THE ACQUISITION OF ENGLISH MORPHOLOGY: A QUANTITATIVE COMPARATIVE STUDY OF ENGLISH LEARNERS WITH L1 INDONESIAN AND L1 ARABIC BACKGROUNDS

Achmad Farid*
achmadfarid@fbs.unipdu.ac.id
(corresponding author)
Universitas Pesantren Tinggi Darul Ulum,
Jombang, Indonesia
Faiza Al-Dhahli
english-hod.niz@cas.edu.om
University of Technology and Applied Science,
Nizwa, Oman
Adi Yusuf
adiyusuf@fbs.unipdu.ac.id
Universitas Pesantren Tinggi Darul Ulum,
Jombang, Indonesia
Salim Ashar
salimashar27@gmail.com
Institut Agama Islam Bani Fattah,
Jombang, Indonesia
Afifa S. Zulfikar
afifazulfikar@fbs.unipdu.ac.id
Universitas Pesantren Tinggi Darul Ulum,
Jombang, Indonesia

Abstract: This study investigated the acquisition of 8 English morphemes for L1 Arabic and L1 Indonesian learners speaking English as a second language. The eight morphemes were pronoun case, articles (*the/a),* progressive *-ing*, copula, plural, auxiliary, past regular, and past irregular. The hypothesis was made per Krashen's Natural Order Hypothesis, predicting that speakers from different L1 backgrounds learning L2 English would show similar acquisition orders for grammatical morphemes as suggested by the NOH. This study used a quantitative method to compare the acquisition of morphology by the two groups of L2 English learners. Through informal interviews, speech data were gathered from participants from two different language backgrounds, Arabic and Indonesian. The findings revealed that the participants performed virtually similarly within the groups. Regardless of some variations in the acquisition sequence of the morphemes, the Mann-Whitney U tests showed no significant difference in the performance of the two language groups (*ps*>.006). However, the acquisition sequence obtained from the two groups was only partially similar to the NOH proposal. The deviations then provided strong support for the existence of L1 transfer. This finding leaded us to propose a weaker form of the NOH suggesting that the Natural Order only affects particular morphemes. These results not only confirm the existence of L1 transfer in L2 acquisition but also introduce an innovative perspective on the interplay between L1 and L2 morpheme acquisition.

Key words: NoH, acquisition order, language transfer, English morphemes

Introduction

Several studies have examined the acquisition of English grammatical morphemes among L2 learners. These studies have built upon the Natural Order Hypothesis (NOH), which suggests that L2 learners acquire specific similar orders of English grammatical morphemes regardless of their native language backgrounds (Dulay and Burt, 1974; Bailey et al., 1974; Larsen-Freeman, 1975; Krashen, 1982). The Natural Order Hypothesis (NOH) has been extensively studied in the context of second language acquisition, with

researchers investigating the acquisition patterns of English grammatical morphemes among L2 learners from various language backgrounds. Wei (2000) explored the acquisition process in Japanese and Chinese learners of English, revealing that the order of acquiring functional elements in the second language did not follow a uniform pattern. Early indirectly elected system morphemes were found to be acquired before later system morphemes, and content morphemes were acquired before any system morphemes. Contrasting this, Cancino (1975) examined the acquisition of English auxiliaries by native Spanish speakers and discovered a highly variable order of appearance for each subject, indicating a lack of consistent acquisition patterns. In another study by Luk and Shirai (2009), involving native speakers of Japanese, Korean, Chinese, and Spanish, the researchers assessed the effect of the learners' native language on the acquisition of grammatical morphemes. While Spanish L1 learners' acquisition order aligned with the so-called natural order, native speakers of Japanese, Korean, and Chinese displayed variations, acquiring certain morphemes earlier or later than predicted by the NOH, depending on the presence or absence of equivalent categories in their L1. These studies collectively demonstrate that while the NOH offers valuable insights into L2 morpheme acquisition, there are exceptions and variations influenced by learners' specific native languages

While the Natural Order Hypothesis (NOH) is rooted in older studies, it remains relevant to the currently studied contexts. However, it is important to acknowledge that the NOH has faced criticism. Scholars argue that factors like frequency, salience, and input variability may also influence the order of acquisition (Ellis, 2002). In this study, we aimed to address this criticism by examining the acquisition order of eight English morphemes among L1 Arabic and L1 Indonesian speakers learning English as an L2. The hypothesis was that both groups will exhibit a similar acquisition order for grammatical morphemes, in line with the predictions of the NOH. This study hypothesized that L1 Arabic speakers and L1 Indonesian speakers learning English as a second language would show similar acquisition orders for grammatical morphemes, as the Natural Order Hypothesis suggests.

Literature Review
The NOH in Second Language Acquisition
The morpheme acquisition order research was initially conducted from the perspective of L1 acquisition. Brown (1973) conducted a longitudinal study of L1 acquisition from the grammatical morpheme acquisition order perspective. The study involved three American English children, Adam, Eve, and Sarah, and identified an invariant developmental process in the acquisition order of some grammatical morphemes. The children's speech was studied longitudinally by identifying the presence or absence of each morpheme in each "obligatory context," or occasion where adult grammar would require the presence of a particular morpheme. Cook and Cook (1993) criticized Brown's study for being based on the "independent grammar assumption," which posits that children do not act as imperfect speakers of the adult language but rather as speakers of their language. However, Brown's study remains unique in providing insight into the phases of language development in naturalistic conversations without specific elicitation or predetermined topics.

Although Brown's study had limitations, such as a limited number of subjects, its scoring method was adopted by later studies on morpheme acquisition order. De Villiers and de Villiers (1973) conducted a cross-sectional study of 21 English-speaking children aged 16 to 40 months and obtained results similar to Brown's study. They ranked the morphemes based on the relative accuracy with which the subjects produced them as highlighted in the following table.

Achmad Farid, Faiza Al-Dhahli, Adi Yusuf, Salim Ashar, Afifa S. Zulfikar

Table 1: The Order of Acquisition of English Morphemes in L1 Studies

Brown (1973)	de Villiers and de Villiers (1973)
1. Present progressive	1. Present progressive
2. On	2. Plural
3. In	3. On
4. Plural	4. In
5. Past irregular	5. Past irregular
6. Possessive	6. Article
7. Uncontractible copula	7. Possesive
8. Articles	8. 3rd person irregular
9. Past regular	9. Contractible copula
10. 3rd person regular	10. Contractible copula
11. 3rd person irregular	11. Past regular
12. Uncontractible auxiliary	12. Uncontractible copula
13. Contractible copula	13. Contractible copula
14. Contractible auxiliary	14. Uncontractible auxiliary

Dulay and Burt (1974) studied the acquisition order of 11 English functors by 115 Chinese and Spanish children learning English. They argued that the L2 system, not the learners' native languages, guides acquisition. Children's speech was elicited using pictures and questions using the BSM instrument. Similar acquisition orders were found for Chinese- and Spanish-speaking children. Results supported the creative construction account of the L2 acquisition. The Syntax Acquisition Index confirmed the order of morphological development. Researchers wondered if adult learners exhibit a consistent order. Bailey et al. (1974) found a sequence of difficulty in English functors among 73 adult L2 learners. Larsen-Freeman (1975) found similar acquisition orders across tasks for 24 adult L2 learners, except in reading. Replication of the original study is recommended due to different results in other studies.

In recent years, the Natural Order Hypothesis (NOH) is still a popular topic in SLA research. The hypothesis posits that acquiring an L2 follows a predictable and natural sequence that mirrors the order of language development in children acquiring their L1. While NOH has been extensively studied in various contexts, recent studies have shed light on its limitations and potential deviations.For example, Łuniewska et al. (2019) expanded the scope of research on the Natural Order Hypothesis (NOH) by conducting a comprehensive study involving seven languages from diverse language families and cultural settings: American English, Czech, Scottish Gaelic, Lebanese Arabic, Malaysian Malay, Persian, and Western Armenian. With a total of 173 participants, the researchers collected highly reliable ratings for each language using a method similar to a previous study that included 25 languages. This enabled them to create a comprehensive database of Age of Acquisition (AoA) ratings for 299 words in a total of 32 languages. The findings revealed that the words in the seven additional languages were estimated to be acquired at similar ages as in the previously reported languages, predominantly between the ages of 1 and 7 years. Moreover, the study demonstrated that the order of word acquisition showed a moderate to high correlation across all 32 languages, further supporting the previous conclusion that early words are acquired in a comparable order across a diverse range of languages and cultural backgrounds. These findings contribute valuable insights into the universality of the NOH across a broader linguistic and cultural context, reinforcing the idea of consistent language development patterns in early word acquisition among L2 learners.

Several studies have been conducted in different countries to investigate the Natural Order Hypothesis with different languages. For example, a study by Liu and Gleason (2002) in Japan investigated the acquisition of English articles by Japanese learners. The study found that Japanese learners acquired the indefinite article "a"

before the definite article "the"1. A study conducted in Carreiras et al. (2010) investigated the acquisition of English relative clauses by Spanish learners. The study found that Spanish learners acquired subject relative clauses before object relative clauses. Another study conducted by Bardovi-Harlig, K., and Reynolds (1995) found that the acquisition of the past tense in English is not a unitary phenomenon; rather, it develops through time and is based on a cross-sectional study of 182 adult English language learners at six levels of ability. A study conducted in France investigated the acquisition of English word order by French learners. The study found that French learners acquired the basic word order of English before more complex structures Hawkins et al (1993). In summary, studies of the Natural Order Hypothesis have been conducted in various countries with different languages. These studies have found that the order of acquisition of grammatical structures can vary depending on the language being learned and the native language of the learner.

Language Transfer
Language transfer has now become a well-known concept. It refers to the influence of a learner's first language (L1) on their second language (L2) acquisition (Odlin, 1989). Over the years, language transfer has been a subject of extensive research in the field of second language acquisition (SLA). One recent study by Diaubalick and Guijarro-Fuentes (2019) found that learners' first language (L1) significantly influenced L2 Spanish interpretation. German learners, lacking verbal aspect morphology in their L1, used an adverb-based learning strategy, which hindered the complete acquisition of the target features. In contrast, Romance language learners benefited from similarities with Spanish and demonstrated better acquisition outcomes. Another study by Choi and Zhu (2018) examined the role of L1 transfer in acquiring Mandarin Chinese by English-speaking learners. The study found that L1 transfer played a significant role in the learners' acquisition of Mandarin Chinese syntax, as learners often transferred English syntax to Mandarin Chinese.

In a different context, a study by Sadeghi (2009) investigated the role of L1 transfer in the acquisition of English articles by Persian learners. The study found that the learners' L1 influenced their acquisition of English articles, as they often transferred the Persian indefinite article "yek" to English. The authors suggest that the findings highlight the importance of understanding the learners' L1 and its influence on L2 acquisition. In the Indonesian context, a study by Warsono (2016) found evidence of L1 transfer in the written production of Indonesian learners of English, with interlingual errors being prevalent in both low and high L2 achievement groups. The presence of interlingual errors did not diminish with increased L2 achievement, suggesting the need for Indonesian English teachers to address these issues to improve language learning outcomes.

These studies suggest that language transfer can occur in various linguistic domains and may challenge L2 acquisition. Learners' L1 plays a significant role in their L2 acquisition. The influence of L1 transfer varies depending on the learners' L1, the linguistic structure under study, and the context of L2 acquisition.

Research Method

This research is a quantitative and cross-sectional study. Blom and Unsworth (2010) suggest that cross-sectional studies can be limited to a specific population or use representative samples concerning jobs, education, sex, age, and so on. This method enables the researcher to reveal inter-individual variation, the acquisition order of 8 English morphemes. A purposive sampling was employed to select subjects likely to provide significant data (Denscombe, 2010: 15). The research participants consisted of postgraduate students aged 25 to 35, ensuring equal English language proficiency to minimize variability. Subjects were selected based on a minimum IELTS band score of

6, categorized as "competent users" of English with effective knowledge, albeit with some imprecisions (British Council, 2022). These learners can utilize and comprehend complex structures, particularly in familiar situations.

Procedure

This study employed naturalistic interviews to elicit data, allowing researchers to explore phenomena that may not be readily observable. Interviews facilitate further data gathering when previous answers are vague, insufficient, unrelated to the topic, or unclear (Mackey and Gass, 2005). Naturalistic interviews provide spontaneous speech data, which is highly suitable for examining the utilization of English morphemes by L1 Arabic and L1 Indonesian-speaking learners.

Individual interviews were conducted with participants who were the researcher's colleagues. These interviews occurred in natural settings such as the researcher's or participants' homes, restaurants, coffee shops, or other comfortable locations. The interviews began with a casual conversation in both the participants' L1 and L2 to ensure a comfortable environment. The researcher had prepared a list of topics and questions to stimulate the participants to produce the expected structures. The table below presents the eight elicited morphemes and structures from the subjects.

Table 2: The 8 Morphemes

Morphemes	Structures	Examples
Pronoun case	*Pron*-V-*Pron*	He visited him
Article (the/a)	Prep-*Det*-Noun	in the bank
-ing	(NP/Pron)-*be*-V+$_{ing}$	I was driving
Copula	(NP/Pron)-*be*-Adj/NP	It is a cat
Plural	NP+$_{pl}$	chairs
Auxiliary	(NP/Pron)-V+$_{ing}$	She was singing
Past regular	(NP/Pron)-V+$_{pst}$-Np	We played basketball
Past irregular	(NP/Pron)-V+$_{pst}$-NP	I went to London

Pronoun case

Nominative, accusative, and possessive pronouns were separately scored (e.g., I, me, your, he, him, they, them, she, her). However, pronouns that remain the same in subject and object positions were not scored for the case (e.g., it, you). Pronoun number and gender were also assessed (e.g., it, they, he, she).

Article

Both "a" and "the" articles were grouped. They were mainly observed in noun phrases, prepositional phrases, and possessive and adjective NP constructions.

Progressive -ing

The progressive -ing form was tallied whenever used in the progressive tense (present, past, or future progressive), excluding its use as a gerund.

Copula

This category included singular, plural, present, and past copulas (am, is, are, was, were).

Plural

This category encompassed short and long plural forms, represented by both /s/ and /z/ allomorphs assigned to nouns (e.g., "cats", "gorillas"). However, in cases like "my friends' cats scared me," the plural marker -s could not be scored due to ambiguity in determining its attachment.

Auxiliary

This category comprised singular, plural, present, and past auxiliaries.

Past regular

All past regular allomorphs were counted (i.e., /t/, /d/, and /əd/). However, in cases like "I missed the train," the -ed ending was not tallied due to difficulty in discerning whether the stop sound /t/ belonged to the end of "missed" or the beginning of "the."

Past irregular

This category included only main verbs such as went, won, came, etc. Past auxiliaries (was and were) were not tallied as they fell under the auxiliary category.

Method of Data Analysis

Audio recordings were transcribed using a broad transcription approach, as Mackey and Gass (2005) suggested, focusing on relevant utterances and minimizing detail. Analysis principles were based on Brown et al.'s (1973) methodology. Obligatory occasions referred to instances where specific morphemes were required. L2 learners, still in the learning process, might omit necessary forms, such as using "I visit an old friend" instead of "I visited an old friend" for a past event. Obligatory occasions were treated as separate test items, and the absence of a functor rendered the utterance incorrect (e.g., "I register with a GP" without the -ed ending). However, if a correct functor was present, the utterance was considered correct, even if the overall sentence was incorrect (e.g., "he's eats"). Each correctly used functor was tallied individually (e.g., two correct uses in "I visited an old friend and went to a barbershop"). The researcher calculated the percentage of correct functor use across all obligatory occasions. This scoring method allowed the identification of the most accurate morphemes and the recognition of the least accurate forms. Descriptive statistics, emphasizing frequency measures, were employed for data analysis, facilitating the determination of how often participants produced correct and incorrect forms. The data analysis proceeded as follows.

Individual Score Method

Individual scoring was conducted by calculating the ratio of correct structures to total structures produced for a specific morpheme by each subject. This ratio was multiplied by 100 to obtain a percentage score. For example, consider the scoring method applied to six obligatory occasions produced by a subject for the past regular category.

Table 3: Individual Scoring

Morphemes	Past Regular	
	Raw Score	Obligatory Occasion
Subject 1: We contacted the landlord	0	1
I registered with a GP	1	1
They showed us our new flat	1	1
I collected my accommodation key	1	1
I opened a UK bank account	1	1
The bank delivered my debit card in one week	0	1
Total	4	6

$$\text{Individual score} = \frac{4}{6} \times 100 = 67$$

The morphemes were then sorted in descending order from the highest to the lowest score to obtain an order of acquisition. The acquisition orders were presented for the Arabic and Indonesian subjects separately.

Achmad Farid, Faiza Al-Dhahli, Adi Yusuf, Salim Ashar, Afifa S. Zulfikar

Group Means Method

Finally, the group means method involved calculating the ratio of correct structures to total structures produced for each morpheme by all subjects. This calculation was performed for individual functors and the entire sample. The acquisition orders were determined by sorting the morphemes in descending order based on their scores. Statistical tests were conducted to examine the correlation between groups.

Findings

The Acquisition Order for L1 Arabic Speakers

The line graph in Figure 1 illustrates the order of English morphemes acquisition obtained for L1 Arabic speakers learning English. As illustrated, the three Arabic subjects strikingly show similar patterns of acquisition: pronoun case, auxiliary, copula, articles (*the/a*), progressive *-ing*, plural, past regular, and past irregular.

Figure 1: The Acquisition Order of English Morphemes Obtained for L1 Arabic Speakers
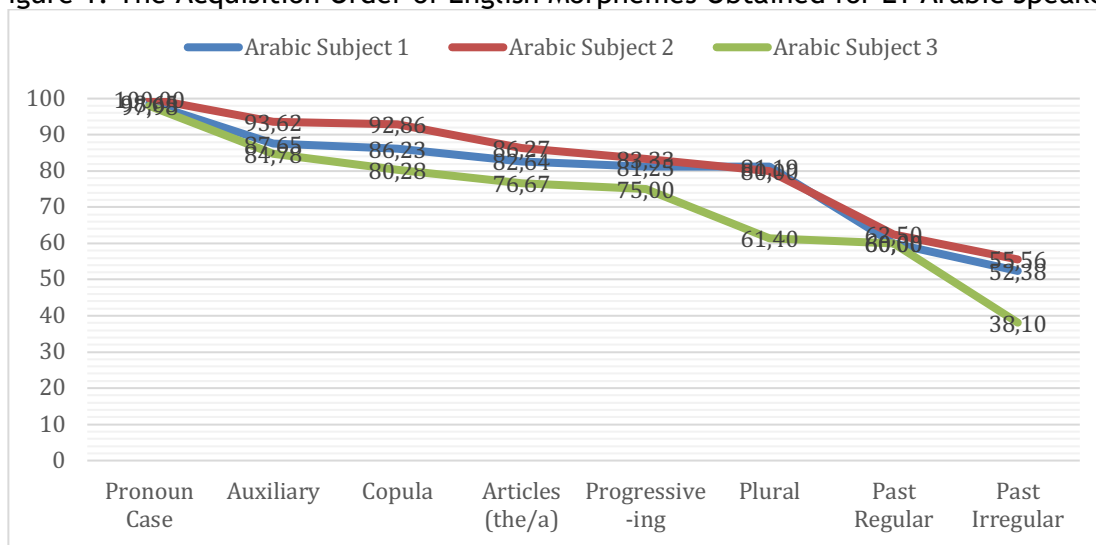

Table 4 below shows that the three Arabic subjects performed at the ceiling in pronoun case with the group mean accuracy level of 98.78% (406/5). Auxiliary and copula are the next two morphemes acquired by L1 Arabic learners of English with group means accuracy level of 88.48% (315/41) and 86.38% (241/38) consecutively. Articles (*the/a*) are the next morpheme acquired (rank 4) with an accuracy level of 82.11% (257/56), slightly lower than the copula.

Table 4: Raw Scores and Percentages of Performances for L1 Arabic Speakers

Morphemes	Correct structures	Accuracy level
	Obligatory occasion	
Pronoun case	406/411	98.88%
Auxiliary	315/356	88.68%
Copula	241/279	86.46%
Article	257/313	81.86%
Progressive -ing	35/44	79.86%
Plural	157/208	74.20%
Past Regular	35/58	60.83%
Past Irregular	29/60	48.68%

Meanwhile, the acquisition of progressive ranks fifth with the group means an accuracy level of 79.55% (35/9). Out of 208 obligatory occasions, 157 structures were produced correctly (75.48% accurate) for plural, making it the next morpheme acquired after progressive. In past regular and past irregular, the subjects relatively performed lower than in any other morphemes. They produced 35 correct past regular verbs out of 58 obligatory occasions (60.34% accurate). For past irregulars, their accuracy level was at 48.33%, producing 29 correct uses of forms out of 60 obligatory contexts.

The Acquisition Order of L1 Indonesian Speakers

The acquisition order of English morphemes for Indonesian-speaking learners is described in the line graph in Figure 2. The graph clearly shows that the contours of the three Indonesian subjects are strikingly similar, which implies that they have a common pattern of acquisition order of the morphemes. Based on the percentages of the accurate use of the morphemes on obligatory occasions, the Indonesian subjects acquire the morphemes in the following order: Pronoun Case, Auxiliary, Copula, Progressive –*ing*, Article (*the*/*a*), Past Regular, Past Irregular, and plural.

Figure 2: The Acquisition Order of English Morphemes Obtained for L1 Indonesian Speakers
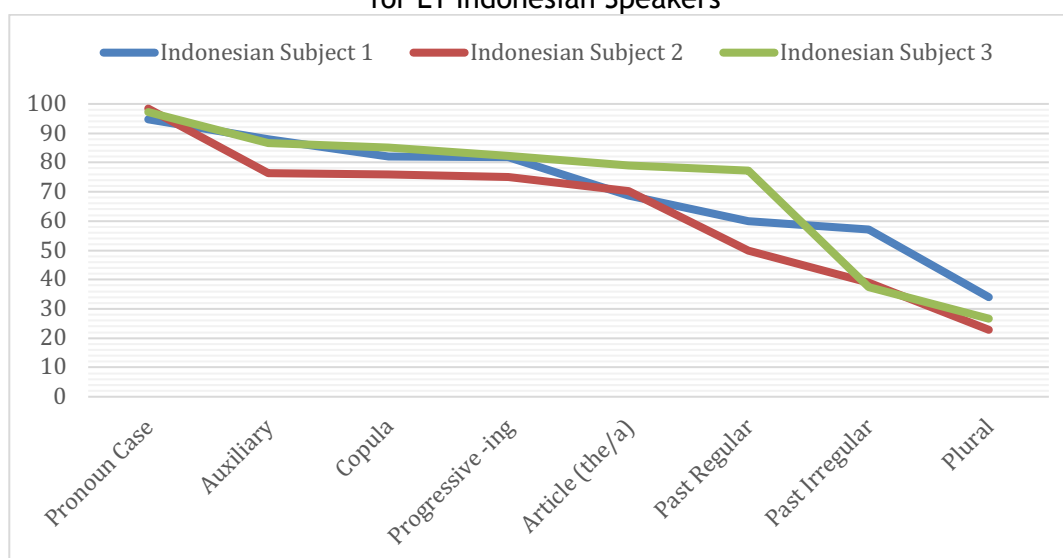

The following table 5 explains the performance and the accuracy level of using 8 English morphemes by L1 Indonesian speakers learning English. Based on the accuracy levels, Indonesian subjects also perform at the ceiling using pronoun case at 96.48% (356/369). The Indonesian subjects also showed A high accuracy level when they produced auxiliary and copula, with the accuracy level of 84.12% (233/277) and 81.61% (182/223) consecutively. It appeared that the subjects did not find significant problems using progressive –*ing*; out of 36 obligatory contexts, they can produce 29 correct forms (80.56%). However, articles (*the*/*a*) are acquired later as they scored lower at 72.86% (204/280). Past regular and past irregular are acquired quite late, ranking 6 and 7, respectively. The subjects used 27 past regular verbs correctly in 40 obligatory contexts (67.50% correct), while in using past irregular, only 14 structures were produced correctly in 33 obligatory contexts.

Table 5: Raw Numbers and Percentages of Performances for L1 Indonesian Speakers

Morphemes	Correct structures	Accuracy level
	Obligatory occasion	
Pronoun case	356/369	96.48%
Auxiliary	233/277	84.12%
Copula	182/223	81.61%
Progressive -ing	29/36	80.56%
Article (the/a)	204/280	72.86%
Past Regular	27/40	67.50%
Past Irregular	14/33	42.42%
Plural	41/145	28.28%

Figure 3: Comparison of the Acquisition Order Obtained
for L1 Arabic and L1 Indonesian
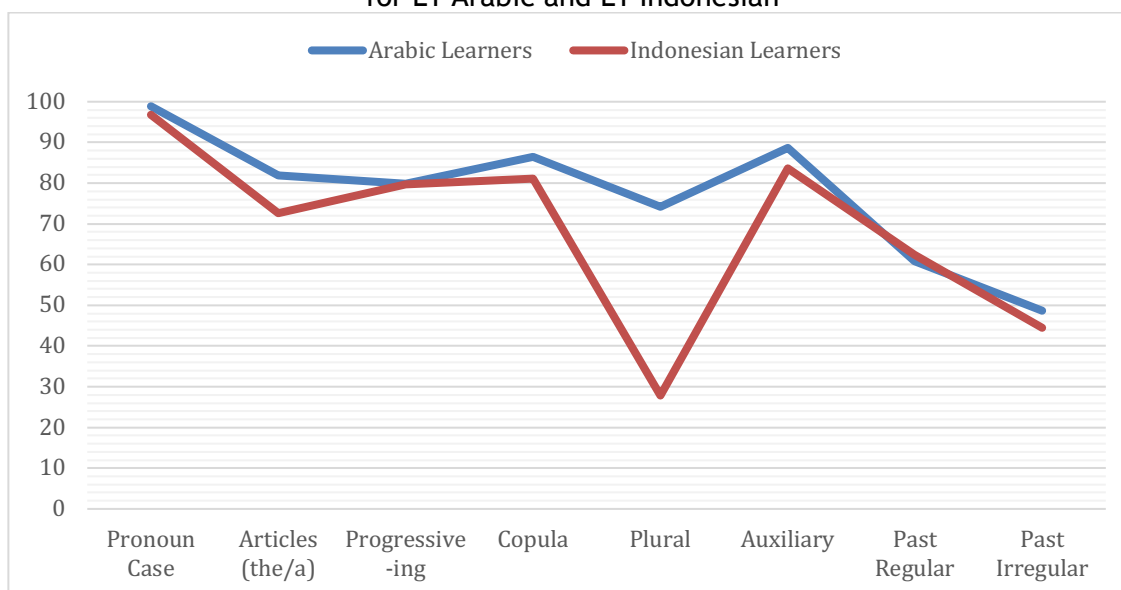
Surprisingly, the plural is the last morpheme acquired by the Indonesian subjects, which differs greatly from Dulay and Burt's finding (1974). In Dulay and Burt, the plural is acquired much earlier, while in this study, Indonesian subjects showed low performance in producing the plural; that is, only 41 plural forms were produced correctly on 145 obligatory occasions.

Agreement Between Groups
Statistical Package for the Social Sciences (SPSS) was used to produce the group statistics and to find the relationship between the two groups. The result from the Kolmogorov-Smirnova test (Field, 2005: 144) showed that the data were not normally distributed ($p < 0.05$). Therefore, a non-parametric was used to compare the differences in orders yielded by the two groups. As this study is a between-group design study, that is, the data were collected from two different groups of people who were scored for their accuracy of the use of 8 English morphemes, a statistical test called the Mann–Whitney test (Mann and Whitney, 1947, cited in Field, 2005) was run. This test was chosen because the variables were categorical, and the accuracy levels of using morphemes were obtained from L1 Arabic and L1 Indonesian speakers learning English.

Bonferroni adjusted alpha levels (Field, 2005: 373) to correct the *a-level* for multiple comparisons. Each test run applied a criterion of the significance of the *a*-level

divided by the number of tests conducted (.05/8 = .006 per test). No significant difference was found (*ps*>.006) between the two groups in their performance on the eight morphemes. The results of the test are described in table 6 below.

Table 6: The Mann-Whitney test of the English Morpheme Acquisition order of L1 Arabic and L2 Indonesian Speakers

Morphemes	Mann-Whitney *U*	Z	Asymp Sig. (2-tailed)	L1 Arabic means	L1 Indonesian means
Pronoun case	1	-1.53	0.13	98.9	96.8
Auxiliary	3	-0.66	0.51	88.7	83.6
Copula	2	-1.09	0.28	86.5	81.0
Article	1	-1.53	0.13	81.9	72.6
Progressive -ing	4.5	0	1	79.9	79.7
Plural	0	-1.96	0.05	74.2	27.8
Past Regular	4	-0.23	0.82	60.8	62.4
Past Irregular	4	-0.22	0.83	48.7	44.5

Summary of the Results

Within the Arabic group, the subjects showed a high level of agreement in acquisition order. It is apparent that there is a strikingly similar order of acquisition within the Arabic group in their acquisition orders of the 8 English morphemes. The first morpheme acquired by the Arabic learners is pronoun case, with a very high accuracy level of 98.78 percent, while the last morpheme acquired is past irregular, with an accuracy of only 48.68 percent.

Within the Indonesian group, the subjects also showed very similar acquisition patterns, though the order is slightly different from their Arabic counterparts (a detailed comparison of the two will be presented in the next section). Although the Indonesian group performed slightly lower than the Arabic group in the pronoun case with a 96.48 percent accuracy level, it remains the first morpheme acquired by the Indonesian subjects. Unlike the Arabic group, who scored relatively higher in the plural than past regular and past irregular, Indonesian subjects scored very low in the plural, indicating that it is the last morpheme acquired by the Indonesian subjects.

However, the statistical result showed that the L1 Arabic-speaking learners did not perform differently from the L1 Indonesian-speaking learners in all eight morphemes. Thus, there was no significant difference between the two groups in their performance (all *ns* because all *ps*> .006).

DISCUSSIONS

The main inquiry in the research question was whether there is a common order of the acquisition of English morphemes by L1 Arabic and L1 Indonesian speakers learning English. The research question arose with the claim by de Villiers and de Villiers (1973), Brown (1973), Dulay and Burt (1974), Krashen (1977, 1982), and (Pienemann, 1988) in relation to the existence of natural order in the acquisition of morphemes by learners from different L1 backgrounds. The results of this cross-sectional study offer far-reaching implications for the acquisition of morphemes and language transfers. The study found an agreement of acquisition order between subjects within the same language group. However, there seems to be a slight difference in acquisition order between the Arabic and Indonesian groups, which L1 transfers may cause.

Natural Order Hypothesis VS Language Transfer

There are some similarities in the average order of the acquisition of morphemes between the one found in Dulay and Burt (1974) and this study. For example, Dulay and Burt found that pronoun case is acquired early. Similarly, in this study L1 Arabic and Indonesian learners of English perform in pronoun case, making it the first morpheme acquired. In addition, the acquisition of copula in Dulay and Burt's study (1974) and this study is also relatively similar. Although Dulay and Burt's copula ranks as the fourth morpheme acquired, and in this study, it ranks as the third, it is always consistently acquired before pasts and plural. This finding is in accordance with several studies conducted in the Indonesian contexts (see Rizqullah and Umami, 2021; Wulandari and Yusrizal, 2020; and Roswita and Kurniawan, 2019), which suggests that the Natural Order Hypothesis is relevant to the acquisition of copula and other morphemes in the Indonesian context. However, various factors, including task type and language proficiency level, may influence the order of acquisition.

Table 7: The Order of Acquisition of English Morphemes in Dulay and Burt (1974) and in the Current Study

| No. | Dulay and burt (1074) | The current study | |
		Arabic Subjects	Indonesian Subjects
1	Pronoun case	Pronoun case	Pronoun case
2	Article (*the/a*)	Auxiliary	Auxiliary
3	Progressive *-ing*	Copula	Copula
4	Copula	Article (*the/a*)	Progressive *-ing*
5	Plural	Progressive *-ing*	Article (*the/a*)
6	Auxiliary	Plural	Past Regular
7	Past Regular	Past Regular	Past Irregular
8	Past Irregular	Past Irregular	Plural

Articles (*the/a*) are acquired relatively in the early stage in Dulay and Burt (1974) and Bailey et al. (1974), and they are acquired before copula and auxiliary. However, in this study, articles are acquired after copula and auxiliary and are acquired slightly later. Although articles are usually consistent with Natural Order, the result in this study is not quite surprising as some studies show some disagreement (Luke and Shirai, 2009). For example, some studies investigating the morpheme acquisition by Japanese learners showed that articles are acquired later by L1 Japanese learning English than the Natural Order Hypothesis (Hakuta, 1976; Sasaki, 1987; Nuibe, 1986; Shirahata, 1988; Izumi and Isahara; 2004). This phenomenon has been claimed as the effect of L1 transfer because the Japanese language system does not recognize the use of articles. Therefore, it is plausible for Japanese learners to have difficulty acquiring articles.

Similarly, Arabic does not have a detailed system of articles. Arabic only has the definite article *al-* (Arabic: ال), prefixed to a noun to show definiteness. To express indefiniteness in Arabic, the speakers use the singular form of the word, and they do not need to add any morpheme. For example, one of the Arabic subjects omitted the indefinite article "*a*" when saying, "It's very nice city." Similarly, an Indonesian subject omitted the article "*a*" when saying, "I have account on Facebook." This omission mistake can be traced back to their L1's:

Arabic:

Innaha   madinah   ra'iah   jiddan

It-FEM   city   nice-FEM   very

'It is a very nice city'

Indonesian:

Saya	*mempunyai*	*akun*	*di*	*Facebook*
I	have	account	on	Facebook

'I have an account on Facebook'

The Arabic example was produced by Arabic subject 2, while the Indonesian example was taken from Indonesian subject 6's speech. From the examples above, it appears that the L1 Arabic and L1 Indonesian learners of English applied their L1 linguistic knowledge to English as their second language. However, the reason the Arabic subjects perform relatively better in Article than their Indonesian counterparts might be due to the Arabic language system, in which the definite article *al-* (Arabic: ال) can be used to simply replace the definite article *the* in English. Therefore, it is not an exaggeration to describe articles as one of the relatively difficult morphemes to acquire because of their 'novelty' and/or 'abstractness' for non-native English speakers who have different rules of articles in their native language (DeKeyser, 2005: 5).

The acquisition of progressive *–ing* ranks third in Dulay and Burt (1974), acquired after Article, and similarly acquired after Article in the Arabic group. Although the Indonesian group acquires progressive –ing after Article, the average order is very similar as progressive *–ing* is as the fourth morpheme acquired by the Indonesian learners. This high degree of relative similarity somehow supports the Natural Order Hypothesis, which states that 'the *bound* morphemes have the same relative order for first and second language' (Krashen, 1982: 13); that is, progressive *–ing* is acquired in the early stage in both L1 and L2 acquisition.

Krashen's Natural Order (1982) suggested that copula and auxiliary are among the early acquired morphemes, and the results of the current study support this fact. Sasaki (1987) also reported that five Japanese children acquired copula in the early stage. Similarly, in Pak (1987), cited in Luk and Shirai (2009), and Andersen (1983), auxiliary is reportedly acquired quite early. There is no explanation for why this study's L1 Arabic and L1 Indonesian speakers did not show L1 effects. In fact, Arabic and Indonesian are 'zero copula' languages (Rickford and Rickford, 2000: 43); that is, there is no overt marking of the relationship between the subject and predicate. Therefore, this phenomenon implies that the Natural Order exists in acquiring copula and auxiliary.

The finding on the acquisition of plural in this study contradicts the NOH. The hypothesis posits that plural is among the morphemes which 'have the same relative order for first and second language acquisition' (Krashen, 1982: 13). In Brown's study (1973) of L1 acquisition, plural was also among the morphemes early acquired. However, recent studies have reported different findings in the Indonesian context. For instance, Roswita and Kurniawan (2019) found that Indonesian EFL learners acquired past tense and progressive aspects earlier than plural marking. Similarly, another study by Wulandari and Yusrizal (2020) reported that task types and language proficiency significantly influenced the acquisition of English copula but not plural marking among Indonesian EFL learners.

The result for L1 Arabic learners' acquisition of plural is similar to that of Dulay and Burt (1974) and Bailey et al. (1974), meaning Arabic speakers did not score very high in using this morpheme. In fact, the Arabic language has a more complicated pluralisation system than English. For example, in Arabic, a singular noun may be pluralized using some methods, depending on whether it is a regular or irregular noun, a masculine or feminine noun, and whether the desired form is dual or more than two (Thatcher, 1993). This phenomenon can only be explained with the optionality theory proposed by Vainikka and Young-Scholten (1996) and Sorace and Filiaci (2006), even though this is out of the scope of the current study. The theory posits that there is the retention of L1 rules at the speakers' interface level, not at the core syntax level. That is to say that Arabic

speakers sometimes drop the use of 's' to form the plural, not because they do not know the rule but because the rule itself is not exactly similar to their L1 (Sorace & Filiaci, 2006).

Conversely, for Indonesian speakers, the plural is the last morpheme acquired, which contradicts Natural Order in L1 and L2 acquisition. This is not surprising as Andersen (1983) argued that there are some deviations related to the acquisition of plural, which leads to inconsistency with the Natural Order caused by L1 transfer. The fact that the Japanese child, Uguisu, in Hakuta (1976), who never acquired plural perfectly, also supports the existence of L1 transfer. Pak's study (1987), cited in Luke and Shirai (2009), also found that Korean children and adult ESL learners acquired plural very late (rank 8).

Therefore, to account for Indonesians' late acquisition of the plural, there is no better explanation than L1 transfer. This is plausible because plural can be formed in the Indonesian language system without necessarily inserting any bound morpheme. A typical plural in the Indonesian language is formed by reduplicating the word. For example, the plural form of the word *siswa* 'student' is *siswa-siswa* 'students'. However, this only applies when the word stands alone without being preceded by a numerical word (e.g., two, three) or group word (e.g., some, a number of). In the case of numerical and group word's presence, the reduplication is not necessary, for example:

Saya   bepergian   dengan   putri-putri   saya
I   travelled   with   daughters   my
'I travelled with my daughters'

Bangunan   ini   terdiri   dari   enam   rumah
Building   this   consist   of   six   flat
'This building consists of six flats'

Saya   juga   bisa   mengajar   di   beberapa   universitas
I   also   can   teach   in   some   universities
'I can also teach in some Universities'

From the example above, we can gain insight into the existence of L1 transfer in the interlanguage of an Indonesian speaker when he said, "This building consists of six flats" and "I can also teach in some University." In Indonesian, the plural can be recognized using the discourse context without special wording, especially when numerical or group words are present. Therefore, the mistakes happen because L2 learners occasionally refer to their native language system while producing L2 utterances.

Very consistent orders were found for past regular and past irregular. These two morphemes were acquired late, both by the Arabic and Indonesian subjects. This finding is consistent with those of Dulay and Burt (1974), Bailey et al. (1974), Hakuta (1976), and Shin and Milroy (1999), which also supports Krashen's Natural Order Hypothesis. Of course, this case cannot be ascribed to L1 transfer for Arabic learners because the Arabic language has both present and past forms of verbs. However, this low performance in past regular and past irregular can be attributed to L1 transfer for Indonesian speakers, as present and past verbs are in the same form in the Indonesian language system. The following example explains how present and past verbs are used in Indonesian:

Minggu   lalu   saya   hanya   tinggal   di   rumah
week   last   i   just   stay   at   home
'Last week I just stayed at home'

> *Setiap   hari   saya   hanya   tinggal   di   rumah*
> every   day   i   just   stay   at   home
> 'Every day I just stay at home'

From the example above, we can notice that the word *tinggal* 'stay' remains in the same form either in the present or in the past context. Without a clear context, we cannot judge whether an Indonesian verb is in a present or past form. The only way to distinguish Indonesian present or past form is by looking at its context, especially the time signal. Thus, the Indonesian speakers' late mastery of past regular and past irregular can be most likely ascribed to language transfer and perhaps the Natural Order.

Other Factors
Some other factors are considered to influence the results of the current study. The following sections will discuss the factors, including data elicitation methods and individual factors.

Data Elicitation Methods
Surprisingly, this study's results only partially support the NOH. In fact, so many previously discussed studies provide robust evidence for the existence of the so-called Natural Order in L2 acquisition. Remembering that this study does not use the BSM to elicit data, this raises a very interesting question of whether the acquisition order of morphemes is the result of the method used to elicit data or, indeed, it exists in all L2 learners without exception. However, if Natural Order does exist, whatever method is employed should obtain similar results.

Therefore, using a specific method to elicit data can be biased. For example, most of the studies which came up with very similar results of Natural Order (de Villiers and de Villiers, 1973; Brown, 1973; Dulay and Burt, 1974, Bailey et al., 1974, and so on) used the BSM to elicit speech data. A surprising fact of the bias of the method is found in, for example, Rosansky's (1976). Rosansky used both the BSM and spontaneous speech method to investigate morpheme orders, and it was quite surprising that the results of the two methods were not similar for the same subject at the same point in time. That is why he considered that the individual variability in using the functors correctly should not be taken for granted, and, therefore, statistical analysis should be done carefully to avoid making the variability unnoticeable.

This fact implies that using certain methods to investigate the acquisition order of morphemes can be biased. Therefore, using a particular method needs to be reconsidered because it is still unknown whether the order of acquisition is only the result of the method, such as the BSM, or it is an actual order of acquisition by all L2 learners in common.

Individual Factors
In cross-linguistic studies, the subjectivity of judgment is very important to consider (Kellerman, 1978). Subjectivity is related to L2 learners' background, including age, level of education, social status, and proficiency. In this study, the most influencing factor might be proficiency. Although the participants were required to have a 6 IELTS band score, it does not necessarily imply that they would show the same performance because some speakers may know the rules but are not able to apply them at all times. Therefore, Phillip (2012: 284) argued that difficulties in producing certain language forms are mostly related to the issue of linguistic performance rather than linguistic competence.

Achmad Farid, Faiza Al-Dhahli, Adi Yusuf, Salim Ashar, Afifa S. Zulfikar

CONCLUSION

This study investigated the acquisition of 8 English morphemes by L1 Arabic speakers and L1 Indonesian speakers learning English as a second language. The findings suggest that the claim made in the Natural Order Hypothesis (NOH) regarding the generalization of language acquisition order to all morphemes may not hold true. The evidence from cross-linguistic data in this study was not robust enough to support the NOH's claim on morpheme acquisition order. However, this does not mean that the Natural Order in language learning does not exist. It is proposed that the Natural Order may only influence certain morphemes, and further research is needed to identify which morphemes are affected by the Natural Order.

The study also found that language transfer is apparent in some cases, as learners from the same language background exhibited similar acquisition patterns, indicating the application of L1 rules to L2. Despite some variations in the acquisition patterns of the 8 English morphemes by Arabic and Indonesian speakers, statistical tests showed no significant differences in their performance. The orders of acquisition were also partially similar to the predictions of the NOH. However, due to the study's small sample size, it is considered a pilot study, and further investigation with larger samples and different data elicitation methods is necessary.

In conclusion, this study suggests a weaker form of the NOH, proposing that the Natural Order may only impact certain morphemes and may vary among learners from different L1 backgrounds. The findings indicate the need for further research to examine the extent and influence of the Natural Order on different morphemes in L2 acquisition.

REFERENCES

Agarwal, Apoorv, Boyi Xie, Ilia Vovsha, Owen Rambow, and Rebecca J. Passonneau. 2011. "Sentiment Analysis of Twitter Data." In *Proceedings of the Workshop on Language in Social Media (LSM 2011)*, 30-38.

Andersen, Roger. 1983. "Transfer to Somewhere." In S. Gass & L. Selinker (Eds.), *Language Transfer in Language Learning* 1: 177-201. Rowley, MA: Newbury House.

Bailey, Nathalie, Madden, Carolyn, and Krashen, Stephen D. 1974. "Is There a "Natural Sequence" in Adult Second Language Learrning?" *Language Learning* 24(2):235-243. Doi: 10.1111/j.1467-1770.1974.tb00505.x

Blom, Elma., and Unsworth, Sharon. 2010. *Experimental Methods in Language Acquisition Research.* Amsterdam: John Benjamins Publishing.

British Council. 2022. *The IELTS 9-band scale*. [Online]. [Accessed 1 July 2022]. Available from: http://takeielts.britishcouncil.org/find-out-about-results/understand-your-ielts-scores

Brown, Roger. 1973. *A First Language: The Early Stages.* Cambridge: Harvard University Press.

Cancino, H. 1975. "The Acquisition of the English Auxiliary by Native Spanish Speakers." *TESOL Quarterly* 9:421. Doi: 10.2307/3585626

Carreiras, Manuel, Duñabeitia, Jon A., Vergara, Marta, Cruz-Pavía, Irene d, & Laka, Itziar. 2010. "Subject Relative Clauses Are Not Universally Easier to Process: Evidence from Basque." *Cognition*, 115(1):79-92. Doi: 10.1016/j.cognition.2009.11.012

Choi, S., Ionin, T., & Zhu, Y. 2018. "L1 Korean and L1 Mandarin L2 English Learners' Acquisition of the Count/Mass Distinction in English. *Second Language Research* 34:147-177. Doi: 10.1177/0267658317717581

Cook, Vivian J. 1993. *Linguistics and Second Language Acquisition.* London: Macmillan.

Diaubalick, T., & Guijarro-Fuentes, P. 2019. "The Strength of L1 Effects on Tense and Aspect: How German Learners of L2 Spanish Deal with Acquisitional Problems." *Language Acquisition* 26:282 - 301. Doi: 10.1080/10489223.2018.1554663

de Villiers, Jill G., and de Villiers, Peter A. 1973. "A Cross-Sectional Study of the Acquisition of Grammatical Morphemes in Child Speech." *Journal of Psycholinguistic Research* 2(3):267-278. Doi: 10.1007/BF01067106

DeKeyser, Robert M. 2005. "What Makes Learning Second-Language Grammar Difficult? A Review of Issues." *Language Learning* 55(S1):1-25. Doi: doi:10.1111/j.0023-8333.2005.00294.x

Denscombe, Martin. 2010. *The Good Research Guide: For Small-Scale Social Research Projects: For small-scale social research projects.* London: McGraw-Hill International.

The Acquisition of English Morphology: A Quantitative Comparative Study of English Learners with L1 Indonesian and L1 Arabic Backgrounds

Dulay, Heidi C., and Burt, Marina K. 1973. "Should We Teach Children Syntax?" *Language learning* 23(2):245-258. Doi: 10.1111/j.1467-1770.1973.tb00659.x

Dulay, Heidi C., and Burt, Marina K. 1974. "Natural Sequences in Child Second Language Acquisition." *Language Learning* 24(2): 37-53. Doi: 10.1111/j.1467-1770.1974.tb00234.x

Ellis, Rod. 2002. "The Place of Grammar Instruction in the Second/Foreign Language Curriculum." In *New Perspectives on Grammar Teaching in Second Language Classrooms*, by E. Hinkel and S. Fotos (Eds.), 17-34. London: Routledge.

Field, Andy. 2005. *Discovering Statistics Using SPSS*. London: Sage Publications.

Hakuta, Kenji. 1976. "A Case Study of a Japanese Child Learning English as a Second Language." *Language Learning* 26(2):321-351. Doi: 10.1111/j.1467-1770.1976.tb00280.x

Izumi, Emi, and Isahara, Hitoshi. 2004. "Investigation into Language Learners' Acquisition Order Based on the Error Analysis of the Learner Corpus." In: *Proceedings of Pacific-Asia Conference on Language, Information and Computation (PACLIC) 18 Satellite Workshop on E-Learning, Japan.*

Liu, Dilin, and Gleason, Johanna L. 2002. "Acquisition of the Article The by Nonnative Speakers of English: An Analysis of Four Nongeneric Uses." *Studies in Second Language Acquisition* 24(1): 1-26. doi:10.1017/S0272263102001018

Luk, Zoe P. S., and Shirai, Yasuhiro. 2009. Is the Acquisition Order of Grammatical Morphemes Impervious to L1 Knowledge? Evidence from the Acquisition of Plural-s, Articles, and Possessive's. *Language Learning* 59(4):721-754. Doi: 10.1111/j.1467-9922.2009.00524.x

Łuniewska, M., Wodniecka, Z., Miller, C., Smolík, F., Butcher, M., Chondrogianni, V., Hreich, E., Messarra, C., Razak, R., Treffers-Daller, J., Yap, N., Abboud, L., Talebi, A., Gureghian, M., Tuller, L., & Haman, E. 2019. "Age of acquisition of 299 words in seven languages: American English, Czech, Gaelic, Lebanese Arabic, Malay, Persian and Western Armenian." *PLoS ONE* 14. Doi: 10.1371/journal.pone.0220611

Kellerman, Eric. 1978. "Giving Learners a Break: Native Language Intuitions as a Source of Predictions about Transferability." *Working Papers on Bilingualism Toronto* 15: 59-92.

Krashen, Stephen. 1977. "The Monitor Model for Adult Second Language Performance." *Viewpoints on English as a Second Language*: 152-161.

Krashen, Stephen. 1982. *Principles and Practice in Second Language Acquisition.* Oxford: Pergamon.

Freeman, Diane E. Larsen. 1975. "The Acquisition of Grammatical Morphemes by Adult ESL Students." *TESOL Quarterly* 9(4):409-419. Doi: 10.2307/3585625

Luk, Zoe Pei-sui, and Shirai, Yasuhiro. 2009. "Is the Acquisition Order of Grammatical Morphemes Impervious to L1 Knowledge? Evidence From the Acquisition of Plural-s, Articles, and Possessive's." *Language Learning* 59(4):721-754. Doi: 10.1111/j.1467-9922.2009.00524.x

Mackey, Alison. and Gass, Susan M. 2005. *Second Language Research: Methodology and Design.* New York: Routledge.

Mann, H.B. and Whitney, D.R. 1947. "On a Test of Whether One of Two Random Variables is Stochastically Larger than the Other." *The Annals of Mathematical Statistics* 18(1):50-60. Doi: 10.1214/aoms/1177730491

Nuibe, Y. 1986. "A Report on the Development of the Grammatical Morphemes in Japanese Junior High School Students Learning English as a Foreign Language." *Kyoiku Kagaku Educational Science*, *28*(2): 371–381.

Odlin, Terence. 1989. *Language Transfer: Cross-linguistic Influence in Language Learning*. Cambridge University Press.

Phillips, Colin. 2012. Individual Variation and Constraints on Language Learning. *Linguistic Approaches to Bilingualism* 2(3):281-286. Doi: 10.1075/lab.2.3.08phi

Pienemann, Manfred. 1988. "Determining the Influence of Instruction on L2 Speech Processing." *AILA Review* 5:40-72. Doi: 10.1075/aral.10.2.07pie

Rickford, John R, and Rickford, Russel J. 2000. *Spoken Soul: The Story of Black English.* USA: John Wiley & Sons.

Rosansky, Ellen J. 1976. "Methods and Morphemes in Second Language Acquisition Research." *Language Learning* 26(2):409-425. Doi: 10.1111/j.1467-1770.1976.tb00284.x

Sadeghi, K. 2009. "Collocational Differences Between L1 and L2: Implications for EFL Learners and Teachers." *TESL Canada Journal* 26:100-124. Doi: 10.18806/TESL.V26I2.417

Sasaki, Miyuki. 1987. "Is Uguisu an Exceptional Case of "Idiosyncratic Variation"? Another Counter Example to the "Natural Order."" *Chugoku-Shikoku Academic Society of Education Research Bulletin* 32:170-174.

Shin, Sarah J. and Milroy, Lesley. 1999. "Bilingual language acquisition by Korean school children in New York City." *Bilingualism: Language and Cognition* 2(02):147-167. Doi: 10.1017/S1366728999000243

Shirahata, Tomohiko. 1988. "The Learning Order of English Grammatical Morphemes by Japanese High School Students." *JACET Bulletin* 19:83-102.

Achmad Farid, Faiza Al-Dhahli, Adi Yusuf, Salim Ashar, Afifa S. Zulfikar

Sorace, Antonella, and Filiaci, Francesca. 2006. "Anaphora Resolution in Near-Native Speakers of Italian." *Second Language Research* 22(3):339-368. Doi: 10.1191/0267658306sr271

Pak, Y. 1987. *Age Differences in Morpheme Acquisition among Korean ESL Learners: Acquisition Order and Acquisition Rate*. Ph.D. Thesis, University of Texas, Austin.

Thatcher, Griffithes W. 1993. *Arabic Grammar of the Written Language.* New York: Hippocrene Books.

Vainikka, A. and Young-Scholten, M. 1996. "The early stages in adult L2 syntax: Additional evidence from Romance speakers." *Second Language Research* 12(2):140-176. Doi: 10.1177/0267658396012002

Warsono, W. 2016. "Language Transfer in Learner Language." *EduLite Journal of English Education, Literature and Culture* 1:103-114. Doi: 10.30659/E.1.1.103-114

Wei, L. 2000. "Unequal Election of Morphemes in Adult Second Language Acquisition." *Applied Linguistics* 21:106-140. Doi: 10.1093/APPLIN/21.1.106

How to Cite the Article (in *The Chicago Manual of Style 16*)

In-text Citation:

Farid et al. (2023, 53) …..
….. (Farid et al. 2023, 53)

Reference List Entry:

Farid, Ahmad, Faiza Al-Dhahli, Adi Yusuf, Salim Ashar, and Afifa S. Zulfikar. 2023. "The Acquisition of English Morphology: A Quantitative Comparative Study of English Learners with L1 Indonesian and L1 Arabic Backgrounds." *Mahakarya: Student's Journal of Cultural Sciences* 4 (1):47-63. https://doi.org/10.22515/msjcs.v4i1.6613