

## An Analysis of L2 Stress Patterns of Polysyllabic Academic Vocabulary of Indonesian Students

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**Abstract.** *This research project explores the production of stress placement on polysyllabic academic words of Indonesian students studying at Coventry University, United Kingdom. The research adopts qualitative approach and looks at the accuracy of the stress placement on polysyllabic academic vocabulary produced by the students. The participants of the research are seven Indonesian students studying at Coventry University where they have been studying English for approximately more than ten years. The participants are interviewed and recorded in a silent room in order to obtain a good quality recording. There are three parts of the interview in the research, which consist of free speaking, text-reading and another free speaking about students' opinion. The results are drawn from the recordings by analysing and rating the accuracy of stress placement on the polysyllabic academic words. In addition, it is also rated by a co-rater who is a native speaker and has adequate knowledge on English phonology, to verify the validity and the reliability of the results. The conclusion drawn from the findings is that most participants tend to avoid using academic vocabulary in their presentation based on the first interview and have the tendency of not stressing the words and even misplacing the stress due to ignorance of stress pattern in English. The result indicates that the student's encounter is due to the interference of their mother language as Bahasa is a syllable-timed language meanwhile English is a stress-timed one, which therefore causes significant interference in their stress placement. It is also concluded that the length of exposure of English use in their previous institution can be accountable variable for the accuracy of their stress placement production.*

**Key words:** *polysyllabic academic vocabulary; stress placement*

## A. INTRODUCTION

In this globalised era, most students from non-English speaking countries, particularly Indonesia, develop eagerness to pursue their higher education in advanced countries where English is the main language used in the tertiary institutions. In fact, most of the scholarly journals and articles published used by students in their academic presentation comprise more polysyllabic academic vocabulary which possess high complexity of production and contextualised meaning that need to be comprehended adequately. Therefore, students need to prepare themselves in order to survive in their academic life, i.e. being able to deliver presentations with general academic words and technical words characteristic of specialised fields of study and being able to produce standard native-like phonological production with both supra-segmental and segmental elements. In other words, as stated by Murphy (2003) being easily understood by native speakers or proficient English speakers around the world is very essential for foreign students who want to achieve success in their academic life.

The mastery of the use of academic words is significantly important to help students to maximise their performance in their academic life. Learners should learn the words in context (Nation 2001) in order to be competent when using them even in extemporaneous speech. The recent corpus-based study conducted by Coxhead (2000) is designed to assist students to enhance their knowledge in academic vocabulary as it provides lists of the most used academic words. The attempt to familiarise students with academic vocabulary both in phonological features and contextual meaning, has been given emphasis as it is realised that student, particularly non-native speakers of English, will perform better in their academic life if they have adequate knowledge in those aspects (Murphy 2006). However, the complexity of phonological production of the words, particularly in stress pattern which is considered to determine the speakers' intelligibility (Derwing and Munro 1997), has been ignored in the teaching of English in

countries like Indonesia. Therefore, most Indonesian students are often found to be struggling in pronouncing polysyllabic words (Weda 2012).

With regard to stress pattern, Bahasa Indonesia is one of the syllable-timed languages that has different supra-segmental elements from English, particularly in lexical stress patterns (Van Zanten and Van Heuven 1996). As claimed by Laksman (1994), the stress pattern of Bahasa is not significantly emphasized in oral communication. As a syllable-timed language, the pronunciation of words in Bahasa is based on syllables in which an equal amount of time is allocated for each syllable at regular intervals (Halim 1974). Meanwhile, English as a stress-timed language, the stresses also fall at regular interval, however, the unstressed syllables tend to be squeezed in between stresses (Crystal 1987). The difference has resulted in confusion for Indonesian students in which they tend to be reluctant to stress a certain syllable of words as they encounter difficulties placing the stress. In addition, Niken (1996) stated that pronunciation teaching focusing on supra-segmental like stress placement is not emphasized in Indonesian educational curriculum, which is considered as another major factor of the students' miscues. In relation to the issues above, a previous study focusing on the use of stress patterns conducted by Weda (2012) showed that the participants (Indonesian university students) tend not to stress words and even misplace the stress. The participants were given list of words and were asked to pronounce them in systematic order. The result was quite surprising as participants frequently placed stress in the wrong places, and some of them did not put any stress in the words.

The main purpose of the study is to investigate Indonesian students' stress placement on polysyllabic academic vocabulary. The research project focuses on Indonesian students studying at Coventry University. The study also aims to find out whether the students tend to use academic vocabulary in their presentation as

most nonnative students tend to avoid using the words, which could affect their academic performance.

## **B. RESEARCH METHOD**

### *Research questions*

The main purpose of the study was to investigate the Indonesian students' lexical stress patterns on polysyllabic academic words in order to provide an insight not only into the lexical stress placement, which may affect their intelligibility in their speech, but also considering whether Indonesian students tend to use polysyllabic academic vocabulary in their presentation, as such skill is highly required by students to survive in their academic life. After reviewing the previous literature review and the gap, the following research questions are formed to interpret the findings in relation to the production of stress placement on polysyllabic academic words made by Indonesian students in their speech.

1. RQ1: Do Indonesian students studying at Coventry University avoid using polysyllabic academic vocabulary when in free speech (part A: free speaking)
2. RQ2: What problems of stress placement do the students have with polysyllabic academic vocabulary (part B: Reading text)?
3. RQ3: How do students feel about the usefulness of academic vocabulary and stress placement?

The first research question was designed to find out whether Indonesian students avoid using polysyllabic academic vocabulary in their speech. It was answered by the first section of the interview whether students tend to use polysyllabic academic words during their speech. The answer was based on the number of academic vocabulary used by the students.

The second research question tried to measure the accuracy of the stress placement on the polysyllabic academic words produced by the students while

reading the given text. This RQ shall bring variation of stress placements due to the lack of knowledge the students have about English stress patterns. The last RQ was formed to obtain students' opinion toward the importance of stress placement on polysyllabic academic words. This RQ would be supposed to bring realization to the students that an adequate knowledge of stress pattern should be acquired in order to produce intelligible speech. This kind of hypothesis 'can be generated as an outcome of the qualitative research' (Mackey and Gass 2015). This is evident once the data is interpreted and triangulated with the recordings and validation of the co-rater, regarding the stress placement.

### ***Research design***

The study tried to investigate stress placement of polysyllabic academic words of Indonesian student at Coventry University. The design of the research was a descriptive qualitative. This research is considered as a qualitative research because its main method of data collection is mostly related to observation, interviews, and recording. This kind of data collection is very effective to draw out 'the possible interpretation of human experience' (Dornyei 2007) thus widening the scope of understanding and making the data more authentic. The recordings were analysed by the researcher and a qualified co-rater who was a native speaker was approached to verify the validity of the findings.

### ***Participants***

The participants of the research were seven Indonesian students studying at Coventry University. They were doing masters in different subjects i.e. Economics, Social Sciences, and Engineering when the study was undertaken. Most of the students were between the ages of 20-27.

### ***Instruments***

The instrument that was used in the research was a voice recorder. Although there were many choices of recorders, the researcher preferred to use a mobile phone as it is more practical and convenient. In fact, the most recent iPhone has high quality recordings which can produce sounds as clear as a real voice recorder. In

addition, a silent room was booked to conduct the interview in order to obtain a good quality of recording. Lastly, a co-rater who is native speaker and has an adequate knowledge in English phonology was approached to verify the results of the research in order to obtain a more valid and reliable conclusion.

### ***Data Collection***

The data used in the research was recordings of spoken discourse from seven Indonesian students studying at Coventry University. The students were interviewed and recorded in the silent room. There were three parts of interview namely free speaking, text-reading, and questions about the students' opinion. The questions in the first part of the interview were about their academic field of study in order to elicit the use of polysyllabic academic words in their speech, which is the main focus of the research. In fact, the questions were designed to ease the students to express their speech with sufficient confidence as they would know their field of study. The three questions are: 1) Can you please briefly describe what you are currently studying? 2) What do you think is the most interesting aspect of your study? Why is it so? 3) How do you think your field of study would significantly contribute to your future career?

The second recording was completed by asking the participants to read a text taken from GLP (Global Leadership Program) talks as most of the participants are members of the GLP program. The last recording was two questions about the importance of stress placement to the students. The two questions are: 1) Do you think that stress placement is important in spoken communication? Why? 2) What do you think is the most problematic aspect of stress placement? In this section, the students were given an opportunity to express their opinion about how important stress placement is in spoken communication and why they encounter difficulties in placing the stress in polysyllabic academic words.

### ***Co-rater Validation***

In order to acquire valid and reliable research data and conclusions, the researcher approached a co-rater who is a native speaker and has an adequate knowledge of English phonology. Mackey and Gas (2015) stated that a co-rater is needed to

attain more accurate adequate analysis of the collected data. It is also believed that the co-rater's verification of the results has a very significant contribution to answer the research questions.

### C. FINDINGS AND DISCUSSION

The results are based on the interview findings which consist of three parts that have been analysed by the researcher and another co-rater. The use of academic vocabulary referring to AWL by Coxhead (the first part) and the stress placement (the second part) is the focus of the finding. The following table is made from the first part of the interview.

Table of students' production on academic vocabulary

Name of students	Number of academic words used in the speech
Student 1	1
Student 2	0
Student 3	0
Student 4	2
Student 5	0
Student 6	0
Student 7	1

The above table is created based on the first part of the interview which is free speaking and that has been analysed by the researcher. The above participants have been studying English for over approximately ten years. They have been in the UK for more than ten months, however, the table shows that most students only use one academic vocabulary. Surprisingly, some of them even do not use any of the words like Student 6, Student 3 and Student 5. The table shows an implication that students have a tendency to be reluctant when using academic vocabulary in the speech. During their free speaking, the participants are placed in a very relaxing situation to maintain their confidence. When answering the question, they seem to speak very naturally as they fully understand what is being

asked. Student 3, a post-graduate student who is studying Environment Management, speaks confidently answering the questions. However, she doesn't produce any academic vocabulary in her speech. Similarly, Student 2 who studied English in Canada for three months and can speak quite fast, does not use any academic vocabulary in her speech. The other students, like Student 1 and Student 7, are able to produce one academic word during their speech. Student 4 is able to produce two academic vocabulary during his speech.

In the second part of the interview, the analysed data is also provided in tables showing the academic words, the correct stress placement based on Oxford dictionary, and the rating of the accuracy of the stress placement. The scale that is used is 1-5, indicating 1 the least accurate and 5 the most accurate. The rating was given by the researcher himself and the other co-rater who is native speaker and has adequate knowledge on English phonology.

Participant name: Student 1

The academic words	Correct stress	Rating by the researcher	Co-rater
Regulation	/rɛgju'leɪʃ(ə)n/	2	1
Modification	/mɒdɪfi'keɪʃ(ə)n/	1	1
Specificity	/spesi'fisiti/	1	1
Evaluate	/ɪ'væljuəɪt/	2	2
Maintenance	/'meɪnt(ə)nəns/	1	1

Student 1 is from Jakarta, the capital city of Indonesia. Bahasa is her main language in daily communication. Based on the table above, Student 1 tends to find it problematic when stressing words with suffixes. For example, the word 'modification' should be pronounced as /mɒdɪfi'keɪʃ(ə)n/ because, based on English stress pattern, the word with suffix -sion or -tion is stressed on the penultimate syllable. However, the co-rater and the researcher himself agree that she does not stress any syllable of the word. It also seems that she misplaces the stress of the word 'specificity'. The word should be pronounced as /spesi'fisiti/,



but she seems to put a very weak stress on the penultimate syllable. Therefore the researcher gives the least accurate to her stress placement production.

Participant name: Student 2

The academic words	Correct stress	Rating by the researcher	Co-rater
Contribute	/'kɒntrɪbjʊ:t/	3	2
Coordination	/kəʊ,ɔ:di'neɪʃ(ə)n/	1	1
Specificity	/spesɪ'fɪsɪti/	1	1
Reinforce	/ri:m'fɔ:s/	2	1
propagation	/prɒpə'geɪʃ(ə)n/	1	1

Student 2 has studied English in Canada for three months. As indicated on the table, she seems to have problem in placing the correct stress on the polysyllabic words. Most of the stress she uses is very weak and not in the right place. For example, the word ‘specificity’ which should be stressed on the ante-penultimate syllable, however, she put the stress on the second syllable /spɛ'sɪfɪsɪti/, which could confuse the native speakers’ perception of the word. Another big miscue is on the word ‘propagation’ which should be stressed on the penultimate syllable as /prɒpə'geɪʃ(ə)n/. The researcher barely finds any stress she puts on the word. In fact, it seems that she does not stress the word. The words ‘contribute’ and ‘reinforce’ are given a very weak stress on the first syllable. From the table, it can be identified that the researcher and the co-rater have a quite strong agreement in rating the stress placement. However, it seems that the word ‘reinforce’ has resulted in different rating where she puts a very weak stress on the right syllable. Therefore, the researcher gives her 2, while the co-rater give her 1.

Participant name: Student 6

The academic words	Correct stress	Rating by the researcher	Co-rater
Specificity	/spesɪ'fɪsɪti/	1	1
Reinforce	/ri:m'fɔ:s/	1	1
Recruitment	/rɪ'krʊ:tm(ə)nt/	1	1
Potential	/pə(ʊ)'tenʃ(ə)l/	2	2
Modification	/mɒdɪfɪ'keɪʃ(ə)n/	1	1

Student 6 is another participant who has the same educational background as Student 1. Based on the table above, it can be identified that he mostly finds the word with suffixes problematic. For example, the word modification which should be pronounced as /mɒdɪfɪ'keɪʃ(ə)n/, is stressed on the ante-penultimate syllable. It mostly happens to the most words with suffixes. However, the word 'potential' seems to be stressed on the right place, but with a very weak stress.

After extracting the results, the most significant finding regarding with the use of the academic words is that the Indonesian students tend to avoid using academic words to express their idea in their speaking. Most of them choose to use simple and informal words in their speech. Although the questions are designed to elicit more production of academic words, most of the participants are not able to produce speech with general standard academic words. The reasons behind this avoidance vary depending on the students' educational background and the length of their exposure in learning English. Student 3, a post-graduate student in Environment Management has not used any academic vocabulary (based on AWL by Coxhead 2000) during her free speaking. She tends to choose simple words to express her idea, which indicates that she is the participant who produces the least academic vocabulary among the other speakers. As evident from the results, she is reluctant to use academic words, which can be identified from the second question given on the free speaking section of the interview (what is the most interesting topic in your field of study? why is it so?). Although the question is designed to elicit the use of academic vocabulary, she does not seem to be competent enough to use them in her speaking. For example, when she says 'the subject makes my knowledge better in oil management'. The answer shows that she is not able to use academic words properly in expressing her idea. Instead of saying 'makes my knowledge better', she could have said 'enhance my knowledge', which sounds significantly more academic. However, the implication is not that she is wrong, she sounds very informal and uses non-academic words, which could affect her confidence in academic world.

Student 1's speech is another explanation of poor competence of the use of academic words. During her free speaking, she barely produces any academic words. Like Student 3, she always tries to choose simple words in expressing her idea. For example, when she says 'it makes me get more knowledge than before', she could have said 'it improves my knowledge, which sounds more academic and efficient. She seems to use simple and informal words during her speech. It can be identified that the habit formation plays an important role in the matter. The phenomena have been a big issue for Indonesian students who study in English speaking countries. Consequently, it can affect their confidence in their academic life, as studying in English speaking countries require students to have adequate understanding of academic words in order to survive in the academic environment.

Another potential reason that causes the tendency is the word contextualisation. Having insufficient knowledge of word contextualisation can lead to this avoidance as academic words are described as high-contextualized in which their meaning needs to be understood in context. Since all participants are studying different subjects, the level of complexity of the word based on their field of study is relatively different. In fact, subjects like economic, health and engineering are quite difficult for the international students and even for native speakers. Students will not choose to use the words if they are not certain about the contextual meaning of the word. Consequently, frequent reading on academic articles and journal is one factor that also determines the students' understanding toward the contextual meaning of the words. Therefore, McCarthy (1979) suggested that vocabulary acquisition should be done by learning the contextual meaning of words.

### ***Discussion***

In English, every word is stressed on a certain syllable depending on the words. There is always one primary stress in every word. However, based on the results, the stress placement is perceived in a variety of ways by the participants. Some

participants interpreted the English stress pattern as one that exists in Bahasa where they do not have to stress words as it does not influence the perception of meaning. It can be identified from Student 5 and Student 6's production on the word 'specificity'. It seems that the students equally stress the syllables of the word. The word should be pronounced as /spesɪ'fɪsɪti/, where the ante-penultimate syllable should be stressed. However, they tend to follow the rule of Bahasa where stress is not needed in a word. On the other hand, some of them are aware of the stress placement, however, due to insufficient knowledge of stress pattern, they tend to stress the words in wrong places. For example, Fadhil pronounces the word 'specificity' by stressing the penultimate syllable which could confuse the perception of native speakers or other proficient English users. It indicates that the participants' perception of stress placement is different due to their L1 interference. Comparatively, in English every polysyllabic word has one primary stress, which is the only focus of the study, although it is realised that there is secondary stress in every polysyllabic word. Therefore, Indonesian speakers find this phonological feature quite complicated and problematic.

The most common pronunciation characteristic among a non-native speaker for example Indonesian, is the placement of the stress which is not emphasized. In English, words must be stressed in a certain syllable, known as a syllable-timed language. Unlike English, Bahasa has no rules in stressing the words which is problematic when the speakers of Bahasa try to learn English which is a stress-timed language and where words must be stressed properly. Therefore, it can be assumed that L1 rules of stress pattern play a significant role in the participants' tendency to not stress the words. It can also be argued that insufficient knowledge of stress placement is the cause of variation of stress placement that the participants put in the words.

Another example from the result that represents the students' confusion of stress placement due to L1 interference is when Student 1 pronounces the word

'modification'. Despite her miscue in producing the vowel sound of the word, she seems to stress the word in the second syllable. Student 5, on the other hand, places the stress on the ante-penultimate syllable, which is not correct. The stress should be placed on the penultimate syllable because the word contains suffix –tion. The correct stress placement of the word is as /mɒdɪfɪ'keɪʃ(ə)n/. This miscue of stressing English polysyllabic academic words can be classified as the most problematic for most Indonesian students as stated by Murphy (2003), due to the high level of complexity of the production of the words, many non-native speaker of English encounter difficulties when pronouncing them with adequate accuracy on both supra-segmental and segmental elements. With regard to the production of the word 'modification', however, Student 4 seems to naturally put a very weak stress to the word on the right place. With the fluency that he has in his speech, he seems to place the stress correctly. His case supports the statement by Nation (2001) and Levelt (1993) that students will be able to store the correct production of words in their brain when they are exposed to the use of the words by native speakers or other proficient English users. In other words, the more students listen to the correct production of academic words, the more they will be able to accurately produce the words in natural way.

On the other hand, the word 'distinct' which should be stressed as /dɪ'stɪŋ(k)t/ is another miscue that students have. All students seem to ignore the stress of the word. The potential reason of this miscue could be due to the rules in Bahasa that most of the two syllable words are not stressed. All students seem to stick to the rules that they have in Bahasa. This finding is in line with the Weda (2012) where his participants do not stress all the two syllables words. Therefore, it can assumed that most Indonesian students tend to ignore the stress for two syllable words. However, their production in the word 'contribute' seems to be quite good. Most of students get 2 in the rating, even some are even scored 3, which shows they have placed the stress of the word quite accurately. It might be that in the previous part of the interview, the researcher uses the word 'contribute' quite

often, therefore, the participants might remember the way that the word is pronounced. Most of the students pronounce the word as /'kɒntrɪbjʊ:t/ although some of them put an incorrect stress on the correct syllable. This indicates that students can get a better input of how words are pronounced by frequently listening to the proper pronunciation of the words.

Although, the use of academic vocabulary has been exposed in scholarly journals and articles, yet due to the translation method that the students use when they are reading the journals, it prevents them understanding the contextual meaning of the words, which resulted in a reluctance of use in free speaking. Referring to the use of the bilingual dictionary that most Indonesian students use while reading scholarly articles, it can be assumed that the technique cognitively obstructs the students' ability to use the words in their presentation. Furthermore, a bilingual dictionary would not help the students to accurately comprehend the contextual meaning of the words as it will interfere with the students' perception to actual meaning of the words.

#### **D. CONCLUSION AND SUGGESTION**

The results of the research have shown some variables that need to be taken into account to draw some conclusion. It is realized that there are many factors that may influence the accuracy of polysyllabic words pronunciation i.e. the length of learning English, educational backgrounds of their family. However, with the data that has been transcribed and rated, the three research questions that are stated in the previous chapter are now ready to be answered.

RQ1: Do Indonesian students avoid using polysyllabic academic vocabulary when in free speech (part A: free speaking)?

The potential answer to the first research question is quite obvious and straight forward. Based on the findings of the results and discussion chapter, most of the participants tend to avoid using academic vocabulary to express their idea when

given questions in the first part of the interview. Although the questions are designed to elicit more academic vocabulary, the participants tend to use simple and non-academic words. The researcher refers to the Academic Word List (AWL) by Coxhead (2000), which contains the most widely used academic vocabulary. This phenomenon indicated that the participants tend to avoid using academic words in their speech. Brown (1994) stated that exposure to the L2 should be made on a regular basis in order to be a balanced bilingual speaker. This means the more the students practice using academic words, the easier they will speak and use them even in a spontaneous situation.

RQ2: What problems of stress placement do the students have with polysyllabic academic vocabulary (part B: Reading text)?

The complete answer to this question is quite difficult, however, the potential one is drawn based on the stress placement produced by each participant when reading the provided text, and when analysed and rated by the researcher and another co-rater. As mentioned in the previous research question, most of the participant have learned English for more that approximately ten years, however, due to the difference of stress patterns between English and Bahasa, the students tend to encounter difficulties in stressing the polysyllabic academic words. The researcher refers to the Oxford Dictionary to find out whether the participants stress the words correctly and accurately. As evident from the results, the participant named Student 5 mostly puts a very weak stress on every polysyllabic academic word. On the other hand, Student 2 mostly puts primary stress on some words in incorrect places. He tends to misplace the primary stress. Based on this finding, it can be assumed that the participants do not achieve target-like accuracy in terms of stress placement. Ellis (2008) stated that target-like accuracy is possibly failed to achieve even after many years of study of the target language. In spite of the stress pattern difference, this could also be potentially because of the standard curriculum applied in most Indonesian schools where supra-segmental elements of phonology are not significantly given emphasis.

RQ3: How do students feel about the usefulness of academic vocabulary and stress placement?

This research question is answered by the students' opinion after they have read the brief explanation of the study, and interviewed with some question related to the stress placement. The answer is quite surprising as some of them do not really have enough knowledge about stress pattern. However, some of them mention that they have never been taught about stress placement in their schools and other private institutions i.e. English schools. In fact, they do not know that stress can actually influence the intelligibility of non-native speakers and potentially confuses native speakers' perception of the words' meaning. On the other hand, Student 7 and Student 4 mention that they are aware of stress placement as they have studied abroad previously, however, they do not have sufficient knowledge of placing the correct stress of the words. So it is reasonable to argue that due to L1 interference and lack of knowledge of stress pattern can lead to unintelligible speech. Therefore, it is very helpful to attach the teaching of stress pattern in the L2 acquisition.

### ***Suggestion***

There some pedagogical implications that can be beneficial for the improvement of those aspects. School and university curriculum in Indonesia should be designed to help the students enhance their skill when using academic vocabulary in context for their coursework presentation i.e. paper presentation, work discussion, and formal speech. In fact, students should be encouraged to actively involve themselves in English clubs at their schools and universities to practice the use of academic vocabulary, and familiarise themselves with the up-to-dated academic topic.

With regard to the stress placement in English, clearly, further studies that focus on supra-segmental particularly on stress placement, and that include varieties of



stress placement production of Indonesian speakers with differing levels of proficiency should be conducted to help to elucidate the relative contribution to non-native speakers' intelligibility. Also, Indonesian school curriculum should put more emphasis on the importance of lexical stress pattern so that the students will be more aware of the significance that it has to the intelligibility of their speech. In addition to that, the rules of stress should be taught by outlining the influences of suffixes and prefixes to stress placement. For non-native speakers, the stress placement can also be learnt by identifying the class of the word and number of syllable that polysyllabic words have. Another implication from the third research question is that students learning English should be encouraged to motivate themselves to improve their awareness of the usefulness of stress placement to acquire the target language with perfection.

For English teachers in Indonesia, the pedagogical implications above should be noted. Larger emphasis should be given to stress placements of polysyllabic words while teaching English to students. In fact, any English tutor and teaching practitioner in the world should consider this aspect significantly important to achieve. The researcher suggests that the emphasis is given to speaking sessions during teaching activities.

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