Noun Phrases and Their Complexity: A Case Study of English Academic Writing of Native and Thai Writers

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การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาความซับซ้อนของนามวลีและรูปแบบการขยายคำนามที่พบใน
บทความวิจัยภาษาอังกฤษที่เขียนโดยเจ้าของภาษาและคนไทย การวิเคราะห์ด้วยสถิติทดสอบไคสแควร์
แบบเพียร์สันพบว่าการใช้คำขยายคำนามของผู้เขียนที่เป็นเจ้าของภาษากับผู้เขียนคนไทยไม่มีความ
แตกต่างกันอย่างมีนัยสำคัญทางสถิติ (p = .27) รูปแบบการขยายคำนามที่พบมากที่สุดคือ 1) คำคุณศัพท์
+ คำนามหลัก เช่น <u>several</u> methods 2) คำคุณศัพท์ + คำนามหลัก + บุพบทวลี เช่น <u>the</u> impact <u>of an</u>
<u>utterance</u> และ 3) คำคุณศัพท์ + คำคุณศัพท์ + คำนามหลัก เช่น <u>this</u> <u>last</u> matter และรูปแบบของการ
ขยายคำนามไม่ได้ขึ้นอยู่กับการเป็นเจ้าของภาษาหรือการเป็นผู้เขียนคนไทย (p = .74)

คำสำคัญ: ความซับซ้อนของนามวลี รูปแบบการขยายคำนาม การเขียนภาษาอังกฤษ การเขียนเชิง
วิชาการ

Abstract

The purpose of this research is to investigate the syntactic complexity of a noun phrase
and patterns of noun modification in the English research articles written by native English and
Thai writers. Pearson's chi-squared test results indicate that there were no significant
differences between native English and Thai writers' use of noun modifiers (p = .27). The three
most frequent patterns found were 1) adjective + head noun (e.g. <u>several</u> methods), 2) adjective
+ head noun + prepositional phrase (e.g. <u>the</u> impact <u>of an utterance</u>), and 3) adjective +
adjective + head noun (e.g. <u>this</u> <u>last</u> matter). In addition, the patterns of noun modification were
independent of being native or Thai writers (p = .74).

Keywords: Noun phrase complexity, patterns of noun modification, English writing,
Academic writing

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1. Introduction

It is widely known that academic writing has long phrases and is complex. Since when a noun phrase is structurally stretched with modifiers, more meaning and information can be added to the head noun, complexity is one of the key features of academic writing that needs high attention from academic writers. In the traditional sense, syntactic or grammatical complexity in academic writing refers to elaborated clausal structures. However, Biber and Gray (2010) argue that academic writing does not rely on clauses, but on phrases. Likewise, Wang and Beckett (2017) indicate that noun phrase centered structures with phrasal modifiers were a feature of advanced academic writing. In this case, Halliday (1993) notes that, when compared to other registers, the use of nouns in academic writing is very challenging for both native and non-native students.

Previous studies have explored the use of language in academic writing among native and non-native English language students and found that native and non-native writers used different lexical bundles for different register (Ädel & Erman, 2012), non-native expert writers use noun phrases that are functionally different from native expert writers (Pan, Reppen, & Biber, 2016), and the two groups of writers' use of prepositional phrases are significantly different (Jitpraneechai, 2019). Wang (2012) indicates that there are many factors that lead to differences between native and non-native academic writing, such as, in the level of lexicon, L1 and L2 writers use different word choice. In the level of a sentence, non-native writers use different sentence patterns and focus on the subject differently. In the level of passage, they use different voice and organization.

Several studies (e.g. Liu and Li, 2016; Ansarifar, Shahriari and Pishghadam, 2018; Jitpraneechai, 2019) have focused on noun phrase complexity. After comparing noun phrase complexity of student writers' academic writing with that of published writers, the findings were that students' use of noun modifiers was significantly different from expert writers. The results also reveal that using more modifiers makes a noun phrase more complex. The reason is that using more extended phrase tends to require more cognitive process and linguistic competence.

Those previous studies have found that the use of language in academic writing among native and non-native English language students was different. However, studies that compare

the use of noun phrases in English academic writing between Thai and native professional writers are still under-researched, especially a study of noun phrase complexity. Between native English and Thai writers, who produce more complex noun phrases is, therefore, the question to be asked in this study. And since Thai academic writers are speakers of English as a foreign language, the present study hypothesizes that native speakers use more complex noun modification than native English speakers.

Syntactic or grammatical complexity of a written text is the sophistication of grammatical structures in writing (Liu and Li, 2016). The most frequently used syntactic complexity measures for writing are length-based measures (longer production units mean superior fluency) and subordination-based measures (more subordination leads to more complicated ideas). However, a long sentence does not necessarily sophisticate because it may only incorporate more dependent clauses together. This study looked into the noun phrase level, so subordination-based measures were selected.

Based on Biber, Gray, and Poonpon (2011), English noun modifiers were divided into six types: relative clause, participle clauses which are divided into 2 types: ed participle clause and ing participle clause, prepositional phrase, noun premodifier, and attributive adjective. They also found that, from the proportion of noun modification per 1,000 words, the most counts were prepositional phrases (68), followed by attributive adjectives (55), and noun premodifiers (22), respectively. These top three counts were in compressed structures. The other three noun modification types, which were elaborated structures, had only a few counts: relative clause (11), ed clause (3), and ing clause (2.5). While most of the previous studies tried to examine the types of modification of a noun phrase, very few studies have discussed the patterns of noun phrases on the preferences of different types of writers. For example, Biber, Grieve and Iberri-Shea (2009) compared the preferred patterns of noun phrase modification in British and American writing and it was found that American English had generally been in the lead in the increasing reliance on compressed styles of noun phrase modification. So, it would be interesting to investigate the patterns of noun modification in native and non-native English writers. Another reason is that academic research papers are often written with extended noun phrase structures; therefore, both native and non-native novice writers should pay attention to and become familiar with a characteristic feature of noun phrase complexity if they are seeking to write such papers and want to achieve advanced literacy. Thus, the second question to be

asked in this research is that what are patterns of noun modification across the two varieties: native English and Thai writers? It is hoped that the findings of this study will provide guidelines for teaching Thai writers of English and other non-native English writers to realize the significance of noun modification and use it efficiently in academic writing.

This study, therefore, aimed to examine patterns of noun modification in academic writing of native English and Thai writers in Applied linguistics and language teaching and to investigate the syntactic complexity of noun phrases in the English academic writing of the two groups of writers. The complexity of a noun phrase was measured by subordination-based measures. A noun phrase which had more modifiers are considered more complex.

2. Methods

Due to the fact that an academic article contains several sections, the selection of the section for this study was done after reviewing previous research. Many studies (Hutter, 2015; Hong, Hua and Mengyu, 2017; Akkaya, 2018) investigated academic writing related to the main organizational framework of research articles: Introduction, Methods, Results and Discussion (IMRD) because they are the core organizational framework for research articles. However, it was found that there were no significant differences in the use of noun phrases among those sections. Thus, this study focused on Introduction section because, in this section, each writer tends to compose concise, formal and complex sentences in a similar pattern and word counts.

The data sources for native English writing in this study were selected from Applied Linguistics and TESOL Quarterly. For Thai writers, the texts were chosen from MANUSYA: Journal of Humanities and LEARN Journal: Language Education and Acquisition Research Network Journal. All of these selective data sources are examples of recent, well established and high-ranked British, American and Thai journals in the applied linguistics and language teaching fields. The selected academic articles were published between 2013 to 2018. The methods to ascertain the first language of a writer is that the native English writers refer to any writers affiliated with American or British universities and first and last names can be considered native English speakers. For the Thai writers, their full names have to be identified as Thai names and they have to be affiliated with Thai universities. The counts for all patterns of noun modification were from 10,000 words gathered from 5,000 words of Thai academic writing with 500 words for each article and with the same proportion of data was from native English writers.

2.1 Definition framework

In order to examine the patterns of noun modification in a noun phrase and to measure the noun phrase complexity, two criteria have been set in this study. Firstly, the selective noun phrases have to be a subject, a direct object and an indirect object of an independent clause in a sentence, e.g. 1) "Some electronic tools have also been designed specifically to measure coherence in a text," 2) "Lee (2004) applied tree diagrams in measuring coherence in students' essays." Secondly, the complexity of a noun phrase was considered from the number of its dependents, e.g. 3) "The third article represents a dialectic relationship between the conceptual and empirical. In this example sentence, the dependents were counted as follows:

"The third article" contains 2 dependents (A+A+H).

"A dialectic relationship between the conceptual and empirical" contains 3 dependents (A+A+H+PP).

This study was based on Biber et al. (1999), Biber (2010) and Biber, Gray, and Poonpon (2011), so noun modifiers were divided into six main types, including relative clause, ed clause, ing clause, prepositional phrase, noun premodifier, and attributive adjective.

In order to explain the patterns of noun modification found in this study, the following abbreviations are used: "A" refers to an "adjective", "H" refers to the "head noun", "PP" refers to a "prepositional phrase", "RCl" refers to a "relative clause", "EdCl" refers to an "ed clause", "IngCl" refers to an "ing clause", "N" refers to a "noun", "AP" refers to an "adjective phrase" which includes one adjective and its dependents, and "NP" refers to a "noun phrase" which includes one noun and its dependent.

While the modifiers are abbreviated with their categories, the abbreviation for the noun is "H" which is considered as its function. The reason is that, in some cases, a noun can be dependent, such as school bus, so "H" is used to refer to the head noun in order to avoid confusion.

The analysis was divided into two parts: quantitative and qualitative. For the quantitative analysis, a noun phrase which its head noun has more modifiers is considered more complex because it is lexically denser and has more grammatical complexity. The Pearson's chi-

squared test was run to see if there was a significant difference in patterns of noun modification and the complexity of the noun phrases used by native English and Thai writers. The patterns of noun modification in a noun phrase were qualitatively interpreted.

3. Results

3.1 Patterns of noun modification

The analysis of patterns of noun modification in a noun phrase of 5,000-word long academic articles was done to answer the first research question: What are patterns of noun modification in the noun phrases across the two varieties: native English and Thai writers? The results indicate that the noun phrases produced by Thai writers are similar in numbers to those of the native writers, 441 and 418 phrases, respectively. However, in the 441 phrases made by Thai writers, only 63 patterns of noun modification were found, while native writers produced 71 patterns from their 418 phrases. It was also found that the total number of patterns of noun modification, excluding the repeated patterns, in the academic writing in this study was 95 patterns. The three most popular patterns used by both native English and Thai writers were similar: A+H (<u>the</u> results; <u>other</u> errors; <u>several</u> methods; <u>two</u> points), A+H+PP (<u>the</u> impact <u>of an utterance</u>; <u>the</u> relationship <u>between hedging and academic writing</u>; <u>a</u> function <u>to a hedge</u>), and A+A+H (<u>this</u> <u>last</u> matter; <u>another</u> <u>important</u> issue; <u>the</u> <u>lexical</u> items), respectively.

Due to the fact that the three most frequently found patterns were in the same order, but the other followed patterns of modification were not, so the first fifteen most frequently used patterns of noun modification of native and Thai writers are compared in order to see the similarities and differences of the patterns used by the two groups of writers. The list of patterns of modification presented in Figure 1 was derived from the patterns of the native English writers.
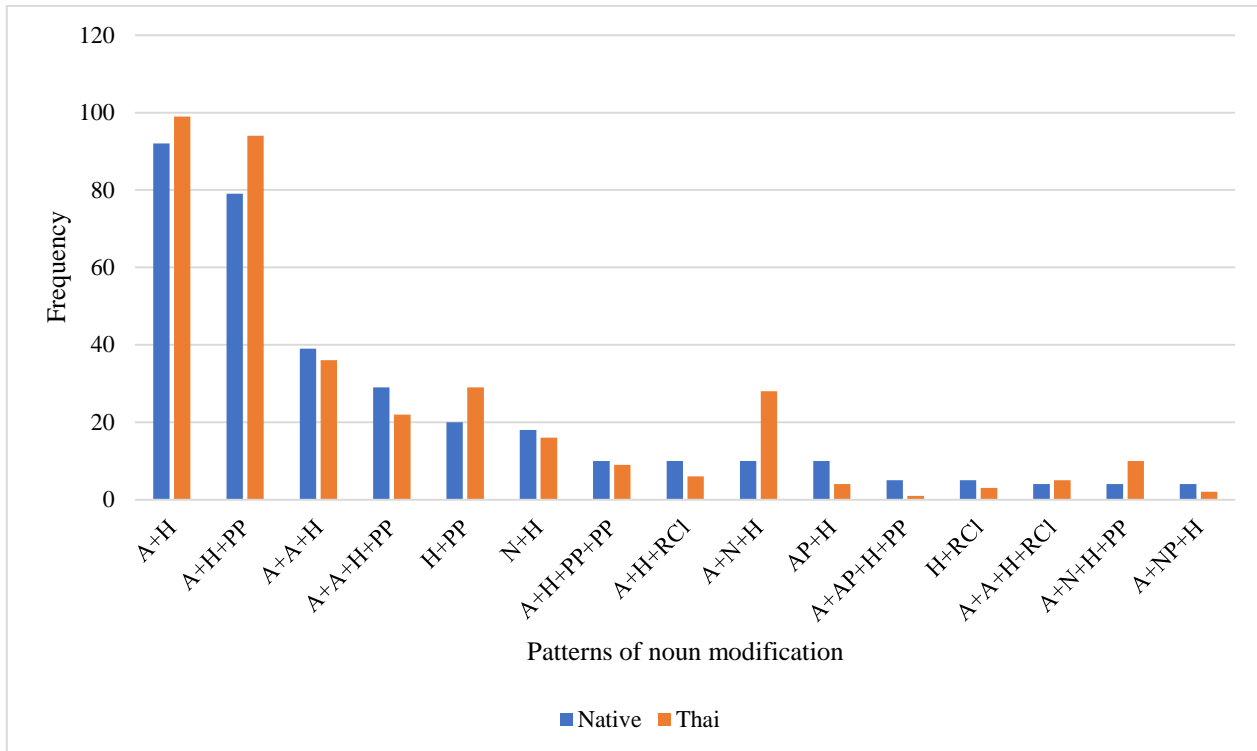
Figure 1. Patterns of noun modification and its frequency

Figure 1 shows that the patterns of noun modification used by native English and Thai writers follow the same trends. To exemplify the results, the fifteen patterns of noun modification in a noun phrase are described in order as follows:

1. A+H   <u>This</u> aim

2. A+H+PP   <u>A</u> nature <u>of knowledge</u>

3. A+A+H   <u>The</u> <u>third</u> article

4. A+A+H+PP   <u>An</u> <u>extraordinary</u> property <u>of a few gifted individuals</u>

5. H+PP   ways <u>of talking about language learning as a signifier for lifestyle practices that are real and imagined</u>

6. N+H   <u>Discourse</u> analysis

7. A+H+PP+PP   <u>the</u> indicators <u>of inequality in accounting</u> <u>for the significant difference in uptake of subjects benchmarked for school performance league tables</u>

8. A+H+RCl   <u>other</u> terms <u>that have been introduced to describe seemingly similar phenomena</u>

9. A+N+H   <u>The</u> <u>word</u> family

10. AP+H   <u>strikingly different</u> texts

11. A+AP+H+PP <u>their</u> <u>often ambivalent</u> desire <u>to learn and practise it</u>

12. H+RCl   'legs', <u>which the interlocutors subsequently exploit by</u>
     <u>referring to sailors 'getting legless' and having 'sea legs'</u>

13. A+A+H+RCl <u>The</u> <u>English</u> learners <u>who are unable to score as</u>
     <u>proficient on these assessments</u>

14. A+N+H+PP <u>the</u> <u>main</u> functions <u>of metonymy</u>

15. A+NP+H   <u>a</u> <u>social class</u> erasure

The above patterns were from the ability of the writers to use noun modifiers. The results reveal that native and non-native speakers possess similar writing skills.

Pearson's chi-squared test was used to compare the use of the top fifteen patterns of noun modification of native English and Thai writers. It was found that the p-value was 0.74 and was considered insignificant. The findings suggest that the patterns of noun modification are independent of being native or Thai writers.

The patterns of noun modification of both Native English and Thai writers are shown in Table 1 below.

Table 1. Five most frequently used patterns of noun modification with one to three modifiers by native English and Thai writers

Order	1 MOD		2 MODs		3 MODs	
	Native	Thai	Native	Thai	Native	Thai
1	A+H	A+H	A+H+PP	A+H+PP	A+A+H+PP	A+A+H+PP
2	H+PP	H+PP	A+A+H	A+A+H	A+H+PP+PP	A+N+H+PP
3	N+H	N+H	A+H+RCl	A+N+H	A+AP+H+PP	A+H+PP+PP
4	AP+H	AP+H	A+N+H	A+H+EdCl	A+A+H+RCl	A+A+H+RCl
5	H+RCl	H+RCl	A+NP+H	A+H+RCl	A+N+H+PP	A+A+N+H

Table 1 shows that native English writers and Thai writers used the same patterns of noun modification with one modifier and in the same order from the first to the fifth most frequently used patterns. For the use of two-modifier type, they used the same patterns of noun modification in the first and the second order while the other two patterns are the same, but the frequency of use is different. For the three-modifier type, the first and the fourth frequently used

patterns are the same. In addition, the other two patterns are the same, but the order is different. Overall, the data in Table 1 indicate that the most frequently used patterns of noun modification in a noun phrase across the two groups of writers are very similar.

3.2 Syntactic complexity of noun phrases

The second research question was "Between native English and Thai writers, who produce more complex noun phrases?" The findings reveal that, in one phrase, both native writers and Thai writers used one to four modifiers. Based on subordination-based measures, a phrase with two or more modifiers were considered "complex," regardless of what types of combination of the modifiers were. The results also show that the average noun modifiers used by native English writers was 1.89 modifiers, while Thai writers used 1.87 modifiers. The numbers of noun modifiers found in this study are shown in Figure 2 below.
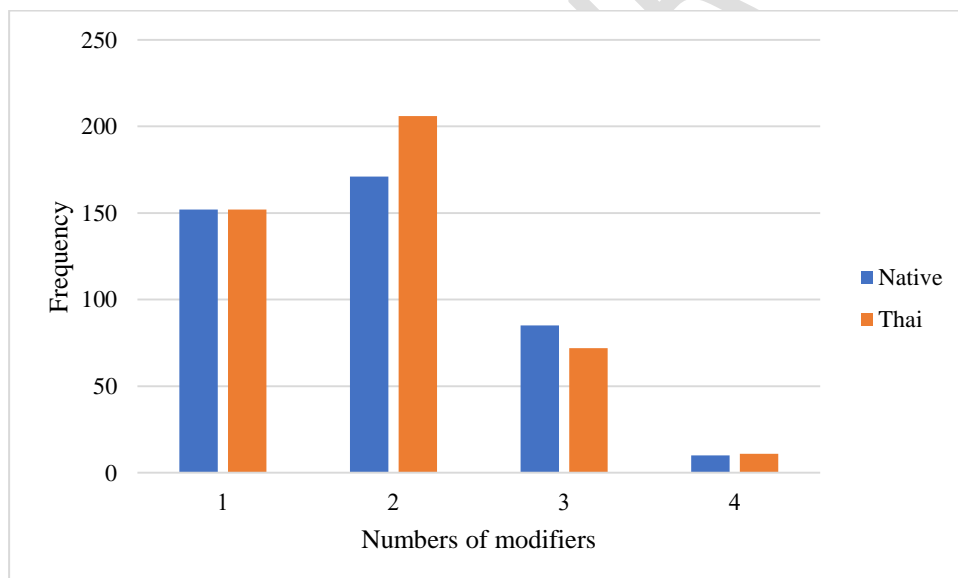

Figure 2. Numbers of noun modifiers and their frequency of occurrence

As shown in Figure 2, both native English and Thai writers used two modifiers for noun modification most frequently, followed by one modifier, and three modifiers, respectively. Even though Thai writers tended to use two modifiers more often than the native English writers, the overall use of noun modifiers is similar.

Pearson's chi-squared test was used to analyze the differences of patterns of noun modification in a noun phrase across the two groups: native English and Thai writers. The result shows that there were no significant differences between the means of the two groups of writers

(p = .27). The results rejected the hypothesis that native writers produce more complex noun phrases than Thai writers. This also suggests that the native English and Thai writers tend to use the same number of noun modifiers in their noun phrases. It could be inferred that noun phrase complexity does not indicate the ability of non-native speakers in academic writing.

4. Conclusion, Discussion and Implication

This paper views complexity as an important characteristic of academic writing. The questions of this research were: 1) In the field of Applied linguistics and language teaching, what are patterns of noun modification of a phrase used in academic writing of native English and Thai writers? 2) Which group of writers produces more complex noun phrases? The data were collected from the Introduction section of the academic articles of well-known peer-reviewed journals.

Surprisingly, the results revealed that there were no significant differences between the two groups of writers' noun phrase complexity in their academic writing. The findings of this study do not agree with those of Ädel and Erman (2012); Pan, Reppen, and Biber (2016); and Jitpraneechai (2019) who claim that native and non-native English language writers use different style in academic writing. The results of this research also showed that native English and Thai writers used similar patterns of noun modification in their noun phrases. The results imply that the writing ability of Thai writers is likely to be at the same level as American and British writers. This seems to be contrasted to the general perception of the public that non-native English learners tend to have lower English proficiency than native ones. In addition, since writing has long been considered to be the most difficult skill in learning a language, so it is possible for ones to assume that non-native writers will perform more poorly in academic writing than the native ones. Therefore, the findings seem to be against that hypothesis.

The results of the present study may also be discussed on the selection of the texts. Due to the fact that the samples of academic articles written by Thai writers were from Thai well-established peer-reviewed journals, there is high possibility that only high-quality articles from expert writers who have good English competence will be published. The journal's operational process should be studied for accurate discussion here. Some journals require native speaker revision approved before submission. This will be an extensive consequence for the result.

In addition to the Pearson's chi-squared test results, being native or Thai writers does not affect the patterns of noun modification in academic writing. Both native and Thai writers produced the same order of three most frequent patterns: adjective + head noun (e.g. <u>several</u> methods), adjective + head noun + prepositional phrase (e.g. <u>the</u> impact <u>of an utterance</u>), and adjective + adjective + head noun (e.g. <u>this</u> <u>last</u> matter). This might be because Thai academic writers have to devote their time reviewing related literature in English in order to write an academic article in English, so it is likely that these writers learn chunks, grammar, and patterns of noun modification from doing this activity (Silva, 1992). Or, the results can also be interpreted in another way that since Thai writers were required by the publishers to get his/her manuscript checked by a native speaker for its grammaticality before submission (MANUSYA, 2018), it is possible that the native English editors had adjusted the language to be native writing styles before the articles were published. So, for further study, it might be more accurate if the corpus is the original manuscripts of Thai writers. In addition, by using the patterns of expert writers in this study, investigation of the patterns of noun modification of low proficient English language learners can also be done.

5. Recommendation for Application

The concept gained from this present study might be applied to L2 learning concept that non-native writers can obtain near-native writing performance, especially the very difficult one like academic writing. In addition, English writing instructors can use the patterns of noun modification found in this research to teach academic writing because these patterns have been employed in academic writing by more experienced and native English academic writers. For writers, on the one hand, if he would like to reach the goal of academic writing, more complexity is needed. On the other hand, if he wants the paper to help ease the readers' incomprehensibility, one or two modifiers are more helpful.

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