner population is not different to that of Altenberg and Tapper (1998) but the essays themselves are different in that they are all linguistic essays written by students studying English linguistics or general linguistics.

4. Method

Corpus linguistics is a methodology that looks at relatively large amounts of naturally occurring language, and observes relative frequencies and patterns of association e.g. between groups of words (Hunston 2006: 244). A corpus is an electronically stored collection of texts. It consists either of complete texts or of text extracts. A large corpus can be used with a quantitative approach in linguistic studies. It can be examined through the use of corpus software, a concordancer, which e.g. searches the corpus for a given target item, counts the number of instances of the target item and displays them so that the corpus user can carry out further investigation. Instances of a single word can be searched and the information about frequency can be used to compare one corpus with another. This kind of methodology can also be used as a starting point for more qualitative research (Hunston 2006: 234–235; 246). Learner corpora (corpora consisting of collections of written or spoken texts produced by learners of a language) allow the learner’s output to be compared with that of native speakers and can be used to “identify features of language that occur significantly more or less frequently in the learner corpus than in a comparable corpus of native-speaker texts” (Hunston 2006: 246).

At a more general level, the method used in the present study follows the framework of *Contrastive Interlanguage Analysis* (CIA), which compares and contrasts what non-native and native speakers of one and the same language do in a comparable situation (Granger 1996). This method is related to classic *Contrastive Analysis* (CA) which establishes comparisons between two different languages. CIA involves two types of comparison: comparison of native and non-native varieties of one and the same language and comparison of different interlanguages (Granger 1996: 43–44). In the present study, only the first type of comparison is explored, examining the frequency of use of connectors.

4.1 Selection of the Connectors

The selection of connectors for the study is based on the list from Quirk et al. (1985). Their list is relatively long since it covers all adverb realizations (except the listing connectors which are an open class) together with some frequently occurring prepositional and noun phrases (see Quirk et al. 1985: 634ff). This list was too extensive considering the limited scope of the present study. First of all, transitional connectors were excluded since they are primarily used in narrative texts and thus are more peripheral to linguistic essays. Another reason for excluding these connectors was that a quick check revealed that they were of low frequency in all three sub-corpora (ranking after 30). Secondly, some individual connectors had too many occurrences to be scrutinized manually. Some connectors with no occurrences (e.g. *on top of it all*, *to cap it all*) were also left out from the study. From the connectors included in the study fifteen connectors were found to have a score of zero in all three corpora (see Appendix 1). However, to be able to get an overall picture of the students' connector usage and in order to have a relatively large but manageable sample of connectors, altogether 69 connectors were investigated.

When the connectors were chosen, every occurrence was extracted by using the AntConc concordance software. The software displays the search term in context, which made the manual task of the study possible. The manual analysis was time-consuming but it was needed since many connectors have two or more different roles (e.g. *still* functions both as a time adverb and a connector). In addition, the *semantic* roles of connectors were the ones that were primarily studied. The corpora included some ambiguous cases where it sometimes was impossible to tell whether a word was meant to be used as connector or not. These cases required reading more than one paragraph of the essay to conclude this. In addition, in some individual cases, another linguist was consulted. Moreover, some cases of misuse made the manual task difficult. This is why all the ambiguous cases are not included in the study. To illustrate the manual task, below are some examples of the relevant/irrelevant cases in the sub-corpora.

1. *Still*, the fact that there is a difference between the speech of women and men seems to be a consensus shared by most (SULingB054, italics added).
2. Today the difference between women and men is not as big as it was in the past, but one difference that *still* exists to a certain extent is their use of language (SULingA016, italics added).

In the first example, *still* functions as a connector, whereas in the second example it clearly is a time adverb. Thus, the second example was not included in the study.

Another example of the connector *at the same time*, further helps to clarify the determination of the semantic role of the connector in question. As a concessive connector, *at the same time* is used when “one unit is seen as unexpected in the light of the other” (Quirk et al. 1985: 639). On the other hand, *at the same time* can also be used as a time adverbial.

3. This in turn is creating not one but 10 linguistic minority groups, something which

the government claim they were trying to get away from. *At the same time*, the government continue to insist that there are 11 official languages in South Africa (KC3LING009, italics added).

4. I drive to the stable where I take a ride and of course have some talk to my horse *at the same time* (SUALING 040, italics added).

Example 3 was included in the study as a connector, where the semantic role of the connector can be interpreted as conjoining a unit that is seen as unexpected, to a previous one. Example 4 was not included in the study, as it functions as a time-adverbial, semantically expressing something that occurs simultaneously with another action.

After the manual task, the overall frequencies were calculated and normalized (per 10,000 words). This was done because the three sub corpora as well as the individual texts differ in size. Finally, the frequencies as well as the position of individual connectors were examined and analyzed.

5. Results and Analysis

5.1 Overall Frequencies

A total of 1,985 connectors in the learner corpus and 2,399 in the native-speaker corpus were identified. This overall frequency of connectors in the material shows that the Swedish learners use fewer connectors in their texts than the native speakers (78 versus 97 connectors per 10,000 words) which is statistically significant ($p < .001$). No considerable difference in overall frequencies was found between the two learner groups (*SULingA* and *SULing B*). A small difference can be found in the types of the connectors used by the groups; Swedish learners use 51 different types of connectors, whereas the native speakers use 45. Table 2 shows the number of connectors used in the three corpora.

Table 2. Overall frequency of connectors in *SULing A*, *SULing B* and *KC*

	SULingA	SULingB	SULing A & B	KC
Corpus size in words	81,873	171,014	252,887	247,435
Connectors	656	1,329	1,985	2,399
Connectors/10,000 words	80	78	78	97
Types of connectors	49	47	51	45

These results concur with the findings of Altenberg and Tapper (1998) who identified 72 connectors per 10,000 words in the learner corpus vs. 95 connectors in the native speaker corpus. Considering that the present study is approximately five times larger in terms of corpus size than that of Altenberg and Tapper's, this could indicate that Swedish learners

tend to underuse connectors in their written production. In addition, Altenberg and Tapper (1998) found that Swedish learners use fewer connectors than Swedish students writing in their native language which could suggest that the problem lies more in the fact that the learners have to express themselves in a foreign language instead of native language influence (Altenberg and Tapper 1998). Also Bikeliene (2008) found that Lithuanian learners had a slight tendency to underuse connectors (Bikeline 2008). However, Bikeliene's study concerned only resultive connectors and the difference was not regarded as statistically significant.

That said, the results of the current study are in contrast to some other studies of EFL learners of other language backgrounds. As mentioned previously, in Granger and Tyson's (1996) study with French learners, no general over- or underuse of connectors was found. Field and Yip (1992) as well as Narita et al. (2004) found that Cantonese and Japanese learners overused connectors. Also in Fei's (2006) study of Chinese learners, overuse of connectors by the learners was found. In Wei-yu Chen's (2006) study of Taiwanese learners, slight overuse of connectors was found. Another contradiction to the present study, that also involves Swedish learners, was found by Tapper (2005) who analyzed a learner corpus containing approximately 159,000 words and a native corpus of approximately 149,000 words. She found that Swedish learners used far more adverbial connectors in their essays than native US students (93 vs 73). This difference was statistically highly significant (Tapper 2005: 122). These results verify the other learner studies but are in contrast to the Altenberg and Tapper (1998) as well as the present study.

It seems that the present study supports the results found in Altenberg and Tapper (1998) but shows a difference compared to other previous learner studies. However, the above-mentioned studies contained much less data in terms of the number of words in the material than the present study. In addition, some studies have included a shorter list of connectors than the present one, and the connectors studied vary as well. A reason behind the contradictory results could also be that different native corpora have been used in different studies. For example, Wei-yu Chen (2006) compared learners' student writing to native professional writing. When it comes to the studies of Swedish learners, Altenberg and Tapper (1998) used a British student corpus whereas Tapper (2005) used an American student corpus. Also the methodological differences of previous studies may explain some of the differences (see Bolton et al. 2002). Other possible reasons behind the contradictory results are the stages of the learners' interlanguage and the processes within it, such as native language transfer and strategies of learning. Several authors have also suggested that the results show reflections of foreign language education (see e.g. Altenberg and Tapper 1998).

It should be emphasized that when analyzing the results of the present study, caution is in order. For instance, the number of connectors per essay is not considered in the study, since it is beyond the scope of the study. It is possible that individual students' use of connectors varies greatly and could hence affect the results. Additionally, the manual analysis revealed that some individual connectors were used several times per student, e.g. *however*, which

one student had used 11 times in his/her essay (more on that in section 5.2). Needless to say, conclusions about general learner behavior from results generated by analyses of the SUSEC corpus cannot be drawn since the learner population represents a very specific group of learners. That said, the size of the corpus representing this population is unusually large compared to previous studies.

5.2 Individual Connectors

Looking at the use of individual connectors, the overall results show that the ten most frequently used connectors cover approximately two-thirds of all the connectors used in the three corpora. Table 3 shows the top ten connectors in the three corpora.

Table 3. Top ten connectors in SULingA, SULingB and KC

SULing A	n	%	SULing B	n	%	SULing A and B	n	%	KC	n	%
<i>however</i>	104	15,9	<i>however</i>	252	19	<i>however</i>	356	17,8	<i>However</i>	573	23,9
<i>for example</i> (<i>e.g.</i>)	71	10,8	<i>for example</i> (<i>e.g.</i>)	133	10	<i>for example (e.g.)</i>	204	10,3	<i>Therefore</i> <i>for example</i> (<i>e.g.</i>)	423	17,6
<i>therefore</i>	54	8,2	<i>furthermore</i>	102	7,7	<i>therefore</i>	146	7,4	(<i>e.g.</i>)	318	13,3
<i>thus</i>	37	5,6	<i>thus</i>	99	7,4	<i>thus</i>	136	6,9	<i>So</i>	201	8,4
<i>so</i>	34	5,2	<i>therefore</i>	92	6,9	<i>furthermore</i>	129	6,5	<i>that is (i.e.)</i>	197	8,2
<i>furthermore</i>	27	4,1	<i>for instance</i>	57	4,3	<i>on the other hand</i>	79	4	<i>Thus</i>	93	3,9
<i>on the other</i> <i>hand</i>	25	3,8	<i>that is (i.e.)</i> <i>on the other</i> <i>hand</i>	55	4,1	<i>so</i>	78	3,9	<i>in addition</i>	53	2,2
<i>of course</i>	25	3,8	<i>hand</i>	54	4,1	<i>that is (i.e.)</i>	78	3,9	<i>Firstly</i> <i>on the other</i> <i>hand</i>	47	2,0
<i>that is (i.e.)</i>	23	3,5	<i>so</i>	44	3,3	<i>for instance</i>	75	3,8	<i>Finally</i>	37	1,5
<i>in addition</i>	21	3,2	<i>still</i>	44	3,3	<i>in addition</i>	62	3,1			
Total	421	64,1		932	70,1		1343	67,6		1982	82,7

n= raw frequency

%= percentage of an individual connector to the overall frequency of the connectors studied

Table 3 shows that there is a great deal of overlap between the groups with respect to which connectors are used most frequently. Eight of ten connectors are shared by KC and SULing A and B. The most frequently used connectors cover 64% of all the used connectors in SULing A, 70% of all the connectors in SULing B, 68% in both learner groups, and 83% in the native speaker group. As shown above, only four connectors (*furthermore*, *for instance*, *of course* and *still*) used by Swedish learners are not represented in the native list. Additionally, only two connectors in the native list (*firstly* and *finally*) are not represented in the learner groups. This means, as found in previous studies of Swedish learners (Altenberg and Tapper 1998; Tapper 2005), that Swedish learners and native speakers rely on a relatively small set of connectors, mostly the same ones.

However, compared to previous studies of Swedish learners, the learners in the current study seem to rely on the top ten connectors to a higher extent. For instance, the frequencies in Altenberg and Tapper's (1998) study were 60% (learners) vs. 76% (native

speakers) and in Tapper's (2005) 48% (learners) vs. 61% (native speakers). Similar results have also been found in studies with other learner groups. For example, Wei-yu Chen's (2006) study shows very similar overall frequencies in comparison to the current study. With Taiwanese learners, the top ten used connectors accounted for 65% of all the connectors used in the Taiwanese learner corpus and 67% in the reference corpus. Also the ranking for the top four frequently used connectors from both corpora was quite similar: *however, therefore, for instance/example* and *thus* for the learner corpus, and *however, for instance/example, thus, and therefore* for the native corpus (Wei-yu Chen 2006). Also Narita et al. (2004) found that four (*for example, however, therefore* and *then*) of the top six connectors were identical in the EFL and native speaker corpora.

There are three individual connectors in particular that the Swedish and the native students of the present study rely heavily on: *however, for example* and *therefore*. The native speakers rely on these same connectors to a higher degree, which can also be shown in that the most frequently used connectors represent 82% of the total number of connectors, whereas the most frequently used connectors in the Swedish corpus account for 64% of all the connectors. It is interesting to see that *however* covers 24% of all the 2,399 connectors in KC students' essays which makes the frequency noticeable. Similar results were also found by Tapper (2005) who found that the most frequently used connector among learners and the native speakers was *however*. In the native group, it accounted for 16% of all the connectors whereas in the learner group it accounted for 9% of all the connectors. In addition, Altenberg and Tapper (1998) found that *however* was the most frequently used connector in the native corpus (25%) and came second in the learner corpus (9%). *However* seems to be frequently used in other learner groups as well. With Taiwanese learners, it was the most frequently used in the corpora, and in the reference corpus, it accounted for 27% of all the connectors used. Also Bolton et al. (2002) found *however*, followed by *therefore*, to be the most frequently used connector in the academic papers they used in the study. Additionally, Narita et al. (2004) found that *however* was the most frequently used connector in the native corpus and the second most frequently used connector in the learner corpus.

Again, it should be emphasized that the connectors used in the individual essays are not considered in this study, nor is the frequency of an individual connector per essay. However, the latter matter required a quick closer look since it was feasible within the scope of the study. This closer survey showed that two students in *KC* corpus used *for example* (*e.g.*) more than ten times in their essays. On the other hand, in the *SULing B* learner corpus, the connector *for instance* is used ten times by one student, whereas it is rarely used at all in the reference corpus. *However* is used over ten times by fourteen students in the native corpus, whereas only three students use it over ten times in *SULing B* and none in *SULing A*. The same kind of "individual overuse" applies to *i.e.*: Five students in the native corpus use it over ten times, but no student uses it this many times in the learner corpora. Additionally, *thus, therefore* are connectors that some students use several times in their essays, however no student uses it over ten times.

The cases where the above-mentioned frequently used connectors appeared more than ten times were considered to be left out from the study, but due to the time-consuming manual task which would have included looking at each essay carefully and reading more than one paragraph of each essay, they were included. In addition, a proper criterion for disregarding certain essays was difficult to determine. This again means that the results are not as reliable as they could be.

Additionally, the results could differ considerably with another kind of learner group and especially with other topic areas since connector usage is dependent on the register and also a stylistic matter. It could also be that some students clutter their text with too many connectors, which was the case with the Taiwanese learners (Wei-yu Chen 2006).

5.2.1 Overuse and Underuse of Connectors

In addition to differences in general over- or underuse, previous research has shown over- and underuse of certain individual connectors. This has also been found in the present study. Tables 4 and 5 show those connectors that were underused and overused by the learners.

Table 4. Connectors overused by the Swedish learners (raw frequency)

Connector	SULing A & B	KC
<i>thus</i>	136	93
<i>furthermore</i>	129	28
<i>for instance</i>	75	4
<i>on the other hand</i>	79	40
<i>still</i>	61	22
<i>of course</i>	56	31
<i>in other words</i>	34	4
<i>nevertheless</i>	34	10
<i>consequently</i>	27	15
<i>at the same time</i>	23	7
<i>first of all</i>	13	0
<i>in comparison</i>	25	13

p<.050=statistically significant difference

Table 5. Connectors underused by the Swedish learners (raw frequency)

Connector	SULing A and B	KC
<i>however</i>	356	573
<i>therefore</i>	146	423
<i>for example (e.g.)</i>	318	204
<i>so</i>	78	201
<i>that is (i.e.)</i>	78	197
<i>firstly</i>	15	47

p<.050=statistically significant difference

It is noteworthy that all the connectors overused in Altenberg and Tapper's study (1998) can be found in the present study. However, the present study shows some differences with respect to Tapper's (2005) list, e.g. in the case of *for example* which in this study is significantly underused and not overused. The tables show that there are some significant differences between the corpora in the tendency to use certain connectors. As seen, Swedish learners significantly overuse twelve, and underuse six connectors. One explanation for the learners' overuse of the connector *for instance* could be that the learners in general vary their connector usage more compared to the native speakers (see Table 2), i.e. it is possible that the native speakers rely more on other appositive connectors such as *for example (e.g.)* and *namely*, or that they prefer the equivalent connector *such as* which was not included in the study. A quick search for *such as* reveals that it occurs more often in KC (F=370) compared to SULing A and B (F=251). In fact, the native speakers' preference of the connector *such as* was the main reason behind the underuse of *for instance* by the native speakers discovered in the study of Altenberg and Tapper (1998). The overuse of *for instance* can also be reflected in the underuse of *for example*.

The Swedish learners' overuse of *of course* is reflected both in Altenberg and Tapper's (1998) study, and Tapper's (2005) study. Even Granger and Tyson (1996) and Narita et al. (2004) reported overuse of *of course* by different groups of learners. Tapper (2005) suggests that the overuse could be a shared interlanguage characteristic, which the results of the present study would support.

Other overused connectors that reflect the previous studies of Swedish learners' connector usage are *furthermore* and *still*, which were found to be overused in Altenberg and Tapper (1998) and Tapper (2005). Nonetheless, in the case of *still*, both the learners and the native students seem to prefer the more formal connector *however* to express contrast. The same observation was also made by Altenberg and Tapper (1998) and Tapper (2005). The current study also supports previous findings from Narita et al. (2004), reporting overuse of *in addition* by Japanese learners, and from Bolton et al. (2002), reporting overuse of *so*, *thus*, *therefore*, *on the other hand* by Chinese learners.

The underused connectors in the current study are *however*, *therefore*, *for example* (e.g.), *so*, *that is* (i.e.) and *firstly*. Even though *however* is the most frequently used connector by the learners, it still is underused compared to the native speakers. One explanation for the underuse of *therefore* and *that is* (i.e.) could be these connectors belong to the formal register. The underuse of *firstly* could partly be explained with the learners overuse of *first of all*, or their preference of the connector *first*, which is not included in the study. Altenberg and Tapper (1998) suggest lack of register awareness as one of the reasons for the underuse of certain connectors. They also suggest that the Swedish learners use a more informal style of writing and thus use more informal connectors. This could be one of the reasons for the overuse of e.g. *of course*, and underuse of *however* but does not support e.g. the overuse of the formal connector *thus*.

Interestingly, some other discrepancies between the present study and previous studies were found. Altenberg and Tapper (1998), Tapper (2005) and Narita et al. (2004: 1173) found underuse of *yet*. In addition Bolton et al. (2002) found underuse of *consequently*, *nonetheless*, *at the same time*, *on the other hand*, which were all overused in the present study.

In sum, both similarities and differences can be found. The reasons for the differences are not always clear. One possibility is that different studies have used different types of reference corpora. Crewe (1990) presents an interesting general suggestion for learners' underuse of certain connectors, namely that certain types of exercises often found in textbooks are a possible source of the problem. These exercises could lead students to view connectors as mere words or expressions that may be used in a text in order to give it an 'academic' look (Crewe 1990).

5.3 Position of Connectors

In English, many connectors can have a changeable position in clauses and sentences. Even though the clause initial position is the norm for most connectors, some connectors are common in medial position (e.g. *however*) or final position (e.g. *anyway*) (Quirk et al. 1985). Previous studies of learners' connector usage have found a tendency to place connectors in the initial position (Altenberg and Tapper 1998; Field and Yip 1992; Granger and Tyson 1996; Narita et al. 2004). However, while in these studies the occurrence position of all the connectors is studied, in the current study only the clause position of the top 12 connectors in the corpora is examined. Three variants have been distinguished: initial, medial and final position. Table 6 shows the position of the connectors in the learner corpora and the native corpus. The separate results for SULing A and SULing B can be found in Appendix 2.

Table 6. Position of connectors in SuLing A and B and KC

SU A and B	n	initial (%)	medial (%)	final (%)	KC	n	initial (%)	medial (%)	final (%)
<i>however</i>	356	65	35	1	573	64	35	1	
<i>for example (e.g.)</i>	204	22	76	1	318	29	70	1	
<i>therefore</i>	146	32	68	0	423	43	57	0	
<i>thus</i>	136	35	65	0	93	44	56	0	
<i>furthermore</i>	129	92	8	0	28	100	0	0	
<i>on the other hand</i>	79	39	61	0	40	30	70	0	
<i>so</i>	78	38	62	0	201	7	93	0	
<i>that is (i.e.)</i>	78	15	85	0	197	4	96	0	
<i>for instance</i>	75	59	40	1	4	50	50	0	
<i>in addition</i>	62	85	15	0	53	81	19	0	
<i>firstly</i>	15	80	20	0	47	64	36	0	
<i>finally</i>	41	75	20	0	37	84	16	0	
<i>still</i>	61	18	82	0	22	0	100	0	
<i>of course</i>	56	25	71	4	31	55	45	0	
Total	1516	48	51	1	2067	42	58	0	

Note: the percentages have been rounded off to a nearest whole percentage number which may affect the total percentage.

The table shows that both groups seem to prefer the medial position for the top twelve connectors. On average, 51% of the learners' and 58% of the native speakers' connectors are placed in the medial position. *However, furthermore, in addition finally* and *firstly* are preferred initially by both groups. Another connector that is preferred in initial position by the learners is *for instance* which divides equally in initial and medial position by the native speakers. On the other hand, the learners tend to place the connector *of course* in the medial position while the native speakers prefer to use it in the initial position. This is the only case in which the general pattern is reversed in the two groups.

Even though the positional tendencies of all the connectors included in the study is not considered, it is interesting to note that the positions of the top twelve connectors show discrepancies with respect to previous studies of learners. While those studies have discovered the learners' preference of the clause-initial pattern, the present study, in the case of the top twelve connectors, does not support this. There are also differences in the positions of individual connectors. For example, Bikeliene (2008: 30) found that the initial position of *therefore* was preferred by Lithuanian learners as well as learners of other language backgrounds, and suggests that this could be considered to be an interlanguage phenomenon. However, the present study does not support this, but instead shows that *therefore* is preferred in the medial position, by both the learners and the native speakers. Additionally, Granger and Tyson (1996: 24–25) found that *so* was more often used initially by native speakers of French, Dutch and Chinese than with native speakers. As seen in the table, this does not apply here.

Different researchers suggest that the tendency for learners to place connectors initially might not be language-specific but rather an interlanguage feature (Bikeliene 2008; Granger and Tyson 1996). However, such conclusions are not supported by the present study. The preliminary results of the most frequently used connectors could reflect native

language transfer, since Swedish is a language that usually allows only one clause element before the finite verb.

6. Conclusion

This paper has offered a quantitative analysis of connectors in advanced EFL learners' and native speakers' student writing. The main overall results show that, as a group, the Swedish learners use fewer connectors in their texts than the native speakers. However, the Swedish learners vary their connector usage more than the native speakers i.e. more types of connectors were found in the learner corpora than in the native speaker corpus. The surface similarities show that both the Swedish learners and the native speakers rely on a rather small set of connectors in their writing.

Some differences in the usage of individual connectors between the learners and the native speakers were also found. The Swedish learners overuse and underuse certain individual connectors compared to the native speakers. In the case of the top twelve most frequently used connectors, both the Swedish learners and the native speakers have a tendency to place the connector in the medial position of a sentence. Both groups also prefer the same connectors in the initial position. The only connector with a reversed pattern is *of course* which in the learner group was preferred in the medial position and in the native group in the initial position.

In comparison to other EFL learners, Swedish learners seem to underuse connectors. However, Altenberg and Tapper (1998) have reported similar underuse by Swedish learners. The results support other previous studies showing that learners and native speakers rely mostly on the same connectors.

However, the results of the current study are tentative and there are number of limitations. The current study is limited by the size of the corpora and the fact that the method has been merely quantitative. In order to gain more knowledge of how the connectors actually are used by the learners, a qualitative dimension is needed. Do Swedish learners use the connectors to express the same semantic relations as the native students? Another qualitative aspect left out from the study is the investigation of misuse of connectors. Moreover, the dispersion of individual connectors per essay is not studied, neither is the use of a single connector per essay. Additionally, the method of collecting data (i.e. connectors) could have been done differently, e.g. by studying the most frequent connectors found in the corpora.

The limitations of the current study give also ground for future research. More studies on advanced Swedish EFL learners' connector usage are needed in order to increase our knowledge of the interlanguage of the learners. Such studies could have clear pedagogical

benefits. For example, what kind of role does the interlanguage feature transfer of training play in the learners' connector usage? It is suggested by different researchers (e.g. Granger & Tyson 1996; Wei-yu Chen 2006) that students need to increase their knowledge of different registers and receive training in how to use connectors, not merely in what connectors to use. On the other hand, future research could also help to recognize the traps that may be set by text book advice consisting merely of lists of connectors as equivalent alternatives (cf. Crewe 1990).

Acknowledgments

I would like to express my gratitude to Annelie Ädel for constructive feedback, guidance and support. In addition I would like to thank and Nancy Haddad, Josefin Norberg and Josefin Sörensen for their support during the research process.

References

- Altenberg, B. (1999). Adverbial connectors in Swedish and English: Semantic and lexical correspondences. In H. Hassegard & S. Oksefjell (Eds.) *Out of corpora. Studies in honour of Stig Johansson*. (pp. 249–268). Amsterdam: Rodopi.
- Altenberg, B. & Tapper, M. (1998). The use of adverbial connectors in advanced Swedish learners' written English. In S Granger (Ed.), *Learner English on computer*. (pp. 80–93). London and New York: Longman.
- Bikeliene, L. (2008). Resultive connectors in advanced Lithuanian learner's English writing. *Kalbotyra*, 59 (3), 30–37.
- Bolton, K., Nelson, G. & Hung, J. (2002). A corpus-based study of connectors in student writing. Research from the International Corpus of English in Hong Kong. *International Journal of Corpus Linguistics*, 7 (2), 165–182.
- Crewe, W. J. (1990). The illogic of logical connectors. *ELT Journal*, 44(4), 316–325.
- Fei, D. (2006). The Effect of the use of adverbial connectors on Chinese EFL learners writing quality. *CELEA Journal*, 29 (1), 105–111.
- Field, Y. & L. M. O. Yip. (1992). A Comparison of internal conjunctive cohesion in the English essay writing of Cantonese Speakers and native speakers of English. *Relc Journal*, 23(15), 15–28.
- Granger, S. (1996). From CA to CIA and back: An integrated approach to computerized bilingual and learner corpora. In K. Aijmer, B. Altenberg & M. Johansson (Eds.) *Languages in Contrast. Papers from a Symposium on Text-based Cross-linguistic Studies, Lund 4–5 March 1994*. (pp. 37–51). Lund: University Press.
- Granger, S. & Tyson, S. (1996). Connector usage in the English essay writing of native and non-native EFL speakers of English. *World Englishes*, 15, 17–27.
- Hunston, S. (2006). Corpus linguistics. In K. Brown (Ed.), *The encyclopedia of language and linguistics*. (pp. 234–248). Boston, MA: Elsevier.
- Mauranen, A. (1993). *Cultural differences in academic rhetoric: A textlinguistic study*. Frankfurt: Peter Lang.
- Narita, M., Sato, C. & Sugiura, M. (2004). Connector usage in the English essay writing of Japanese EFL learners. *Proceedings of 4th International Conference on Language Resources and Evaluation. LREC*, 1171–1174.
- Pander Maat, H. & Sanders, T. (2006). Connectives in text. In K. Brown (Ed.), *The encyclopedia of language and linguistics*. (pp. 33–41). Boston, MA: Elsevier.
- Quirk, R., Greenbaum, G., Leech, G. & Svartvik J. (1985). *A comprehensive grammar of the English language*. London: Longman.
- Tapper, M. (2005). Connectives in advanced EFL Learners' written English – preliminary results. In F. Heinat & E. Klingvall (Eds.), *The department of English in Lund: Working papers in linguistics 5*. Lund: Department of English, Lund University.
- Tarone, E. (2006). Interlanguage. In Brown, K (Ed.), (pp. 747–752). *The encyclopedia of language and linguistics*. Boston, MA: Elsevier.
- Wei-yu Chen, C. (2006). The use of conjunctive adverbials in the academic papers of advanced Taiwanese EFL learners. *International Journal of Corpus Linguistics*, 11(1), 113–130.

Appendix 1

Frequencies of all the connectors studied

SU Ling A	<i>n</i>	<i>n per</i> <i>10,000</i>	SU Ling B	<i>n</i>	<i>n per</i> <i>10,000</i>
<i>however</i>	104	13	<i>however</i>	252	15
<i>for example (e.g.)</i>	71	9	<i>for example (e.g.)</i>	133	8
<i>therefore</i>	54	7	<i>furthermore</i>	102	6
<i>thus</i>	37	5	<i>thus</i>	99	6
<i>so</i>	34	4	<i>therefore</i>	92	5
<i>furthermore</i>	27	3	<i>for instance</i>	57	3
<i>on the other hand</i>	25	3	<i>that is (i.e.)</i>	55	3
<i>of course</i>	25	3	<i>on the other hand</i>	54	3
<i>that is (i.e.)</i>	23	3	<i>so</i>	44	3
<i>in addition</i>	21	3	<i>still</i>	44	3
<i>in conclusion</i>	22	3	<i>in addition</i>	41	2
<i>moreover</i>	19	2	<i>of course</i>	31	2
<i>for instance</i>	18	2	<i>finally</i>	28	2
<i>still</i>	17	2	<i>yet</i>	28	2
<i>nevertheless</i>	14	2	<i>moreover</i>	25	1
<i>finally</i>	13	2	<i>in other words</i>	24	1
<i>consequently</i>	11	1	<i>nevertheless</i>	20	1
<i>in other words</i>	10	1	<i>in contrast</i>	17	1
<i>at the same time</i>	9	1	<i>consequently</i>	16	1
<i>in comparison</i>	9	1	<i>in comparison</i>	16	1
<i>as a result</i>	8	1	<i>at the same time</i>	14	1
<i>hence</i>	8	1	<i>Secondly</i>	14	1
<i>secondly</i>	8	1	<i>Firstly</i>	13	1
<i>in contrast</i>	7	1	<i>similarly</i>	12	1
<i>first of all</i>	6	1	<i>in conclusion</i>	11	1
<i>similarly</i>	6	1	<i>namely</i>	11	1
<i>namely</i>	5	1	<i>as a result</i>	8	0
<i>after all</i>	5	1	<i>hence</i>	8	0
<i>nonetheless</i>	5	1	<i>nonetheless</i>	8	0
<i>on the contrary</i>	4	0	<i>first of all</i>	7	0
<i>somehow</i>	3	0	<i>to sum up</i>	6	0
<i>yet</i>	3	0	<i>above all</i>	5	0
<i>above all</i>	2	0	<i>thirdly</i>	4	0
<i>conversely</i>	2	0	<i>likewise</i>	4	0
<i>in any case</i>	2	0	<i>to conclude</i>	4	0
<i>firstly</i>	2	0	<i>on the contrary</i>	3	0
<i>likewise</i>	2	0	<i>somehow</i>	3	0
<i>to sum up</i>	2	0	<i>after all</i>	2	0
<i>anyway</i>	2	0	<i>(all) in all</i>	2	0
<i>to summarize</i>	2	0	<i>anyway</i>	2	0
<i>anyhow</i>	1	0	<i>in any case</i>	2	0
<i>by contrast</i>	1	0	<i>in sum</i>	2	0
<i>in spite of that</i>	1	0	<i>that is to say</i>	2	0
<i>to conclude</i>	1	0	<i>anyhow</i>	1	0
<i>alternatively</i>	1	0	<i>conversely</i>	1	0
<i>in consequence</i>	1	0	<i>what is more</i>	1	0

<i>that is to say</i>	1	0	<i>to summarize</i>	1	0
<i>thirdly</i>	1	0	<i>admittedly</i>	0	0
<i>what is more</i>	1	0	<i>alternatively</i>	0	0
<i>admittedly</i>	0	0	<i>anyways</i>	0	0
<i>anyways</i>	0	0	<i>correspondingly</i>	0	0
<i>correspondingly</i>	0	0	<i>in consequence</i>	0	0
<i>(all) in all</i>	0	0	<i>in spite of that</i>	0	0
<i>in sum</i>	0	0	<i>in spite of it all</i>	0	0
<i>more accurately</i>	0	0	<i>more accurately</i>	0	0
<i>contrariwise</i>	0	0	<i>contrariwise</i>	0	0
<i>oppositely</i>	0	0	<i>oppositely</i>	0	0
<i>by way of contrast</i>	0	0	<i>by contrast</i>	0	0
<i>by comparison</i>	0	0	<i>by way of contrast</i>	0	0
<i>by way of comparison</i>	0	0	<i>by comparison</i>	0	0
<i>notwithstanding</i>	0	0	<i>by way of comparison</i>	0	0
<i>in spite of it all</i>	0	0	<i>notwithstanding</i>	0	0
<i>that said</i>	0	0	<i>that said</i>	0	0
<i>in any event</i>	0	0	<i>in any event</i>	0	0
<i>at any rate</i>	0	0	<i>at any rate</i>	0	0
<i>at all events</i>	0	0	<i>at all events</i>	0	0
<i>for all that</i>	0	0	<i>for all that</i>	0	0
<i>all the same</i>	0	0	<i>all the same</i>	0	0
<i>still and all</i>	0	0	<i>still and all</i>	0	0
TOTAL	656	80		1329	

KC	n	n per 10,000	SU A and B	n	n per 10,000
<i>however</i>	573	23	<i>however</i>	356	14
<i>therefore</i>	423	17	<i>for example (e.g.)</i>	204	8
<i>for example (e.g.)</i>	318	13	<i>therefore</i>	146	6
<i>so</i>	201	8	<i>thus</i>	136	5
<i>that is (i.e.)</i>	197	8	<i>furthermore</i>	129	5
<i>thus</i>	93	4	<i>on the other hand</i>	79	3
<i>in addition</i>	53	2	<i>so</i>	78	3
<i>firstly</i>	47	2	<i>that is (i.e.)</i>	78	3
<i>on the other hand</i>	40	2	<i>for instance</i>	75	3
<i>finally</i>	37	1	<i>in addition</i>	62	2
<i>moreover</i>	32	1	<i>still</i>	61	2
<i>of course</i>	31	1	<i>of course</i>	56	2
<i>furthermore</i>	28	1	<i>moreover</i>	44	2
<i>yet</i>	27	1	<i>finally</i>	41	2
<i>in conclusion</i>	26	1	<i>in other words</i>	34	1
<i>in contrast</i>	26	1	<i>nevertheless</i>	34	1
<i>similarly</i>	26	1	<i>in conclusion</i>	33	1
<i>as a result</i>	25	1	<i>yet</i>	31	1
<i>hence</i>	22	1	<i>consequently</i>	27	1
<i>still</i>	22	1	<i>in comparison</i>	25	1
<i>secondly</i>	20	1	<i>in contrast</i>	24	1
<i>consequently</i>	15	1	<i>at the same time</i>	23	1
<i>in comparison</i>	13	1	<i>secondly</i>	22	1
<i>nevertheless</i>	10	0	<i>similarly</i>	18	1

<i>namely</i>	10	0	<i>as a result</i>	16	1
<i>by contrast</i>	9	0	<i>namely</i>	16	1
<i>at the same time</i>	7	0	<i>hence</i>	16	1
<i>to conclude</i>	7	0	<i>firstly</i>	15	1
<i>somehow</i>	7	0	<i>first of all</i>	13	1
<i>alternatively</i>	7	0	<i>nonetheless</i>	13	1
<i>nonetheless</i>	6	0	<i>to sum up</i>	8	0
<i>likewise</i>	6	0	<i>after all</i>	7	0
<i>that said</i>	4	0	<i>on the contrary</i>	7	0
<i>after all</i>	4	0	<i>above all</i>	7	0
<i>for instance</i>	4	0	<i>likewise</i>	6	0
<i>in other words</i>	4	0	<i>somehow</i>	6	0
<i>anyway</i>	3	0	<i>to conclude</i>	5	0
<i>conversely</i>	3	0	<i>thirdly</i>	5	0
<i>that is to say</i>	3	0	<i>anyway</i>	4	0
<i>thirdly</i>	3	0	<i>in any case</i>	4	0
<i>in any case</i>	2	0	<i>conversely</i>	3	0
<i>above all</i>	2	0	<i>that is to say</i>	3	0
<i>admittedly</i>	1	0	<i>to summarize</i>	3	0
<i>more accurately</i>	1	0	<i>what is more</i>	2	0
<i>in consequence</i>	1	0	<i>(all) in all</i>	2	0
<i>(all) in all</i>	0	0	<i>in sum</i>	2	0
<i>anyhow</i>	0	0	<i>anyhow</i>	2	0
<i>anyways</i>	0	0	<i>in consequence</i>	1	0
<i>first of all</i>	0	0	<i>in spite of that</i>	1	0
<i>correspondingly</i>	0	0	<i>by contrast</i>	1	0
<i>what is more</i>	0	0	<i>alternatively</i>	1	0
<i>in spite of that</i>	0	0	<i>admittedly</i>	0	0
<i>in spite of it all</i>	0	0	<i>anyways</i>	0	0
<i>in sum</i>	0	0	<i>by way of contrast</i>	0	0
<i>to sum up</i>	0	0	<i>contrariwise</i>	0	0
<i>to summarize</i>	0	0	<i>correspondingly</i>	0	0
<i>contrariwise</i>	0	0	<i>in spite of it all</i>	0	0
<i>oppositely</i>	0	0	<i>more accurately</i>	0	0
<i>on the contrary</i>	0	0	<i>oppositely</i>	0	0
<i>by way of contrast</i>	0	0	<i>by comparison</i>	0	0
<i>by comparison</i>	0	0	<i>by way of</i>	0	0
<i>by way of</i>	0	0	<i>comparison</i>	0	0
<i>comparison</i>	0	0	<i>notwithstanding</i>	0	0
<i>notwithstanding</i>	0	0	<i>that said</i>	0	0
<i>in any event</i>	0	0	<i>in any event</i>	0	0
<i>at any rate</i>	0	0	<i>at any rate</i>	0	0
<i>at all events</i>	0	0	<i>at all events</i>	0	0
<i>for all that</i>	0	0	<i>for all that</i>	0	0
<i>all the same</i>	0	0	<i>all the same</i>	0	0
<i>still and all</i>	0	0	<i>still and all</i>	0	0
Total	2399			1985	

Appendix 2

Position of connectors in SULing A and SULing B

SU Ling A	<i>n</i>	<i>initial (%)</i>	<i>medial (%)</i>	<i>final (%)</i>
<i>however</i>	104	66	34	0
<i>for example (e.g.)</i>	71	25	75	0
<i>therefore</i>	54	35	65	0
<i>thus</i>	37	35	65	0
<i>so</i>	34	38	62	0
<i>furthermore</i>	27	96	4	0
<i>on the other hand</i>	25	44	56	0
<i>of course</i>	25	16	76	8
<i>that is (i.e.)</i>	23	0	100	0
<i>in addition</i>	21	86	14	0
<i>for instance</i>	18	61	39	0
<i>firstly</i>	2	100	0	0
<i>finally</i>	13	77	23	0
<i>still</i>	17	18	82	0
Total	471	46	54	0

Note: the percentages have been rounded off to a nearest whole percentage number which may affect the total percentage.

SU Ling B	<i>n</i>	<i>initial (%)</i>	<i>medial (%)</i>	<i>final (%)</i>
<i>however</i>	252	64	35	1
<i>for example (e.g.)</i>	133	20	77	2
<i>furthermore</i>	102	91	9	0
<i>thus</i>	99	34	66	0
<i>therefore</i>	92	30	70	0
<i>for instance</i>	57	58	40	2
<i>that is (i.e.)</i>	55	22	78	0
<i>on the other hand</i>	54	37	63	0
<i>so</i>	44	39	61	0
<i>still</i>	44	18	82	0
<i>in addition</i>	41	85	15	0
<i>firstly</i>	13	77	23	0
<i>finally</i>	28	82	18	0
<i>of course</i>	31	32	68	0
Total	1045	49	50	1

Note: the percentages have been rounded off to a nearest whole percentage number which may affect the total percentage.