

## SYNTACTIC COMPLEXITY IN EFL AND NATIVE LEARNERS' UNDERGRADUATE THESIS ABSTRACTS

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### ABSTRACT

This research aims to find syntactic complexity of the abstracts in the undergraduate thesis written down by university learners in Indonesia and the ones written down by native speakers of English. The characteristics of syntactic complexity produced by Indonesian learners and the learners who are the native speakers should also be analyzed. It is possible to extend the type of syntactic complexity found in academic texts. In the end, those extensions should be characterized the English language used by Indonesian learners. The data is gained through downloading the abstracts of the undergraduate thesis in the academic year of 2015-2016 from the UBM English Department alumni database. The data regarding the abstracts written down by the native speakers is downloaded from the reputable universities in The United States of America. After that, the data is analyzed by making used of the syntactic analyzer by Lu & Ai (2015). The results shows that the Indonesian learners tend to write more complex sentences and use subordination in the abstracts. The native speakers, on the other hands, tend to write longer sentences with longer T-Unit and clauses. They also tend to write complex nominal in the abstracts. The number of coordination used is similar between the ones written down by Indonesian learners and native speakers of English.

**Keywords:** syntactic complexity, syntactic structures, undergraduate thesis, Indonesian learners

### ABSTRAK

*Penelitian ini bertujuan untuk menemukan kompleksitas leksikal dalam hal orisinalitas, kepadatan, kecanggihan, dan variasi abstrak dalam skripsi yang ditulis oleh mahasiswa di Indonesia dan yang ditulis oleh penutur asli bahasa Inggris. Karakteristik kompleksitas leksikal yang dihasilkan oleh pembelajar Indonesia dan pembelajar yang merupakan penutur asli juga harus dibandingkan. Diharapkan para mahasiswa Indonesia, khususnya mahasiswa Jurusan Bahasa Inggris dapat belajar dari hasil-hasil yang nantinya dapat membuat penggunaan kata leksikal mereka lebih mirip dengan penutur asli. Data penelitian ini diperoleh dengan cara mengunduh abstrak skripsi dari tahun akademik 2015-2016. Data kedua diperoleh dengan mengunduh abstrak dari situs web universitas terkemuka di Amerika Serikat. Data dianalisis dengan memanfaatkan penganalisis kompleksitas leksikal berbasis web oleh Lu & Ai (2015). Hasil penelitian menunjukkan bahwa pelajar Indonesia cenderung menulis kalimat yang lebih kompleks dan menggunakan subordinasi di abstrak-abstraknya. Di lain pihak, penutur asli cenderung menulis kalimat yang lebih panjang dengan T-Unit dan klausa yang lebih panjang. Mereka juga cenderung menulis nominal kompleks dalam abstrak. Jumlah koordinasi yang digunakan mirip antara yang ditulis oleh pelajar Indonesia dan penutur asli bahasa Inggris.*

**Kata Kunci:** kompleksitas leksikal, orisinalitas leksikal, kecanggihan leksikal, kepadatan leksikal, variasi leksikal

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## INTRODUCTION

### 1.1. Background

There have been many researches which discuss about the uniqueness of English used in several contexts in several places. The English usages in Non English speaking countries have widely recognized due to its role as a global language (Crystal, 2003). However, it must be admitted that the English language used by the native speakers of English, which is called as the inner circle (Kachru, 1989) is still being used as the standard English, especially in academic writing. As a result, the English used by the non-native speakers in academic writing is still being compared to the ones written down by the native speakers due to its appropriateness.

In relation to the English language used in the undergraduate thesis, an aspect that can be analyzed is about the syntactic structures and complexity. The term complexity as Biber & Gray (2015) suggest, refers to the availability of dependent clause. A "simple" clause consists of a single subject, verb, and object. A "simple" phrase consists of a head and a determiner. An addition to those simple constructions can be called as complexity. In addition to the definition, Fang & Schleppegrell (2008) argue that the length of clause and phrase can also determine the complexity. The longer the clause and phrase, the more complex they will be.

Syntactic structures in written academic texts, including the undergraduate theses, has got its own characteristics. In the level of clause, it is found out that finite adverbial clauses are not commonly found. Next, That-complement clauses are highly used in popular science academic text while non-finite complement clauses and finite relative clauses are used more often in humanities texts (Biber & Gray, 2015). Regarding the syntactic complexity in the phrase level, the evidence shows that progressive verbs is decreasing over the past two centuries (Biber & Gray, 2015) Next, it can be said that major grammatical complexities of writing relies on nouns and

nominalizations (Fang, Schleppegrell, & Cox, 2006).

There have been many results of researches talking about the comparison of both syntactic structures complexity produced by American or British learners who belong to the inner circle and learners from the outer or expanded circles. The differences ranged from the overuse of certain grammar complexity or, usually, less and inappropriate Syntactic complexity produced by the non-native speakers of English from both the outer and expanded circles. Tapper (2005) presents some evidences that Swedish EFL learners overuse the adverbial connectives compared to Native American English learners. On the other hands, there is also a research shows that Spanish learners use less syntactic complexity in terms of nominalization and clause combinations (Columbi, 2002). In the level of clauses, Iranian EFL Learners use less adjective clauses, than then the Native American English learners (Seifoori & Fattahi, 2014). Moreover, Syntactic complexity is also related to proficiency. Iranian EFL learners with Higher English proficiency have produced similar Syntactic complexity to Native American English learners (Seifoori & Fattahi, 2014).

The above researches show that syntactic structures complexity are commonly seen from the clausal complexity. Not until 2015 does when Biber & Gray (2015) discusses phrasal complexity. They argue that phrasal complexity is more common than clausal complexity in academic writing that it gives characters to academic writing. In a more general term, they said that the syntactic complexity change actually talks about the phrasal complexity, not about the clausal complexity. Moreover, he also argues that "one of these alternative types of complexity involves the extensive use of embedded phrases than the clausal complexity". It is also such an unfortunate that some corpus based research regarding syntactic complexity is still not complete due to the lack of the phrasal complexity device tracker (Biber & Gray, 2015).

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## 1.2. Research Questions

The previous studies have indicated that little attention has been paid to the syntactic complexity, especially in academic texts. This present research is therefore aims to answer the following research questions.

1. What syntactic structures found in the abstracts of the undergraduate thesis written down by EFL learners and native speakers of English?
2. What syntactic complexity found in the abstracts of the undergraduate thesis written down by EFL learners and native speakers of English?
3. To what extent are they different?
  - a. What are the characteristics of the abstracts of the undergraduate thesis written down by EFL learners?
  - b. What are the characteristics of the abstracts of the undergraduate thesis written down by native speakers of English?

## 1.3. Research Objectives

The objective of this research is first, to determine the typical syntactic structures and complexity found in the abstracts of undergraduate thesis written down by EFL learners and native speakers of English. Next, it would also like to see characteristics of the abstracts of the undergraduate thesis written down by both EFL learners and native speakers of English.

## 1.4. Significance of the Research

It is expected that the results of this study will present a new or expanded classification of the syntactic structures and complexity commonly used in the academic text. It is later the undergraduate learners who can specifically choose one kind of phrase, such as the noun phrase, and analyze texts based on the results of this research.

## 1.5. Scope and Limitation

The scope of this research is syntactic structures and complexities found in 30 abstracts of undergraduate theses written by university learners studying in Universitas

Bunda Mulia in 2016-2017, where the researcher teaches. Other abstracts should be downloaded from reputable universities in The United States of America.

This research has also some limitations. Due to the access, the syntactic structures and complexity will only be analyzed from the abstracts of the undergraduate thesis. Moreover, due to the numbers of the university which has English Program, this research will cover 30 abstract from Universitas Bunda Mulia the 30 abstracts which are written down by the native speakers of English.

## THEORETICAL FRAMEWORK

### 2.1. Syntactic Structures and Complexity

Corpus linguistics deals with how language is used in real-life contexts. The term "corpus" refers to the collection of words used in a natural usage of a language (Hunston, 2005). The fast growing technology allows people to create corpus software to analyze the language, especially English. People can see the frequency of word, differentiate between spoken and written language used, and the field where certain language is used by using that corpus software.

Lu & Ai (2015) has developed a syntactic analysis program called as L2 Syntactic Complexity Analyzer 3.3.3. The program can identify two measurements, they are (1) syntactic structure analyzer, and (2) syntactic complexity analyzer. The syntactic structures analyzer is measuring the word count (W), the number of the sentence (S), the verb phrase (VP), the clause (C), the T-Unit (T), the dependent clause (DC), the complex T-Unit (CT), coordinate phrase (CP), and its complex nominal (CN) . Those syntactic structures are analyzing the texts which have not been put in phrase structures. The syntactic structures are usually being analyzed to predict the syntactic complexity of the texts.

The syntactic complexity analyzer is basically analyzing the phrase structures of each sentences found in the texts. They can basically measure fourteen categories. They can be seen in the table in the next page.

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Measure	Code	Definition
<i>Type 1: Length of production unit</i> Mean length of clause Mean length of sentence Mean length of T-unit	MLC MLS MLT	# of words / # of clauses # of words / # of sentences # of words / # of T-units
<i>Type 2: Sentence complexity</i> Sentence complexity ratio	C/S	# of clauses / # of sentences
<i>Type 3: Subordination</i> T-unit complexity ratio Complex T-unit ratio Dependent clause ratio Dependent clauses per T-unit	C/T CT/T DC/C DC/T	# of clauses / # of T-units # of complex T-units / # of T-units # of dependent clauses / # of clauses # of dependent clauses / # of T-units
<i>Type 4: Coordination</i> Coordinate phrases per clause Coordinate phrases per T-unit Sentence coordination ratio	CP/C CP/T T/S	# of coordinate phrases / # of clauses # of coordinate phrases / # of T-units # of T-units / # of sentences
<i>Type 5: Particular structures</i> Complex nominals per clause Complex nominals per T-unit Verb phrases per T-unit	CN/C CN/T VP/T	# of complex nominals / # of clauses # of complex nominals / # of T-units # of verb phrases / # of T-units

Table 3.1. Syntactic complexity measurement

As can be seen above, there are five different measurement in order to identify the syntactic complexity of a text. of the the measurement is calculated based of the evidence of word, phrase, clause, sentences and T-Unit. T-unit itself is defined as “the shortest unit into which a piece of discourse can be cut without leaving any sentence fragments as residue” (Hunt, cited in Bardovi-Harlig, 1992). To make it easy, look at the examples below.

- (1) The boy is clever and he has just won a spelling bee competition.
- (2) The boy who is clever has just won a spelling bee competition.

Sentence (1) above contain 2 (two) subjects and verbs which are connected by “and”. It is considered as two T-units. On the other hands, sentence (2) has one subject and verb and one dependent clause. It is, therefore, considered as one T-unit.

The first measurement is the length of the production unit. The mean length of the sentences, the clauses and T-unit are measured. The second is the number of clauses

found in the sentences after being analyzed in the phrase structures. The more complex the sentence, the more clauses are found in the sentence. The third is measuring the subordination found in the text. It can be found by measuring the number of clauses in the T-units, the complex T-Units in each T-units and the number of dependent clauses in both clauses and T-Units. The fourth measurement is about the coordination. The texts are analyzed in accordance to the number of independent clause found in both T-Unit and clauses. The last is about the particular structures. It is basically measuring the complex nominal and verb phrases in both the clauses and T-Units.

## 2.2. Phrasal Complexity as a Part of Syntactic Complexity

A sentence is not just a group of words; it can be broken down into several constituent. This constituent is called as a phrase which can consist of one or more than one words. If it is one, it must be the head and if it consists of more than words, it must be the

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head and the determiner, the head and the modifier, the head and the complement, or the combination of all of them. Unlike a clause, a phrase is characterized by the substitution. It means that those many words in a phrase can be substituted by a single head word. In addition, a phrase can also be moved as a unit. Last, a phrase can be “embedded at different levels and in some cases a given structure can have more than one interpretation” (Biber, Johansson, Leech, Conrad, & Finegan, 1999).

The evidence that shows a phrase can have multi interpretation makes it a complex phrase. In addition, a phrase can be categorized as complex if it contains more than four words (Biber, Johansson, Leech, Conrad, & Finegan, 1999).

In relation to part of speech, there are five kinds of English phrases; they are noun, verb, adjective, adverb, and prepositional phrases.

#### A. Noun Phrase

A noun phrase consists of a noun as the head. It can be accompanied by determiners which specify the reference of the noun and modifiers which describe or classify the noun. The noun can also be followed by a complement which usually takes the form of that-clause. Below is the example of a noun which is followed by that-clause in an academic text:

“The popular **assumption** that language simply serves to communicate “thoughts” or “ideas” is too simplistic” (Biber, Johansson, Leech, Conrad, & Finegan, 1999).

The above example shows the head noun “assumption” followed by a complement that-clause “that language simply serves to communicate “thoughts” or “ideas”.

The noun phrase has several syntactic roles. The most common ones are as (1) subject, (2) direct object, (3) indirect object, (4) prepositional object, and (5) complement of preposition. Besides those most common roles, a noun phrase also has other syntactic roles. They are (6) subject predicative, (7) object predicative, (8) adverbial, (9) premodifier of noun, (10) apposition, and (11)

premodifier in adjective or adverb phrase (Biber, Johansson, Leech, Conrad, & Finegan, 1999).

Regarding the complex noun phrase, Biber, Johansson, Leech, Conrad, & Finegan, (1999) also say that it could be “split up” under circumstances, such as in the following example: “In this chapter a **description** will be given **of the food assistance programs that address the needs of a family**”.

#### B. Verb Phrase

Verb phrases contain of a lexical verb as the main verb which could be accompanied by one or more auxiliaries. The verb phrase can be both finite and non-finite. The non-finite verb phrase does not usually contain “specification of tense and modality”; as a result, it has fewer possibilities of variations, such as “have caught”. As for the syntactic role, the verb phrase usually serves as the “central clause elements”. Both finite and non-finite verb phrase have the same role. Similar to noun phrase, the verb phrase might also discontinuous, such as in “The current year **has** definitely **started** well (Biber, Johansson, Leech, Conrad, & Finegan, 1999).

#### C. Adjective Phrase

An adjective phrase contains an adjective as the head and could be accompanied by modifiers in the form of word, phrase, and clause. It also has several syntactic roles. The two most common roles are as (1) premodifier of nouns, and (2) subject predicative. Other roles are as (3) post modifier of nouns, and (4) object predicative. An adjective phrase has also recognized the discontinues adjective clause, such as in: “You couldn’t have a **better** name **than that**” It can be seen that the two adjective phrase “better” and “than that” is separated by a noun “name” (Biber et. al, 1999).

#### D. Adverb Phrase

An adverb phrase contains an adverb as the head which is optionally followed by the modifiers in the form of word, phrase, and clause. The two most common syntactic roles of adverb phrases are (1) modifier in adjective

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or adverb phrase, and (2) adverbial in clause level. Other syntactic roles are (3) pre- and postmodifier in noun phrase, (4) complement of preposition, and (5) premodifier in prepositional phrase (Biber, Johansson, Leech, Conrad, & Finegan, 1999).

### E. Prepositional Phrase

A prepositional phrase consists of a preposition and a complement. A prepositional phrase can be preceded by adverbial particles and other modifying elements. The syntactic roles of a prepositional phrases are as (1) adverbial on the clause level, (2) postmodifier and complement of noun, (3) premodifier of noun, and (5) complement of adjectives (Biber, Johansson, Leech, Conrad, & Finegan, 1999).

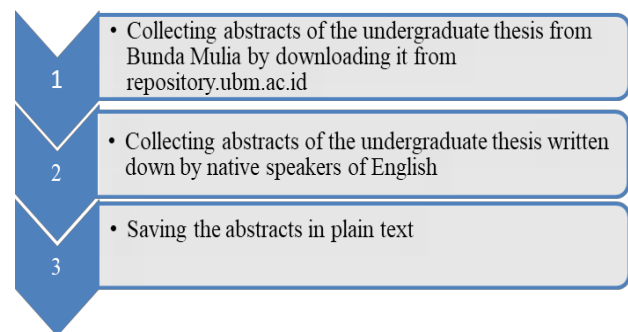
## RESEARCH METHODOLOGY

### 3.1. Source of Data

The Data is gained from the abstracts of the undergraduate thesis written by Bunda Mulia University learners studying at English Department. The abstracts written down in the academic year of 2015-2017 should be analyzed. Next, the abstracts which are written down by native speakers of English should be downloaded from several reputable universities and Schools which first language is English. The abstracts should also be written down between 2015 to 2017.

### 3.2. Data Collection Procedures

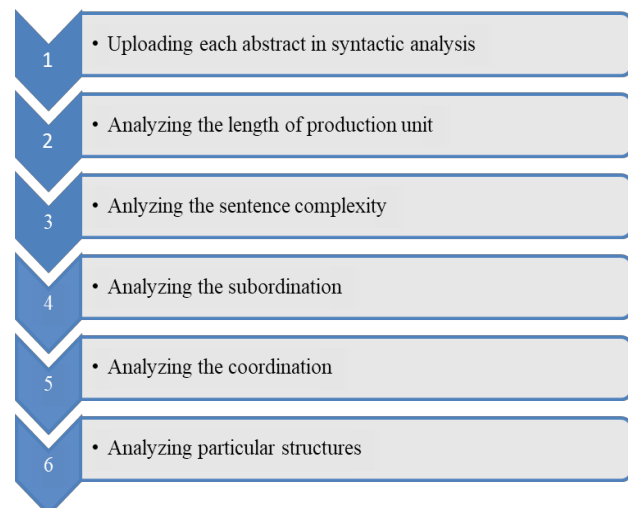
The data is collected one by one, starting from selecting and downloading the research articles written down by Bunda Mulia University learners majoring in English. Next, the data is saved in plain texts so that it can be uploaded into corpus application later on. After that, abstracts from Oxford University are also downloaded and saved in plain texts. In short, all of them can be seen in the figure below.



**Figure 3.1. Data collection procedures**

### 3.3. Data Analysis Procedure

In order to answer research questions, several steps are conducted. It can be seen in the figure below.



**Figure 3.2. Data Analysis Procedure**

As can be seen above, after all of the data is uploading, length of production unit, the sentence complexity, the subordination, coordination, and particular structures are analyzed. Later, it could be concluded whether the abstracts are complex or not in terms of the syntactical units.

## FINDINGS AND DISCUSSION

### 4.1. Syntactic Complexity in the Abstracts

Since syntactic complexity can be characterized by its structures and indices, this research is also presented by those two parts.

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One is in accordance to the syntactic structures, and the other by its syntactic complexity indices. The syntactic structures can be concluded from the word count (W), the number of the sentence (S), the verb phrase (VP), the clause (C), the T-Unit (T), the dependent clause (DC), the complex T-Unit (CT), coordinate phrase (CP), and its complex nominal (CN). The syntactic complexity itself are divided into several indices, namely the mean length of the sentence (MLS), the mean length of the T-unit (MLT), the mean length of the clause (MLC), the clause per sentence (C/S), verb phrase per T-Unit (VP/T), clause per T-unit (C/T), dependent clause per clause

(DC/C), dependent clause per T-unit (DC/T), T-unit per sentence (T/S), Complex T-unit ratio (CT/T), coordinate phrase per T-unit (CP/T), coordinate phrase per clause (CP/C), complex nominal per T-unit (CN/T), complex nominal per clause (CN/C).

#### 4.1.1. Syntactic Structures of the abstract written down by Indonesian learners

The table below shows the syntactic structures written down by Indonesian learners. There are thirty of them.

FILE NAME	W	S	VP	C	T	DC	CT	CP	CN
Student 1	3907	97	96	93	77	12	7	11	118
Student 2	3529	81	93	88	59	20	8	9	103
Student 3	3984	95	97	93	72	16	9	10	117
Student 4	3396	76	77	75	60	14	6	8	87
Student 5	3985	97	96	96	78	15	9	11	117
Student 6	3538	86	101	95	72	19	9	11	107
Student 7	3319	85	95	89	68	17	9	7	109
Student 8	3496	87	94	88	66	21	6	11	118
Student 9	3687	89	122	112	73	24	11	9	120
Student 10	3938	99	98	93	74	12	6	11	122
Student 11	3780	92	95	94	74	19	9	3	120
Student 12	4018	103	107	97	81	16	12	8	130
Student 13	4012	92	88	84	66	14	6	8	107
Student 14	3410	92	105	98	78	15	5	4	110
Student 15	3987	103	96	93	75	16	7	12	120
Student 16	4036	89	87	83	67	11	6	9	105
Student 17	3578	99	113	112	84	19	12	14	151
Student 18	3619	96	93	92	72	17	9	11	117
Student 19	3677	92	102	95	74	20	5	9	128

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Student 20	6671	121	133	120	94	25	13	16	149
Student 21	4018	101	113	104	83	16	10	11	133
Student 22	3707	87	94	85	66	20	7	5	103
Student 23	3841	77	90	77	60	15	6	8	106
Student 24	3876	90	97	93	67	16	8	12	117
Student 25	3735	93	117	114	74	31	12	10	147
Student 26	3914	94	106	97	73	15	10	11	127
Student 27	3485	90	100	100	72	27	11	14	133
Student 28	3672	94	103	90	76	12	6	13	99
Student 29	3559	96	108	101	73	26	10	6	124
Student 30	3562	93	102	95	70	21	9	7	122
<b>Average</b>	<b>3831.2</b>	<b>92.9</b>	<b>100.6</b>	<b>94.9</b>	<b>72.6</b>	<b>18.0</b>	<b>8.4</b>	<b>9.6</b>	<b>118.9</b>

**Table 4.1. Syntactic structures of the abstract written down by Indonesian learners.**

As can be seen in the table above, the average number of the sentence is 92.9 sentences which is written down in the average of 3831.2 words. There are 100.6 verb phrases in those 92 sentences. It means that some sentences have more than one verb phrases. On the other hands, there are 94.9 clauses in those 92.9 sentences. The T-unit or minimum terminable unit is only 72.6. It shows that the sentences produced by Indonesian learners are not really effective. Some of them can be combined into more complex sentences. This conclusion is supported by the average number of dependent clause which reaches 18. Comparing to the number of sentences, this number is really low. In addition, the complex T unit is only 8.4. It is even lower than the average number of the dependent clauses. It

might happen since the average number of the coordinate phrase is only 9.6. The complex nominal is about 118.9. It means that the learners mostly use phrases than clauses in the sentences.

#### **4.1.2. Syntactic Structures of the abstract written down by Native Speakers**

The table below shows the words, sentences, verb phrases, clauses, T-unit, dependent clauses, Complex T-Unit, coordinate phrases and complex nominal written down by the native learners in their undergraduate thesis.

<b>FILE NAME</b>	<b>W</b>	<b>S</b>	<b>VP</b>	<b>C</b>	<b>T</b>	<b>DC</b>	<b>CT</b>	<b>CP</b>	<b>CN</b>
Native 1	4171	97	115	105	78	22	11	8	149
Native 2	4187	99	101	94	78	13	8	11	129

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Native 3	3913	99	110	99	73	22	11	16	143
Native 4	3889	98	93	88	70	14	6	9	128
Native 5	3891	99	100	96	74	19	9	10	132
Native 6	3890	93	96	90	72	18	10	11	133
Native 7	4055	95	101	93	74	16	9	10	110
Native 8	4004	96	96	87	72	14	6	10	133
Native 9	4152	101	105	99	82	15	6	8	131
Native 10	4186	103	106	98	77	15	9	12	138
Native 11	3848	109	121	104	82	20	10	13	157
Native 12	4036	102	105	99	82	15	9	12	144
Native 13	4061	100	86	85	71	11	5	12	121
Native 14	4066	98	104	98	78	16	10	8	130
Native 15	4324	99	110	105	81	14	8	10	117
Native 16	4297	99	104	98	80	14	8	11	126
Native 17	4074	100	95	95	75	16	8	13	136
Native 18	4282	97	107	100	75	21	11	12	131
Native 19	4086	92	97	91	72	15	7	14	117
Native 20	3873	95	96	96	77	17	8	9	129
Native 21	4136	96	101	97	77	16	8	10	122
Native 22	4121	88	92	84	68	13	10	8	134
Native 23	4039	101	99	98	81	15	7	8	133
Native 24	3941	91	93	90	72	17	9	11	134
Native 25	4058	91	97	92	73	13	7	14	119
Native 26	3973	101	88	86	68	14	6	10	133
Native 27	4053	94	100	90	75	12	8	9	115
Native 28	4067	92	92	86	68	14	8	9	109
Native 29	4212	90	91	85	67	14	9	11	121
Native 30	3559	96	108	101	73	26	10	6	124
<b>Average</b>	<b>4048.13</b>	<b>97.03</b>	<b>100.30</b>	<b>94.30</b>	<b>74.83</b>	<b>16.03</b>	<b>8.37</b>	<b>10.50</b>	<b>129.27</b>

**Table 4.2. Syntactic structures of the abstract written down by native learners**


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As can be seen above, the average number of sentences is about 97. Those sentences are considered as effective sentences which have the high number of syntactic structures. First, the number of the verb phrase is higher than the number of the sentences. The average number of clauses also closes to the average number of sentences. Next, the T unit is 74.83 which mean that some sentences can actually be combined into more complex sentences. It is also supported by the number of dependent clauses which reach 18. In addition, the average number of complex T-Unit is also low; it is only 8.4. The coordinate phrase is also low which support the first conclusion that most of the sentences are not

complex. Finally, the complex nominal number reaches about 118. It shows that the sentences contain more phrases than clauses.

#### 4.1.3. The Different Syntactic Structures of the Abstract Written Down by Indonesian and Native Speakers

After discussing the results of the syntactic structures found in the abstracts written down by the Indonesian and native learners, the overall results of both of them can be seen in the table below.

No	Structures	Indonesian Learners	Native Speakers
1.	Words	4048.13	<b>3831.2</b>
2.	Sentences	97.03	<b>92.9</b>
3.	Verb Phrase	100.30	<b>100.6</b>
4.	Clause	94.30	<b>94.9</b>
5.	T-Unit	74.83	<b>72.6</b>
6.	Dependent Clause	16.03	<b>18.0</b>
7.	Complex T-Unit	8.37	<b>8.4</b>
8.	Coordinate phrase	10.5	<b>9.6</b>
9.	Complex Nominal	129.27	<b>118.9</b>

**Table 4.3. The average number of syntactic structures of the abstract written down by both Indonesian and native speakers**

As can be seen from the tables, the results are not really different from one to another. It just can be seen that the native speakers tend to write more complex sentences which are marked by the number of dependent clauses found. On the other hands, the Indonesian learners tend to use more complex nominal than the native speakers.

#### 4.2. The Syntactic Complexity Indices

In order to indicate the syntactic complexity indices, there are several measurements which in general are divided into five types. Type 1 is regarding the length of production unit. It is divided into (1) Mean length of clause, (2) Mean length of sentence,

and (3) Mean length of T-unit. Type 2 is about the sentence complexity. It is divided into (1) Sentence complexity ratio. Type 3 is in relation to the subordination. It is divided into (1) T-unit complexity ratio, (2) Complex T-unit ratio, (3) Dependent clause ratio, and (4) Dependent clauses per T-unit. Type 4 is about the coordination. There are the sub parts: (1) Coordinate phrases per clause, (2) Coordinate phrases per T-unit, and (3) Sentence coordination ratio. The last type, which is type 5 is in relation to particular structures. It is divided into (1) Complex nominal per clause, (2) Complex nominal per T-unit, and (3) Verb phrases per T-unit.

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**4.2.1. The Length of Production Unit**

The table below shows the length of the production unit produced by both the Indonesian and native learners.

No	MLS		MLT		MLC	
	Indonesian	Native	Indonesian	Native	Indonesian	Native
1	402,784	430,000	507,403	534,744	420,108	397,238
2	435,679	422,929	598,136	536,795	401,023	445,426
3	419,368	395,253	553,333	536,027	428,387	395,253
4	446,842	396,837	566,000	555,571	452,800	441,932
5	410,825	393,030	510,897	525,811	415,104	405,312
6	411,395	418,280	491,389	540,278	372,421	432,222
7	390,471	426,842	488,088	547,973	372,921	436,022
8	401,839	417,083	529,697	556,111	397,273	460,230
9	414,270	411,089	505,068	506,341	329,196	419,394
10	397,778	406,408	532,162	543,636	423,441	427,143
11	410,870	353,028	510,811	469,268	402,128	370,000
12	390,097	395,686	496,049	492,195	414,227	407,677
13	436,087	406,100	607,879	571,972	477,619	477,765
14	370,652	414,898	437,179	521,282	347,959	414,898
15	387,087	436,768	531,600	533,827	428,710	411,810
16	453,483	434,040	602,388	537,125	486,265	438,469
17	361,414	407,400	425,952	543,200	319,464	428,842
18	376,979	441,443	502,639	570,933	393,370	428,200
19	399,674	444,130	496,892	567,500	387,053	449,011
20	551,322	407,684	709,681	502,987	555,917	403,438
21	397,822	430,833	484,096	537,143	386,346	426,392
22	426,092	468,295	561,667	606,029	436,118	490,595
23	498,831	399,901	640,167	498,642	498,831	412,143

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24	430,667	433,077	578,507	547,361	416,774	437,889
25	401,613	445,934	504,730	555,890	327,632	441,087
26	416,383	393,366	536,164	584,265	403,505	461,977
27	387,222	431,170	484,028	540,400	348,500	450,333
28	390,638	442,065	483,158	598,088	408,000	472,907
29	370,729	468,000	487,534	628,657	352,376	495,529
30	383,011	370,729	508,857	487,534	374,947	352,376
<b>Av</b>	<b>412,397.47</b>	<b>418,077</b>	<b>529,071.70</b>	<b>542,586</b>	<b>405,947.17</b>	<b>431,050</b>

**Table 4.4. The length of production unit**

As can be seen in the table above, the (1) Mean length of clause, (2) Mean length of sentence, and (3) Mean length of T-unit written down by the native speakers are slightly higher than the ones written down by the Indonesian learners. Regarding the mean length of the clause, the native speakers write longer clauses than the Indonesian learners. Considering that the number of words and sentences written down by the Indonesian learners are higher, it can be concluded that in

terms of the length of the production unit, the native speakers write a more syntactic complex texts.

#### **4.2.2. Sentence Complexity**

The sentence complexity ratio written down by both the Indonesian and native learners in their abstracts can be seen in the table below.

No	CS	
	Indonesian	Native
1	6.65833	10,825
2	10,864	6.59375
3	6.79792	10,000
4	6.85278	6.23611
5	6.87292	6.73403
6	11,047	6.72014
7	10,471	6.79792
8	10,115	6.29306
9	12,584	6.80694

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10	6.52361	6.60764
11	10,217	6.62569
12	6.53958	6.74028
13	6.34028	5.90278
14	10,652	10,000
15	6.27014	10,606
16	6.47639	6.87431
17	11,313	6.59722
18	6.65486	10,309
19	10,326	6.86875
20	6.88681	10,105
21	10,297	10,104
22	6.78472	6.62847
23	10,000	6.73819
24	10,333	6.86806
25	12,258	10,110
26	10,319	5.91319
27	11,111	6.64861
28	6.64861	6.49167
29	10,521	6.55833
30	10,215	10,521
<b>Average</b>	6,090.98	3,091

**Table 4.5. Sentence complexity**

The table shows that the ratio of the sentence complexity in the Indonesian learners is much higher than the ones in the native learners. It means that the average number of clauses per sentence in the undergraduate thesis written down by the Indonesian learners is really high. It might happen since Indonesian learners usually use passive voice in academic writing, including in the abstracts.

#### 4.2.3. Subordination

As mentioned earlier, subordination is divided into It is divided into (1) T-unit complexity ratio which defines clauses per unit, (2) complex T-unit ratio which calculates complex T-unit per T-unit, (3) Dependent clause ratio which talk about dependent clause per clause, and (4) Dependent clauses per T-unit. The results of the subordination written

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down by both Indonesian and native learners  
can be seen in the table below.

No	C/T		CT/T		DC/C		DC/T	
	I	N	I	N	I	N	I	N
1	12,078	13,462	0.63	0.97917	0.90	1.45486	1.08	1.95903
2	14,915	12,051	0.94	0.7125	1.58	0.96042	2.35	1.15764
3	12,917	13,562	0.87	1.04653	1.19	1.54306	1.54	2.09306
4	12,500	12,571	0.69	0.59514	1.30	1.10486	1.62	1.38889
5	12,308	12,973	0.80	0.84444	1.08	1.37431	1.34	1.78333
6	13,194	12,500	0.87	0.96458	1.39	1.38889	1.83	1.73611
7	13,088	12,568	0.92	0.84444	1.33	1.19444	1.74	1.50139
8	13,333	12,083	0.63	0.57847	1.66	1.11736	2.21	1.35
9	15,342	12,073	1.05	0.50833	1.49	1.05208	2.28	1.27014
10	12,568	12,727	0.56	0.81181	0.90	1.06319	1.13	1.35278
11	12,703	12,683	0.84	0.84722	1.40	1.33542	1.78	1.69375
12	11,975	12,073	1.03	0.7625	1.15	1.05208	1.37	1.27014
13	12,727	11,972	0.63	0.48889	1.16	0.89861	1.47	1.07569
14	12,564	12,564	0.45	0.89028	1.06	1.13403	1.34	1.42431
15	12,400	12,963	0.65	0.68611	1.19	0.92569	1.48	1.2
16	12,388	12,250	0.62	0.69444	0.92	0.99236	1.14	1.21528
17	13,333	12,667	0.99	0.74097	1.18	1.16944	1.57	1.48125
18	12,778	13,333	0.87	1.01875	1.28	1.45833	1.64	1.94444
19	12,838	12,639	0.47	0.675	1.46	1.14444	1.88	1.44653
20	12,766	12,468	0.96	0.72153	1.45	1.22986	1.85	1.53333
21	12,530	12,597	0.84	0.72153	1.07	1.14514	1.34	1.44306
22	12,879	12,353	0.74	1.02153	1.63	1.075	2.10	1.32778
23	12,833	12,099	0.69	0.6	1.35	1.06319	1.74	1.28611
24	13,881	12,500	0.83	0.86806	1.19	1.31181	1.66	1.63958
25	15,405	12,603	1.13	0.66597	1.89	0.98125	2.91	1.23681
26	13,288	12,647	0.95	0.6125	1.07	1.13056	1.43	1.42986

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27	13,889	12,000	1.06	0.74097	1.88	0.92569	2.60	1.11111
28	11,842	12,647	0.55	0.81667	0.93	1.13056	1.10	1.42986
29	13,836	12,687	0.95	0.93264	1.79	1.14375	2.47	1.45139
30	13,571	13,836	0.89	0.95139	1.54	1.7875	2.08	2.47361
<b>Av</b>	13,088.97	12,605	0.80	0.77808	1.31	1.17627	1.74	1.49021

**Table 4.6. Subordination**

As the table suggests, the Indonesian learners tend to write more clause in each unit. As a result, the number of complex T-unit in each T-unit is also higher. Next, It can also be seen in table that the number of dependent clauses both per T-unit and per clause used by the Indonesian learners is higher than the ones used by the native learners.

#### 4.2.4. Coordination

Type 4 is about the coordination. There are the sub parts namely (1) Coordinate phrases per clause, (2) Coordinate phrases per T-unit, and (3) Sentence coordination ratio which count the number of T-units per sentence.

No	CP/C		CP/T		T/S	
	Indonesian	Native	Indonesian	Native	Indonesian	Native
1	0.82	0.52917	0.99	0.7125	5.51	5.58403
2	0.71	0.8125	1.06	0.97917	5.06	5.47153
3	0.75	1.12222	0.96	1.52222	5.26	5.12083
4	0.74	0.71042	0.93	0.89306	5.48	4.96042
5	0.80	0.72361	0.98	0.93819	5.58	5.19097
6	0.80	0.84861	1.06	1.06111	5.81	5.37639
7	0.55	0.74653	0.71	0.93819	5.56	5.40903
8	0.87	0.79792	1.16	0.96458	5.27	5.20833
9	0.56	0.56111	0.86	0.67778	5.70	5.63819
10	0.82	0.85	1.03	1.08194	5.19	5.19167
11	0.22	0.86806	0.28	1.10069	5.59	5.22431
12	0.57	0.84167	0.69	1.01597	5.46	5.58264
13	0.66	0.98056	0.84	1.17361	4.98	4.93056
14	0.28	0.56667	0.36	0.7125	5.89	5.52708
15	0.90	0.66111	1.11	0.85764	5.06	5.68194

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16	0.75	0.77917	0.93	0.95486	5.23	5.61181
17	0.87	0.95	1.16	1.20347	5.89	5.20833
18	0.83	0.83333	1.06	1.11111	5.21	5.36944
19	0.66	1.06806	0.84	1.35	5.59	5.43472
20	0.93	0.65139	1.18	0.81181	5.40	5.62847
21	0.73	0.71597	0.92	0.90208	5.71	5.57014
22	0.41	0.66111	0.53	0.81667	5.27	5.36597
23	0.72	0.56667	0.93	0.68611	5.41	5.56944
24	0.90	0.84861	1.24	1.06111	5.17	5.49444
25	0.61	1.05694	0.94	1.33194	5.53	5.57083
26	0.79	0.80764	1.05	1.02153	5.39	4.67569
27	0.97	0.69444	1.35	0.83333	5.56	5.54097
28	1.00	0.72708	1.19	0.91944	5.61	5.13264
29	0.41	0.89861	0.57	1.14028	5.28	5.16944
30	0.51	0.4125	0.69	0.57083	5.23	5.28056
<b>Av</b>	<b>0.70</b>	<b>0.77639</b>	<b>0.92</b>	<b>0.97812</b>	<b>5.43</b>	<b>5.35736</b>

Table 4.7. Coordination

As can be seen above, Indonesian learners tend to use more coordinate phrase both per unit and per clause. The number of T-unit in the sentence, however, shows the similar results.

#### 4.2.5. Particular Structures

It is divided into (1) Complex nominal per clause, (2) Complex nominal per T-unit, and (3) Verb phrases per T-unit.

No	CN/C		CN/T		VP/T	
	Indonesian	Native	Indonesian	Native	Indonesian	Native
1	12,688	14,190	15,325	19,103	12,468	14,744
2	11,705	13,723	17,458	16,538	15,763	12,949
3	12,581	14,444	16,250	19,589	13,472	15,068
4	11,600	14,545	14,500	18,286	12,833	13,286
5	12,188	13,750	15,000	17,838	12,308	13,514
6	11,263	14,778	14,861	18,472	14,028	13,333

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7	12,247	11,828	16,029	14,865	13,971	13,649
8	13,409	15,287	17,879	18,472	14,242	13,333
9	10,714	13,232	16,438	15,976	16,712	12,805
10	13,118	14,082	16,486	17,922	13,243	13,766
11	12,766	15,096	16,216	19,146	12,838	14,756
12	13,402	14,545	16,049	17,561	13,210	12,805
13	12,738	14,235	16,212	17,042	13,333	12,113
14	11,224	13,265	14,103	16,667	13,462	13,333
15	12,903	11,143	16,000	14,444	12,800	13,580
16	12,651	12,857	15,672	15,750	12,985	13,000
17	13,482	14,316	17,976	18,133	13,452	12,667
18	12,717	13,100	16,250	17,467	12,917	14,267
19	13,474	12,857	17,297	16,250	13,784	13,472
20	12,417	13,438	15,851	16,753	14,149	12,468
21	12,788	12,577	16,024	15,844	13,614	13,117
22	12,118	15,952	15,606	19,706	14,242	13,529
23	13,766	13,571	17,667	16,420	15,000	12,222
24	12,581	14,889	17,463	18,611	14,478	12,917
25	12,895	12,935	19,865	16,301	15,811	13,288
26	13,093	15,465	17,397	19,559	14,521	12,941
27	13,300	12,778	18,472	15,333	13,889	13,333
28	11,000	12,674	13,026	16,029	13,553	13,529
29	12,277	14,235	16,986	18,060	14,795	13,582
30	12,842	12,277	17,429	16,986	14,571	14,795
<b>Av</b>	12,531.57	13,735.5	16,392.90	17,304.1	13,881.47	13,405

**Table 4.8. Particular structures**

Unlike the previous results, it can be seen that the native learners tend to use more complex nominal both per clause and per T-Units. The Indonesian learners, on the other hands, use more verb phrases per unit.

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## CONCLUSIONS AND SUGGESTIONS

### 5.1. Conclusions

In general, it can be concluded that based on the syntactic structure, it can be seen that the Indonesian learners write longer abstracts with more sentences than the native

speakers. The Indonesian learners' abstracts can also be seen directly that it is more complex with more dependent clauses used. However, when we observe its syntactic complexity, the results are a bit different. It can be seen in the table below.

No	Type	Indonesian Learners	Native learners
<i>Type 1: Length of production unit</i>			
1	Mean length of clause	Lower	Higher
2	Mean length of sentence	Lower	Higher
3	Mean length of T-unit	Lower	Higher
<i>Type 2: Sentence complexity</i>			
4	Sentence complexity ratio	Higher	Lower
<i>Type 3: Subordination</i>			
5	T-unit complexity ratio	Higher	Lower
6	Complex T-unit ratio	Higher	Lower
7	Dependent clause ratio	Higher	Lower
8	Dependent clauses per T-unit	Higher	Lower
<i>Type 4: Coordination</i>			
9	Coordinate phrases per clause	Similar	Similar
10	Coordinate phrases per T-unit	Similar	Similar
11	Sentence coordination ratio	Similar	Similar
<i>Type 5: Particular structures</i>			
12	Complex nominals per clause	Lower	Higher
13	Complex nominals per T-unit	Lower	Higher
14	Verb phrases per T-unit	Higher	Lower

**Table 5.1. The overall results of syntactic complexity**

The overall results reveal some academic writing characteristics of the Indonesian learners. First, it is stated that they tend to write more complex sentences. There are several reasons why their writings are considered as complex. One reason is

unfortunately due to grammatical errors. For example, one student has written "Stowe was writing about her experience which there was discrimination toward Niger". While syntactically analyzed, that ungrammatical sentence has longer analysis which resulted to

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a more complex sentence. Another reason is that the lexis used are sometimes ambiguous, such as “values is collection of values ...” In analyzing that sentence, those two lexis “value” need longer analysis.

The next Indonesia learners’ characteristics while writing abstracts is that they tend to write by using subordination. They like to add more explanation by adding dependent clause, such as in “...about slang especially that the researcher found in the movie”. That dependent clause is grammatically correct but not really effective. In addition, those Indonesian learners also tend to use participial phrases in the abstracts, as a result, the subordination results are higher and the sentence complexity is also higher.

Last but not least, the Indonesian learners use more various tenses in the abstracts. When they use past continuous, such as in “Stowe was writing about ...”, the verb phrase should result in longer and more complex sentence, clause, and unit. Next, they also like to add adverb to the verb, such as in “The researcher initially conducted ...” It also resulted in longer production of sentences, clause, and unit.

Moving to the characteristics of the abstracts written down by native speakers, first, they tend to write complex nominal. For example, it is found out in one of the abstracts “The Russian novelist Fryudor Dustoesky ...”. Those words refers to one subject which is described in complex nominal. The next characteristics is that they tend to add more explanation in each sentence by adding commas, such as in “Through research on his writing style, biography, and a close reading of his novel Notes from the underground I am exploring the impact of his most famous outcast, the Underground man, on counterculture writers in America during the great subculture upsurge of the 1950s and 60s. That addition comma is one of the reasons why the numbers of mean length of the sentences, T-Unit and clause is considered as high in the abstracts written down by the native speakers.

## 5.2. Suggestions

After this research has completely been conducted and the results have all been discussed, there are suggestions for both this research and for a better future research in this field. First of all, ideally a previous research regarding lexical complexity should be conducted earlier. It is expected that the bias regarding the lexical can be avoided. Next, it is also recommended to group the learners into low, middle, and high proficiency. As a result, the topic should only cover Indonesian learners. Finally, the syntactic complexity analyzer can be broadened by using another analyzer.

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