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문학석사 학위논문

**The Use of *And* and *But* in the  
Sentence-initial Position in  
Academic Writing**

학술적 글쓰기의 문두에서의  
*and* 와 *but* 의 사용

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# Abstract

## The Use of *And* and *But* in the Sentence-initial Position in Academic Writing

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A comparative analysis is made of the use of *and* and *but* in the sentence-initial position as cohesive devices in English academic discourse from international journals and domestic journals based in Korea. The analysis is based on the concept of cohesion set down by Halliday and Hasan (1976) and seeks to examine ways that the international journal articles and domestic journal articles use sentence-initial *and* (SIA) and sentence-initial *but* (SIB) to cohere text. Two corpora of 480,000 words (international) and 410,000 words (domestic) were built, and a text-analytic

approach was employed to investigate the function of SIA and SIB along with an investigation of the distribution of the items.

The study reveals that SIA and SIB employment in academic journals of the international corpus are mostly restricted to the genre of humanities, unlike what was shown in previous studies. The writers of the domestic corpus employ SIA and SIB far less frequently compared to that of the writers of the international corpus. The findings of this study confirms the three functions of SIA and SIB put forward by Bell (2007); the functions of SIA are: (i) signaling the last item on a list; (ii) signaling a discontinuity/shift in discourse, and (iii) chaining of arguments. Three similar functions to these are recognized in the use of SIB as: (i) adding the final item on a list; (ii) shifting the domain of the topic; and (iii) developing arguments. It is notable that although the domestic corpus reflected all three functions in the use of SIA and SIB, these occurrences of SIA and SIB did not always portray successful operations as a cohesive device.

The avoidance by domestic writers in using SIA and SIB in their writing is most likely a direct result of strictures against SIA and SIB put upon them in the EFL classroom, coupled with their inability to determine the flexibility of a rule. Based on the results of the study, it is suggested that the best course of action is to teach EAP students, in general, to continue to employ SIA and SIB alternatives in their writing. However, the current study emphasizes that for learners who will likely write in the field of humanities, the employment of SIA and SIB as cohesive devices should at least be introduced, if not encouraged. Also, the study indicates a need for EAP writers to be instructed in the use of logical transitions so that they may improve cohesive discourse within their writing.

**Keywords:** *And, But*, Cohesive device, Academic discourse, Cohesion, Text analysis

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# **Chapter 1. Introduction**

## **1.1 Motivation and Background of the Study**

Cohering text is an essential core skill in writing in that it helps readers recognize relationships between ideas and make obvious the thread of meaning that the writer attempts to communicate. In fact, in order for academic writing to be a vessel of successful communication within its discourse community, one of the writer's most important objectives is to compose texts that are coherent and cohesive. Analysis of the use of cohesive devices has naturally been of interest for researchers and language instructors in the field of academic writing (Connor, 1984; Hinkel, 2001; Nesi & Basturkmen, 2006). Further, exploring the functions of certain lexicogrammatical features in academic writing could assist students in improving their compositions by providing information on the need for cohesiveness and methods they might employ to attain that cohesiveness.

The failure to choose the proper connector—the term loosely used here to refer to elements that can link chunks of discourse—results in the message embedded in the combination of texts becoming vague, or even lost, regardless of whether the individual sentences are clear or not. This kind of failure appears to be not so uncommon to Korean writers of English, and, in fact, is an easily observed phenomenon in most foreign language learner writing productions.

For instance, in a contrastive interlanguage analysis using the International Corpus of Learner English (ICLE), EFL writers showed no overall overuse of connectors (Granger & Tyson, 1996). However, on a more qualitative note, the corpus analysis showed strong evidence of overuse and underuse of individual

connectors, as well as semantic, stylistic, and syntactic misuse. Other corpus-based studies comparing the use of linking adverbials between learner corpora and native speaker corpora (e.g. Milton & Tsang, 1993; Altenberg & Tapper, 1998; Bolton, Nelson, & Hung, 2003; Chen, 2006; Lei, 2012) have also come to a consistent conclusion that second-language learners tend to overuse/underuse/misuse linking adverbials.

When the research on EFL learners' writings turned to writers whose L1 is Korean, similar results were observed. For instance, Cho (1998), in a study looking at the correlation of the range of the connectors produced with the students' length of study, found that the longer the length of study, the greater the diversity of the connectives produced. However, even the learners with a longer length of study showed a restricted use of connectives, revealing a lack of growth in the production of subordinators that contribute to the syntactic complexity of a sentence. When examining the writing of Korean university EFL students, an overuse of conjunctive adverbials as a cohesive marker was observed (Lee, 2004; Yoon, 2006; Park, 2013b), showing a much greater frequency of use of conjunctive adverbs when compared to native-speaker writers. The NS writers also appeared to noticeably prefer sequential and additive types of conjunctive adverbs and frequently fronted them to the sentence-initial position. In another study, Park (2013a) compared the use of contrastive conjunctions in argumentative writings of Korean university EFL students and NS university students, revealing some notable characteristics of the NNS writers' use of contrastive conjunctions. For example, NNS writers displayed an overuse of the two most common contrastive conjunctions *but* and *however* in sentence-initial position, and they exhibited frequent misuses of conjunctive

adverbials, such as *in contrast*, *on the contrary*, and *on the other hand*. Park puts forward that, in addition to the form-related errors, problems that the NNS writers face are seemingly results of the misunderstanding of semantic relations of the conjunctions.

There have been many other studies carried out with the aim of comparing the use of cohesive devices in the writing of native and non-native speakers of English (Connor, 1984; Francis, 1989; Hinkel, 2001; Scarcella, 1984); most found that the NNS group exemplified very few or inappropriate use of certain lexical cohesive devices. Subjects of Hinkel's (2001) study, in particular, illustrate that even advanced non-native-speaker writers do not use a wide variety of cohesive devices to compose a unified text.

Of the many cohesive devices, the current study confines itself to the investigation of the use of *and* and *but* used in sentence-initial positions. The uses of sentence-initial *and* (henceforth SIA) and sentence-initial *but*<sup>1</sup> (henceforth SIB) have long been proscribed in writing, especially in academic prose (Biber et al., 1999). However, the increase in the use of SIA and SIB across various genres has been recorded in recent studies (Cotter 2003; Raimes 2002), and they are even being recognized to be trending as the most frequently occurring sentence-initial additive and contrastive connectives, respectively, in academic writings (Bell, 2007). In particular, the study, based on a 100,000-million-word corpus of academic prose

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<sup>1</sup> The proscription against SIB has traditionally been much less restrictive than that against SIA. Bell (2007) suggests the prescriptivist prohibitions of conjunctions in sentence-initial position reflect the gradient of coordinating and subordinating conjunctions presented in *A Comprehensive Grammar of the English Language* (Quirk, Greenbaum, Leech, & Svartvik, 1985). As put forth in that text, *and* and *or* are the most strongly prohibited; *but* is prohibited to a lesser degree than the preceding conjunction; and *yet* has no such restrictions, as it is located towards the subordinating conjunction end of the scale.

conducted by Bell (2007), revealed that SIA was the preferred additive connective over *moreover*, *furthermore*, and *in addition*, etc., while SIB was the second most preferred contrastive connective following *however*.

Bell (2007) has even put forward that SIA and SIB are found to function in very similar ways in academic writing—the study is further detailed in sections 2.3.2 and 2.4.2 of this paper—and one can easily question how two semantically independent items perform approximately identical functions as cohesive devices in a genre of written discourse. Given the relatively frequent use and similar functions of SIA and SIB in academic prose, the current study stemmed from the question as to whether the functions of SIA and SIB found in previous studies are valid and whether or not the same kind of functions show in a Korean setting. With previous research pointing to a common deficiency of Korean EFL writers when choosing proper lexical cohesive devices, a study focusing on SIA and SIB use seemed necessary. This is further underscored by the fact that SIA and SIB use is strongly proscribed in English classrooms in Korea, even as they are being recognized to be amongst the most frequently occurring sentence-initial connectives within their respective semantic groups of additives and contrastives (Bell, 2007). Such a study would aid in understanding the impetus for the employment of SIA and SIB in an EFL setting, and it would help further the advancement of teaching methods that address cohesive-writing composition skills, especially from a viewpoint of English for academic purposes (EAP). The current study examines both the distribution and functions of SIA and SIB in academic writing taken from Korean domestic journals in comparison with that of international journals. The aim of the study is to find answers to the following research questions: (i) in what distribution and functions

are SIA employed by writers in international and domestic journals and (ii) in what distribution and functions are SIB employed by the same writers in international and domestic journals?

While the majority of the literature on connector usage of non-native writers of English focuses on the overuse, underuse, and/or misuse of connectives of non-native English writers (eg. Goldman & Murray, 1992; Kanno, 1989; Granger & Tyson, 1996; Lei, 2012; Narita, Sato, & Sugiura, 2004; Ryoo, 2007; Yoon, 2006), the current study is interested in the functional similarities and differences that domestic and international academic discourse possess when SIA and SIB are chosen by writers to signal cohesion in text. Using a text-analytic approach and based on the theoretical framework of Halliday and Hasan's (1976) idea of cohesion and conjunction, this study aims to identify the functions of SIA and SIB and see how they are used in the domestic corpus in comparison with the international corpus.

## **1.2 Organization of the Study**

This study is composed of five chapters. The first chapter covers the background and motivation of the study. In Chapter 2, literature on topics related to the current study are reviewed: first comes a review of the idea of cohesion and conjunction; next comes a discussion of the traditional functions and categorization of *and* as a conjunction and *and* as a cohesive device; and last comes the traditional functions and categorization of *but* as a conjunction and *but* as a cohesive device. Chapter 3 covers the data collection in terms of the construction of the two corpora, and this data is analyzed with regard to the distribution and functions of SIA and SIB in Chapter 4. The final chapter concludes the study with focus on the contributions of

the research to the study of academic discourse from an EAP point of view, noting the limitations of the study as well as its pedagogical implications.

## Chapter 2. Previous Literature

In the first two sections of this chapter, I review Halliday and Hasan's (1976) cohesion theory and the role of conjunction under this theory. A review of *and* and *but*, the two conjunctions under scrutiny, follows, focusing on their particular semantic functions and categorizations, both as a logical operator and as a cohesive device.

### 2.1 Cohesion

A discussion of cohesion is central to the current study, as the investigation of SIA and SIB as cohesive devices naturally hinges notably on the concept of cohesion. Few researchers before Halliday and Hasan mention the topic of cohesion, and, if they mention it at all, it is only to briefly describe its function within the concept of their works (eg. Quirk, Greenbaum, Leech, & Svartvik, 1972; Crystal & Davy, 1969). For the most part, however, the concept of cohesion to these researchers appears to play a mere supporting role in their studies. Only do Halliday & Hasan (1976), in their book *Cohesion in English*, concentrate on laying out cohesion as a theoretical concept.

Halliday and Hasan (1976) put forward the idea that a text is coherent as a consequence of cohesion. The concept of cohesion is the notion that linguistic devices related one component in the text to another; and by means of cohesion texture is created through cohesive ties between structurally independent propositions (Halliday & Hasan, 1976). Texture is fundamental to the concept of cohesion. Produced by linguistic devices such as reference, substitution, ellipsis, and conjunctions, texture reveals thematic relations between two or more clauses or

within independent elements in the text (Halliday & Hasan, 1976). Cohesion occurs where some element in the discourse conditions the interpretation of another element in the text. Consider the example:

- (1) Mary promised to send a picture of the children, but she hasn't done.  
(Halliday & Hasan, 1976, p. 8)

Readers of the sentence above can understand that what Mary has not done is to send a picture of the children. This interpretation would still hold even if there were a sentence boundary in between. Thus, Halliday and Hasan (1976) argue that the concept of cohesive relations must be understood separately from sentence boundaries.

Now that we have established that the idea of cohesion is unaffected by sentence structure, we can take a look into the different ways that cohesion is expressed. Halliday and Hasan (1976) explain that substitution, ellipsis, and lexical cohesion express cohesive relations regardless of the sentence structure. Conjunction, on the other hand, behaves somewhat differently. It can communicate cohesion through special forms that express various conjunctive relations which are sensitive to grammatical structure, and, in addition, it can do so with structurally free sentences (Halliday & Hasan, 1976). This is illustrated in (2):

- (2) a. It's raining. – Then let's stay at home.  
b. Since it's raining, let's stay at home.

(Halliday & Hasan, 1976, p. 9)

Halliday and Hasan (1976) demonstrate that, regardless of the existence of a structural connection in (2)b, or the absence of such connection, as in (2)a, the

semantic relation that provides cohesion is equal in both examples. Further discussion of conjunctions will follow in the next section.

Though the idea of cohesion itself is not bound by structures of sentences, “the relation among the elements within the sentence, together with the order in which the elements occur (which is one of the means of realizing these relations), is determined by the structure (Halliday & Hasan, 1976, p. 28).” Halliday and Hasan (1976) recognize the order of sentences significant in the reading of cohesion in text. Notice in the group of sentences below that those which do not form a text can be rearranged in any order without altering the meaning it projects.

- (3) Although the light was on, he went to sleep. Although the house was unfurnished, the rent was very high. Although he was paid a high salary, he refused to stay in the job. (Halliday & Hasan, 1976, p. 19)

Here, no structural relation between the sentences and no grammatical restrictions on the sequence of the placement of sentences are observed. In contrast, sentences of a text are related by cohesion; and alteration of the order of the sentences will always result in alteration of the meaning, as the meaning of each sentence is dependent on its environment, including its cohesive relations with other sentences (Halliday & Hasan, 1976).

Cohesion accounts for how different linguistic items operate in association with each other to construct a meaningful interpretation of discourse. Thus, it allows for the reader to pick up a unity of purpose from structurally independent propositions in the text. When considering cohesion, therefore, we are dealing with the linguistic means that permit a text to function as an independent unit of meaning (Halliday & Hasan, 1976, p. 29).

## 2.2 Conjunction

Since this paper examines the function of SIA and SIB in written discourse, a review of Halliday and Hasan's layout of the concept of conjunction is necessary. The process of conjoining two constituents of the same type in order to produce a larger constituent of the same type is called *conjunction*. Since it is able to produce compound structures, this process has been referred to as *compounding* in traditional grammar (Celce-Murcia & Larsen-Freeman, 1999). For example, conjunction may occur across two sentences to produce a single "compound sentence," or it may occur across two subject NPs to create a "compound subject (Celce-Murcia & Larsen-Freeman, 1999)."

In *Cohesion in English* (Halliday & Hasan, 1976), the cohesive relation of conjunction is discussed as one of the four types of cohesive relations that can be found in the grammar. Halliday and Hasan (1976) argue that conjunctive elements are rather different in nature from the other three linguistic items that express cohesive relations; they are not cohesive in themselves but, thanks to their specific meanings, are able to indirectly cohere a text. While substitution and ellipsis signal a grammatical relation that directly adheres the words and structures to each other, rather than relating them through the meanings they hold, reference and conjunction signal a semantic relation (Halliday & Hasan, 1976, p. 226). However, while reference signals a direction for interpreting an element in terms of its environment—such as the linguistic environment which we have thus far referred to as "text"—Halliday and Hasan argue that conjunction "moves into a different type of semantic relation, one which is no longer any kind of a search instruction, but a

specification of the way in which what is to follow is systematically connected to what has gone before (p. 227).”

Even so, Halliday and Hasan (1976) remind readers that conjunctive relations are not bound by any particular sequence in what is being communicated. If there are two sentences in a text that are cohered to each other by means of some form of conjunction, the particular order in which they appear does not dictate the specific cohesive relation. Rather, it is argued that the specific meanings contained by the conjunctions presuppose the presence of other components in the discourse (Halliday & Hasan, 1976).

Though the concept of cohesion expands beyond the notion of structure, it is inevitable that we are still concerned with the actual sequence of the text, because cohesion is, after all, the relation between sentences in text. Thus, when describing conjunction as a cohesive device, the focus must not be on the semantic relations but on the unique aspect of conjunction: that is to say, the function that conjunctions have of relating to independent linguistic elements that occur in a sequence but which are not linked by any other structural element (Halliday & Hasan, 1976).

Halliday and Hasan (1976) have laid out four types of conjunctive relations: additive, adversative, causal, and temporal. As the aim of the current study is to observe the function of two particular conjunctions—*and* and *but*—the significance of the two words playing a cohesive role requires attention. *And*, the simplest form of conjunction, is said to express an additive relation, and the adversative relation articulated by *but* is viewed to contain the logical meaning of *and* as an equivalent of *and however* (Halliday & Hasan, 1976). A further look into studies on *and* and *but* as cohesive devices will help to add more clarity to the discussion.

## **2.3 *And***

Under this section, I review the semantics and classification of *and*. First, I discuss its traditional meaning as a coordinating conjunction. Then, I address the function that *and* takes on as a cohesive device as it occurs in the sentence-initial position. Finally, I review the function of SIA in different genres, bringing focus to the use of SIA in academic writings.

### **2.3.1 *And* as a coordinating conjunction**

The review of *and* in this section focuses on discussion of the meaning that *and* conveys in its traditional role as a coordinating conjunction. Its meaning seemingly close to that of the “plus sign in arithmetic, *and* is the most common signal used to conjoin (Celce-Murcia & Larsen-Freeman, 1999). According to Posner (1980), the meanings of conjunctions may be viewed under two different scopes: one that he calls a “meaning-minimal” account and another that he calls a “meaning-maximal” account. The former focuses on the logic of conjunctions, while the latter focuses on the pragmatics of the conjunctive words themselves.

Most linguists have no doubt that conjunctions possess certain logical properties. Some branches of linguistics that favor the formal description mention the truth-condition properties of connectives. This is where the view of *and* as a logical operator can be accounted for. The idea is that the truth-value of a statement is the result of a function of each individual conjunct. For example, in the statement

- (4) Sam is a teacher and Tom is a student.

as long as each conjunct is true —i.e. Sam truly is a teacher, and Tom truly a student— then the entire statement in (4) is true; and if at least one conjunct is false, then the statement as a whole is false. Thus, the essential meaning of the coordinating conjunction *and* appears to be this truth-conditional meaning.

However, if *and* is solely a logical operator, as  $X+Y$  is an equivalent of  $Y+X$ , the reversed order of all clauses conjoined by *and* must hold the same meaning. Indeed, most *and*-conjoined statements follow this constraint, as in (5), but some do not, as in the example shown in (6).

(5) a. Tokyo is the capital of Japan, **and** Paris is the capital of France.

b. Paris is the capital of France, **and** Tokyo is the capital of Japan.

(6) a. Fred fell down, **and** he hurt his foot badly.

b. ?Fred hurt his foot badly, **and** he fell down.

(Celce-Murcia & Larsen-Freeman, 1999, p. 473).

Although (5) shows that the order of the conjuncts do not bring about a difference in meaning, (6) does not operate in this way. It is true that if Fred fell down and hurt his foot, then Fred did hurt his foot, and he did fall down. But, the reader of (6)a can conclude that Fred hurting his foot is a result of him having fallen, and this conclusion does not hold in (6)b. Hence, the role of *and* as a logical operator is able to explain some, but, not every *and*-conjoined statement.

Labeling *and* as a “marker of many things (Celce-Murcia & Larsen-Freeman, 1999)” is one solution to the problem presented above. In this “meaning-maximal” account, *and* portrays lexical ambiguity; in addition to the truth-conditional meaning of logic, there also exists a richer meaning that implies the idea of “as a result.” The listener/reader will have to figure out from the context whether the former or latter

meaning of *and* is intended in the given utterance. As noted by the list of examples below, given by Posner (1980), the problem of this view is that the number of possible readings of *and* is very large, where even the list below is incomplete.

- (7) a. Annie is in the kitchen, **and** she is making doughnuts. (*and there...*)  
b. Annie fell into a deep sleep, **and** her facial color returned. (*and during this time...*)  
c. The window was open, **and** there was a draft. (*and coming from it...*)  
d. Peter married Annie, **and** she had a baby. (*and after that...*)  
e. Paul pounded on the stone, **and** he shattered it. (*and thereby...*)  
f. Give me your picture, **and** I'll give you mine. (*If you give me your picture, I'll give you mine.*)

(Posner, 1980, p.186)

All are possible uses of the conjunction, showing that the various meanings of *and* may gradate into one another. This quickly becomes problematic in terms of claiming that *and* is lexically ambiguous.

Then there is the view of *and* as an inferential connective, where it is argued that the meanings of *and* discussed so far are not actually meanings at all but aspects of use of the conjunction *and*. Blakemore (1992) argues that by using the conjunction *and*, the speaker/writer expresses a desire to have the listener/reader to draw an inferential connection through the conjunction. Recalling example (6)a, when the utterance *Fred fell down and hurt his knee* is made, the listener/reader will take into account what is already known about falling down and the outcome on the human body, and would most likely draw a causal relationship from the use of *and*.

### 2.3.2 SIA: *And* as a cohesive device

The review of *and* in this section focuses on its role as a cohesive device in the sentence-initial position. Halliday and Hasan (1976) delineate SIA in their study of a broader discussion on conjunction, revealing the operation of conjunction as a cohesive device in the whole concept of cohesion. They set apart the concept of coordination and conjunction, putting forward the concept that coordination is a structural device that works within a sentence, and conjunction is a cohesive device that performs the role of establishing a relationship between two sentences. Halliday and Hasan acknowledge that the additive relationship that SIA signals may be viewed as a derived form of coordination, but they argue that the difference between conjunction and coordination does not simply lie in the domain of their function.

With this being said, Halliday and Hasan (1976) agree that sets of SIA sentences similar to coordination exist, most likely if they share parallel structure between the sentences. They argue that, although the example is punctuated as sentences, this cannot be interpreted as the sentence being composed of separate sentences, but more so, a set of coordinate clauses (Halliday & Hasan, 1976).

- (8) “At the end of *three* yards I shall repeat them—for fear of your forgetting them. At the end of *four*, I shall say goodbye. **And** at the end of *five*, I shall go!” (Halliday & Hasan, 1976, p. 235).

Example (8) shows a set of sentences that are separated by punctuation but behave in a manner similar to coordination. In fact, recent studies on academic writing reveal that the function of signaling the last item on a list is the most common use of SIA in academic writing (e.g. Bell, 2007).

In addition, Halliday and Hasan (1976) recognize another use of SIA, one which comes very close to the function of *and* as a coordinator; this function of SIA signals the continuation of an ongoing list of items. They give as an example a passage from *Alice in Wonderland*, where Alice presents a group of questions, and all questions are preceded by *and*. Halliday and Hasan contend that the SIAs in the string of questions exhibit some of the retrospective effect of a backwards projection (Halliday & Hasan, 1976, p. 236), i.e. taking into account what has already been said, which is a function that *and* carries as a coordinating conjunction. A string of SIA sentences representing individual ideas that all support a single argument also exemplify this function of SIA in signaling a continuation of an ongoing list (Halliday & Hasan, 1976).

Halliday and Hasan (1976) state that, aside from these functions that are closely related to the function of coordinator *and*, SIA is commonly employed in contexts where “there is a total, or almost total shift in the participants from one sentence to the next, and yet the two sentences are very definitely part of a text (p. 213).” A prime example of this is (9).

- (9) He heaved the rock aside with all his strength. **And** there in the recesses of a deep hollow lay a glittering heap of treasure. (Halliday & Hasan, 1976, p. 235)

Here, the first sentence denotes a man’s action. The following SIA sentence depicts a treasure lying in a certain location, which is a seemingly remote idea from the previous statement with completely different participants. Yet, it is not difficult to see the relation of the two statements, as the location where the treasure lies was probably the result of the man’s moving of the rock in the first sentence.

The discussion of SIA thus far gives insight into a few functions of SIA: signaling the last item on a list; signaling a continuation of an ongoing list; and signaling a shift in participants between two sentences that form a part of a text. From here on out we will explore a number of studies that adopt this framework to investigate what ways these functions of SIA appear in written discourse.

Though the current study is focused on SIA use in the genre of academic writing, SIA use is certainly not limited to this genre. I will briefly note some studies on SIA use that have been observed in literary text and news articles before discussing SIA in academic writing. An analysis on works of poetry with the aim of determining how both discourse-initial *and* and SIA are employed therein was conducted by Huttar (2002). Discourse-initial *and*, according to Huttar, is frequently used to set stages that are already in progress or that are understood to be the preceding event where the present utterance continued from. In literary text, a typical form of *and* in discourse-initial position is an interrogative following an implied statement by another person, with the question being asked often expressing surprise at that implied statement. This was recognized in Julian's (1892) *A Dictionary of Hymnology*, where 64 out of 99 hymns beginning with *and* were in the form of interrogatives (Huttar, 2002). Bell (2007) suggests that this observation made in hymns can allow us to conjecture that discourse-initial *and* is coordinating for some prior unit the discourse that follows. Viewed in a religious context, this could be construed to be the believer's continuing meditation on God (Bell, 2007). Sotirova (2004) studied the works of D.H. Lawrence and argues that Lawrence uses SIA, along with other connectives, to signal perspectival shifts in free, indirect style. She states "that Lawrence creatively engaged with a feature of oral narration to use it

structurally for the manipulation of viewpoints” (Sotirova, 2004, p. 227).

Observing discourse in print newspapers, Cotter (2003) investigated the use of SIA and SIB in newspapers between 1900 and 1995. Her 100,000-word corpus was made up of news articles from a town newspaper in Northern California, including general news, feature articles, and local and national syndicated articles. Cotter found that, while the number of temporal connectives was declining, SIA and SIB showed a simultaneous increase in use. She puts forward the concept that SIA and SIB perform a variety of functions. A few of the examples Cotter presents as SIA and SIB performing some of these functions are shown in (10)-(12).

(10) Some depend so much on their eyebrows that they’ve had them done in permanent makeup—a cousin of tattooing, said salon owner Louise Hild. She’s been doing permanent makeup for 10 years, and permanent eyebrows are her most common request.

“A lot of people couldn’t see to do them” daily, or are tired of spending the time to tend them, Hild said.

**And** the importance of eyebrows can’t be underestimated, she said. After all—a face without eyebrows “is a blank,” Hild said.

(11) Have you been looking forward to an extra hour of sleep tonight [...] If you have you’re just one month early. **And** you’ll have to wait a month to catch up with the sleep you lost last spring.

This used to be the day [...]

**But** last June the voters decided to keep it in effect another month, as most of the rest of the nation does.

(12) Johnson said that according to the polls by the California Teachers

Association, there is a great deal of support for education.

**But** Tuesday's vote will have fallout for educators and students, said Ken Matias [...]

With public library funding in doubt, students could again be cut off from library materials—especially the important reference works.

(Cotter, 2003)

SIA in (10) demonstrates its function of closing a sequence by moving from the specific topic of permanent makeup as it relates to eyebrows to the more general topic of the importance eyebrows. In (11), SIA organizes the discourse relations, continuing and developing a previous argument, while SIB signals a change in expectations. Example (12) shows SIB being used to contrast what the results of an election meant locally with what they meant on a broader scale.

The increasing preference of SIA and SIB over other connectives is viewed by Cotter (2003) as indicative of a historical shift from a more text-centered prose to a more reader-centered one, meaning that text has become to the reader more of a stimulus that elicits a response. Her judgment as such can be illustrated in the observation that SIA and SIB are avoided in chiefly text-centered stories, such as front-page news, where more acceptable rhetorical and communicative written-language devices are favored, while they are more tolerated in reader-centered texts, such as op-ed pieces, where a more perspectival style is accepted (Cotter, 2003).

Returning our attention to academic writing, we can see that Dorgeloh (2004), upon examining SIA in British English, reported that there was actually a decline in the use of SIA in both academic and newspaper writing. The reason why Dorgeloh's

results contradict the findings of Cotter (2003) may be attributed to the fact that Dorgeloh's corpus is of a relatively small size. Her study was based on the LOB and FLOB corpora, compiled from texts from the early 1960s and the early 1990s, respectively; the corpora included academic writings of medicine, history, and sociology, along with newspaper writings, biographies, and religious writings. Her qualitative analysis gives insight into the fact that SIA occurring in written discourse marks functional shifts on a more global level of discourse by signaling the relation between the sentence with SIA and the entire previous discourse (Dorgeloh, 2004). However, Dorgeloh (2004) finds that the discourse coordination is typically achieved by asyndetic, or "zero (p. 1777)," coordination, and attributes this outcome to modern-day stricture against SIA, which regards the use as informal and colloquial.

It is contended by Dorgeloh (2004) that the current linguistic prohibitions against SIA had their origins primarily in the domain of scientific writing. She posits that changes in preferences for discourse structure, which saw a transition from paratactic to subordinate conjunction, occurred in that particular field because of changing standards of objectivity and argumentative structure. Dorgeloh believes that this was a result of changes in scientific experimentation during the mid-seventeenth century. Her argument is that SIA "became associated with older, more narrative, and hence less professional style and thus became increasingly stigmatized" (Dorgeloh, 2004, p. 1770), and this in part agrees with Cotter's (2003) view that SIA and SIB are less associated with text-centered writings. Dorgeloh ultimately proposes that the discontinuation of the use of SIA in academic scientific writing provided the impetus for a broader proscription against it in other forms of written discourse.

Bell (2007) looked into the sentence-initial occurrences of *and* and *but* in academic discourse encompassing discipline-specific patterns of usage, as well as the specification of functions and distribution of the words. Using 11 journals altogether—from the fields of natural science, social science, and humanities—a corpus of a combined word count of close to one million was used to examine the patterns of occurrences of SIA and SIB, analyzing their particular functions and distribution in academic discourse.

Upon analyzing his data set, Bell (2007) found that SIA appeared to be preferred over other additive connectives such as *moreover*, *furthermore*, and *in addition*, etc. Such findings contrast previous findings of Dorgeloh (2004), but this could be triggered by the fact that Bell's data selection was made of texts written a decade later than writings included in Dorgeloh's data. In terms of the function of SIA, Bell was able to divide the functions according to the symmetry of surrounding text. The symmetrical function, or the listing function, as he describes it, appears to be the principal use of SIA. Below is an example taken from Bell (2007) where the listing function of *and* is exemplified.

(13) Three meal-pattern categories were created based on their ability to provide meaningful comparison of eating behaviors: Consistent, moderately consistent, and inconsistent. These categories are mutually exclusive and include all possible combinations of eating occasions. Respondents with a consistent meal pattern (n=538) consumed two or three meals (plus or minus snacks) on all 3 days of reported intake. Those with a moderately consistent meal pattern (n=726) consumed two or three meals (plus or minus snacks) on 2 of the 3 days of reported intake. **And**

respondents with an inconsistent meal pattern (n=46 consumed only one meal (plus or minus snacks) or snacks only on all 3 days of reported intake. (Bell, 2007, p.188)

Here, we can observe that the SIA sentence indeed marks the last item on a list of *meal-pattern categories* as announced in the first sentence of this excerpt.

In considering the genre-specific use of the functions, social science and natural science journals favored the use of symmetric SIA, while humanities journals had more asymmetric occurrences of SIA, which is the use that “signals continuation or shift (Bell, 2007, p. 189).” With regard to this asymmetric occurrence of SIA, Bell (2007) presents the second function of SIA in academic writing: a marking of discontinuity or shift in discourse. Bell notes that this use of SIA is most often signaled by a movement away from previous discourse via an authorial comment as shown in (14).

(14) Not much is left to respect. There remains only an old man to abuse. **And** this is exactly what awaits him, precisely as he celebrates his son's successfully concluded training. (Bell, 2007, p.190)

Here, the shift in discourse is realized as the SIA sentence that explicitly states the realization of what is speculated in the previous statement, moving away from the flow of the previous discourse.

The other broad use of the asymmetric kind that Bell (2007) set down introduces the concept of “argumentative chains” in academic writing. An argumentative chain, he explains, “describes the way that arguments are derived from and build on prior arguments (Bell, 2007, p. 189),” as illustrated in the examples below found in Bell’s

data.

(15) A small country in the Ricardian model, then, cannot lose from fragmentation so long as *prices of final goods remain fixed*. **And** *fixity of prices* has a certain plausibility if the rest-of-world is integrated, as noted above. (Bell, 2007, p.189)

(16) The ordinary person, needless to say, rarely shares this sinister and degrading conviction. Yet it remains possible, in the right circumstances, to convince people of their unhappiness by appealing to base motives like *resentment*. **And** *resentment*, in turn, demands an object. The consolidation of power requires, then, an external enemy, on whom the unhappiness of the ordinary person can be blamed. (Bell, 2007, p.190)

The chaining effect is often noticeable by topic development or by the new information slot in P becoming the topic/given slot in Q. Example (15) illustrates an argumentative chain marked by the former manner, as the *fixity of prices* is developed into the topic of discourse, whereas in the case of (16), the latter method of marking of the chaining effect is apparent as the new information slot in P, *resentment*, becomes the topic slot of Q.

Bell (2007) argues that the particular functions of SIA that appear in academic discourse are based on its syntactic privileges, its reduced phonological prominence, and the semantic features of *and*. SIA's syntactic advantage in comparison with other additive connectors was recognized as it was the only additive connector in his data that was able to preface interrogatives and certain adverbs such as enumerators and stance adverbs. Also, while other additives including *moreover*, *in addition*, and *furthermore* must be followed by a comma to indicate a short pause before the

following word or phrase, SIA was found to be able to behave like a clitic due to its reduced phonological prominence. Further, it was suggested that the semantic and pragmatic feature of SIA that motivates writers in their choice of using SIA over asyndetic coordination was its ability to signal certain listing relationships that the asyndetic coordination may have difficulty presenting. Ultimately, Bell's investigation of SIA in academic discourse gives way to the idea that the use of *and* as a cohesive device cannot be discussed only under stylistic and prescriptive terms, but that we can also take into account the syntactic, phonological, semantic, and pragmatic features of the words to influence the writer's word choice.

By revisiting the studies mentioned in this section, we are able to take note of several functions of SIA in written discourse based on the framework of Halliday and Hasan (1976). Also, we were presented the varying results of the distribution of SIA. Cotter (2003) found that, in print newspapers, while the number of temporal connectives declined, SIA and SIB showed a simultaneous increase in employment. Dorgeloh (2004) followed up with a study yielding contradicting results, reporting that there was actually a decline in the use of SIA in both academic and newspaper writing. And in a more recent study, Bell (2007) contended that SIA is actually the most preferred additive connective in academic writing. We see varying reports on the employment of SIA, and thus can realize a need for a study with a larger pool of data of more recent collections of writing. Further, in this section, we were presented three functions of SIA employed in academic prose put forward by Bell (2007): signaling the last item of a list; signaling a discontinuity or shift in discourse; and signaling an argument-chaining effect.

## 2.4 *But*

Under this section, I review the semantics and classification of *but*. First, I discuss its traditional meaning as a coordinating conjunction. Then I address the function that *SIB* takes on as a cohesive device in ways similar to those of *SIA*, as presented in Bell (2007).

### 2.4.1 *But* as a coordinating conjunction

The coordinating conjunction *but* is often recognized as a logical equivalent to *and*. As put forward by Celce-Murcia and Larsen-Freeman (1999, p. 475), if the sentence “It is raining, but I am happy” is true, then replacing *but* with *and* will also result in a true statement. However, the meaning of *but* is not restricted to this, as it is able to express some sort of contrastive relation. The two types of contrast that *but* may signal are “denials of expectation” and semantic contrast (Celce-Murcia & Larsen-Freeman, 1999).

The function of *but* denying expectations, occurs when a probable expectation is not met or is violated. By this use of *but*, the expectation that arises with the reading of the first conjunct turns out not to be true, as in the following examples.

- (17) a. He is friendly but introverted.  
b. He worked slowly but diligently.  
c. They tried for three hours to steer the boat from the storm, but the boat sank.

(Celce-Murcia & Larsen-Freeman, 1999).

Examples in (17) illustrate cases of expectations being canceled: that a friendly

person is outgoing; that a slow worker is lazy; and that hard work will yield success are all denied by the conjoining of conjuncts with *but*.

The second and final use of *but* involves semantic contrast. In this use of *but*, two entities or qualities are juxtaposed to call attention to the semantic difference or differences between them. Celce-Murcia and Larsen-Freeman (1999) note that the two entities/qualities may be polar oppositions but, as can be seen in (18), that that is not always the case.

(18) a. Winter is warm in Miami but cold in Moscow.

b. John likes skiing, but his sister prefers tennis.

(Celce-Murcia & Larsen-Freeman, 1999, p. 475)

In (18)a, the climate of the two locations is contrasted showing that they are polar opposites, but in (18)b, the two people's preferences in sports are contrasted without having to be polar opposites. In this use of *but* as a marker of semantic contrast, no denial of expectation is necessary in order for *but* to conjoin a sentence (Celce-Murcia & Larsen-Freeman, 1999).

### **2.4.2 SIB: *But* as a cohesive device**

In the taxonomic system of Halliday and Hasan (2007) delineating conjunctions, SIB is classified as an adversative. This adversative cohesive device does not face prescriptivist prohibition as strict as that of SIA, and this fact could be the reason why SIB use is much more frequent than SIA use in academic writing (Bell, 2007).

Perhaps because of this weaker prohibition of SIB there are fewer studies to be found on the topic. While the number of studies of *but* has proliferated (See

Blakemore [2001, 2002] for a study from a relevance theoretic perspective; Thompson [2005] for an analysis within the framework of systemic functional linguistics; Umbach [2005] for a perspective of information structure; and Nemo [2006] working from a construction-based perspective), most of them fail to differentiate the cohesive function of *but* that works across sentence boundaries from the intersentential, coordinating use of *but*.

On the other hand, there are studies that encompass *but* in the sentence-initial position, and these studies regard SIB as a discourse marker—a tool used to show relations between discourse units, speech acts, and discourse participation (Bell, 2007). According to Bell (1998), *but*, as a cancellative discourse marker, provides instruction regarding what aspect of information derivable from the prior discourse, P, whether global or local, is to be canceled by the current message, Q. In this framework, SIB is seen as a discourse tool that allows speakers to remove from intended meanings any potential unintended meanings.

In his work investigating SIA and SIB in academic discourse, Bell (2007) found that SIB is used quite commonly, discovering that it is the second most preferred connective with contrastive features, following *however*. In addition, Bell was able to undergird the claim of Biber et al. (1999) that, when functioning as coordinators, *and* is used more frequently than *but* in academic discourse, but when used as cohesive devices, *but* is employed more frequently than *and* (Bell, 2007, p. 184). Bell argues that SIB operates in functions similar to those in SIA: (i) to coordinate “idea units” by marking the last item on a list; (ii) to signal a discontinuity or shift in discourse; and (iii) to develop arguments from previous discourse (Bell, 2007, p. 195). See the respective examples below taken from Bell (2007):

(19) I have tried to find a concrete image for this space in photography and films. In Camera Lucida it exists in the simple example Barthes gives to explain that reality and photography are intertwined by a special relationship, another sort of skin, which make photography belong to "that class of laminated objects whose two leaves cannot be separated without destroying them both: the window pane and the landscape."

**But** an even more pertinent example exists in the realm of film.

(20) There can be various different kinds of use bases, and analyzing all of them is beyond the scope of this investigation. **But** one of the most important ones is that referred to as "common knowledge."

(21) The nature of design is partly revealed in the qualities of products. **But** it is also revealed in the processes of design thinking that lead to the creation of products. There is little agreement among practicing designers or design educators about what constitutes the precise pattern of the design process.

(Bell, 2007, pp. 195-196).

Example (19) depicts *but* in a paragraph-initial position combined with the comparative *more*; the SIB sentence adds a final, more relevant element to the previous set of arguments here. In (20), SIB cancels the proposition of the prior discourse achieving a shift in the topic domain; here, *an analysis of the various kinds of use bases* was said to be *beyond the scope of the investigation* in the meta-discoursal statement, which is then cancelled when the SIB sentence discusses one of the most important use bases. And in (21), SIB implies an antithesis between *the qualities of products* and *the processes of design thinking* while they are both

indications of *the nature of design*; this implication comes from the revelation of authorial thoughts, adding extra contextual information facilitating a development of argument.

The features of SIB which give writers an advantage over employing other contrastive connectors are explained by Bell (2007). As has been demonstrated in his results regarding SIA as well, the weak phonological prominence of SIB, especially in comparison with the most common cancellative *however*, appears to be the reason SIB is preferred as a preface for interrogatives, enumerators, and stance adverbs. SIB was actually found to be the most common contrastive connector in juxtaposition with enumerators and stance adverbs, while it was also found to preface interrogatives 18 times more frequently than *however* has. Further, it was suggested that the motivation behind using SIB coordination rather than intrasentential coordination stems from the need to make the text more reader-friendly by accentuating a step in argumentation.

By reviewing Bell's (2007) work on *but* as a cohesive device, we are able to note the ways in which SIB may function in a similar manner to SIA. With an aim to explain SIB occurrences in academic written discourse, the current study adopts the account of SIB viewed as a discourse device, by which writers subtract meanings from existing meanings.

## **2.5 Overview**

According to Halliday and Hasan (1976), cohesion accounts for how different linguistic items work together to construct a meaningful interpretation of discourse from structurally independent propositions in the text. As a linguistic item that

expresses cohesive relations, conjunctive elements are special in that their specific meanings are what bring cohesion to a text. The specific meanings that *and* and *but* carry as coordinators influence their functions as cohesive devices when they appear in sentence-initial position: SIA signals an additive relation, and SIB signals an adversative relation. Bell (2007) argues that SIA and SIB function in similar ways as cohesive devices: (i) to coordinate “idea units” by marking the last item on a list; (ii) to signal a discontinuity or shift in discourse; and (iii) to develop arguments from previous discourse. The special functions of SIA and SIB in academic writing that the alternatives (i.e. asyndetic coordination, similar additive or cancellative connectors, or intrasentential coordination) cannot perform are likely due to their weak phonological prominence, their role of coordinating conjunctions, and their particular semantic meanings. Thus, SIA and SIB are found to create a type of cohesion that other methods discussed above cannot.

## Chapter 3. Data

Seeking to find answers to (i) in what distribution and functions SIA are employed by international and domestic journals and (ii) in what distribution and functions SIB are employed by international and domestic journals, the current study investigates the distribution and function of SIA and SIB across international and domestic journals.

As a means to do so, two corpora of 480,000 words (international) and 410,000 words (domestic) were built with journal articles published between the years 2012 and 2016, and a text-analytic approach was employed to investigate the function of SIA and SIB. Because the focus of the study is confined within academic discourse, SIA in modes other than academic writing, such as quotes and transcripts of conversation, were eliminated from data.

The list of journals gathered to build the international corpus of this study is shown in Table 1, along with the size of the articles gathered from each genre of study.

**Table 1. Composition of the international corpus**

Discipline	Title of Journals	Number of Words
Natural science	<i>International Journal of Biological Science</i>	106,924
	<i>Nature Physics</i>	
Engineering	<i>Journal of Sustainable Development</i>	106,981
	<i>Advanced Engineering Materials</i>	
	<i>Computers &amp; Industrial Engineering</i>	
	<i>AIChE Journal</i>	
Social Science	<i>Journal of Financial Economics</i>	138,442
	<i>American Journal of Political Science</i>	
Humanities	<i>World Archaeology</i>	127,731
	<i>International Journal of Applied Linguistics</i>	
	<i>Business Ethics Quarterly</i>	
Total		480,078

The international corpus included 50 journal articles from 11 international journals, all of whom registered with the Science Citation Index (SCI), written by individual U.S.-affiliated writers or multiple writers mostly affiliated with US organizations. Out of the 50 journal articles gathered for the international academic-writing corpus, 7 articles were written by multiple authors with at least one non-US-affiliated writer; all of these articles belonged to natural science journals. Other disciplines included in the corpus are engineering, social science, and humanities.

The list of journals gathered to build the domestic corpus of this study is shown in Table 2, with the size of the articles gathered from each genre of study presented as well.

**Table 2. Composition of the domestic corpus**

Discipline	Title of Journals	Number of Words
Natural science	<i>Blood Research</i>	109,207
	<i>Journal of the Korean Society for Applied Biological Chemistry</i>	
Engineering	<i>Fibers and Polymers</i>	100,291
	<i>ETRI Journal</i>	
Social science	<i>Korean Journal of Sociology</i>	99,790
	<i>East Asian Journal of Business Economics</i>	
	<i>Journal of East Asian Economic Integration</i>	
Humanities	<i>International Journal of Buddhist Thought &amp; Culture</i>	101,577
	<i>Journal of Universal Language</i>	
Total		410,865

Nine domestic journals published in Korea were selected for the domestic corpus, all of whom registered with the Korea Citation Index (KCI) and all covering the disciplines of natural science, engineering, social science, and humanities. The corpus included 75 articles, with those selected articles being written only by authors who are affiliated with a Korean institute. Selecting articles based on the author's

affiliation was a necessary step with the goal to decrease the risk of error in making generalizations in comparing domestic and international academic discourse<sup>2</sup>.

Note that each given example from the corpora of this study will code the example by the kind of corpus and genre of the journal under examination. Additionally, the code will include an arbitrary identification code for the article and, in cases where there are more than one occurrence from a single article, a number that indicates which occurrence of the article the excerpt is taken from.

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<sup>2</sup> There is no practical means for identifying the English-writing proficiency or the native-likeness of the academic writings used in this study. However, it is reasonable to assume that the international journals would call for a higher degree of completion of English text than a domestic journal would. By narrowing down the selection of international-journal-writers to those who are U.S.-affiliated, and comparing their results to that of a group of Korean-affiliated-writers of Korean domestic journals, I suggest that the results of this study reflect a reasonable approximation of the comparison between a group of more cohesive English text and English text produced by writers of EFL situations.

## Chapter 4. Data Analysis

In this chapter, an overlook of the distribution of SIA and SIB is followed by a text-analysis of the functions of SIA and SIB in the two corpora of academic writing. First, the investigation of the distribution and function of SIA found in my corpora are discussed. Then, the distribution and function of SIB follows.

### 4.1 SIA

In this section, I first discuss the distribution of SIA as it appears in my data, then analyze the functions of SIA employed by the writers of my corpora.

#### 4.1.1 Distribution of SIA

The distribution of SIA in my data will be presented in the order of the distribution in the international corpus followed by that of the domestic corpus.

##### 4.1.1.1 Distribution in International Journals

In terms of general frequency, SIA was used less than 2 times for every 10,000 words in the international corpus (relative frequency at 1.83/10,000 words). The number of SIA tokens used in each discipline of the international corpus may be found in Table 3.

**Table 3. SIA in the international corpus**

Discipline	Word count	SIA (No. of tokens)	SIA /10,000 words
Natural science	106,924	0	0.00
Engineering	106,981	8	0.75
Social Science	138,442	2	0.14

Humanities	127,731	71	5.56
Total	480,078	81	*1.69

\* Note that the relative frequency of the total number of occurrences is not the sum of the relative frequencies of each genre.

While natural science journals exhibited no use of SIA, social science journals showed 2 tokens, and engineering journals showed 8. However, it should be noted that all of the 8 tokens found in engineering journals and both tokens in the social science journals were employed in a single article of the respective genre. The number of tokens found in the humanities journals (71 tokens), in comparison to the previously mentioned genres, was remarkable and accounted for most of the SIA use in the international corpus. Though SIA is used in the international corpus, its use is restricted mainly to the humanities genre.

Note that when another connective directly followed the SIA in the sentence, that particular example was not taken into account in the general function analysis of this study. When SIA prefaces another connective, the function of SIA becomes hard to distinguish due to the meaning of the connective following SIA. For this reason, any SIA colligating with another connective was exempt from analysis. Out of the 81 tokens of SIA under analysis in the international corpus, 6 prefaced other connectives: four occurred next to *so* and two next to *yet*. These occurrences were eliminated from the analysis because the semantic relation conveyed by the other connective interrupts the pure meaning of SIA, making it difficult to identify the role of SIA. After excluding SIAs in combination with other connectives, 75 tokens remained for analysis; the eliminated tokens are still included in the frequency of tokens represented in Table 3.

A brief look at the frequency of SIA in comparison with other competing

additives used in the international corpus can provide a sense of a relative preference for SIA. Along with SIA, *in addition*, *moreover* and *furthermore* were some of the most frequent additives found in the international corpus. A detailed account of the frequency of some of the more common additive connectives found in my data is presented in Table 4.

**Table 4. Common additive connectives in the international corpus**

	<i>In addition</i>	<i>Moreover</i>	<i>Furthermore</i>	<i>And (SIA)</i>
No. of tokens	58	56	39	81
Relative frequency (per 10,000 words)	1.21	1.17	0.82	1.69

SIA appeared to be the most commonly used additive connector. However, this also was an influence of its dominating employment in humanities journals; only in humanities journals was SIA the most commonly used additive connector, and its preference was quite substantial compared to the distribution of other connectives.

#### 4.1.1.2 Distribution in Domestic Journals

The number of SIA tokens used in each discipline of the domestic corpus may be found in Table 5.

**Table 5. SIA in the domestic corpus**

Discipline	Word count	SIA (No. of tokens)	SIA /10,000 words
Natural science	109,207	2	0.18
Engineering	100,291	14	1.40
Social science	99,790	6	0.60
Humanities	101,577	8	0.79
Total	410,865	30	*0.73

\* Note that the relative frequency of the total number of occurrences is not the sum of the relative frequencies of each genre.

In terms of general frequency, SIA was used less than once for every 10,000 words in the domestic corpus (relative frequency at 0.73/10,000 words). Regarding the distribution across disciplines, the employment of SIA was most frequent in engineering journals (14 tokens) followed by humanities (8 tokens), social science (6 tokens), and natural science (2 tokens). Out of the 30 tokens of SIA in the domestic corpus, 8 prefaced other connectives; 5 in juxtaposition with *then*, and 3 with *also*. These occurrences were eliminated from the analysis as was done in the international corpus. All in all, 22 tokens were left to undergo analysis. Note that the accounts eliminated from analysis are still included in the frequency of tokens represented in Table 5 and Table 6.

Table 6 helps compare the distribution of SIA between the results of the international and domestic corpus.

**Table 6. Distribution of SIA across disciplines in international and domestic corpora**

Discipline	International		Domestic	
	No. of tokens	SIA /10,000 words	No. of tokens	SIA /10,000 words
Natural science	0	0.00	2	0.18
Engineering	8	0.75	14	1.40
Social science	2	0.14	6	0.60
Humanities	71	5.56	8	0.79
Total	81	*1.69	30	*0.73

\* Note that the relative frequency of the total number of occurrences is not the sum of the relative frequencies of each genre.

In comparing the total number of SIA used in writing, the writers of the domestic corpus employ SIA in their writings far less often than the writers of the international corpus: 0.73 per 10,000 words for the domestic sample in contrast to 1.69 per 10,000 words for the international sample. Interestingly, though, the more frequent use of SIA observed in the international corpus was limited to the comparison made in the

humanities journals. In fact, in the natural science, engineering, and social science journals of the domestic corpus, the relative frequency of SIA employment was consistently slightly larger than that of the international corpus. Thus, the stark contrast in the frequency of SIA use is a result of the dramatic difference of SIA employment in the humanities journals.

A brief comparison of the frequency of some of the most common additive connectives shows that *in addition*, *also* and *furthermore* were some of the most common additives found in the domestic corpus along with SIA. A detailed account of the rate of employment of each of these additives is presented in Table 7.

**Table 7. Common additive connectives in the domestic corpus**

	<i>In addition</i>	<i>Also</i>	<i>Furthermore</i>	<i>And (SIA)</i>
No. of tokens	139	60	47	30
Relative frequency (per 10,000 words)	3.38	1.46	1.14	0.73

*In addition*, *also* and *furthermore* appeared more frequently than SIA in the domestic corpus. Even in engineering journals, where SIA was used the most out of the four disciplines under scrutiny, the frequency of SIA use fell behind *in addition*, *also* and *furthermore*. This contrasts the observation made in the international corpus, as SIA was drastically preferred over the other additives, which was due to its dominating employment in the humanities journals. This contrasting behavior of the international and domestic corpora emphasizes the strong preference for SIA in the international humanities journals.

### 4.1.2 Functions of SIA

The functions of SIA in my data will be presented in the order of the functions

employed by writers of the international corpus, followed by those of the domestic corpus. After the removal of all examples juxtaposed with other connectives, there remain 75 tokens of SIA from the international corpus and 22 tokens of SIA from the domestic corpus being considered for examination. In this section, I will reveal three ways in which SIA is employed in both the international and domestic corpus of academic writing: (i) in signaling the last item on a list; (ii) in signaling a discontinuity/shift in discourse, and (iii) in chaining of arguments<sup>3</sup>. Additionally, I reveal some examples of SIA use in the domestic corpus in ways not manifested in the international corpus.

#### **4.1.2.1 Functions in International Journals**

Upon examining SIA in the international corpus, the first broad use of SIA was found to be its function as a marker of the last item on a list. The coordinating effect of *and* is reflected in this function, as writers show their use of coordinating chunks of an argument, i.e. “idea units,” by signaling the last item of the list. SIA may colligate with explicit enumerators, as the example below from *Business Ethics Quarterly* does, and they typically appear in a list that contains more than two items.

- (22) Investor capitalism emerged in the 1980s in response to investor demands for market returns that had languished throughout the economic crisis of the 1970s. By the 1990s, it became the dominant institutional logic governing the way corporations were managed and is widely acknowledged to be an important cause of the corporate scandals that

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<sup>3</sup> For the purpose of categorizing the function of SIA in this study, I will borrow from Bell's (2007) title of the argument-developing function of SIA as an “argumentative chain”

have since plagued the economy (Ordonez, Schwietzer, Galinsky, & Bazerman, 2009). First... (my elipsis) Third, the narrow focus on maximizing shareholder value and short term performance incentives combined with intense global competitive pressures distorted executives' risk preferences and encouraged riskier business strategies. **And** fourth, because riskier strategies are likelier to fail, executives tended to adopt unsound business practices—e.g., earnings management, financial engineering, and moving risks off balance sheets—that ultimately led many executives to violate ethical standards (Schwietzer, Ordonez, & Douma, 2004). (INT.H.027.02)

In this excerpt, in a list, the author describes how investor capitalism is an important cause of corporate scandals. Prefacing an enumerator, SIA presents the last cause of the issue.

The final, most important item of a list may be presented by this listing function of SIA, as seen in (23). Here, in an excerpt from the *Journal of Sustainable Development*, the list preceding the SIA sentence seems to have no explicit signal that it is, in fact, to be read as a list until the final item of the list is appended.

- (23) This paper develops an Environmental Quality Trajectory (EQT) model and applies it to provide a theoretical and empirical analysis of the importance of environmental quality, and how it impacts economic growth and development for developing countries. The study reveals some very important issues concerning the environment and the major factors that shape its role in economic growth and development in low-income countries. **And** most importantly, the study's results appear to

generally lend support to aspects of the Ruttan Kuznets propositions about the relationship between income and environmental quality in developing countries, and at the same time seem to refute some aspects of it, to the effect that the implications of the environmental Kuznets curve does not seem to hold equally to all low-income countries per se, as ordinarily believed hitherto. (INT.E.047.01)

In (23), as the author discusses the achievement of the study, he marks the most important achievement using SIA. The author does not signal the readers that a list has begun, but the addition of the SIA sentence acts as a coordinator of the discourse segments.

The second function of SIA found in my data is its role of marking a discontinuity or shift in the discourse. In the cases where SIA signals a discontinuity or shift, the writer can inject a parenthetical statement or authorial comment related to previous discourse. SIA can aid such a shift in discourse by appearing with an interrogative or sentences parenthetical to the main flow of the discourse. The two examples below, from *Business Ethics Quarterly*, reveal the use of SIA as it effects a shift in discourse.

(24) List and Pettit's Rawlsian argument still faces a couple of difficulties.

Again, they claim that individuals "can be expected to agree to less than equal status for" corporations. Presumably, they intend for their claim to be about what it would make most sense for individuals to do. **And**, of course, they are right that it is most rational to afford less protection to beings or entities that are not included or represented in the original position. Why decide on a basic structure that treats these others as equal

to individuals if one has the choice to select rules that will allow individuals to enjoy greater power over them? But the claim about what it is most rational for individuals to do where only individuals are deliberating in the original position unfairly begs the question against the corporation's moral standing... (INT.H.028.02)

(25) A further concern about judgment arises in determining how risky is a particular investment. Morally speaking, investors may not risk money in abstruse or bailed out investments any time the investments risk C4. It is immoral for firms to make complicated investments when those investments risk the integrity of the economic system itself for the reason that, in those circumstances, the investment firms except themselves from a moral rule that they regard as being generally binding. If the investments do not involve systemic risk, then the above analysis does not explicitly prohibit them. (**And**, as broached above, some risks are highly beneficial.) (INT.H.030.01)

Example (24) depicts the SIA sentence revealing the author's attitude to previous discourse; the author is in agreement with a claim that has been made about what constitutes the rational thing for individuals to do in corporate settings. This particular shift in discourse continues to be signaled in the interrogative following the SIA sentence. Example (25) makes an explicit statement referring to a previous argument in the discourse that is related to the current theme of discourse, i.e. risks that follow investments. This parenthetical statement moves, or at least discontinues, the flow of discourse by reiterating an idea from a previous segment of discourse.

The third function of SIA found in this study is what Bell (2007) refers to as the

marking of an "argumentative-chain." This function of SIA was found to be the most frequently used function of SIA. This employment of SIA illustrates the way that arguments stem from and build on prior arguments in the context of academic discourse. A typical illustration of the argument-chaining function of SIA can be seen in the example, from *World Archaeology*, below.

(26) States are the highest level where political decisions and thus cultural policy decisions are made in the current world order and within international organizations. And this structure in the postwar era has resulted in multilateral failure. In terms of holding states accountable, international cultural heritage law lacks legal enforcement, existing treaties have deficient systems of control and effective international tribunals are not in place (Chechi 2014). So the responsibility to implement, not just adopt as Van der Auwera notes, international heritage conventions rests with individual nations and UNESCO can only educate and encourage through diplomatic channels. **And**, as I have outlined above, those channels are now increasingly susceptible to gridlock. (INT.H.034.04)

Example (26) illustrates the paragraph-final SIA sentence reinforcing a chaining effect of arguments by P becoming the topic slot of Q. Here, what is situated in the new information slot of P, *diplomatic channels*, is carried over to the given slot in Q as it is denoted by a demonstrative.

The following example from the *Journal of Financial Economics* further displays the argument-chaining function of SIA. Here, the element in prior discourse from which the new argument is derived is not locally adjacent but part of a more

global message of discourse.

(27) How are persistent firm-level shocks transferred to households? Perhaps the main source of transmission is through the labor income that households derive from firms that employ them. For example, when workers possess firm-specific human capital, shocks to firm value are also shocks to workers' human wealth (Becker, 1962). Other transmission channels include under-diversified equity positions in own-employer stock and the influence of firm performance on local wages and residential real estate values. **And** while firms provide employees with some temporary insurance against idiosyncratic productivity shocks, workers have little protection against persistent shocks, which ultimately affect compensation through either wages or layoffs. Because households cannot completely insulate their consumption from persistent shocks to their labor income... (INT.SS.017.01)

In (27), the writer elaborates on the ways that *persistent firm-level shocks transfer to households*. After discussing the *main source of transmission* and some other transmission channels, the writer develops a new argument derived from the previous discourse segment and signals this development using SIA; thus, SIA yields another chain of thought.

The current study substantiates the findings of Bell (2007) that SIA functions in three ways: the three functions of SIA found in the international corpus are: (i) signaling the last item on a list; (ii) signaling a discontinuity/shift in discourse, and (iii) chaining of arguments. As illustrated in Table 8, out of the 75 tokens under examination, 37 facilitated a listing effect; 15 signaled a discontinuity or shift in

discourse; and 23 showed an argument-chaining effect.

**Table 8. Functions of SIA in the international corpus**

	Listing	Discontinuing/ shifting	Argument- chaining	Total
Tokens	37	15	23	75

With regard to the most common function of SIA employed, my data is in sync with the finding of Bell (2007) that the dominant use of SIA is in its listing function.

#### **4.1.2.2 Functions in Domestic Journals**

Turning to results from the domestic corpus, it was observed that SIA in domestic journals also performed the three functions recognized in international journals. However, sometimes those functions were carried out in ways unaccounted for in the international corpus, often resulting in a failure to bring discourse segments together using SIA as a cohesive device. For each function, I will present examples of SIA employed in the domestic corpus as accounted for in the international samples, and then I will introduce the examples in which cohesion is not so apparent even with the employment of SIA.

First of all, the listing function of SIA, the most commonly employed function of SIA in the international corpus, was also commonly used in the domestic corpus. In the two examples below, SIA appears to be coordinating an “idea unit” by marking the last item of a list. Examples (28) and (29) are excerpts talking about market spillovers and affected nations, as well as the method used to conduct an experiment, respectively.

(28) In contrast, the other nations have much milder own-market spillovers ranging from 18.4% to 38.5%, implying greater spillovers from/to other

nations. Indonesia in particular has the highest contagion effect to the others (111%). In the Philippines and Thailand, for example, CDS spreads are affected more by spillovers from Indonesia than from their own markets. **And** in China and Korea, the influence from Indonesia is almost as large as their own-market spillovers. The Indonesian CDS spread, the most unstable in Asia, greatly influences other developing Asian countries. (DOM.SS.034.01)

(29) In order to test the temperature, speed and load at the same time, a testing machine built using the results of the evaluation that's conducted between the old and the new is utilized. As such, an acceleration criteria outlined on Table 4 is planned for the composite acceleration test. Three samples each from the processing criteria are collected to measure the tensile characteristics and elastic compression recovery rate. **And** finally, a comparative analysis conducted between the old and new products. (DOM.E.068.04)

In (28), an excerpt from the *Journal of East Asian Economic Integration*, the author discusses nations that are affected by Indonesia's *contagion effect* by presenting a list with two items, with each item on the list containing information about two countries. This listing function is also found in an SIA sentence located paragraph-finally, followed by the adverb *finally*. In the example from *Fibers and Polymers* in (29), under a reasonable assumption that the author intended to explain that a comparative analysis *was* conducted, the author uses the listing function of SIA in which the coordinating power of *and* plays a role by adding the final item of an instructional list.

As mentioned above, the listing function is commonly found within the domestic corpus. However, the employment of this function was found behaving in a particular manner that is not manifested in the international corpus. Notice the excerpt taken from *Fibers and Polymers* presented in (30) that includes a list describing the measures taken in the process of carrying out a specified study mentioned in the previous discourse.

(30) In this study, we use the actual used <sup>4</sup>for accelerated testing new industrial felt. In addition, by using a felt-tip produced reliability evaluation device (test temperature, speed, load, the unit load, the specimen width, and so on test days) was set to harsh conditions of the six factors. **And** an acceleration test was carried out over a total of five differences. Repeat testing was performed three times for the reliability of the test conditions. (DOM.E.068.02)

Here, a list of four items is shown with SIA marking the third item of the list. This use of SIA is noteworthy since no example in the international corpus showed SIA signaling anything other than the last item on a list.

SIA was also found in the listing function as exemplified in (31), an excerpt from the *Journal of East Asian Economic Integration*, acting as a link between two longer lists. See the excerpt discussing the various influences on domestic investment and consumption below.

(31) Since government expenditure is exogenously given outside economic

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<sup>4</sup> Excerpts taken from the domestic corpus sometimes show errors such as this. In order to stay true to motives of this study, errors from borrowed text are left as is.

models, looking into the determinants of private demand such as consumption and investment will provide *a clue to understanding the significant decline in the growth to domestic demand*. We consider those determinants at the aggregate level based on economic theories and empirical evidence. Although the list is not complete, we view that the *following factors significantly affect domestic investment* (my italics<sup>5</sup>): participation in global value chains, population ageing, the real interest rate relative to the world interest rate, and terms of trade (or real exchange rate). **And** the *following factors significantly affect consumption* (my italics): household income (or labor income share), household debts, population ageing, and terms of trade (or real exchange rate). Of them, we view that the real interest rate relative to the world interest rate and terms of trade (or real exchange rate) are mainly related to short run economic fluctuations, while participation in global value chains, population ageing, labor income share, and household debts are related to the structural factors of the economy. (DOM.SS.035.01)

Directly prior to SIA appears a list of *factors (that) significantly affect domestic investment*, and directly subsequent to SIA is a list of *factors (that) significantly affect consumption*. The two separate lists stand independently, but, by way of using SIA, they are coordinated to form a united list exposing *clues to (help) understand the significant decline in the growth to domestic demand*.

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<sup>5</sup> Within borrowed text, all italics that I deliberately mark to aid in the understanding of the excerpt are noted by a parenthetical text. If an italicized phrase has no additional mark, it should be understood that the original author of the excerpt made the choice to emphasize the text.

The second function of SIA signaling a discontinuity or shift in discourse was observed in the domestic corpus as well. Below is an example of a discourse shift from an excerpt from *Fibers and Polymers*.

(32) As mentioned earlier, major factors that have an effect on the felt's performance are temperature, operating speed and operating load. **And** the following research attempts to evaluate the reliability under a strenuous condition that accelerates malfunction.

As such, a performance evaluation device that can apply a more strenuous condition than the actual condition present is designed and created. (DOM.E.068.01)

In example (32), a rather abrupt shift from the previous thrust of discourse is recorded. The paragraph-final SIA sentence shifts the flow of discourse, foreshadowing that the following discourse will *attempt to evaluate the reliability under a strenuous condition that accelerates malfunction*. The discourse directly prior to SIA lists the major factors that have an effect on *the felt's performance*. The shift in discourse leaves readers on their own to make speculations as to how the two discourses are related.

The excerpt from the *International Journal of Buddhist Thought & Culture* in (33) also depicts an SIA sentence appearing paragraph-finally with the effect of signaling a shift in discourse, but in a way that is unattested by the international corpus.

(33) In the Chapter on Medicinal Herbs, the Buddha's response can be likened to the concept that medicinal herbs grow due to the abundant rain from

great clouds (i.e., the Buddha's great teachings) depending on the character of each herb. In the same manner, the rain of Buddha-truth (Dharma rain) causes all beings to grow. The teachings of the Buddha are given freely and indiscriminately to all living beings, just like the rain that sustains all forms of plant life without discrimination. **And** within the *Lotus Sutra* are several cases of the Buddha teaching according to the spiritual capacity of his audience.

Then how does the interaction of the empathy or receptivity of sentient beings and the response ('grace') of a Buddha or the Dharma work?  
(DOM.H.041.01)

Upon describing the characteristics of Buddha's teaching, the author of (33) uses the SIA sentence to shift the discourse and then presents the fact that in the *Lotus Sutra*, several cases of the kinds of teaching being described are recorded. The way the SIA sentence is structured here brings focus to the new subject, the *Lotus Sutra*. The author does not continue on to discuss the instances of the Buddha's teaching recorded in *Lotus Sutra*; the shift ends there. The shift in discourse that is exemplified here behaves as if it is presenting parenthetical information to the previous discourse, but it does not present to readers a reason to believe that it is relevant information. These kinds of employment of the discourse-shifting function of SIA, where the shift is abrupt and difficult to follow, are found to be a specific behavior of writers within the domestic corpus and are not found in the international corpus.

Though not as favored as it appears to be in the international corpus, the final function of SIA as a marker of an argument-chain is certainly found in the domestic corpus as well. Two excerpts from the *International Journal of Buddhist Thought &*

*Culture* are presented in (34) and (35). Example (34) exemplifies a classic use of SIA in its argument-chaining function— as the new information slot in P becomes the topic slot of Q— while (35) shows the same function of SIA, but in an unusual manner. Both examples are excerpts from a passage discussing the figure Sotaesan and his progression in studying the Way.

(34) Such progression in concert of the study of the Way and science does not mean a simple parallel. Sotaesan emphasized mind practice as the way to establish the study of the Way. **And** practicing the study of the Way to cultivate the mind is “central to all studies and the foundation of all practice” (*TJG*, 2:28). (DOM.H.046.02)

(35) This Threefold Study of course originated from the three trainings of precept, absorption (*samādhi*), and wisdom (*prajñā*) of Buddhism. Sotaesan developed them hermeneutically. **And** one who attains power through practice is said to achieve the three great powers (*Joseonbulgyo Hyeoksinron*, 1:25). *Won-Buddhism*, by accepting not only the tradition of Single-minded practice through the Three Gates previously mentioned but also the teachings of other sects, may make use of various expedients of practice. (DOM.H.046.01)

In (34), the argument with emphasis on *mind practice as the way to establish the study of the way* developed into an argument that claims that this *practicing of the study of the way to cultivate mind* is central to all practice. In the case of (35), however, it is hard to say that the new information slot in P is moved to the topic/given slot in Q. Rather, it appears that P as a whole can be subsumed under the topic/given slot in Q; because *Sotaesan* developed the three qualities, he qualifies as

*one who attains power through practice*, which is now central to the new argument that has arisen.

The following example presented in (36) shows the author coordinating two parallel structures with the argument-changing effect of SIA as well, but the employment seems to reflect the NNS status of the author.

- (36) When we review the spread of Buddhism in Asia, we come to know that *early Indian Buddhism was not transmitted to Japan in its original form* (my italics). First of all, from the perspective of time, Buddhism was spread and expanded across central Asia over a long period of time. When Buddhism was first transmitted from India to China, it was already a mixture of early Buddhism and Mahayana Buddhism. Also, from a regional perspective, early Indian Buddhism, heavily influenced by the Indian worldview and its values, differed greatly from Chinese culture and thought. **And** when Buddhism was transmitted to Japan via Korea, it also contained characteristics of East Asian culture, including Korean values. Therefore, for these reasons, it was impossible for Japanese Buddhism to receive early Buddhism in its original form.  
(DOM.H.044.01)

In this segment of an abstract from an article belonging to the *International Journal of Buddhist Thought & Culture*, the writer describes reasons why *early Indian Buddhism was not transmitted to Japan in its original form*. As the author gives a sequential account of the transmission of Buddhism, she chooses to use SIA as her cohesive device, when actually, in NS writing, the conjunctive adverb *then* would be the most likely selection to signal such a sequential relation.

Regarding the frequency of employment of the various functions of SIA, its significance within the domestic corpus is diminished due to the infrequent use of SIA in comparison to its use within the international corpus. Table 9 represents the frequency of each function of SIA employed in the domestic corpus.

**Table 9. Functions of SIA in the domestic corpus**

	Listing	Discontinuity/s hift	Argument- chaining	Total
Tokens	10 (2)	4 (1)	8 (2)	22 (5)

\*Numbers in parentheses represent each function that is used in a way unaccounted for by the international corpus

Out of the 22 tokens under examination, 10 tokens were observed facilitating a listing effect; 4 tokens signaling a discontinuity or shift in discourse; and 8 tokens showing an argument-chaining effect. Although the domestic corpus's rate of SIA use is much lower than that of the international corpus, the rank order of the functions is consistent in both corpora. A total of 5 tokens exemplified the non-nativeness of writers of the domestic corpus, revealing how SIA was employed in ways that were not represented in the international corpus.

The analysis of the functions of SIA employed in the domestic corpus of this section demonstrated that the domestic corpus employed SIA in the same functions as the international corpus. The three functions that SIA performed in the domestic corpus are (i) signaling the last item on a list; (ii) signaling a discontinuity/shift in discourse, and (iii) chaining of arguments. However, the functions found in the domestic corpus were often reinforced in manners different from those of the functions found in the international corpus. The SIA in the domestic corpus was found marking a non-final item of a list while SIA always signaled the final item of a list in the international corpus. Also, the listing use of SIA was found conjoining

two, more extensive lists together, whereas no such example was found in the international corpus. Regarding the function of SIA as a signal for discontinuity/shift in discourse and its argument-chaining effect, the writers of the domestic corpus produced examples where the shift or development of discourse was abrupt and the contextual link between the prior and subsequent discourse of SIA was unclear. I suggest that such attempts to bring cohesion through SIA failed not because of the misuse of the lexical cohesive device, but because of the lack of the method for presenting a logical transition from one discourse segment to another.

## **4.2 SIB**

In this section, I first discuss the distribution of SIB as it appears in my data, then analyze the functions of SIB employed by the writers of my corpora.

### **4.2.1 Distribution of SIB**

The distribution of SIB in my data will be presented in the order of the distribution in the international corpus followed by that of the domestic corpus.

#### **4.2.1.1 Distribution in International Journals**

In terms of general frequency, SIB was used more than 2 times for every 10,000 words in the international corpus (relative frequency at 2.62/10,000 words). The number of SIB tokens used in each discipline of the international corpus may be found in Table 10.

**Table 10. SIB in the international corpus**

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Discipline	Word count	SIB (No. of tokens)	SIB/10,000 words
Natural science	106,924	2	0.19
Engineering	106,981	4	0.37
Social science	138,442	14	1.01
Humanities	127,731	106	8.30
Total	480,078	126	*2.62

\* Note that the relative frequency of the total number of occurrences is not the sum of the relative frequencies of each genre.

Most of the employment of SIB in the international corpus occurred in humanities journals (106 tokens), while far fewer instances of its use appeared in journals on social science, engineering, and natural science (14, 4, and 2 tokens respectively).

A comparison of SIB employment in conjunction with the usage of other competing contrastives in the domestic corpus shows that *however*, *yet* and *in contrast* were some of the most frequent additives found along with SIB in the international corpus. Details of the frequency of some of the more common contrastive connectives found in my data are presented in Table 11.

**Table 11. Common contrastive connectives in the international corpus**

	<i>However</i>	<i>Yet</i>	<i>In contrast</i>	<i>But (SIB)</i>
No. of tokens	158	32	22	126
Relative frequency (per 10,000 words)	3.29	.67	.46	2.62

SIB was the second most common contrastive connector following *however*. However, this also was the direct outcome of its dominating employment in humanities journals, as was the case with SIA. Only in humanities journals was SIB the most commonly used contrastive connector, and that, at more than two times the use of *however* (106 and 41 tokens respectively). In the other three disciplines, *however* remained the most common contrastive connector.

### 4.2.1.2 Distribution in Domestic Journals

Regarding general frequency, SIB was used less than once every 10,000 words in the domestic corpus (relative frequency at 0.58/10,000 words). The number of SIB tokens used in each discipline of the domestic corpus may be found in Table 12.

**Table 12. SIB in the domestic corpus**

Discipline	Word count	SIB (No. of tokens)	SIB/10,000 words
Natural science	109,207	0	0.00
Engineering	100,291	2	0.20
Social science	99,790	9	0.90
Humanities	101,577	13	1.28
Total	410,865	24	*0.58

\* Note that the relative frequency of the total number of occurrences is not the sum of the relative frequencies of each genre.

SIB was employed the most in humanities journals (13 out of 24tokens); Social science journals contained 9 examples of SIB; engineering had 2; and natural science exhibited no use of SIB. There was no exclusion of data that took place before the analysis process, leaving all 24 tokens available for analysis.

Table 13 depicts a comparison between the results of the international and domestic corpus.

**Table 13. Distribution of SIB across disciplines in international and domestic corpora**

Discipline	International		Domestic	
	Tokens	SIB /10,000 words	Tokens	SIB /10,000 words
Natural science	2	0.19	0	0.00
Engineering	4	0.37	2	0.20
Social Science	14	1.01	9	0.90
Humanities	106	8.30	13	1.28
Total	126	*2.62	24	*0.58

\* Note that the relative frequency of the total number of occurrences is not the

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sum of the relative frequencies of each genre.

The writers of the domestic corpus employ SIB in their writings far less often than the writers of the international corpus (domestic: 0.58 per 10,000 words; international: 2.62 per 10,000 words). This observation is noteworthy as the ratio of SIA employment (domestic: 0.73 per 10,000 words; international: 1.69 per 10,000 words) was not as drastic as that of SIB. Also, while humanities journals of the international corpus show a drastic difference in the frequency of SIB employment in comparison with the other three disciplines, the distribution of SIB in the domestic corpus does not show such stark contrast between humanities and the other disciplines.

By comparing the frequency of SIB with the frequency of some of the most common contrastive connectives found, we can see the relative preference for SIB in the domestic corpus. Regarding some of the most common contrastive connectors such as *however*, *on the other hand* and *in contrast*, SIB did not appear as one of the most commonly employed contrastive connectors. A detailed account of the frequency of SIA and some of the most common contrastive connectives found in my data is presented in Table 14.

**Table 14. Common contrastive connectives in the domestic corpus**

	<i>However</i>	<i>On the other hand</i>	<i>In contrast</i>	<i>But</i> (SIB)
No. of tokens	323	51	50	24
Relative frequency (per 10,000 words)	7.86	1.24	1.22	0.58

All disciplines demonstrated a strong inclination towards *however*, while the use of SIB in all genres did not come close to that of *however*. This contrasts the observation

made in the international corpus, as the international humanities journals showed a much greater preference of SIB over the other contrastive options. Thus, the strong preference for SIB in the international humanities journals is once again revealed through the comparison of the ranking of SIB within the realm of contrastive connectors.

## **4.2.2 Functions of SIB**

The functions of SIB in my data will be presented in the order of the functions employed by writers of the international corpus, followed by that of the domestic corpus. Reviewing 126 tokens of SIB in the international corpus and 24 tokens of SIB in the domestic corpus, I reveal three ways in which SIB is employed to bring cohesion to text in both corpora mentioned above: (i) in coordinating “idea units” through adding the final item on a list; (ii) in shifting the domain of the topic; and (iii) in developing arguments. Additionally, I reveal an example of SIB use in the domestic corpus in a way unaccounted for by the international corpus.

### **4.2.2.1 Functions in International Journals**

As with SIA, SIB, using the coordinating function of *but*, was found to conjoin "idea units" by marking the last item on a list. The examples from *Business Ethics Quarterly* shown in (37) and (38) exemplify the employment of SIB to add a final element to a list. Example (37) contains a two-item list of the outcome of turning to judgment in terms of *prudential decision-making*, and (38) discusses the result of the ruling of rights over duties in the form of a list.

(37) Whereas expected value calculations rely on judgment to determine which possible consequences will be evaluated and which sources of probability estimates are the most reliable, the prudent decision maker employs judgment to question those probability estimates in depth. Using judgment may, in this sense, help the prudent investment firm to reach a better decision about whether to make an abstruse investment or rely on a bailout. **But** the reliance on judgment also renders the decision more personal, less objective, and more controversial. (INT.H.030.04)

(38) The cultural hegemony of rights over duties contributes to what Kagan (2003) calls an “adversarial legalism” in dealing with social problems that undermines *civic cooperation* (my italics).

First, the two cultural impulses are fundamentally different: civic duty affirms the public order over the freedom of individuals; rights affirm the freedom of the individual (or group) against the social system. Second, the very concept of a right has an inviolable quality that permits little compromise and makes social problems harder to resolve. Third, the adversarial impulse redirects civil society energies to using lawsuits and advocacy politics to force government to solve social problems through regulatory coercion or judicial fiat (Fukuyama, 2013). This results in the government expansion into the domain of civil society. Indeed, Rauch (1998: 2153) notes that “Never before has the government concerned itself so minutely with the detailed interactions of daily life.” **But** the most significant cost of such rights-driven adversarial legalism is the weakening of civic bonds. (INT.H.027.11)

In (37), the author, writing in the form of a list, discusses how well *prudential decision-making* can address the *weaknesses in expected value theory* concerning judgment. Of the two outcomes that the writer suggests will take place when employing judgment, the last item is added on with SIB. The paragraph-initial SIB found in (38) combines with a superlative, also to mark the final item of a four-item list—a list of *ways in which cultural hegemony of rights over duties contribute to adversarial legalism*. Here, the SIB behaves in a way that is distinguished from the similar listing function of SIA, as it separates the final item from the list and introduces it as a new discourse topic that stands on its own.

A second, widely used function of SIB portrays the cancelling power of *but* to signal a shift in the domain of the topic of discourse. Though SIA and SIB both facilitate a shift, the shift that happens through the employment of SIB is different from that of SIA in that the shift denoted by SIB is limited to the topic of the discourse, while with SIA, the flow of discourse may shift or be discontinued. Example (39) shows the SIB sentence in a segment from *Business Ethics Quarterly* cancel the explicitly stated assumption of the previous discourse, and thus shifts the topic domain of discourse.

(39) First, neo-classical economics assumes that maximizing profit is the singular purpose of business. **But** for Whole Foods profit was a means to serving what Mackey calls a “higher purpose” —the positive “difference you’re trying to make in the world” (Mackey & Sisodia, 2013: 47). Whole Foods is dedicated to the higher purpose of bringing whole foods to people to help them to eat well, improve the quality of their lives, and increase their lifespan. (INT.H.027.08)

Here, an assumption made in previous discourse—that *maximizing profit is the singular purpose of business*—is canceled by the SIB statement explaining that for the business model of Whole Foods, a successful company, *profit was a means and not an end*. Ultimately, through this cancellation, the topic of the discourse shifts from neo-classical economics to Whole Foods.

Another example of this function of SIB shifting the topic-domain of the discourse is exemplified in (40), taken from the *Journal of Sustainable Development*. The excerpt talks about developing countries and their attitude towards economic growth and environmental preservation.

(40) Granted that a poverty-stricken developing country would tend to be primarily concerned with ways and means to achieve greater economic growth, such a country is expected to be less concerned with environmental preservation if at all. **But** this view fails to take into account the fact that ultimately any level of environmental degradation that occurs as a result of economic growth would ostensibly also tend to inhibit the pace of economic growth itself. (INT.EN.047.01)

Here, the author's employment of SIB followed by the demonstrative *this* shifts the topic domain from *a poverty-stricken developing country* to the *view* stating that such a country must be less concerned with environmental preservation.

The final function of SIB is as a tool for argument development. This function is also empowered by the subtracting and cancelling personality of *but*. SIA and SIB both function as a key for argument development, but they differ in how they facilitate argument development: while SIA facilitates argument development by adding on to the existing argument, SIB does so by canceling or taking away from

the previous argument. Examples (41) and (42) illustrate this effect. Example (41), an excerpt from *Business Ethics Quarterly*, is a discussion of the successfulness of the *Kon-Tiki expedition*, and example (42), from *World Archaeology*, is a story of the Russian Foreign Minister and his motives behind the action he takes towards UNESCO.

(41) Few other well-known maritime replication experiments have been able to draw on such detailed analogues. The most celebrated of them all, Thor Heyerdahl's Kon-Tiki expedition in 1947 (Heyerdahl 1950), was intended to show that parts of Polynesia could have been colonized from South America; this famously involved a craft whose design took into account descriptions of indigenous Peruvian balsa rafts encountered in the sixteenth century by Spanish conquistadores such as Francisco Pizarro, as well as ethnohistoric and near-contemporary examples of such sailing rafts (Coles 1979, 57–63; Edwards 1960). **But** the Kon-Tiki itself involved considerable creative imagination and improvisation, so that – notwithstanding the success of the expedition and the public acclaim it received – there are limits to the inferences that can be legitimately drawn from this experimental voyage. Assuming the accuracy of the analogue, possibility is certainly demonstrated; winds and currents were not as well documented back then as they are today, and the outcome certainly suggests that such a simple type of watercraft could in fact have made this voyage. (INT.H.031.01)

(42) Ironically, Russian Foreign Minister Sergey Lavrov used the sixtieth anniversary of Russia's membership of UNESCO in April to hail the organization as 'the generally accepted authoritative forum to protect

traditional values, cultural heritage and the environment, through the deepening of a mutually respectful dialogue between civilisations and cultures’. **But** this acknowledgment came with the directive: ‘to reinforce our relations with UNESCO, we would like to see more Russians among the employees of the Secretariat, as well as a wider use of Russian in the activity of the Organisation and its measures.’ One month later Chairman Verkhovna Rada and Acting President of Ukraine Oleksandr Turchynov dismissed the Permanent Delegate of Ukraine to UNESCO. (INT.H.034.02)

In (41), that the *Kon-Tiki expedition* was a successful *replication experiment* drawn on *detailed analogues of Polynesia* is implied in the previous discourse. The SIB sentence subtracts from this implication and leaves the reader with the fact that the *Kon-Tiki expedition* was indeed a successful *experiment* but one that was not completely based on the *detailed analogues of Polynesia*. In (42), the authenticity of the Russian Foreign Minister’s appraisal of UNESCO implied in P is canceled in Q via SIB; the SIB sentence states that the acknowledgement came with a certain directive. Thus, SIB facilitates an argument development by subtracting from the previous argument, exposing the motivation of the Russian Foreign Minister.

The investigation of the functions of international academic writing revealed that writers employ SIB in the following three functions: (i) coordinating “idea units” through adding the final item on a list; (ii) in shifting the domain of the topic; and (iii) in developing arguments. These functions seem to take into account the coordinating, cancellative, and subtractive characteristics of the conjunction *but*.

The current study confirms the findings of Bell (2007) that the argument

developing function of SIB is by far the most common function employed in academic discourse. Table 15 depicts the frequency of each function of SIB employed in the international corpus.

**Table 15. Functions of SIB in the international corpus**

	Listing	Topic-domain shift	Argument developing	Total
Tokens	10	15	101	126

Out of the 126 tokens under examination, 10 facilitated a listing effect, 15 showed a topic-domain-shifting effect, and 101 exhibited an argument-chaining effect.

It can be observed through my data that though SIA and SIB seem to perform the same functions in academic writing, they are not always alike. First of all, the listing function of SIB was found taking place in the paragraph-initial position, making the final item of the list the new topic of discourse, while no such observations were made in the case of SIA. The shift in discourse that SIB signals is different from that of SIA, as it is confined to the topic-domain where as SIA can facilitate a shift in the topic and the flow of discourse. Finally, a difference between SIA and SIB in aiding the development of argument was observed as well: argument development using SIB is a result of the canceling and subtracting characteristic of *but*, while the argument-chain expressed through SIA is a result of adding to an existing argument structure.

#### **4.2.2.2 Functions in Domestic Journals**

Switching to results from the domestic corpus, it is observed that SIB in the domestic corpus also perform the three functions recognized in the international corpus, which are (i) coordinating “idea units” through adding the final item on a list; (ii) shifting

the domain of the topic; and (iii) developing arguments. However, as will be discussed in more detail later, in an example of the argument-developing function of SIB, the lexical cohesive device was employed in way unaccounted for in the international corpus, resulting in a failure to conjoin discourse segments. I will begin with presenting examples of SIB employed in the domestic corpus as accounted for in the international samples, then introduce the examples in which cohesion is difficult to trace, even with the employment of SIB.

First of all, the listing function of SIB signaling the last item on a list was observed in the domestic corpus. In the example taken from the *International Journal of Buddhist Thought & Culture* presented in (43), the writer discusses the *four natures* of Buddhism. In (44), the text, from *Fibers and Polymers* describes a procedure for a computer game.

(43) The third nature, vipāka, is a result of kamma ripening. Because of this nature, unwholesome and wholesome kamma can deliver their results.

**But** the fourth nature, kiriya is just a process of citta. It is not kamma or the result of kamma. Unlike the first two natures, vipāka and kiriya cannot be determined as wholesome or unwholesome. (DOM.H.043.03)

(44) This proposal was posted on the subjects' screens, giving the amounts allocated to each player by its subject number. *If the proposal was accepted* (my italics), then the proposed payoff was implemented and the game ended. **But**, if it was rejected, then the process repeated itself, with the amount of money available reduced by the relevant discount factor.

(DOM.E.060.01)

Appearing with an enumerator, the SIB in (43) marks the last item of a four-item list.

Here, in discussing the *four natures*, the writer contrasts the last two natures with the first two natures that are mentioned outside of this excerpt. The writer, in marking the last item of the list with SIB but grouping the last item with the third item and contrasting them with another group within the list, exemplifies a NNS-specific characteristic of writing; it is abnormal for the final list item to be presented in a way that separates it from the list and then combines it with another item on the list. Example (44) depicts SIB contrasting two items that are parallel in structure: the two conditional sentences discussing an outcome of a computer game according to the player's binary selection. This particular use of SIB is read as a list because it contrasts two equal items on a list of *ways the game progresses*.

The second role of SIB represented in the domestic corpus is its function to facilitate a shift in the discourse-topic-domain, as we have seen in the international corpus. This function was reinforced by a couple of writing strategies as exemplified in (45) and (46). Both examples, taken from *The International Journal of Buddhist Thought & Culture*, (45) discusses an idea about the relationship of essence and function, and body and gesture, while (46) depicts the concept of *Buddha-Nature* and its growing importance.

(45) For while “essence” and “function” are abstract and intellectual in feel, “body” and “gesture” are concrete and visual, and the relationship between them is clearer. We know from daily experience that the body is not what it *does*, whether that is walking or sitting or standing up. **But** we also know that these movements *derive* from the body and are an expression of its nature, so to speak. It is this relationship between *source* and *manifestation* that the device attempts to describe. (DOM.H.053.01)

(46) In examining Buddhism's evolution as it spread throughout Asia, especially eastern Asia, we see that the concept of Buddha-Nature has achieved an importance it never had in India. In India, the teaching of 'consciousness-only' and Esoteric Buddhism were developed much more than the concept of Buddha-Nature. **But**, In Asia, including China, the awareness of Buddha-Nature evolved based on the book *Awakening of Faith in the Mahayana*, and this was transmitted to Japan. (DOM.H.044.05)

In (45), SIB aids a shift in the topic domain by subtracting from the previous discourse, about *what we know about the body*, according to *what we know about movement*. In (46), the shift in topic domain is foretold in a previous discourse segment, as the author states that *the concept of Buddha-Nature has achieved an importance in Asia which it never had in India*; naturally, a shift in the topic-domain of the discourse is expected once the subject of India is mentioned in discourse. The shift in topic-domain comes into effect with SIB cancelling the fact of the preferred teachings from previous discourse.

The final and most commonly used function of SIB is its use as a tool for argument development. This is also the only function in which un-cohesive results appeared after the employment of SIB. The subtractive and cancellative properties of SIB facilitate argument development by cancelling, or subtracting from, the previous argument. Examples (47)-(49) demonstrate some ways that the writers of the domestic corpus employed SIB in ways accounted for in the international corpus. Examples (47), (48), and (49) are from *The Journal of East Asian Economic Integration*, the *International Journal of Buddhist Thought & Culture*, and *Fibers*

*and Polymers*, respectively. Example (47) talks about the link between the economic growth in Korea and export growth, (48) is about the relationship between crystallinity and melting temperature, and (49) describes Wonhyo's attitude towards practice and scholarship.

(47) In sum, these stylized facts suggest that one of the main sources for the Korean economic growth is from the export growth. Further, *this export-driven economic growth is closely linked to the investment-driven economic growth* (my italics) before the East Asian financial crisis. **But** this link appears to be broken after the crisis. (DOM.SS.035.02)

(48) Also, Figure 7 shows the relationship between crystallinity and melting temperature with respect to draw ratio and annealing temperature. The *drawn and annealed polyketone fibers* (my italics) have higher *crystallinities and melting temperatures* (my italics) than the raw polyketone fiber. **But** the crystallinity and melting temperature of the drawn (at draw ratio of 2) and annealed (at 200 samples) slightly decreased due to molecular chain scission and thermal degradation by the excessive treatment condition. (DOM.E.062.01)

(49) As this passage indicates, Wonhyo is respectful of both scholars and practitioners perhaps because, as an enlightened monk who was also a celebrated exegete, he belonged to both groups. **But**, as subsequent passages make clear, there is no doubt that he gives priority to practice over scholarship or, to put it another way, that he believes the true purpose of scholarship is to be found in the guidance of practice. This is an important point because his commentary, like the text itself, is a work

of tremendous erudition, largely involved in the task of synthesizing or “reconciling” doctrinal conflicts. (DOM.H.053.03)

In (47), the *existence of a link between export-driven economic growth and investment-driven economic growth* is argued. This argument is soon canceled by SIB, as the author explains the condition of the relationship after a crisis, and thus, alluding to a development of argument. SIB signals a development in argument in (48) as well. Here, the expectation that the *crystallinity and melting temperature of the drawn and annealed polyketone fibers* would remain consistent is canceled via the SIB sentence, showing Q illustrates a change of status of the *drawn and annealed samples of polyketone fibers* from the expected behavior in P. Lastly, in (49), SIB subtracts from a previous argument made by the writer’s statement describing Wonhyo as a scholar and practitioner, now accentuating Wonhyo’s identity as a scholar. This shows SIB facilitate an argument-developing effect by refining an implied broader claim of P by Q.

Though the functions of SIB that the writers adopt in the domestic corpus may appear to be identical to the patterns found in the international corpus, there is one example found in my data where the chosen function of SIB is unsuccessful in its role as a cohesive device. In other words, considering the infrequent employment of SIB, writers of the domestic corpus were not always successful in facilitating that function in their writings. Example (50), taken from the *International Journal of Buddhist Thought & Culture*, discusses theories on the history of the spread of Buddhism, where SIB is used in a way to develop an argument.

(50) According to *Nihonshoki* (日本書紀, History of Ancient Japan, published

in the Nara era), Buddhism was officially introduced to Japan in about Oct. of the 13th year of the reign of King Kinmei (欽明). This is considered the beginning of Buddhism in Japan, and it was referenced in *Sankokubutboudentouenki* (三國佛法傳通緣起, The History of Buddhism's Acceptance in Japan's Three Kingdoms, written by Gyounen (凝然), a Buddhist monk who lived at Dodaizi (東大寺)) Temple in Jul. 1311. The article is as follows:

*There are two theories about when Buddhism first arrived in Japan. The first is that Baekje introduced Buddhism to Japan on Dec.12 in the Year of the Horse (戊午, 538), the third year of King Senka (宣化天皇). This is mentioned in Daeansasimsangdaedeokgi (大安寺審祥大德記, An Examination of an Auspicious Monk of Daeansa Temple) written by a Silla student. The second theory is that Buddhism was first introduced to Japan in the 13th year of King Kinmei's (欽明天皇) reign. This is referenced in Dodaizienchoshyogi written in the Year of the Dog (甲戌, 794), the 14th year of Nengi's (延喜) reign. Among the two theories, the latter is recognized as when Buddhism was first "officially accepted" in Japan. During the reign of King Senka, 256 years prior, Buddhism had arrived but was not widely propagated. (Inoue, Hideo 1990, 48-49)*

By these two books two different theories on when Buddhism arrived in

Japan was presented. **But**, here it takes the theory of Kinmei (欽明) 13th year, not Senka (宣化) 3th year, because Dodaizienchoshyogi (東大寺圖超所記, The History of the Construction of Dodaizi Temple) regarded as a fair record. The reason for this is that the theory that Buddhism arrived in the 3rd year of Senka's reign is false. If Buddhism did arrive at that time, it was neither widely propagated nor well established. (DOM.H.044.04)

Here, after introducing two different theories on when Buddhism was accepted in Japan, presented in the form of excerpts from two different books, the author resorts to SIB to cancel one of the theories presented by the previous discourse. However, the use of SIB in (50) is inappropriate regarding the flow of discourse. When two theories are given about a certain issue, there follows the assumption that both of the theories cannot be correct, especially if they contradict each other. In this excerpt there is no bias shown in the presentation of the two options, thus, the reader can expect that one option will be chosen over the other. The writer employing SIB, in this case, to cancel one of the two theories, brings confusion to the reader because what SIB seems to cancel is the expectation that one theory will be chosen. An asyndetic coordination in the position of SIB would be the ideal choice for the writer to make the text clear.

Table 16 illustrates the employment of each function of SIB in the domestic corpus. Out of the 24 tokens under examination, the majority was employed in the argument developing function (16 tokens), while the listing and topic-domain shifting functions only appeared in 2 and 6 tokens, respectively. One token of SIB

exemplified the non-nativeness of the writer, revealing how SIB was employed in a way that was not found in the international corpus.

**Table 16. Functions of SIB in the domestic corpus**

	Listing	Topic-domain shift	Argument developing	Total
Tokens	2 (0)	6 (0)	16 (1)	24 (1)

\*Numbers in parentheses represent each function that is used in a way unaccounted for by the international corpus.

The analysis of the functions of SIB employed in the domestic corpus of this section demonstrated that the domestic corpus employed SIB in functions identical to the international corpus. However, there was one instance where SIB was used in a way that did not facilitate development of argument. As I have already done regarding SIA use in the domestic corpus, I suggest that the difficulty of developing a cohesive argument found in the domestic corpus is not because of the misuse of the lexical cohesive device, but because of a lack of understanding of the method for presenting a logical transition from one discourse segment to another.

## 4.3 Overview

In this section, I briefly reiterate the findings of this study, noting the observations made on the distributions of the functions of SIA and SIB and the similarities and differences between the results found in the international and domestic corpora. First, the discussion of SIA is presented, followed by that of SIB.

### 4.3.1 SIA

Despite strictures against its use, SIA is employed in the international corpus, but,

interestingly, most instances are limited to humanities journals, while its use in other disciplines is almost nonexistent. Such prominent use of SIA in humanities-journal writing may be a result of the genre being especially more reader-centered in comparison to the remaining three genres (Cotter, 2003), as it elicits a response from the readers. By using SIA, writers are able to virtually pull out some information that could possibly be embedded sentence-initially, accentuating the information within the flow of discourse, and thus, creating a more reader-friendly text.

The findings of this study confirm the three functions introduced by Bell (2007) for which SIA is employed in academic writing. They are: (i) signaling the last item on a list; (ii) signaling a discontinuity/shift in discourse, and (iii) chaining of arguments, with the most common function being that of listing. In the genres that do not show any meaningful use of SIA, this dominant function of SIA that writers of humanities journals most often employ to mark the last item of a list was often replaced with “zero” coordination. This was chiefly observed in natural science journals, and is probably an effect of the characteristic of the genre where, rather than the last item of the list being separated and thus gaining focus, the process as a whole must be understood as a sequential matter.

The rate of SIA employment in the domestic journals, on the other hand, represented less than half of the relative frequency of SIA employment in the international corpus. Furthermore, there was no particular genre-specific behavior observed regarding SIA employment, other than the fact that natural science journals consistently avoided SIA employment, as was also found in the international corpus.

Though all examples of SIA use from the domestic corpus employed functions identical to those of the international corpus, there were frequent instances where

these occurrences of SIA did not always portray successful operations as a cohesive device. It is noteworthy that such difficulty of developing cohesion through SIA is most likely not a result of the writers' misunderstanding the lexical cohesive device, but rather a result of their lack of skill in knowing how to present logical transitions from one discourse segment to another.

### **4.3.2 SIB**

As expected, with weaker strictures against its use compared to that against SIA, SIB in the international corpus was observed nearly twice as often as SIA in the international corpus. Most occurrences of SIB were also found in humanities journals. SIB also allowed writers to separate out a part of an argument from the general flow of discourse, bringing the reader's attention more directly to the information following SIB. By doing this, the writer is able to create a more reader-friendly text.

The functions of SIB in academic writing can be closely identified with those of SIA. The three functions of SIB are: (i) coordinating "idea units" through adding the final item on a list; (ii) shifting the domain of the topic; and (iii) developing arguments, with both corpora heavily preferring the argument-developing function. I note that though SIA and SIB seem to perform the same functions in academic writing, they are not always alike. SIB was found in the paragraph-initial position, making the final item of the list the new topic of discourse, while no such observations were made in the case of SIA. The shift in discourse that SIB signals was also found to be different from that of SIA, as it is confined to the topic-domain whereas SIA can facilitate a shift in the topic as well as the flow of discourse. Finally,

argument development using SIB is a result of the canceling and subtracting characteristic of *but*, while the argument-chain expressed through SIA is a result of adding to an existing argument structure.

Regarding SIB employment in the domestic corpus, the difference between the frequency of SIB in the international and domestic corpora is even much larger than the difference of SIA tokens found between the two corpora. This is interesting because the data from the international corpus supports the fact that stricture against SIB is weaker in comparison to that of SIA, while the writers of the domestic corpus employ SIA and SIB at a similar rate. Relying on this observation, we can make a reasonable assumption that, for domestic journal writers, both SIA and SIB are used in a more restricted way that reflects the writers' faithfulness to the rules they are taught when learning how to produce academic writing.

Additionally, I present one example of SIB use in the domestic corpus in a way that it is not employed by the international corpus. The writer's non-nativeness is reflected in her choice to use SIB where an asyndetic coordination is needed. Though I only recorded one instance of a non-native-specific SIB use out of 24 tokens, we cannot conclude that SIB is better understood by domestic writers, because, in comparison to the international corpus, it is clearly avoided in the domestic corpus. Once again, as seen with SIA, I suggest that using SIB correctly in academic writing may be difficult for domestic writers because of a lack of understanding of the method for presenting a logical transition from one discourse segment to another, in addition to their faithfulness to the strictures taught in the classroom.

## Chapter 5. Conclusion

The aim of this study was to examine the use of SIA and SIB in international and domestic academic journals in an attempt to provide insight on the ways SIA and SIB function to cohere academic discourse. The main focus was to seek answers to these questions: (i) in what distribution and functions are SIA employed by international and domestic journals? and (ii) in what distribution and functions are SIB employed by international and domestic journals?

The findings of this study revealed that (a) SIA and SIB employment in academic journals of the international corpus are mostly restricted to the genre of humanities; (b) the frequency of SIA and SIB employment of the domestic journals is far less than that of the international journals, with the difference being even larger in SIB employment; and (c) writers of domestic journals choose to use SIA and SIB for the identical functions that are used by the writers of the international journals, but they often struggle to facilitate cohesion between discourse segments.

Based on the observations of this study, SIA and SIB seem to be used to accentuate a segment of an argument by separating the segment from the rest of the flow of the discourse. This style of writing aids in the reader's comprehension of the intended meaning of the writer, thus, is most frequently used in reader-centered texts (Cotter, 2003), which is best exemplified in my data in humanities journals, as it is the genre where argument building happens most prominently. Writers in other disciplines, such as natural science, in which the focus of the writing is less likely to be on a specific step of a process rather than on the entire process as a whole, employ SIA and SIB far less often in their writing. The contrast between the argument-building characteristic of humanities journals and the fact-presenting characteristic

of natural science journals is reflected in the writers' preference for SIA and SIB within each discipline. Still, there remains a need to further account for the low rate of SIA and SIB use in social science and engineering journals.

The current study is meaningful in several ways. First of all, it uses recently published journal articles between the years 2012 and 2016; thus it can be seen as an update on previous studies. The findings of the study contrasts and refines reported findings of Cotter (2003), Dorgeloh (2004), and Bell (2007). The results of the study contradict Dorgeloh, because they show, as a matter of fact, that SIA (as well as SIB) is very often used in academic writing. The study also refines the arguments of Cotter and Bell by showing that SIA and SIB use is mostly restricted to humanities journals. Further, this finding gives weight to the idea that a genre centered around argument-building is more likely to use SIA and SIB as a cohesive device than a genre that focuses on presenting facts. The identical functions of SIA and SIB laid out by Bell are also found to show some differences in making a text cohesive. Finally, by comparing and contrasting SIA and SIB employment in international and domestic journals, this study allows room for assertions in an EAP perspective.

Writers of domestic journals tend to avoid using SIA and SIB in their writing. This is understandable, in light of the strictures against SIA and SIB placed upon them in the EFL classroom. Considering the insubstantial usage of SIA and SIB in most genres of the international corpus, excluding humanities, of course, teaching general EAP students to rely on SIA and SIB alternatives is probably the most reasonable approach. However, in the genre of humanities of the international corpus, SIA and SIB appeared as the most preferred additive and contrastive connectives, respectively. Though the use of *and* and *but* is taught in the earliest stages in the EFL

classroom, SIA and SIB are never introduced as cohesive devices. It would seem prudent, though, at least in the discipline of humanities, that the role of SIA and SIB as cohesive devices should be introduced, if not encouraged, for text focusing heavily on argument building. Furthermore, since the domestic corpus revealed a lack of understanding by students as to the correct employment of SIA/SIB as cohesive devices, more attention should be paid to training them in the use of cohesion through logical transitions. Thus, in teaching EAP, more attention should be paid to the writers developing an understanding of producing cohesive discourse through logical transitions.

Though I was able to successfully illustrate the ways in which international and domestic writers behave differently in the employment of SIA and SIB, this study is not without limitations. First of all, dividing the writers by their affiliation was the only practical solution in an attempt to recognize and contrast domestic writers and writers who, through a better understanding of proper utilization of SIA/SIB, are able to produce more cohesive academic writing. The problem with this solution is apparent, as there is no concrete method of distinguishing the writers' statuses in the placement of academic writing. Additionally, there was no knowing whether or not any of the data had been edited by a third party. Lastly, the few tokens of SIA and SIB found in most disciplines, which is likely due to the small size of corpus, put a constraint on finding more readily generalized explanations for the research questions.

For future studies on SIA and SIB in academic writing, a study identical to the current research could be carried out with larger data, and with data collected in chronological order, to contribute more to the understanding of SIA and SIB.

Researching the functions of SIA and SIB that make them irreplaceable by any other form of coordination is necessary in order to obtain insight on why they re-emerged after a period of prohibition as well.

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## 국문초록

### 학술적 글쓰기의 문두에서의 *and* 와 *but* 의 사용

본 연구는 접속사 *and* 와 *but* 이 학술적 글쓰기에서 응집성 장치(cohesive device)로서 국제 학술지 저자와 국내 학술지 저자 사이에서 어떻게 사용되는지 알아보기 위해, 문장 처음의 *and* (이하 SIA, sentence-initial *and*)와 문장 처음의 *but* (이하 SIB, sentence-initial *but*)의 용례가 어떤 차이로 나타나는지 국제 학술지와 영어로 출판되는 국내 학술지를 비교 분석하였다. 분석은 할리데이(Halliday)와 하산(Hasan) (1976) 이 제시한 응집성(cohesion)의 개념에 의거하여 이루어졌으며, 이를 위해 각각 480,000 자 상당의 국제 학술지 코퍼스과 410,000 자 상당의 국내 학술지 코퍼스를 구축하여, SIA와 SIB의 분포를 살펴보는 한편, 텍스트 분석(text-analysis)을 통해 SIA와 SIB의 기능을 분석하였다.

SIA와 SIB가 학술적 글쓰기에서 사용하지 않도록 교육되어 왔음에도 불구하고 빈번하게 사용되고 있다는 이전 연구의 (Bell, 2007) 주장과는 달리, 본 연구는 국제 학술지 코퍼스에서 SIA와

SIB가 인문학 분야의 학술지에서만 주로 사용된다는 것을 발견했다. 뿐만 아니라 국내 학술지의 저자들의 경우 국제 학술지의 저자들에 비해 SIA와 SIB를 매우 낮은 빈도로 사용한다는 것이 발견되었다. 본 연구에서 진행한 기능의 분석은 벨(Bell) (2007)이 제시한 SIA와 SIB의 세 가지 기능을 뒷받침하는데, SIA는 (i) 목록의 마지막 아이템을 표시할 때 (ii) 담화의 중단/변화를 표시할 때 (iii) 주장들 간의 연결고리를 표시할 때 사용되었고, SIB도 유사하게 (i) 목록의 마지막 아이템을 표시할 때 (ii) 화제가 전환될 때 (iii) 주장이 전개될 때 사용됨을 확인하였다. 주목할 것은 국내 학술지 저자들이 국제 학술지 저자들과 같은 기능으로 SIA와 SIB를 사용함에도 불구하고, 학술적 글쓰기를 응집성이 있게(cohesive) 서술하지 못하는 양상을 보인것이다.

국내 학술지 저자들이 SIA와 SIB를 현저히 적은 빈도로 사용하는 현상은 SIA와 SIB를 엄격하게 금지하는 EFL (English as a Foreign Language) 상황에서의 교수법의 직접적인 영향으로 보인다. 본 논문은 국제 학술지 코퍼스에서의 SIA와 SIB의 사용이 인문학 분야 이외의 학술지에서는 나타나지 않은 점을 토대로 EAP (English for Academic Purposes) 학생들에게 SIA와 SIB 사용을 제한하는 교수법이 타당하다는 것을

뒷받침한다. 하지만 인문학 분야의 학술적 글쓰기에서만큼은 SIA와 SIB가 각각 가장 빈번하게 쓰이는 부가적 연결어(additive connective)와 대조적 연결어(contrastive connective)이기 때문에, SIA와 SIB의 응집성 장치(cohesive device)로서의 기능을 학생들에게 소개할 필요가 있다는 교육적 함의를 갖는다. 또한 본 저자는 EAP 학생들의 응집성(cohesive) 있는 글쓰기를 위해서 학생들이 글쓰기의 논리적인 흐름에 대해 이해할 수 있게 하는것에 무게가 실려야 한다고 제안한다.

주요어: *and*, *but*, 응집성 장치, 학술적 글쓰기, 응집성, 텍스트 분석

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