ARGUMENT BAR MOVEMENT IN RELATIVE CLAUSES PRODUCED BY BIPA STUDENTS: AN ANALYSIS OF NOAM CHOMSKY'S GENERATIVE TRANSFORMATION

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Abstract: This study was intended to describe (1) the characteristics of the argument bar movement in relative clauses, (2) the characteristics of the relative clause structure, and (3) the suitability of the relative clause structure produced by BIPA students. This research was a qualitative descriptive case study. This research data were relative clauses sourced from BIPA students' speeches at the beginner and intermediate levels at the University of Muhammadiyah Malang. The data collection method used was the listening method with tapping, recording, note-taking, and hidden fishing techniques. Data analysis was carried out by identifying the predication-argument relationship with theta theory, identifying the deep structure and surface structure, analyzing movement objectives, movement traces, and movement consequences by utilizing the subjacency condition theory. The results showed that the characteristics of the argument bar movement in the relative clauses generated by 92% of BIPA students were in the form of short movements and did not exceed one bounding node. Based on the Indonesian language rules, most of the relative clauses produced by BIPA students were appropriate (75%). It shows that BIPA students have fully understood the relative clause structure.

Keywords: argument bar movement, BIPA, relative clause, generative transformation

INTRODUCTION

There is a grammatical encoding process in language production, which assembles words to be arranged into sentences. This process would run well if the speaker mastered the sentence structure in the language used. In Indonesian (BI), the sentence structure consists of at least a subject and a predicate (SP), with structural variations in the form of subject-predicate-object (SPO), subject-predicate-complementary (SPpel), subject-predicate-additional information (SPK), subject-predicate-object-additional information (SPOK), subject-predicate-complementary-information (SPPelK). In this case, the filler for each syntactic function in the construction can be words or phrases. However, the structure of word order in noun phrases and verb phrases is relatively free. Although the phrase structure is generally a postmodifier phrase, the delimiter can be placed before or after the head depending on the type of phrase (Irmawati et al., 2015: 740).

To produce these sentences, speakers organize the message using various clauses. Among the types of clauses, Gennari et al. (2012) recommend relative clauses as suitable constituents to be investigated since they describe how speakers choose and determine the choice of the resulting sentence. Irmawati et al. (2015:741) and Fortin (2018:40) also indicate that relative clauses are used to modify nouns by using the word 'yang' in Indonesian. For example, the noun "apple" can be added with the red relative clause.

The characteristics of BI relative clauses are different from English which uses wh-words as relativizers, such as who, which, whom, whose, and that. The difference in

relative clauses is related to Kaufman's (2018: 207) statement that each language aims to express basic information structures through prosodic features. Still, the actual implementation is significantly different from one language to another. For example, although Indonesian and Filipino are in the same Austronesian language family, their relativizers are different. For example, relativizer 'yang' in BI can be the head of a phrase without a noun, as in this one and with sunglasses (Kaufman, 2018: 225). Meanwhile, in Filipino, the relativizer cannot stand at the beginning of a phrase without any word or phrase.

Due to the difference in relative clauses in each language, someone learning a language requires effort in mastering the language system. In this process, the language that has been previously mastered will affect the target language learning process. BIPA students from England, for example, who study the Indonesian language will face challenges mastering the language system because English has different characteristics from Indonesian. It shows that language learning difficulties occur at the morphological level and the syntactic and semantic levels.

Based on this assertion, the mastery of the relative clause is influenced by its structural characteristics. The relative clause is the result of the movement to the position of the argument bar; it is called the argument bar movement. Movement is the flow of a constituent in a sentence to a destination, leaving a trace of movement. There are two types of movements based on the purpose of the movement, (1) argument movement and (2) argument bar movement. Argument movement occurs when the constituent moves to a position that the argument can occupy in the sentence, such as passive voice. In addition, the argument bar movement is a movement that occurs in interrogative sentences, relative clauses, and focusing on the third person subject (Coon et al., 2014: 193).

Based on observations conducted to BIPA students at the University of Muhammadiyah Malang, the students produced relative clauses in spoken and written language production. It could be seen in the learning process in the classroom, communication between students, and

communication between students and BIPA teachers. The resulting relative clauses indicated obtaining structure and its use in communication. For example, it could be seen from the sentence 'the book that I read is very good' (read here is mentioned as membaca, instead of baca). The sentence indicated that the students intended to modify 'buku''s subject noun (the book) with a relative clause. Still, there had been no adjustment of the affixation on the verb 'membaca' (read), which in the relative clause should turn into 'Buku yang saya baca sangat bagus' (the book that I read was excellent). To produce an appropriate Indonesian relative clause, the prefix meN- needed to be removed from the word membaca (read).

Concerning relative clause errors, Kusdianty (2016) found that relative clause errors were caused by the influence of the language the students had mastered, students' understanding, intermediate language, and mother tongue in speech and writing of relative pronouns. Meanwhile, Novianto and Suhandono (2019) implied that relative clause errors included six types: 1) errors in using the relativizer, 2) resulted in unnecessary relative clauses, 3) absence of relative pronouns, 4) errors in using verbs in relative clauses, and 5) errors in agreement. These studies described errors in relative clauses produced by Indonesian speakers who studied English. On the other hand, relative clause mismatch also occurs in foreign language speakers who learn Indonesian because they are still studying the structure of the formation and adjustment of their morphosyntactic. However, research that discusses the conformity of the rules in the relative clause of BIPA (Indonesian for Foreign Speakers) speakers is still limited.

Therefore, to describe the relative clauses of Indonesian produced by foreign speakers, it is necessary to look at the process from the initial structure of the constituent clauses to form relative clauses. Prihatini (2019) states that further research needs to examine the argument bar movement (wh-movement) in the relative clause by utilizing generative transformations. Argument bar movement occurs due to the movement of the argument to a position that does not allow it to get the role of the argument again (argument bar movement). As stated by Coon,

Pedro, and Preminger (2014: 193), argument bar movement occurs when constituents are moved to a position that makes them unable to accept the role of argument anymore, for example, relative clauses, interrogative sentences, and the focus of the third person subject persona.

Previous studies had not specifically discussed the acquisition of relative clauses of BIPA speakers in terms of moving nouns to the argument bar position and making adjustments to the sentence structure due to the movement. There are still research gaps that discuss the acquisition of relative clauses in the speech of BIPA students, mainly based on the argument bar movement process studied with generative transformations. Therefore, it is essential to obtain a comprehensive description of how the bar movement argument can be used to form relative clauses and how the relative clause conforms to Indonesian language rules.

Based on this background, this study aims to describe the argument bar movement in the relative clause of BIPA students at the University of Muhammadiyah Malang in three focuses, namely (1) the argument bar movement in the relative clause, (2) the characteristics of the head and stopper in the relative clause structure, and (3) the suitability of the relative clause structure in the speech of BIPA UMM students with the relative clause structure of the Indonesian language. The three research foci were analyzed based on the theory of generative transformation developed by Noam Chomsky. The researcher chose the theory because it was based on a view of universal grammar that assumes that every language has universal characteristics shared by all languages and has identical characteristics that are unique to each language. Furthermore, the theory was based on a view of mental processes experienced by a person when acquiring and learning a language. Therefore, this research is crucial as BIPA students are in the stage of learning Indonesian. The characteristics of the argument bar movement in its relative clauses need to be studied so that more effective models, media, or teaching materials can be developed to help BIPA students master the relative clause structure of the Indonesian language.

RESEARCH METHOD

This study implemented a qualitative descriptive method because it was objected to empirically and objectively describe the relative clauses used by BIPA students using the generative transformation theory developed by Chomsky. The object of this research was the argument bar movement in the relative clause of Indonesian speech by BIPA students. In line with that, the data in this study were in the form of BIPA students' utterances containing the bar movement argument in a relative clause.

The researcher researched UPT BIPA, University of Muhammadiyah Malang. The research subjects were Indonesian foreign learners in the *Darmasiswa* and *KNB* programs at BIPA UMM. The purposive sampling technique carried out the selection of research subjects. The research subjects were not chosen randomly but were selected based on specific criteria regarding the research objectives. In this case, the criteria used were their language levels. The assumption was that the higher the language level of BIPA students, the more abundant the argument bar movement in the relative clauses produced. Concerning this, the subjects of this study were five students at level B and five students at level C. Furthermore, the data in this study were limited to speech produced in the classroom. The decision was based on considering that the learning context would bring up several data to be studied.

The data collection method used was the listening technique with the tapping technique as the primary technique, and the recording technique and note-taking technique were advanced techniques. The data in this study were obtained by recording the utterances from the data source. The recording was audio-visual to get the correct interpretation of the speech. While recorded, the data assumed to contain Argument Bar Movement in the relative clause was intercepted using a note-taking technique. In addition, to enrich the research data, data collection was carried out through hidden fishing.

Several stages were carried out to analyze the bar movement argument referring to the sub-theory framework in Noam Chomsky's generative transformation. First, identification of the predicate using theta

theory was made to determine the role of theta in the inner and outer arguments of the predicate. Then, analysis with theta theory was carried out using a theta grid in the form of a table that explained the relationship between the predicate and its argument (FN, which functions as subject and object) accompanied by index markers i, j, or k in the argument.

Second, the researcher analyzed the deep structure and surface structure. Deep structure is a sentence structure that has not undergone a movement that is generally an active sentence. In addition, the surface structure is a sentence that has or does not experience a movement whose structure is as produced by the speaker is speaking. Based on this analysis, suggested the difference in sentence structure

Third, the researcher analyzed the purpose of movement, movement traces, and the consequences by utilizing the theory of subjacency conditions. In this process, the movement could only pass through one bounding node if the bounding nodes were Inflectional Phrases (IP/FI) and Noun Phrases (NP/FN). The abounding node was a movement boundary node in the form of a sentence-composing phrase so that the word or phrase it dominated could not be moved past the boundary node. If the movement passed through more than one bounding node, the resulting sentence became unacceptable, and the structure did not match the applicable language rules.

Fourth, the results of data analysis became research findings whose meaning was explained by utilizing the theory and results of previous research. Finally, the meaning results were concluded in the form of propositions that explain the relative clause bar movement argument in the speech of BIPA UMM students.

RESULTS AND DISCUSSION

Characteristics of the Argument Bar Movement in the Relative Clause of BIPA Students

Based on the data collected, the bar movement arguments generated by BIPA students included short movements and long movements. Short movement refers to a movement that does not exceed one movement limit node or is commonly referred to as an abounding node, namely the FI and FN nodes. Meanwhile, the long movement refers to movement in the presence of more than one movement boundary node exceeded. The distance between the movement trace (t) and the landing site of movement is limited by two FI nodes. The short movement production process was more straightforward as it passed through only one bounding node. It was seen between the trace or movement distance with the antecedent limited by one movement boundary node, namely the inflection phrase (FI). The following data will show the details.

(1) [FI **Hal**ᵢ [yang [FI tᵢ paling menakjubkan adalah

kami melihat bagaimana membuat kombinasi keduanya, dan kami juga melakukan itu oleh kita sendiri]].

(2) [FI Kami makan **makanan**ᵢ [yang [FI tᵢ disiapkan tᵢ

oleh keluarga angkat di sana, seperti kue dan minuman]]].

(3) [FI Saya melihat sesuatu yang baru dengan **teknologi baru**ᵢ [yang [FI tᵢ membantu [untuk [FI tᵢ mengetahui

apakah buah mencapai tingkat tinggi hp (keasaman) atau tidak]]]].

Translated version
(1) ...the most fascinating thing was when we saw how to combine both, and we also did that by ourselves
(2) ...We are food that was prepared by the foster family there, like cookies and beverage
(3) I saw something new with the new technology, helping to know that fruit achieved the high level of hp or not

Data (1) contained a short movement by moving the noun *hal*ᵢ to the argument bar position through a bounding node FI. The noun *hal*ᵢ could no longer accept the *theta* role of the most amazing adjective predicate. The move left a trail of movement tᵢ which was the initial position before the noun *hal*ᵢ was moved. The movement traces were phonetically and textually without constituent forms, but structurally they existed and were gaps (empty parts).

The description explains the transformation rule and describes the properties of the movement of the constituents (Chomsky, 2000:13). In this case, the move occurred to the argument bar position based on the move alpha, for example, the move FN, wh-phrase, or extra posed item (Chomsky, 1988a:178). The movement in question included the constituents that could be moved, the purpose of the movement (Friedmann & Lavi, 2006), and the trace of the movement. In this study, the constituents transferred were nouns or noun phrases. The purpose of the movement (landing site of movement) was the argument bar position made the argument (noun or noun phrase) no longer able to accept the *theta* role of predication in the deep structure clause before it underwent movement (Chomsky, 1988a; Haegeman, 1994). Meanwhile, the movement trace (trace or symbolized *t*) was the empty part of the place occupied by the constituent before undergoing the movement.

Next, data (2) displayed the same symptoms and movement process as data (1). However, data (1) existed in the subject so that it formed a relative subject, while data (2) formed a relative object. The movement occurred by a marked relative clause with a modification clause that followed per-relative '*yang*' and traced movement *t.*

In contrast to data (1) and (2), data (3) contained the movement of the noun phrase (FN) of the new technology, which is translated '*teknologi baru*' from the lowest node clause by passing two bounding nodes FI. Based on this movement, there were two traces of movement t_i which indicated that the FN moved twice to the argument bar position. The traces of the long movement were known by identifying each movement that happened (Haegeman, 1994). Therefore, the FN could no longer accept the theta role from the predicate in the previously occupied clauses. Because it passed through more than one bounding node, it was classified as a long movement. This finding was related to the previous research, which stated that movement occurs in the form of short movement, but in its application, it is found that long movement is due to repeated movement factors (Rizzi, 2006; Adani, 2011; Haegeman, 1994). Therefore, the long movement was a continuous application of the short movement with a more complex structural fit.

Furthermore, based on the class of words that filled in the predicate function in the relative clauses produced by BIPA students, it was found that the classes of verbs, adjectives, and numerals were present. The verb class predicate function was shown in data (2) and indicated by the prepared word, while data (1) showed the adjective word-class predicate function indicated by the special word. Data (4) below presented the predicate class of numerals function.

(4) * [FI Waktu sore, saya dan teman-teman pergi ke musola dengan kegiatan diba.
Ini adalah **kali** [yang [FI t_i **pertama** saya]]].
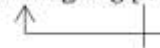
Translated version
(4) In the afternoon, my friends and I went to the prayer room with diba activity. That was the very first time for me.

The marker for the numeral word class as a filler for the predicate function of the relative clause was the first. It's just that there was an error in the data (4). In order not to experience errors, there were two choices: '*Ini adalah kali pertama bagi saya*' (This is the first time for me) or '*Ini adalah yang pertama bagi saya*' (This is the first for me).

Relevant to the discussion above, the results of data analysis showed that in the speech of BIPA students, short movements were more common than long movements. Likewise, verb and adjective predicate word classes were more common than numerals word classes. It is illustrated in Figure 1 below.
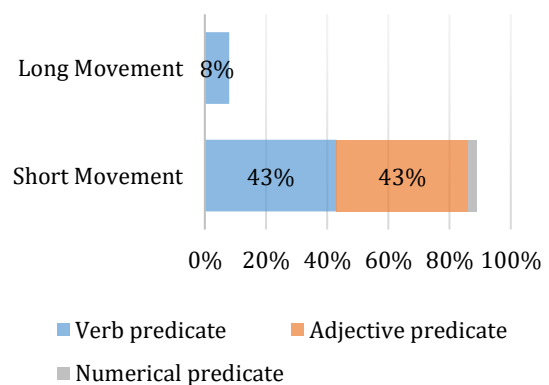
Figure 1. Characteristics of the Argument Bar Movement in the Relative Clause of BIPA Students

Based on these findings, it was be concluded that although BIPA students could produce both types of movements, the ability to produce the Indonesian language at the intermediate level was still at the short movement stage. This finding was related to the complexity of sentence structure. Short movements only passed through one movement limit, so short movements tended to be more straightforward. As a result, they were easier to produce in sentences, especially in relative clauses, than long movements.

This finding referred to Kirjavainen, Kidd, & Lieven (2017) state that the distribution frequency and relative clause complexity contribute to the difficulty level of the production process. Therefore, long movements tend to be more complex and challenging to master than short movements. In other words, the dominance of the short movement in the speech of the intermediate level BIPA students also showed that they mastered the short movement earlier. This finding was in line with Suharsono's (2015) research, which concludes that the order of obtaining relative clauses describes the order of mastery.

In this study, the predicate function filler word class was dominated by verbs, such as adjectives and a few numerals. The adjectives presented tended to be root words compared to their derivatives. Previous research suggested that the dominant syntactic function (predicate) clause tends to be filled by adjectives in the basic form rather than its derivative form (Umiyati, 2016). In English, such relative clause structures are not translated into relative clauses but become nouns (Dwijati et al., 2016). The movement of nouns to argument bar in relative clauses with adjective predicates commonly used in Indonesian is not done much in English but instead undergoes nominalization. Thus, the short movement and clause predicate phenomenon is relatively specific in each language by considering the subjacency condition that applies to each language (Haegeman, 1991).

It is different from the long movement where the distance between the two is limited by more constituents that make up the sentence, as Haegeman (1991) exemplified.

[ᵢₚ This is **the man** [whom
[ᵢₚ Emsworth claims [that
[ᵢₚ he will invite t]]]].
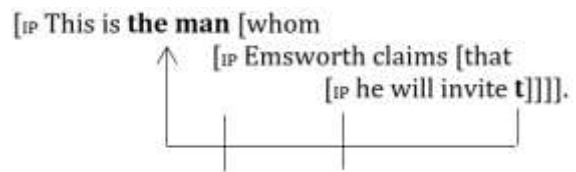
Based on the example of movement in English, the conformity of the constituent structures in the resulting movement was also related to agreements; tenses, gender, and singular-plural. However, it is different from Indonesian, which does not recognize an agreement similar to English, as in the relative clauses produced by BIPA students. So, the movement of the constituents to the argument bar position is related to the subjacency condition and relates to the unique characteristics of the system applied to each language.

Characteristics of BIPA Students' Relative Clause Structure

Based on the data found, the characteristics of the relative clause structure are described based on the relative clause head and the relative clause head syntactic function. Both are described as follows.

The first is about the relative clause head. Based on the constituent constituents, the relative clauses produced by BIPA students consisted of two types, namely (1) relative clauses with a head and (2) relative clauses without a head. The relative clause syntactically accompanies the head of a noun and semantically limits the noun's meaning, just as adjectives with nouns. On the other hand, a relative clause without a head occurs when the head noun that precedes the relative clause does not appear explicitly, giving rise to an empty part. However, relative clauses without heads have the same distribution as noun phrases or prepositional phrases (Caponigro, Torrenz, & Maldonado, 2020).

Data (1) to data (4) in the previous section, in this case, described the occurrence of the head in this relative clause. Heads in data (1) were things, heads in data (2) were food, heads in data (3) were new technologies, and heads in data (4) were times. Thus, the head in the relative clause could be a word (data 1, data 2, and data 4) and could also be a phrase (data 3). In this case, the results of data analysis showed that compared to phrases, BIPA students were more likely to modify words into relative head clauses. It was

related to the fact that words have narrower semantic features than phrases so that the process of modifying them into relative clauses is not more complex than phrases.

Furthermore, the relative clauses produced by BIPA students that did not contain heads can be observed in the following data.

(5a) **Yang penting dari program** *homestay* adalah juga menginspirasi kaum muda Indonesia (untuk) tinggal di negara lain untuk dapat berbicara bahasa asing dan mengenal budaya yang telah ada sebelumnya]].

(5b) [**Nᵢ [Yang [ꜰᵢ tᵢ penting dari program** *homestay*

adalah juga menginspirasi kaum muda Indonesia (untuk) tinggal di negara lain untuk dapat berbicara bahasa asing dan mengenal budaya yang telah ada sebelumnya]]].
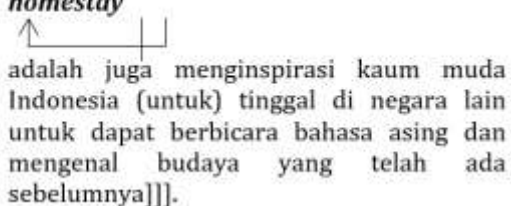
Translated version
(5a) What's important about the homestay program is that it also inspires young Indonesians (to) live in other countries to be able to speak foreign languages and get to know the culture that has existed before]].
(5b) ...analysis

The relative clause without head was found in the data above in an actual quote from the homestay program. In particular, the headless relative clause was characterized by *'yang'* as a relativizer. It is in line with Kaufman's (2018: 205) findings that in Indonesian, the relativizer '*yang*' can be the head without being preceded by a noun. Based on the context of the sentence, the head data (5) was filled with the word '*tujuan'* (goal) or '*hal'* (thing).

Intermediate learners of BIPA produced a minimal number of headless relative clauses. However, it indicated that the mastery of the relative clause structure was quite comprehensive. This finding aligns with Friedmann et al.'s (2011) research, which suggests that in the early stages of language acquisition in general, the relative clauses produced are headless relative clauses. However, as language acquisition increases, speakers can produce more relative clauses accompanied by heads.

Quantitatively, the relative clauses of intermediate level BIPA students were dominated by relative clauses with a head with the linguistic unit of head filling in the form of words. The data are presented in Figure (2) below for more details.
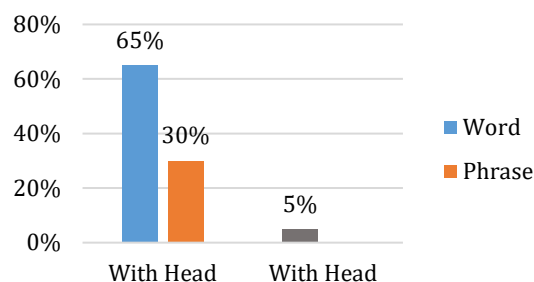

Figure 2. Characteristics of Relative Clause Head Produced by BIPA students

For this reason, BIPA students were able to produce Indonesian relative clauses well. BIPA students were able to connect head nouns with relative ones to form relative clauses, as in the research of Sari et al. (2017), who also found the same thing. It means that the acquisition of relative clauses was in relativizing thermic elements. The appearance of a relative clause that contained a head showed that BIPA students understood the structure of a relative clause, which had a head, relative, and modification clauses. Likewise, the appearance of a headless relative clause proclaimed that BIPA students understood the existence of a headless relative clause in Indonesian.

The second was about the syntactic function of the relative clause head. The syntactic function refers to the constituents that are relative in the relative clause. For example, the data indicated the existence of a relative clause that related to the subject and object.

(6) [ꜰᵢ Di sana ada **berbagai kain batik**
[yang [ꜰᵢ tⱼ sangat
mahal]]].

(7) [Semua karya batik mempunyai
cerita-ceritaᵢ [yang [ꜰᵢ tᵢ membuat [ꜰᵢ kami
sangat tertarik]]]].

Translated version:
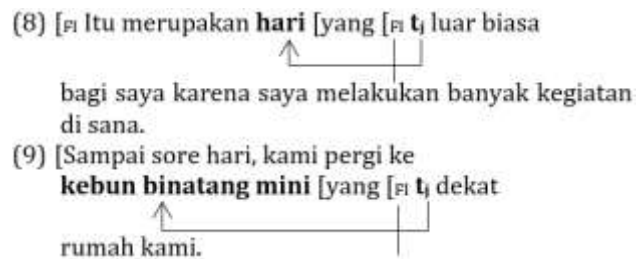(6) ...There were various batik clothes which were very expensive.

(7) All batik artworks have stories that made us very interested.

The relative elements in data (6) were '*berbagai kain batik'* (various batik cloths) that occupied the syntactic function of the subject so that they left traces of the movement of t$_i$. This subject was located behind because the sentence structure in data (6) was an inversion sentence with a predicate-subject pattern, namely verbs '*ada'* (exist) as predicates and '*berbagai kain batik yang sangat mahal'* (various costly batik cloths) as subjects.

The elements relative to the data (7) were stories that occupied the object's syntactic function and left traces of the movement of t$_i$. In this case, the nouns of batik cloth (data 6) and the nouns of stories (data 7) became the relative head clauses positioned in the argument bar, making them unable to accept the role argument from the accompanying predication. Therefore, the distance between the antecedents of batik cloth and the stories with their movement traces was limited by one bounding node in the form of an inflectional phrase (FI). Thus, data (6) contained a relative subject, and data (7) presented a relative object whose movement occurred with a relative clause marker '*yang*.' BIPA students could produce relative subjects and objects based on these findings, both in version and inversion sentences.

This finding contrasts with the previous research that stated that Indonesian relativization is limited to the direct subject and object (Cole and Hermon, 2005:59). In addition, other studies found four types of relative clauses, namely relative clauses that relate to the subject, relative clauses that relate to objects, relative clauses that relate to property elements, and relative clauses that omit noun elements (Sari et al., 2017; Suharsono, 2015). This study found relative clauses related to the subject and object and relative clauses on other syntactic functions, namely complements and nouns in additional information. The examples of these two relativities are shown in data (8) and (9), respectively. In data (8), the relative head clause occupied a complementary syntactic function because it was preceded by the intransitive verb predicate '*merupakan'* (is). In data (9), the relative clause head '*kebun*

binatang mini' (the mini zoo) was in the syntactic function of the additional information in the prepositional phrase with '*ke kebun binatang mini'* (**to** the mini zoo).

(8) [$_{FI}$ Itu merupakan **hari** [yang [$_{FI}$ **t$_i$** luar biasa bagi saya karena saya melakukan banyak kegiatan di sana.

(9) [Sampai sore hari, kami pergi ke **kebun binatang mini** [yang [$_{FI}$ **t$_i$** dekat rumah kami.

Translated version:
(8) It was a really great day for me because I did a lot of activities there.
(9) In the afternoon, we went to the mini zoo near our house

Prepositions or conjunctions that were positioned as the head of a prepositional phrase or the adverbial phrase located as an adverb were still limited in variety. However, the noun in the adverb became the most dominant element experiencing relativization. To form these prepositional phrases or adverbial phrases, BIPA students use several prepositions and conjunctions, such as '*untuk,'* '*dengan', 'tentang', 'dari', 'di',* and '*ke'* (for, with, about, from, at, and to).

The descriptions above reinforce the idea of Ekakristianto et al. (2020), which pinpoints that constituents—in this case, nouns—can be developed by adding relative clauses. In this case, nouns and noun phrases that occupy the subject, object, and complement functions can be the head of a relative clause.

The agentive roles of the subject, object, and complement in the sentence are agent, theme, experiencer, or benefact. In addition, all three have the same position in the syntactic function in the main clause. On the other hand, nouns in prepositional phrases and adverb phrases that make up additional information are also produced by BIPA students as relative clauses. In other words, the nouns in the prepositional and adverb phrases are classified as subordinate clauses (subclauses). Thus, BIPA students were not only able to construct relative clauses on nouns that occupied syntactic functions in the main clause but were also able to relativize nouns in subordinate clauses. Therefore, BIPA

students were able to apply relativization to various constituent structures.

Based on its characteristics, inanimate head nouns in these relative subjects tend to be abstract entities, such as things, experiences, and activities. It is related to the background of BIPA students who are adult learners that are cognitively able to think abstractly. In this regard, abstract nouns contain more content information than concrete nouns (Piantadosi, Tily, and Gibson, 2011). So, cognitively, BIPA students are adults who can think abstractly so that indirectly it contributes to the production of relative clauses with abstract noun heads.

Furthermore, the quantity of data occurrences in each relative clause head syntactic function is presented in Figure 3 below.
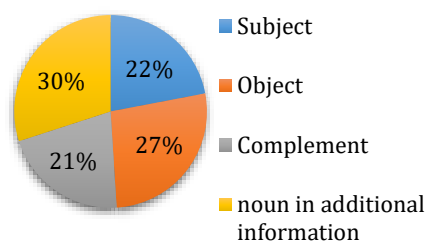

Figure 3. Syntax Function of BIPA Students' Relative Clause Head

The exciting thing to study further is that the syntactic function of the noun head in the additional information has the highest percentage (30%). BIPA students were inclined to produce relative clauses by modifying nouns in prepositional phrases/adverbial phrases located at the end of sentences or in adverb syntactic functions. The most modified constituents into relative clauses were those with no argument-predication relationship with the core clause in the sentence. This relative clause was used as additional information after the structure of the core clause had been successfully submitted. Regarding the argument bar movement rule, moving constituents to produce relative clauses was also more accessible because it was done at the end of the sentence. After all, no more constituents needed to be connected to the relative clause.

This phenomenon was explained at least from two perspectives. First, there was interference from spoken language into the written language in the sociolinguistic perspective. In general, interference is defined as a language disorder caused by using elements of the mother tongue when speaking a second or foreign language (Adityarini et al., 2020). However, interference can also be interpreted as a language disorder because the entry of one language variety into another, which is spoken language into written language. One of the spoken language features is structural freedom because it has been supported by the clarity of the speech situation (Prayitno, 2018). It has implications for the speaker's habit of "sticking" speech. The sentence that has been stated is then given additional information by using a relative clause. It is supported by Kurnia et al. (2018), which described that the habits in the spoken variety used in daily communication affect written language performance.

Second, in a psycholinguistic perspective, speech planning is not entirely carried out before the speaker speaks but coincides during the speech (Pangesti, 2017). Since speech planning coincides, speakers often develop new ideas and expand the sentence with relative clauses.

Conformity of BIPA Students' Relative Clause Rule

Conformity of the rules was based on the accuracy of the movement, the arrangement of the relative clause structure, and the correspondence between its constituents. It is illustrated in the following data (10).

(10a) DS1: Kami makan makanan.
    DS2: Keluarga angkat menyiapkan makanan, seperti kue dan minuman.
(10b) SS1: Kami makan makanan.
    SS2: **Makanan**ᵢ disiapkan tᵢ oleh keluarga angkat di sana, seperti kue dan minuman.
(10c) SS: [Kami makan **makanan** [yang [ᵣₗ tᵢ disiapkan tᵢ oleh keluarga angkat di sana, seperti kue dan minuman]].

Translated version:
(10a) DS1: We ate food
    DS2: The foster family prepared some food, like cookies and drinks/beverages.
(10b) SS1: We ate food
    SS2: The foster family prepared the food, like cookies and drinks.

(10c) SS: We ate food prepared by the foster family there, like cookies and drinks.

The data (10a) was a deep structure consisting of two clauses, namely DS1 and DS2, which were active sentences and had not undergone constituent movement. In data (10b), the movement of '*makanan*' (the food) noun object in DS2 to the subject position so that it formed a passive sentence as in SS2 and left a trace of movement t_i. The move made '*makanan*' (food) nouns that initially served as internal arguments turned into external arguments. In other words, the purpose of the landing site of movement was a position that allowed the constituents to accept the role of the argument from the predication of '*makan*' (eating). Hence, the movement was classified as an argument movement, namely passivation.

After that, SS2 merged into SS1 to become data (10c) SS. The object of SS1 and subject of SS2 were the same, namely '*makanan*' (food), so that it had consequences for the formation of a relative clause with a relative marker '*yang*' (is). SS2 became a subordinate clause of the main clause of SS1. '*Makanan*' (food) object nouns in SS2 initially had an argument role in the prepared predication. However, the food object noun moved to the argument bar position by passing one bounding node FI so that the prepared predication could no longer give '*makanan*' (the food) noun an argument role. So, the transfer is per the rules of the Indonesian language and the rules of generative transformation.

Furthermore, BIPA students produced relative clauses that were not following the rules. The discrepancy between the relative clauses and the rules found in this study included (1) improper head deletion, (2) disorganization of sentence constituents, (3) unnecessary use of relative markers, and (4) predication mismatch. The use of relative markers and mismatch of predications were frequent phenomena.

(11) *Desa yang kami pergi adalah Sidomulyo
(The village where we went was Sidomulyo)

The data indicated a discrepancy (*) with the rules in the relative clause produced by BIPA students. In data (11), the discrepancy occurred due to the inappropriate selection of the predication in the relative

clause, namely the verb '*pergi*' (to go), which should be replaced with the verb '*kunjungi*' (to visit), as in the following analysis.

(11a) DS1: Kami pergi ke desa.
Kami ke desa Sidomulyo
SS1: *[**Desa** [yang [FI kami pergi adalah Sidomulyo]]].
(11b) DS2: Kami mengunjungi desa.
Kami ke desa Sidomulyo.
SS2: [**Desa** [yang [FI t_i kami kunjungi t_i

adalah Sidomulyo]]].

Translated version:

(11a) DS1: We went to a village. We went to Sidomulyo village.
SS1: *The village we went to was Sidomulyo.
(11b) DS2: We visited a village. We went to Sidomulyo Village.
SS2: The village we visited was Sidomulyo.

Based on this analysis, SS1 as the data representation suggested no movement of nouns to the argument bar position in the relative clause. It could be seen from the absence of a movement trace after the predicate verb *pergi* (leave) because the verb did not need an object that followed it (intransitive). However, SS1 used a relative marker '*yang,*' which signified a trace of movement in the role of the inner argument from the predication '*pergi*' (to go) even though an inner argument could not follow this verb of its intransitive nature. As previous research stated that predication (verb) is closely related to argument (noun) because the verb determines the presence or absence of the accompanying noun (Prihatini, 2019) and the characteristics of the argument. In this case, SS1 was not a relative clause by the rules because of the inappropriate use of predication.

On the other hand, DS2 used '*mengunjungi*' (visit) verb, so it took the '*desa*' (village) object as the inner argument and the subject '*kami*' (us/our) as the outer argument. If the main clause and subordinate clause in DS2 were combined, then SS2 was composed. SS2 contained the movement of '*desa*' (the village) noun from the initial object and the inner argument of '*kunjungi*' (to visit)

predication to a position that passes through the FI bounding node. The move made '*desa*' (the village) noun unable to get any more argument roles from '*kunjungi*' (to visit) predication. The initial position of '*desa*' (the village) noun became a trace of the movement of t_i with the village antecedent, which was already in the argument bar position. Based on this analysis, one of the factors causing the discrepancy with the rules in the relative clauses produced by BIPA students was inappropriate predications, resulting in a shift to an inappropriate argument bar. In this study, alpha was filled by nouns or noun phrases that occupied the head of the relative clause. Accordingly, the structure of SS1 in (11a) did not contain movements consequent on the structure's inaccuracy, while SS2 in (11b) was the other way around.

In addition, the data also suggested some discrepancies of the following rules.

(12) *[Cuaca di Batu sangat dingin dan orang disini [**yang** [FI lucu dan baik hati]]].
(13) *[Bagaimana transplantasi cabang ke pohon jeruk dan jumlah hari [**yang** [FI diambil menjelaskan juga]]].

Translated version:
(12) * The weather in Batu is icy, and the people here are funny and kind.
(13) * How to transplant a branch to an orange tree and the number of days it took explained too.

Data (12) did not match because the relative clause marker '*yang*' was not needed because there was no movement to the bar position argument that occurred. If viewed from the structure, the noun '*orang*' (person) was intended to be an antecedent and an element transferred to the argument bar position by passing the bounding node FI. However, the noun *orang* (person) could not make the transfer. It could be seen from the use of '*lucu dan baik hati*' (funny and kind-hearted) adjective predicates, which was impossible to give the role of argument to the constituents that followed it. Therefore, there was also no trace of movement that could prove the existence of the bar movement argument. Meanwhile, data (13) displayed that there was a discrepancy with the rules because the noun '*jumlah hari*' (number of days) was not clear about its role and its

relationship, namely whether it was related to the predication '*diambil*' (being taken) or '*menjelaskan*' (explain). This ambiguity resulted in the position of the *t* movement trace, namely whether after the verb was '*diambil*' (being taken) or after '*menjelaskan*' (explain).

In this case, the percentage of rules conformity of the relative clause of BIPA students can be seen in Table 1 below.

Table 1. Finding the Rules Conformity in the Relative Clause

Confor-mity with the rules	Sub-ject	Ob-ject	Com-ple-ment	A noun in addi-tional infor-mation	Total percen-tage
According to the rules	10%	20%	18%	27%	**75%**
Not according to the rules	12%	7%	3%	3%	**25%**
Total	22%	27%	21%	30%	**100%**

Table 1 suggested that the relative subject experienced the most errors based on the syntactic function compared to the relative clause that occupied other syntactic functions. It indicated that subject production was relatively more difficult for BIPA students. This finding is different from Gennari et al.'s (2012) research, which states that the object is relatively more complicated than the relative subject. However, on the other hand, considering that the differences are not significant, Suzuki's (2011) research can be used as a reference. He found that although the relative object was seen as more complex in the past, there is no longer any difference in the difficulty level between the relative subject and the relative object.

CONCLUSION
Based on the results and discussion description, intermediate-level BIPA students could produce relative clauses as a form of moving nouns to the bar position argument by considering the structure and conformity of the constituents that accompanied it. Furthermore, most of the data were in short movements and a small part of long

movements. Therefore, moving to the bar position argument in the controlled relative clause was still relatively simple.

The linguistic unit of the head of the relative clause was primarily words, then also phrases, and some were without heads. In addition, BIPA students could generate bar movement arguments in relative clauses to nouns that occupied the function of the object, subject, and complement and nouns in prepositional phrases or adverbial phrases that functioned as additional information. These findings indicated that the relative clause structure was fully understood, namely the presence of head, relative, and accompanying modification clauses.

Based on the Indonesian language rules, most of the relative clauses produced by BIPA students at the intermediate level were appropriate, and only some were not. The discrepancy with the rules was more common in relative subjects. The discrepancy with the rule also consisted of several phenomena, namely (1) improper head deletion, (2) disorganization of sentence constituents, (3) unnecessary use of relative markers, and (4) mismatch of predications. So, most of the students mastered the concept of argument bar movement, shifting to form relative clauses at the level of short-distance movement.

Based on these conclusions, further research can examine the findings of this study that need to be further deepened, namely the relationship between animation and argument bar movement. In contrast, practically, the results of this study can also be used in learning relative clauses in the BIPA class.

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