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## **PATTERNS OF SENTENCE CONNECTORS IN ESL LEARNERS' WRITING**

### **Study 1: Effects of Writing Proficiency**

This study investigates patterns of connectors in second language learner's writing. Some research reveals that ESL learners' use of connectors is distinguished from native speakers' use (Field and Oi, 1992; Goldman and Murray, 1992; Steffani and Nippold, 1997). In general, most of them agree with the idea that ESL learners have more difficulty with the use and understanding of connectors than English native speakers. Interestingly, Steffani and Nippold (1997) not only compared ESL learners and native speakers but also investigated differences among ESL learners. Their study revealed that ESL learners showed different abilities depending on how long they have learned English.

A similar finding is confirmed by Cho (1998) whose study indicates that ESL learners reveal different patterns in the use of connectors according to the length of English study. She divided 18 junior school students into two groups according to their length of study: a two-year group and a three-year group, and she investigated how different their

writing was in terms of the use of connectors. Cho concludes that the three-year group used more various connectors than the two-year group both in coordination and subordination.

As Cho admitted herself, however, the interval between two and three years of study is too small to distinguish the two groups. Because the purpose of choosing the length of study as an independent variable in these studies is to see the effects of proficiency on the use of connectors, I want to explore how ESL learners' proficiency is related to their use of connectors. Towards this end, my study uses proficiency as a variable rather than length of English study. In particular, I will examine the relationship between writing proficiency and students' use of connectors. The reason why I choose writing proficiency as an independent variable is that rather than students writing ability does not always match their overall English language proficiency. At the University of Hawaii, all the international students whose TOEFL score is from 500 to 600 must take ESL classes. As for writing courses, according to their placement test results, they are placed into two different levels – ELI(English Language Institute) 73, the intermediate level and ELI 100 or 83, the advanced level—or they are exempted when their writing is judged to be beyond an ELI level. However, their TOEFL scores do not necessarily predict their appropriate writing levels. Taking into consideration this kind of mismatch between proficiency level as determined by TOEFL and writing ability, I think it would be more reliable to depend on writers' writing ability rather than their overall English language proficiency in order to see their use of connectors.

In this study, I categorized ELI 83 and ELI 100 as separate levels although they are officially considered as the same level. While ELI 83 consists of graduate students, ELI 100 consists of undergraduate students. Not only in their status but also in their problems, they are distinct from each other. The majority of ELI 83 students are international students who graduated from universities in their own home country and came to the U.S.A. to pursue their studies in graduate school. On the other hand, most ELI 100 students are immigrant students, who immigrated to the U.S.A. when they were relatively young. As Byrd & Reid (1998) reveal, international students and immigrant students have distinctive problems from each other. Since immigrant students have been exposed to an English environment early on, they tend to be better at speaking and listening than they are with grammar. By contrast, many international students have learned English through grammar so they tend to have better knowledge of English grammar. Because of these differences inherent in the two groups, I separated them into individual groups. Therefore, for the preliminary study, the target groups are four: ELI 73, ELI 83, ELI 100 and exempt.

To investigate patterns of use of connectors in ESL learners' writing, I classified connectors according to their forms and meanings (Table 1). Some scholars divide connectors according to their meaning, while others divide them according to their form. Halliday and Hasan (1976) belong to the former group of scholars. They group connectors into four categories according to their meaning: additive, adversative, causal, and temporal. The distinction draws on their argument that a text is a semantic unit, "a unit not of form but of meaning" (p.2). Extending this belief into defining connectors, they argue that connectors function as cohesive devices not in themselves but by virtue of their meanings



(p.226). In other words, according to Halliday and Hasan, “they [connectors] express certain meanings which presuppose the presence of other components in the discourse” (p.226).

On the other hand, Zamel (1983) criticizes the general tendency of grammar textbooks to focus on meaning, arguing that without the knowledge of grammatical functions of connectors, students cannot benefit from an instruction on connectors. In the case of grammatical functions of connectors, Larsen-Freeman & Celce-Murcia(1999), classify them into coordinating conjunctions, subordinating conjunctions and conjunctive adverbials. For this last category--conjunctive adverbials--there seems to be less agreement among scholars than for the first two labels. While Larsen-Freeman & Celce-Murcia label it as conjunctive adverbials, Thewlis calls it a sentence connector.

In this study, I use Thewlis’ term *sentence connectors* because it implies functions of connectors more explicitly. In addition to his term, I also accept his model, which tries to cover both function and meaning of connectors. Although I accepted Thewlis’ division and label, I narrowed down the focus to—four types of sentence connectors because my observation revealed that my students were likely to overuse sentence connectors rather than coordinating conjunctions. Based on this observation, I hypothesize that for high-intermediate students like my participants, sentence connectors are acquired later than coordinating conjunctions. Following this line of reasoning it does not seem to make sense that Cho (1998) investigated only coordinations and subordinations rather than sentence connectors in her low-level subjects who have been studying English for two or three years.

Therefore, I will limit this study to the four categories of sentence connectors: additive, adversative, cause and effect, and temporal.

[ INSERT TABLE 1 ]

## **Study 2: Effects of Instruction**

In addition to the effects of writing proficiency, I also examined the effects of instruction on students' output in the use of connectors. Following the preliminary study, I thought that it is necessary to enhance ESL students' level of awareness of connectors by giving them some exercises. To develop new material, I draw on a text-based approach such as Byrd & Reid's approach (1998). Frodsen (1991) states that this approach can be effectively used for learners who know prescriptive grammar rules very well but do not acquire how to use them. This served as the rationale to adopt this approach when I develop materials in order to help my students acquire connectors. Except one student<sup>1</sup>, most of my students started English with prescriptive grammar rules so that they are quite well accustomed to them. What they really seem to need, however, is to learn how to utilize those grammar rules in writing. Satisfying their needs, I am devising an activity to make students aware of how connectors are used in academic writing.

Byrd and Reid's text-based approach is based on Larsen-Freeman's three-dimensional grammar framework. Larsen-Freeman (1991) tries to reconcile the two polar approaches to grammar: the analytic grammar translation approach and the use-oriented direct method such as the communicative approach and the natural approach. The three-dimensional grammar framework is the alternative she chose to keep the balance between language analysis and language use. Explaining three components of language—the form, its meaning and the pragmatic conditions governing its use—as wedges of a single pie chart,

Larsen-Freeman denies any hierarchical rankings and insists on the interconnectedness among the three dimensions.

Drawing on Larsen-Freeman's approach and tailoring it to academic writing, Byrd presents a modified version of the three-dimensional framework. Combining form and meaning in one wedge of a pie chart, she divides the pie chart into just two: forms & meanings and discourse. Forms and meanings are combined together because she thinks that forms get their meanings when they are placed in contexts. The context, in academic setting, can be replaced with discourse. Her great efforts to analyze discourse of various disciplines are the result of this theoretical basis. Analysis of discourse contributes to diagnosing which grammar point should be emphasized in a particular discourse. As an example, Byrd demonstrates Bardovi-Harlig's (1996) model on the verb tense and aspect. According to Bardovi-Harlig, writing teachers can focus on the verb tense and aspect while teaching a narrative. Because a narrative is usually being told, it shows lots of examples of simple past tense (p.10). On the other hand, background knowledge is expressed in past perfect or past progressive (p.10). Her students were not only taught the structure of a narrative and grammar points related with the discourse but also they were given the chance to use them. Students were asked to write a story, keeping in mind those grammar points, for practicing how to use grammar skills is very essential in a context-based grammar approach. Likewise, drawing on the context-based approach, I want to give the students to practice for themselves.

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<sup>1</sup> . Because he is an immigrant student, he is less familiar with grammatical terms such as relative clause than



## Material Critique

While searching for materials, from which I can get some hints or ideas to develop my own material, I was surprised to discover that there seem to be very few materials that deal with connectors. Among these very few, it is even more difficult to find some materials that deal with connectors in context-based approach. And even those materials which claim that they draw on context-based approach are likely to fail to satisfy high-intermediate or advanced learners who desperately need to know how connectors are used in authentic texts rather than how to connect simple sentences into a complex one. For example, Thewlis (1997) and Frodesen & Eyring (1997) respectively wrote book 3 and book 4 in the same series, which claim to draw on Larsen-Freeman's three-dimensional approach. Both of them appear to make efforts to fulfill that goal by showing the pie chart indicating form, meaning, and use, but it is somewhat rare to find usage in explanations and exercises.

Even when Thewlis and Frodesen & Eyring maintain that they are showing use, what they mean by "use" is not clear. When Frodesen & Eyring demonstrate the use of connectors, they just show several segmented examples. That is, what they mean by use is not much different from examples. Their interpretation of the term, 'use' is reflected in the exercises, for most of the exercises are sentence-level. Though some exercises are above sentence-level, they ask students just to fill in the blanks with appropriate connectors. They

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the other students.



may succeed in enhancing students' awareness level, but they fail to draw out their outputs production.

In Thewlis' case, use does not simply mean examples. When he shows the use, he explains how connectors are used and gives some hints for how learners can avoid inappropriate expressions, such as redundant and run-on sentences, by using connectors. Likewise, in the exercises, students are asked to revise redundant expressions and run-on sentences by using appropriate connectors. Although some exercises are at more than sentence-level, students have only to identify the form and the meaning or choose an appropriate connector. They do not have opportunities to produce their own writing based on their learning.

On the other hand, Larsen-Freeman & Celce-Murcia (1999) provide the valuable information that ESL learners tend to overuse connectors. In an exercise section, students are provided with a passage and are required to correct overuse of connectors. Their grammar book is outstanding in that they point out the overuse of connectors in ESL learners' writing. Nevertheless, their exercise does not reach the level where it could promote students' appropriate production of connectors.

Benson & Byrd (1989)'s grammar book is distinguished from others in that theirs deals with English for academic purposes. This means that they assume academic setting as a context within which all the exercises are situated. All the passages or examples are extracted from authentic academic writings. The first exercise requests students to analyze sentences and mark connectors. The next step is sentence combining. This exercise is to connect independent sentences, which are given, into one sentence. Although all the items

appear to be separated from each other, they make a paragraph. This is the final step to practice connectors. Actually, in this book, the last part, concentrates on editing, but it does not cover connectors. Connectors are dealt with as a part of run-on sentences or comma splices unit. If they included connectors in the editing practice and provided opportunities to practice them in their writing, it would "enable ESL students to write more sophisticated and accurate English" as they declared in the preface (pp. I).

I do not mean to say that those grammar books are useless for the high-intermediate or advanced learners. Generally speaking, most of them are successful in that they increase students' awareness about connectors. For example, they provide students with a chance to analyze the usage of connectors by varied exercises. They also try to evoke students' output by asking them to combine simple sentences into a complex one. Through these exercises, students might learn what connectors are, what they mean, and how they connect simple sentences. And yet students cannot obtain the chance to learn how they can use connectors appropriately without overusing them. What high-intermediate and advanced ESL learners really want, in my observation, is not just how to combine sentences. Rather, they need to know in what context those connectors are used, or sometimes they may need to know how to express their ideas without using connectors.

In the first part of my material, I asked the subjects to bring in some academic article, which they are going to quote in their paper. The primary purpose is to provide an optimal context under which the subjects can develop their own abilities lest they should lose interest. Because the articles they chose are written on a similar topic to their own topic for the later writing assignment, and because they can serve as samples for the papers they are

supposed to write in an academic setting, this activity can attract students' attention more efficiently. Another purpose of this step in the activities is to give the subjects an opportunity to choose what they think is an appropriate level to them. In other words, the levels of those articles are up to the individual's self-assessed reading ability. This planning should ensure that the students understand their own articles.

To reinforce the effect of treatment, I made four 20-minute steps.<sup>2</sup> This was intended to refresh students' memory and contribute to longitudinal effects on students. I hypothesize that the experimental group will use connectors in almost the same pattern as that of higher-level students observed in the analysis of placement test results.

#### Research Questions:

1. How is ESL learners' writing proficiency related to their use of sentence connectors?
2. Do ESL learners reveal distinctive patterns according to their writing proficiency in the use of sentence connectors?
3. Does the grammar teaching based on structured input and text-based approaches make a significant difference in low-level students' use of connectors in their writing?
4. Does grammar instruction facilitate students' acquisition of higher-level patterns of connectors?



## Method

### *Participants*

The participants of the preliminary are 87 ESL students who are enrolled in ELI 73, ELI 83, ELI100 or those who are exempted from ELI courses during the fall, 2001 semester at the University of Hawaii at Manoa. All of them have TOEFL scores that range from 500 to 600, and therefore are supposed to take ELI courses. In the beginning of this semester, they took an ELI placement test which determined their placement into one of those courses, or exempted them if their scores were high enough. The placement test is a 45-minute test, in which students are given two writing prompts and must choose one to write about. After the test, three raters score them. When the three raters reveal disparity among their evaluations, a fourth rater reads it.

In Study 2, participants are 23 students enrolled in two sections of ELI 73 at the University of Hawaii at Manoa during the same semester as those in the first study (fall, 2001). Thirteen participants were in a control group and ten in a treatment group. The treatment group is the class that I am teaching, and the other group is taught by another instructor. Because both of them are intact classes, to counterbalance preexisting differences in both groups, right before the treatment, I gave both groups a pretest, which has two versions. Right after the treatment, I also gave both groups the same test as a posttest, but at this time I switched the versions.

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<sup>2</sup>. It is an intact writing class, so realistically it is impossible to spend more than 10 minutes on this activity.

### *Measures*

The ratio of number of each sentence connector per 100 words was calculated. For the first study, which investigates the effects of writing proficiency on the use of connectors, a two-way repeated ANOVA was conducted to investigate whether the four groups show significant differences in the ratios of number of connectors per 100 words. Since the results turned out to be statistically significant, following post hoc tests--Scheffe and Tukey were conducted. In the second study, a three-way repeated ANOVA helped to decide whether the treatment was effective or not. Also I checked whether the final production of the treatment group shows similar patterns to those of higher-level group.

### *Materials & Procedure*

For the Study 1, the fall 2001 ELI placement test was used for investigating the effects of writing proficiency on students' use of sentence connectors. On the other hand, in the second study, I developed a four-step treatment to reinforce its effects. For the first step of the procedure, the subjects were given some mini lesson on connectors. Two days later, they were asked to compare a sample academic paper and their writing in terms of the number of connectors used. After calculating how many connectors are used in the articles they brought to the class, they calculated the number of connectors in their writing. By doing that, they could easily catch the difference between the sample and their writing. Five days later, they were asked to figure out how connectors are used in the sample paper and then explain the usage of each connector. Two days later, as a final step, they were

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Because of that, I restrict it to just 20 minutes.

given the chance to think about another way to connect sentences without using connectors. So I asked them to figure out how each sentence is connected with the next sentence in the sample paper.

## Results

In the two studies, each variable is independent from each other. Furthermore, standard deviations reveal that the distribution of each group seems to be approximately normal. To check this assumption, standard errors of skewness (ses) and of kurtosis (sek) of each variable were calculated. According to the results, each ses (.258 and .481) and sek (.511 and .935) are below 1.00 so that it is safely assumed that the scores are normally distributed.

Looking at the results of Levene's equal variance test, it is unlikely that study 1 and 2 satisfy another assumption of ANOVA, equal variances, because some dependent variables of both studies reject the null hypothesis that the error variance of the dependent variable is equal across groups. Cause and temporal in the first study and temporal 2 in the second study fail to meet the assumption of equal variance. According to Brown (1988), "the violation of this assumption apparently has little effect on the results if the sample size are equal" (pp.166). Since in the second study, the sample size of control group (N=13) and experimental group (N=10) are almost equal, the violations do not seem to seriously affect



the results. However, unfortunately, each group of study 1 has a different sample size and the ratio of the smallest group to the largest group (11 to 42) is more than 3, which is a critical value in Brown. In that case, I will apply more stringent  $\alpha$  level ( $\alpha = .025$ ), as suggested in Tabachnick and Fidell (2001).

In addition to these assumptions, a repeated ANOVA must meet another assumption, assumption of sphericity. According to this site, [users.wmin.ac.uk/~baldwim/2cog205/COG205Ch14.htm](http://users.wmin.ac.uk/~baldwim/2cog205/COG205Ch14.htm), “the assumption states that the population variances of each level of the repeated measures factor are the same and that each pair of levels of the repeated measures factor have identical correlations.” When this assumption is violated, F-ratio tends to be abnormally larger than it should be so that it may lead to Type I error, which wrongfully rejects a null hypothesis. To investigate this assumption, in SPSS Mauchly’s test of sphericity can be used. This test shows that both of study 1 and 2 violate the assumption of sphericity. To adjust F-value less significant than indicated, therefore, as suggested in [users.wmin.ac.uk/~baldwim/2cog205/COG205Ch14.htm](http://users.wmin.ac.uk/~baldwim/2cog205/COG205Ch14.htm), Greenhouse-Geisser method is adopted in both studies.

To check whether each study is reliable, Alpha coefficients were calculated. Each of them is .54 and .78. While the reliability of the second study is relatively high, study 1’s reliability is not so high. This result may come from an unequal sample size in study 1. Besides, in the first study, correlation coefficients are relatively lower than in the second study.

[ INSERT TABLE 2 & 3 ]

The descriptive statistics of the first study, which examined the relationship between writing proficiency and the ratio of number of connectors per 100 words, are described in Table 2. According to the table, except adversative, all of the other means are going down as the level goes up.

[ INSERT TABLE 4]

To see whether these differences are statistically significant, a two-way ANOVA was conducted. The results are presented in Table 3. According to Table 3, of the two main effects—the main effects of level and connector type—only one, the effect of level is significant. The interaction between connector type and level is also significant but it is not so significant when more stringent  $\alpha$  level ( $< .025$ ) is used. Therefore I can safely argue that only the main effect of level is significant. To clarify which pair among the six pairs—73 vs. 83, 73 vs. 100, 73 vs. Exempt, 83 vs. 100, 83 vs. Exempt, 100 vs. Exempt—show a significant difference, Tukey and Scheffe tests were used. Both of them unanimously reveal that only 73 group is significantly different from the exempt group.

[INSERT TABLE 5]

The descriptive statistics of the second study, which investigated the effect of instruction on the use of connectors, are presented in Table 4. According to Table 4, in the pretest results, except Cause, the treatment group and the control group do not seem to be drastically different from each other. In the case of Cause, the treatment group ( $M = .21$ ) used the Cause type of connectors much less frequently than the control group ( $M = .60$ ) in the pretest. On the other hand, in the posttest results, except Additive and Adversative, the

treatment group means are lower than the control group mean. This means that the treatment group used Adversative more often than the control group.

[INSERT TABLE 6]

To compare pretest and posttest results in both groups, a three-Way ANOVA was performed. The results are introduced in Table 5. Table 5 does not reveal any significant results. Neither any main effect nor interaction effects exist.

[INSERT TABLE 7]

In addition to the ratio of the number of connectors per 100 words, I tried another measure because it may not be an appropriate method to investigate sentence connectors. The function of sentence connectors is to connect a previous sentence with the following sentence. No matter how long each sentence is, that is, no matter how many words are used in one sentence, more than one or two sentence connectors cannot be used in one sentence. This means that the overuse of sentence connectors can be caught at the intersentential level rather than at the intrasentential level. Instead of the ratio of the number of connectors per 100 words, therefore, I calculated the ratio of connectors per five sentences.

As for the first study, newly calculated descriptive statistics do not seem to differ from the prior ones, as shown in Table 6. The only difference is that not only Adversative but also Temporal revealed inconsistent results as the level goes up. That may be the reason why the new measure fails to obtain only one significant main effect of level. Even the



main effect of level is less significant and less powerful than the previous results. If a more stringent  $\alpha$  level ( $\alpha < .025$ ) is applied, the main effect of level turns out to be non-significant.

[INSERT TABLE 8 & 9]

However, as for the second study, new results are more positive. Using the new measure, I come by some significant main effects of treatment variable though they are not so powerful (Observed Power = .222). The new results are shown in Table 8 and 9. It indicates that the two groups—the treatment group and control group—turn out to have statistically significant differences. According to Table 8, several explanations are possible. For example, it can be the result of the initial differences between treatment and control group in the aspect of Adversative and Cause. Or it may come from the big differences of both groups in their posttest results in Cause and Temporal types of connectors.

[INSERT TABLE 10 & 11]

## **Discussion**

When ratios of number of connectors per 100 words are used, the lowest level—level 73—is distinguishable from the highest level—the exempt group—but not the other two

groups. The other two groups are not significantly different from 73, from each other, nor from the exempt group. It might be interpreted that lower-level students overuse connectors to support their ideas, but this kind of tendency takes longer to change such as until their writing ability develops into the relatively very high level.

Unfortunately the four types of connectors do not show any significant differences among them. Nevertheless, in the plot (Figure 1) I discovered interesting patterns. Although there are no significant differences between the four connectors, 73 and 83 have some distinct pattern from 100 and exempt. It is likely that 73 and 83 group use Additive and Temporal types more often than Adversative and Cause types. On the other hand, 100 and exempt groups use Adversative most often compared with the other types of connectors. Although this study measured frequency of connectors unlike Goldman & Murray's (1992) which measured frequency of correct uses of connectors, both research reveal the possibility of connector patterns which varies according to proficiency level. Goldman and Murray found that the least proficient students understand the general distinction between Temporal and the other three types, and the most proficient students differentiate Adversatives from Additives and Cause & Effects. Likewise, this study shows that lower levels might use Additive and Temporal more frequently than the other types while higher levels might use Adversative more often than other types.

[INSERT FIGURE 1]

Unlike the first study which fails to produce any significant result with a new measure, the second study reveals that the treatment effect is significant with a new measure. But the power is so low (Observed Power = .222). Therefore it is hard to say that the result supports the hypothesis that the treatment works in this research. Rather, I think, from the starting point, the two group means are somewhat different from each other. Only in Additive and Temporal, their pretest means are very similar, but not in Adversative and Cause types.

Looking at each plot of the four types of connectors, in Additive, the two groups started from a very similar level, but the control group mean is lower than the treatment group mean in the posttest. On the other hand, for Adversative, the mean of the treatment group, in the pretest, is a lot lower than that of the control group, but it ends a little bit higher than the control group. As for Cause, the results are relatively consistent and stable. There seems to be little change in both groups. The treatment group mean is much lower than the control group in the posttest as well as in the pretest. Temporal type of connectors most fit into my expectation. The starting points of both groups are not different, but the posttest discovers that the treatment group overuses Sequence type of connectors less than the control group.

[INSERT FIGURE 2,3,4,& 5]

In general, the significant treatment effect might mean that both groups are different from each other from the start rather than that the treatment does make a difference



between them. That is not to say that the participants did not benefit from any treatment, just this treatment. The beginning difference might come from another treatment, which was given before the pretest. At the beginning of this semester, I told them that ESL learners tend to overuse connectors and also made them practice how to avoid such overuse, using Celce-Murcia and Larsen-Freeman's (1999) exercise. Therefore, I speculate that this previous practice might have affected the treatment groups' use of connectors.

Finally, although I did not find robust results, the plots vaguely indicate that some change is going on in the treatment group. While in the treatment group, the other three types of connectors—Additive, Cause, and Temporal—decline, only the use of Adversative increases, a pattern I cannot find in the control group. In the case of the control group, their use of Additive and Adversative decreases while the number of Temporal type increases. In other words, through the treatment, the treatment group is getting closer to the higher level that uses Adversative types more than the other types.

## **Conclusion**

This study has several limitations. In the first study, the participants are not so drastically different from each other in their writing proficiency. Even though they were placed into separate groups based on their placement results, initially they were a highly homogeneous group, whose TOEFL scores range from 500 to 600. This fact might hinder this study from obtaining significant differences between pairs, except ELI 73 and exempt, and between four types of connectors.

Another limitation in the first study is unequal sample size. Because of unequal sample size, one of ANOVA assumption, equal variances might have been violated. To adjust this problem, alpha level is strengthened; as a result it is hard to find significant results when using the new measure.

In the second study, there seems to be more limitations than in the first study. First, the second study has stereotypical weak points such as the use of intact classes and a small number of participants. Because I used intact classes, I failed to counterbalance some extraneous variables, such as contents of teaching or initial differences between the control and the treatment groups. Above all, N size is too small. As the research design is more complicated than the first study, it should have had more participants.

Finally, the treatment effect is not strong enough to make a difference between the two groups. The primary reason is that to avoid overuse of connectors, the students should have had more practice or more knowledge of other cohesive devices. I prepared just one step for this, but it does not seem to be enough. To get more robust results, further studies are needed, which would focus more on alternative cohesive devices to sentence connectors.

Finally, the results of the two studies, which are different according to a measure—ratio of number of connectors per 100 words or per 5 sentences—imply that studies on connectors are very sensitive to what kind of measure is used. Therefore, in future studies, more appropriate measure must be developed which catch overuse of connectors more effectively and which are less sensitive to the amount of writing at the same time.

Despite these limitations, this study suggests that ESL learners may have distinct patterns in their use of connectors in accord with their writing proficiency level. If the

limitations discussed above were fixed and corroborated, I think future studies will shed more light on ESL learners' connector patterns. Not only studies on frequency of connectors like this research but also studies on correct use of connectors will be very helpful to understanding ESL learners' acquisition. The teaching of English as a second language can benefit from better knowledge of ESL acquisition of sentence connectors. If a research reveals that a certain level of students need some knowledge of a specific connectors, for example, in this study, lower-level students need to learn about adversative and causal types of connectors—teachers can adjust their teaching to students' needs more effectively.



## References

- Azar, B. S. (1992). *Fundamentals of English grammar* (2nd ed.). Englewood Cliffs, NY: Prentice Hall Regents.
- Baldwin, M. (2001). Parametric test assumptions. Retrieved December 13, 2001, from the University of Westminster, Department of Computer Science Web site: <http://users.wmin.ac.uk/~baldwin/2cog205/COG205CH14.htm>
- Benson, B. & Byrd, P. (1989). *Improving the grammar of written English: The editing process*. Belmont, CA: Wadsworth Publishing Company.
- Benson, B. & Byrd, P. (1992). *Applied English grammar*. New York: Heinle & Heinle Publishers.
- Brown, J. D. (1988). *Understanding research in second language learning*. Cambridge: Cambridge University Press.
- Celce-Murcia, M. & Larsen-Freeman, D. (1999). *The Grammar book*. New York: Newbury House.
- Cho, Y. (1998). Use of connectives in writings by Korean learners of English. *ERIC Document 441348*.
- Field, Y. & Oi, Y. L. M. (1992). A comparison of internal conjunctive cohesion in the English ESL writing of Cantonese speakers and native speakers of English. *REL C Journal*, 23, 15-28.
- Frodesen, J. & Eyring, J. (1997). *Grammar dimensions: Form, meaning and use* (2nd ed., Vol. 3). New York: Heinle & Heinle Publishers.
- Goldman, S. R. & Murray, J. D. (1992). Knowledge of connectors as cohesion devices in text: A comparative study of native-English and English-as-a-second-language speakers. *Journal of Educational Psychology*, 84, 504-519.
- Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. London: Longman.
- Koshik, I. (1999). A preliminary investigation into the effect of grammatical cohesive devices—their absence and their misuse—on native speaker comprehension of non-native speaker speech and writing. *Issues in Applied Linguistics*, 10, 3-25.

- Norment, N., Jr. (1995). Quantitative analyses of cohesive devices in Spanish and Spanish ESL in narrative and expository written texts. *Language Quarterly*, 33, 135-159.
- Raimes, A. (1990). *How English works: A grammar handbook with readings*. New York: St. Martin's Press.
- Smith, E. L. & Smith, B. M. (1994). *Sentence basics: Diction, usage, and mechanics*. New York: St. Martin's Press.
- Steffani, S. A. & Nippold, M. Y. (1997). Japanese speakers of American English: Competence with connectives in written language. *Journal of Speech, Language, and Hearing Research*, 40, 1048-1055.
- Tabachinick, B. & Fidell, L. S. (2001). *Using multivariate statistics*. Boston: Allyn and Bacon.
- Thewlis, S. (1997). *Grammar dimensions: Form, meaning, and use* (2nd ed., Vol. 4). New York: Heinle & Heinle Publishers.
- Zamel, V. (1983). Teaching those missing links in writing. *ELT Journal*, 37, 22-29.

## Appendix 1. Tables & Figures

Table 1. Connectors

Meaning	Form		
	Coordinating Conjunctions	Sentence Connectors	Subordinating Conjunctions
Additive	And Not only... but also	In addition Besides Furthermore Indeed	In addition to Besides Not to mention
Adversative	But Yet	However On the other hand In contrast Even so Nevertheless	While Whereas Although Even though In spite of
Cause and Effect	For So	Accordingly Consequently As a result Therefore	Due to Because/Since As a result of So that In order to Providing/If
Temporal	And	First Then Eventually Soon	After When Before



Table 2. Correlation for Study 1

	Additive	Adversative	Cause	Temporal
Additive	1.000			
Adversative	-.361**	1.000		
Cause	.030	.079	1.000	
Temporal	.104	-.192	.271*	1.000

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 3. Correlation for Study 2

	Additive	Adversative	Cause	Temporal	Additive2	Adv. 2	Cause2	Temp.2
Additive	1.000							
Adversative	.121	1.000						
Cause	-.273	-.135	1.000					
Temporal	-.236	-.149	.452*	1.000				
Additive2	.661**	-.170	-.157	.010	1.000			
Adv.2	-.388	.416*	.354	.064	-.336	1.000		
Cause2	-.031	.561**	-.259	-.231	-.339	-.103	1.000	
Temp.2	-.210	-.314	.213	.403	-.098	-.176	-.079	1.000

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 4. Descriptive Statistics for Study 1

Level	ELI 73				ELI 83				ELI 100				Exempt			
Connector	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.
N	20	20	20	20	42	42	42	42	14	14	14	14	11	11	11	11
Mean	.82	.34	.48	.66	.61	.29	.37	.39	.39	.60	.35	.20	.20	.37	.25	.19
Std	.62	.33	.56	.92	.45	.27	.35	.51	.30	.47	.31	.31	.31	.41	.30	.26

Table 5. Two-Way Repeated Measures ANOVA for study 1

Source	Sum of squares	df	Mean square	F	Sig.	Eta Squared	Observed Power
Between subjects							
Level	3.159	3	1.053	4.580	.005*	.142	.874
Within Groups	19.079	83	.230				
Between subjects							
Connector	.908	2.603	.349	1.491	.222	.018	.362
Connector*Level	3.877	7.809	.496	2.121	.028*	.071	.833
Within Groups	50.578	216.063	.234				

\* &lt; .05

Table 6. Descriptive Statistics for Study 2

	Treatment Group								Control Group							
	Pretest				Posttest				Pretest				Posttest			
Connector	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.
N	10	10	10	10	10	10	10	10	13	13	13	13	13	13	13	13
Mean	.74	.64	.30	.48	.76	.73	.22	.17	.62	.76	.64	.48	.64	.60	.53	.63
Std.	.75	.38	.40	.68	.94	.52	.40	.28	.69	.53	.69	.64	.66	.48	.45	.67

Table 7. Three-Way Repeated Measures ANOVA for study 2

Source	SS	df	MS	F	P	Eta Squared	Observed Power
Between Subjects							
Treatment	.531	1	.531	1.117	.303	.050	.172
Within Groups	9.979	21	.475				
Between Subjects							
Connector	2.987	2.218	1.347	1.991	.144	.087	.412
Connector*Treat	1.448	2.218	.653	.965	.396	.044	.217
Within Groups	31.505	46.573	.676				
Pre/Post	.093	1	.093	.683	.418	.031	.124
Pre/Post*Treat	.024	1	.024	.175	.680	.008	.068
Within Groups	2.867	21	.137				
Connector*Pre/Post	.095	2.020	.047	.128	.882	.006	.068
Connector*Pre/Post*Treat	.749	2.020	.371	1.004	.376	.046	.261
Within Groups	15.673	42.420	.369				

\* &lt; .05

Table 8. Descriptive Statistics for study 1 (Connector/Sentence)

Level	ELI 73				ELI 83				ELI 100				Exempt			
	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.
Connector																
N	20	20	20	20	42	42	42	42	14	14	14	14	11	11	11	11
Mean	.60	.23	.36	.43	.49	.24	.28	.30	.31	.46	.27	.15	.18	.28	.20	.18
Std	.48	.22	.44	.58	.39	.25	.28	.38	.25	.35	.25	.22	.28	.29	.24	.27

Table 9. Two-Way Repeated Measures ANOVA for study 1 (Connector/Sentence)

Source	Sum of squares	Df	Mean square	F	Sig.	Eta Squared	Observed Power
Between subjects							
Level	1.109	3	.370	3.152	.029*		.712
Within Groups	9.738	83	.117				
Within subjects							
Connector	.672	2.732	.246	1.840	.146	.022	.451
Connector*Level	2.035	8.197	.248	1.857	.066	.063	.786
Within Groups	30.309	226.785	.134				

\* &lt; .05

Table 10. Descriptive Statistics for study 2 (Connector/Sentence)

Connector	Treatment Group								Control Group							
	Pretest				Posttest				Pretest				Posttest			
	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.	Add.	Adv.	Ca.	Tem.
N	10	10	10	10	10	10	10	10	13	13	13	13	13	13	13	13
Mean	.50	.47	.19	.27	.48	.51	.16	.11	.51	.64	.46	.33	.45	.48	.45	.46
Std.	.51	.23	.27	.38	.57	.37	.30	.18	.61	.52	.51	.44	.44	.40	.40	.48

Table 11. Three-Way Repeated Measures ANOVA for study 2 (Connector/Sentence)

Source	SS	df	MS	F	P	Eta Squared	Observed Power
Between Subjects							
Treatment	.033	1	.033	5.992	.023*		.222
Within Groups	.117	21	.056				
Within Subjects							
Connector	1.895	2.195	.863	2.135	.125	.092	.435
Connector*Treat	.577	2.195	.263	.650	.540	.030	.157
Within Groups	18.639	46.099	.296				
Pre/Post	.050	1	.050	.568	.459	.026	.111
Pre/Post*Treat	.043	1	.043	.048	.828	.002	.055
Within Groups	1.852	21	.088				
Connector*Pre/Post	.013	1.810	.073	.032	.959	.001	.054
Connector*Pre/Post*Treat	.382	1.810	.211	.907	.403	.041	.188
Within Groups	8.839	38.003	.233				

\* &lt; .05



Figure 1. Profile Plot for Study 1 (Ratio of Number of Connectors per 100 words)

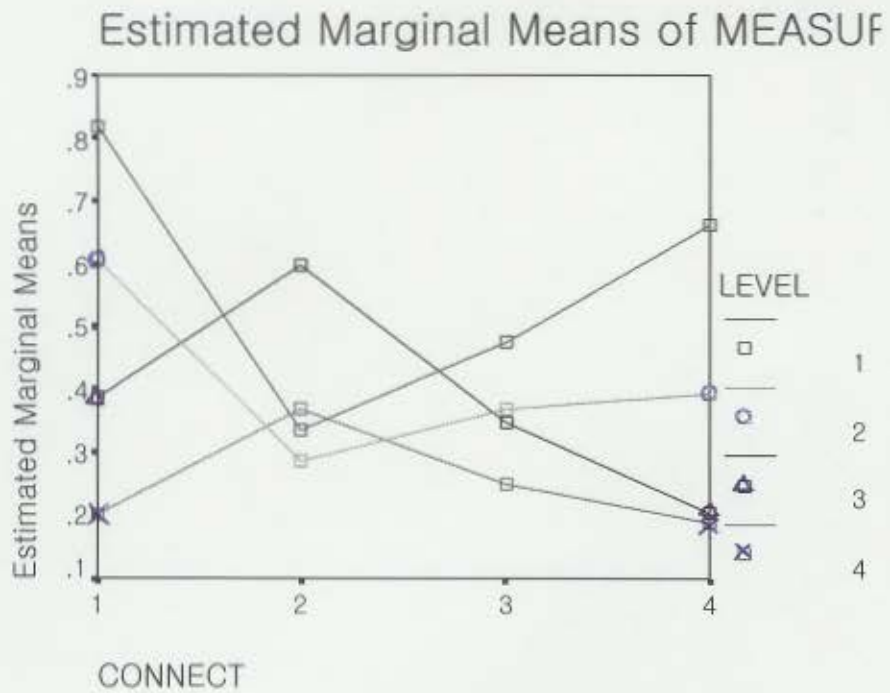


Figure 2. Profile Plot for Study 2

(Ratio of Number of Additive Connectors per 5 sentences)

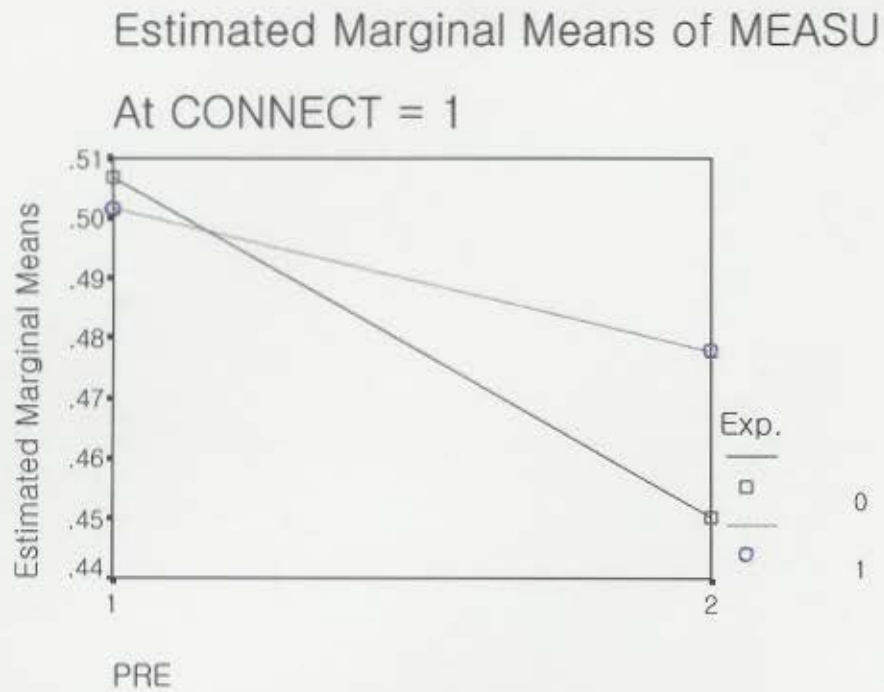


Figure 3. Profile Plot for Study 2

(Ratio of Number of Adversative Connectors per 5 sentences)

## Estimated Marginal Means of MEASUF

At CONNECT = 2

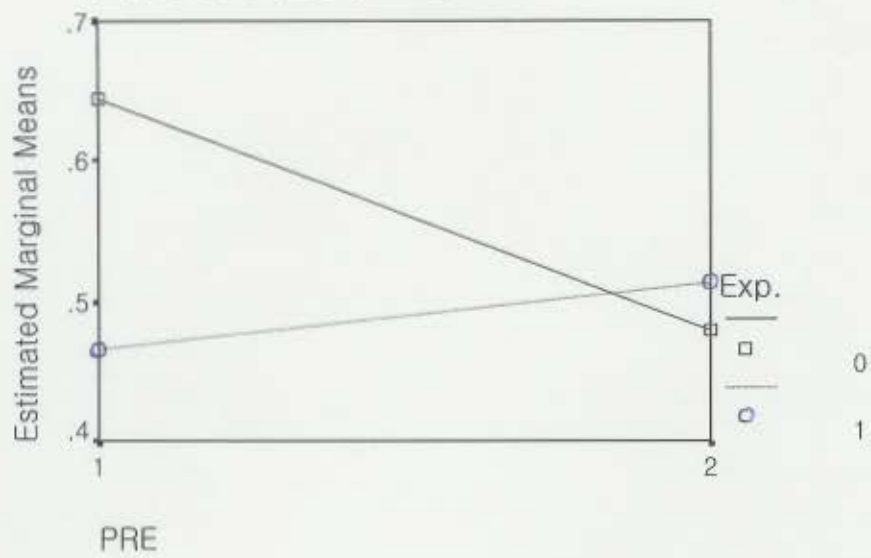




Figure 3. Profile Plot for Study 2

(Ratio of Number of Causal Connectors per 5 sentences)

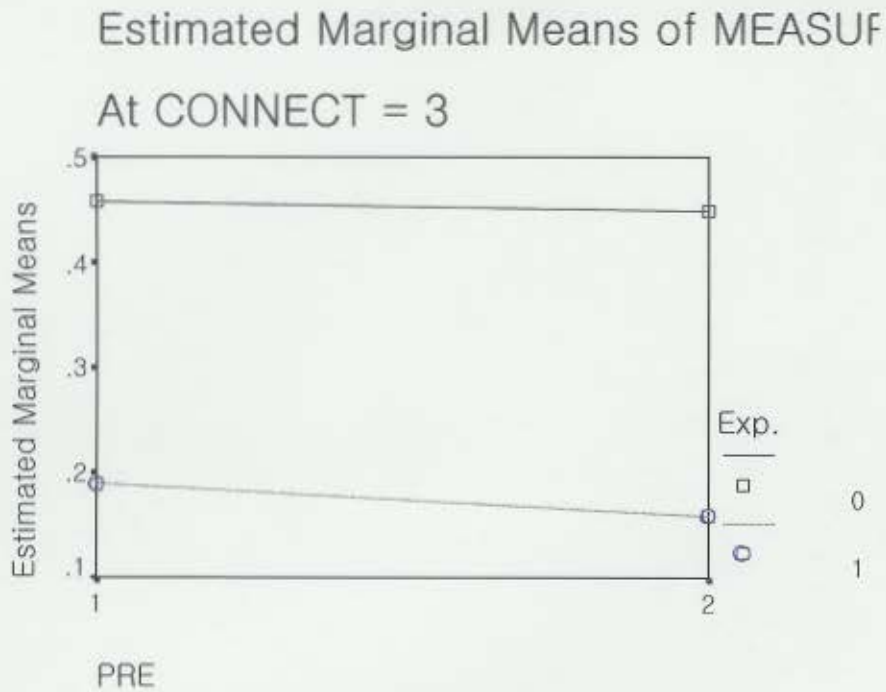
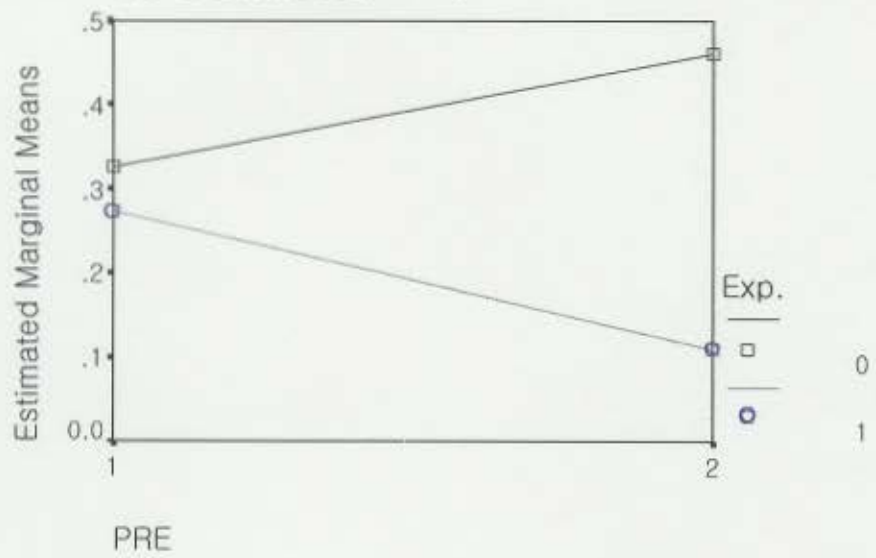


Figure 4. Profile Plot for Study 2

(Ratio of Number of Temporal Connectors per 5 sentences)

# Estimated Marginal Means of MEASU

At CONNECT = 4



## Appendix 2. Material

### How to use connectors

#### Part 1. Sentence Connectors

Usually ESL learners are likely to overuse sentence connectors. They have learned connector, but they do not know how to use them in their writing. The purpose of this activity is to help them to find out how to use connectors, especially sentence connectors.

##### a. Connectors

Meaning	Form		
	Coordinating Conjunctions	Sentence Connectors	Subordinating Conjunctions
Additive	And Not only... but also	In addition Besides Furthermore Indeed	In addition to Besides Not to mention
Adversative	But Yet	However On the other hand In contrast Even so Nevertheless	While Whereas Although Even though In spite of
Cause and Effect	For So	Accordingly Consequently As a result Therefore	Due to Because/Since As a result of So that In order to Providing/If
Temporal	And	First Then Eventually Soon	After When Before

##### b. How Many Connectors Are Used

Bring a sample paper, of which the topic is related with your own topic. Calculate how many sentence connectors are used per 100 words in the



sample paper and then in your writing. By doing that, you can easily catch differences between the sample and your writing in the aspect of connectors.

c. How Connectors Are Used

Figure out how the connectors are used in the sample paper and then examine your use of connectors. Discuss with your group members.

d. Revision

Revise your writing based on the previous three steps.

### **Appendix 3. Student Consent Form**

**AGREEMENT TO PARTICIPATE IN**  
**Patterns of Connectors in ESL learners' writing**  
**Sookyung Cho, Moore 474, 956-2791**

This research study is being used as a course paper and an MA thesis. Analyzing your writing samples; the researcher is to investigate second language learners' grammar, which is distinct from native speakers'. You were selected as a possible participant (N=29) in this project because you are currently enrolled in one of ELI 73 courses at UHM, and ELI 73 is the target level for this study. Your teacher has already agreed to participate.

Right now and two weeks later, the researcher will give you writing tests, which are similar to TWE (The Test of Written English) both in format and length. Each of them will take 30 minutes.

Your data will be used confidentially and there will be minimal risks such as losing your class time in participating in this study. By participating in this study, you can help the development of appropriate writing materials, which can help to facilitate ESL learners' learning based on the authentic data such as yours.

You can choose whether to participate in this study or not. If you volunteer to participate in this study, you may withdraw at any time without consequences of any kind. If you have questions or concerns regarding your rights as a research participant, you may contact the UH Committee on Human Studies at (808) 956-5007.

I certify that I have read and that I understand the foregoing, that I have been given satisfactory answers to my inquiries concerning project procedures and other matters and that I have been advised that I am free to withdraw my consent and to discontinue participation in the project or activity at any time without prejudice.

I hereby give my consent to participate in this project with the understanding that such consent does not waive any of my legal rights, nor does it release the principal Investigator or the institution or any employee or agent thereof from liability for negligence.

\_\_\_\_\_  
Signature of individual participant

\_\_\_\_\_  
Date

## **Appendix 4. Pretest/Posttest**

(Type I)

**Code #** \_\_\_\_\_ **Undergraduate** \_\_\_\_ **Graduate** \_\_\_\_

**Native Language** \_\_\_\_\_

### **Direction**

You have 30 minutes to write a composition on the question.

### **Question**

Some students prefer to work in groups in their writing class. Others prefer to work individually. Which do you prefer? Use specific reasons and examples to support your opinion.



(Type II)

Code # \_\_\_\_\_ Undergraduate \_\_\_\_ Graduate \_\_\_\_

Native Language \_\_\_\_\_

**Direction**

**You have 30 minutes to write a composition on the question.**

**Question**

Some students believe that a language teacher should be a native speaker of that language. Others believe that non-native teacher understands better them and s/he can be a good teacher as well. With which do you agree most? Use specific reasons and examples to support your opinion.