Stress production by Cebuano learners of Arabic: A metrical analysis

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ABSTRACT

Stress is one of the most neglected components of the Arabic language in classrooms (Lin, 2018; Ryding, 2013).This study is devoted to analyzing stress production in Arabic as produced by Cebuano learners in order to highlight the challenges so that teachers can address them in the best way. The data have been examined within the metrical theory of word stress elaborated in Hayes (1995). A sample of 100 words has been considered, spoken by six non-native speakers of Arabic, three females and three males, whose first language is Cebuano, the national language of the Philippines. Data analysis shows that native Cebuano speakers have an iambic foot, where the foot involves left-to-right parsing, satisfies the End Rule Right Principle by which the main stress lands on the head of the rightmost visible foot, and imposes a weak ban on the degenerate foot. Intriguingly, foot iambicity observed in the produced words is regarded as a reflection of the speakers' source language (Ll) that has an iambic foot. Arabic words spoken by Cebuano non-natives conform to the bimoraic condition for the minimal phonological word that takes the primary stress, and is repaired only through vowel lengthening; whereas gemination, as a main strategy for creating bimoraicity, is totally absent. Similarly, vowel lengthening is seen as a transfer effect of L1, where stress always attracts a long vowel. The results point to the great importance of prosody in teaching Arabic as a foreign language, since prosodic features significantly contribute to the communication intelligibility.

Keywords: Iambic foot; L2 stress; metrical theory; phonological adaptation; transfer effect

INTRODUCTION

Mastering a foreign language is the main concern of recent scientific research, not only linguistically but also politically, psychologically, and sociologically (Dörnyei, 1998; Lambert, 1967). Monolingualism has become rare in our societies as people daily recognize the importance of learning the language of their destination (Kijak, 2009). During the acquisition process, learners of a second language (L2) struggle with many problems in producing and perceiving the L2. They rarely reach the same level of competence as those who acquire their first language (Ll) as children, as we are born with an innate capacity for language learning. This acceptance of a new system where none existed is termed a language acquisition device (Chomsky, 1965). Biological and cognitive prerequisites are developed and adapted to the language acquisition system (Lenneberg, 1967). These processes naturally take place consecutively and spontaneously when babies listen to their families communicating around them using language.

One of the significant concepts in L2 learning is that of *interlanguage*, which refers to the linguistic system developed by L2 speakers in the process of learning the L2, whereby they preserve features from both languages (Fantazi, 2008; Selinker, 1972). The interlanguage phonology of L2 learners would be that of non-native speakers who seek to: a) produce new segments, and b) learn to set off phonological rules and constraints that control their production, and follow some adaptation patterns which result from interference of L1 (Lin, 2018).

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The interlanguage phonology of L2 learners has been the primary concern of recent linguistic analysis (e.g., Fantazi, 2008; Lin, 2018). These works emphasize that post-puberty learners fail to achieve natives' phonological competence in L2. For example, the English language skills of Cuban children who were exposed to English at the 1-6 years old stage were found to produce a native-like English compared with 13-year olds or above, who can never produce a native-like accent (Asher & Garcia, 1969; Scovel, 1988).

Several factors affect L2 learning process, including (i) the role of the mother language, in that L2 learners come with the knowledge of L1; for example, where the learner's knowledge of L2 is not sufficient, he/she applies knowledge of L1 (Karim & Nassaji, 2013); (ii) the kind of phonological input that learners live in the L2 setting; (iii) learner's age; (iv) the amount of input (Fantazi, 2008; Moyer, 2009); and (v) the length of exposure (Fantazi, 2008). Therefore, learners' linguistic knowledge of L2 can differ in many respects: processing, accuracy, speed of learning, and learning mechanism (Lin, 2018).

Most L2 learners face language transfer effects (cf. Brown, 1980; Dulay, Burt, & Krashen, 1982; Lin, 2018; Yan, 2010). Language transfer comprises the linguistic knowledge of the source language and the transfer of social and cultural norms (Ma, 2013). This posits that L2 learners of different L1s are expected to produce words that correspond to the context of their native language. For example, Ueyama (2000) demonstrates that Japanese learners of English adapted/transferred F0 (pitch) and temporal length patterns, which were previously acquired in their L1, Japanese. Lin (2018) shows that Chinese produce Arabic lexical stress more fluently than English participants, contributed to by the Chinese learners' better use of stress correlates. Similarly, examining the acquisition of English stress by learners of seven languages, Altmann (2006) shows that learners from non-stress languages, for example, Korean, Japanese, and Chinese, were the worst in placing stress, where stress was assigned to an ultimate syllable. Although stress is unpredictable in Spanish as in English, learners' performance was unsatisfying as expected, where they tended to stress the final syllable. Intriguingly, in languages with predictable stress, as in Turkish and Arabic, learners correctly placed stress in most cases.

Several studies emphasize the significant role of stress in the intelligibility of L2 learners (e.g., Al-Jarrah, 2002; Jenkins, 2000; Kondo, 2009). In order to maintain the minimum intelligible commutations among non-native speakers, learners should learn a list of phonological features, including stress placement, which should be the core of the pronunciation syllabus of learners of English (Jenkins, 2000). Zoghbor (2018) reported that out of 204 incidents of communication breakdown by Arab learners of English, 170 of them were phonological, while 34 were grammar and vocabulary mistakes.

Over recent decades, a great body of the literature has considered stress production and perception by non-native speakers (e.g., Al-Jarrah, 2002; Keyworth, 2014; Kondo, 2009). Whereas most of the recent related work considered English as a second language, none of these studies has dealt with the stress production by Cebuano learners of Arabic, where native competence is hard to attain, particularly in phonology as opposed to other areas of linguistics like syntax and pragmatics. Additionally, many of the previous studies on L2 stress have been analyzed acoustically, yet none of them has accounted for the behavior of L2 stress from a metrical perspective, which can make significant contributions to linguistic theory. Acquiring the stress system of L2 is also of special significance since it promotes better communication skills by reducing the foreign accent which might result in misunderstandings and learners' lack of self-confidence (Lin, 2018). This study therefore endeavors to fill in a gap in the literature by examining the stress patterns produced by Cebuano learners of Arabic, to find the role that L1 plays in their production of stress in light of the metrical proposal developed by Hayes (1995).

What follows is a discussion of stress systems in first and second languages, the methods employed in this study, and then a presentation of patterns of stress in L2. Within the metrical framework, we then discuss stress in the speech of Cebuano learners of Arabic. Examples of adaptation of stress in L2 are then analyzed, followed by concluding remarks and recommendations for future work.

The phonology of stress in Arabic and Cebuano
Learning prosodic features, including word stress, is an important skill that L2 learners must acquire if they are to master the target language and build up self-confidence (Morley, 1991; Zhang, 2004). Placement of stress is problematic for language learners due to the different phonological systems in L1 and L2 (Karjo, 2016). The syllable structure plays a significant role in stress acquisition; thus, Cebuano learners of Arabic should acquire the syllabification patterns and processes in Arabic, despite problems of consonant clusters within the same syllable which learners tend to avoid through epenthesis or deletion (cf. Fantazi, 2008). For Cebrian (2009), similar to the segmental structures, acquisition of the prosodic and suprasegmental structures is also subject to interference from L1, among other factors.

Stress is the phonetic feature of a syllable that is produced with higher energy than the neighboring syllables. Stressed syllables are characterized by prominence mainly achieved by greater intensity, a longer duration, and a higher pitch than other syllables within the phonological word (Kager, 2012; Ladefoged & Johnson, 2010; Mashaqba, 2015). In some languages, stress placement is predictable and pattern-governed (the so-called fixed stress system); for instance, word-initial syllable constantly receives the main stress in Czech, whereas the word-final syllable is consistently the most prominent in French. In Polish, the penultimate

syllable always receives primary stress (Stehling, 2009). In other languages with lexical accents, stress placement cannot be predictable (the so-called free stress system) (Hayes, 1995, p. 32).

Placement of stress in Arabic dialects is sensitive to certain principles: i) each word should have at least one prominent syllable (the cumulative property), ii) stress lands near word edges (the demarcative property), and iii) sensitivity to syllable length is active. Much work has addressed stress in Jordanian Arabic (JA) varieties, e.g., Bani Ḥassan Bedouin (Irshied, 1984), Abba:di Arabic (Sakarnah, 1999), Wa:di Mousa Arabic (Huneety, 2015), Wadi Ramm Arabic (Mashaqba, 2015), and Bedouin Jordanian Arabic in the North (Huneety & Mashaqba, 2016). The core analysis of these works (except for that of Mashaqba, 2015 and Mashaqba & Huneety, 2018) suggests that all JA dialects share with Levantine dialects the same (moraic) trochaic foot ('μ μ), metrification directionality and level of extrametricality. Basically, stress in these works shares the following algorithms:

a. Stress lands on the right-most heavy syllable within a three-syllable window, where the word-final consonant is rendered extrametrical, e.g., *bu.'ʃār* 'popcorn,' *bur.'kān* 'volcano,' *ma.'sā.dʒid* 'mosques,' *'xaj.ja.ṭat* 'she sewed.'
b. In the absence of heavy syllables among the three right-hand syllables, the antepenultimate syllable receives the primary stress, e.g., *'ba.ga.ra* 'cow.'
c. In disyllabic light words, stress lands on the initial syllable (x .), e.g., *'ka.tab* 'he wrote.'

Linguistic status in the Philippines is complicated. There are around 172 languages, of which three are extinct (Aspillera & Yolanda, 2014). Eight of these languages are spoken by around 90% of the population: Cebuano, Kapampangan, Tagalog, Ilocano, Bicolona, Hiligaynon, Pangasinan, and Waray.

Cebuano, the main concern of this work, is the official language in Cebuano phone areas of the country and is spoken by around 10 million people. It is widely spoken in the Philippines and is understood by around half of the population for its local influence.

Stress is quantity-sensitive in Cebuano, where a CVC syllable is heavy, and CV is light (Shryock, 1993). Short vowels may undergo lengthening when stressed. Either the penultimate or ultimate syllables trigger the main stress, on the basis that the heavy penultimate syllable attracts the main stress irrespective of the shape or weight of the ultimate syllable, e.g., *'tin.da* 'sell,' *'lib.ro* 'book'. Stress placement is unpredictable if the penultimate syllable is light, sometimes falling on the penultimate syllable, as in *'da.ro* 'plough', and sometimes on the ultimate syllable, as in *pa.'lit* 'buy.' Therefore, the right-most syllable weight does not contribute to stress position; it may be heavy and yet fail to attract stress, or it can be light and take the main stress.

Shryock (1993) also demonstrates that Cebuano has an iambic foot (μ 'μ) that is parsed from right to left. There is a weak ban against the degenerate foot; thus, a single mora can construct a foot. Assigned by the End Rule Right (ERR), stress lands on the head of the right-most foot. To account for not stressing the final heavy syllable, it has been assumed that final heavy syllables are rendered light (taking one mora) as the final consonant is deemed extrametrical. Degenerate feet are deemed extrametrical when peripheral feet contain an extrametrical consonant. Data (a)-(d) below summarize stress profiles in Cebuano (Shryock, 1993).

a. Consonant extrametricality: C → ⟨C⟩ /___] word (except for monosyllabic words)
b. Foot construction: form iambic foot from right to left.
c. Degenerate foot: weak prohibition.
d. Word layer construction: End Rule Right.

Stress has been addressed in other languages of the Philippines. For example, in Tagalog, the national language, stress is phonemic, i.e., it can distinguish between words with the same shape, e.g., *'bu.kas* 'tomorrow,' *bu'kas* 'open'; *'ba.gah* 'ember,' *'ba.gah* interrogative particle. Two stress types are observed: (i) primary, which concerns the root and is always assigned to either the ultimate or penultimate syllables, and (ii) secondary stress, which applies as the outcome of some derivational and inflectional processes (French, 1991).

According to Otanes and Schachter's (1972) length hypothesis, vowel length in Tagalog is contrastive, where all syllables containing long vowels are more prominent than other syllables. They report that long vowels are characterized by prominence in terms of pitch and length in non-final positions, but by a prominent pitch in final positions (French, 1991). The main stress lands on either two syllables of the epistgam. The penultimate syllable triggers stress if it is heavy (trochaic); if it is light, then stress goes to the ultimate one and therefore is iambic (Potet, 2013).

The fact that JA and Cebuano employ different stress systems poses a challenge for Cebuano learners of Arabic, where phonological attainability is hard. Accordingly, errors in prosodic elements, e.g., syllable, stress, would cause unintelligibility of learners' speech, with natives taking more time understanding the imprecise form. It can also affect native speakers' judgments on non-native pronunciation if they are irritated and prejudiced by unfamiliar accents. A comparative study like this is significant in order to highlight areas of difficulty for L2 learners and recommend some pedagogical strategies that concern the progress in L2 pronunciation skills, with special focus on the native prosodic features.

METHODS
To analyze patterns of word stress in Arabic articulated by Cebuano speakers, the researchers collected data from six participants, three females and three males,

who had been exposed to JA for a period of 7-11 years. The ages of the participants range from 25-50, and all were exposed to Arabic post-puberty; that is, they were no longer able to acquire L2 with native competence in their L2 phonology (Fantazi, 2008; Lenneberg, 1967). The researchers confirmed that the learners are free from speech disorders, and were ready to contribute voluntarily in work.

Two methods were utilized in this study. Interviews were the main source of data, with each interview face to face on several occasions. Each session lasted 5-10 minutes. The interviews included a variety of questions covering several themes, such as lifestyle, daily activities, cultural heritage, marriage, social occasions, food, and drink. Personal information, religious and political concerns were avoided. Second, picture elicitation was used to generate new data; participants were shown sixty pictures and asked to comment on them.

Oral data from an average of 7 minutes for each participant were recorded and backed. A corpus of 100 JA words covering all possible syllable weights was recorded, classified according to syllable numbers and syllable weight, transcribed and glossed into English. All data were transferred to an Excel sheet. Three native speakers of Arabic, then, auditorily assigned stress on the words produced by Cebuano learners of Arabic. Patterns of stress were then theoretically analyzed.

FINDINGS AND DISCUSSION

Production of Arabic L2 stress is rule-governed and is associated with the syllable weight as well as the distance between the target syllable and the right edge of the word (Huneety, 2015; Mashaqba, 2015; Watson, 2011). The native language has also a considerable role in stress placement in Arabic. The following algorithms summarize the placement of Arabic L2 stress by Cebuano natives.

a. For monosyllabic words, the stress lands on the single syllable, as shown in Table 1.

Table 1. Stress in monosyllabic words

JA word	Example	Glossary
'nuṣṣ	'nu:s	half
'lʌʔʔ	'la:ʔ	no
'ʔimm	'ʔu:m	mother
'dʒild	'dʒiit	leather
'ra:s	'ra:s	head
'ʃu:	'ʃu:	what
'ku:ʕ	'ku:ʔ	elbow
'ra:ḥ	'ra:h	went

Note here that all monosyllabic words are bimoraic and, therefore, conform to the minimality condition exhibited by many Arabic dialects (Hayes, 1995; Huneety, 2015; Mashaqba, 2015; Watson, 2002). Interestingly, all such words contain long vowels, which can be seen as a transfer effect from participants' native language, where stress is characterized by vowel lengthening. In the case of word-final geminates, i.e., CVCC, the geminates are realized as singleton consonants, whose loss is compensated for by lengthening the vowel, producing CVVC, e.g., the monosyllabic word *'nuṣṣ* 'half' /nu$_\mu$ş$_\mu$<ş>/ takes place as *'nu:s* [nu:$_{\mu\mu}$<ş>]. This result also confirms the notion that the production of geminates poses a problem for non-native speakers of Arabic (Al-Mashagbah, 2010).

b. In disyllabic words, stress lands on the rightmost visible superheavy syllable; If both syllables are light, stress lands on the ultimate (rightmost); otherwise, stress is assigned on the penultimate heavy syllable, as shown in Table 2.

Table 2. Stress in disyllabic words

JA word	Example	Glossary
'za.riʕ	za.'riʔ	plant
'ʕu.ʃub	ʔu.'ʃub	grass
'na:.ʕim	'na:.ʔim	soft
'ka:.tib	'ka:.tib	witer
tʌn.'ḍi:f	tan.'ḍi:p	cleaning
siʃ.'wa:r	sis.'wa:r	hair dryer
xa.'ru:f	ka.'ru:f	sheep

Table 2 shows Arabic words spoken by the native speakers of the Cebuano language produce an iambic foot (μ'μ) where the rightmost syllable is stressed (L'L), e.g., *we.'dʒi* 'face.' This is different from a number of JA dialects, e.g., Bani Hassan Bedouin (Irshied, 1984), Abbadi Arabic (Sakarnah, 1999), and Wa:di Mousa Arabic (Huneety, 2015) which have a trochaic foot ('μ μ). This finding highlights another effect of the participants' native language, where stress attracts a heavy penultimate syllable, but otherwise is put on the ultimate syllable (Potet, 2013; Shryock, 1993). It should be mentioned that the voiced pharyngeal fricative /ʕ/ is articulated as a glottal stop because the participants' L1 lacks any gutturals.

More intriguingly, a number of Arabic monosyllabic words having CCVVC become disyllabic words by inserting a vowel to avoid onset clusters. This resyllabification process produces a CV.CVVC structure, where the ultimate syllable receives the primary stress, as given in Table 3.

The epenthesis of the intervening vowels can be accounted for by the fact that the Cebuano phonology does not allow consonant clusters except in loan/borrowed words (Malabonga & Marinova-Todd, 2007). It is worth noting that the epenthesized vowel and the new syllable are not enough to attract the primary stress due to prosodic weight patterns in L1.

Table 3. Stress in disyllabic words including vowel epenthesis

JA word	Example	Glossary
'kta:b	ki.'ta:b	book
'bʕi:d	ba.'ʔi:d	far
'ḥma:r	hi.'ma:r	donkey
'xja:r	ki.'ja:r	cucumber

c. In multisyllabic words, a heavy syllable is visible to the main stress in the last two syllables of the word and does not overstep the penultimate window. Thus, stress lands on the rightmost superheavy syllable; otherwise, it lands on the heavy penultimate syllable. With the native word has monomoraic ultimate and penultimate syllables, the penultimate syllable undergoes a process of vowel lengthening. Again, this is seen as an impact of speakers' L1, where heavy (bimoraic) penultimate syllables always trigger the main stress irrespective of the weight of other syllables (see Table 4 for illustration).

Table 4. Stress in trisyllabic words

JA word	Example	Glossary
dʒa.wa. 'za:t	dʒa.wa.'za:t	passports
sidʒ.'dʒa:.da	sa.'dʒa:.da	carpet
duk.'ka:.na	du.'ka:.na	minimarket
'mak.ta.ba	mak.'ta:.ba	library
fa.'ṣu:l.ja	pa.'su:l.ja	beans
'kah.ra.ba	ka.'ra:.ba	electricity
'mak.na.sa	mak.'na:.si	broom

Many polysyllabic words containing onset clusters are resyllabified by Cebuano speakers (producing one extra syllable) by inserting a vowel to break the clusters, as in Table 5. Again, stress is assigned to the heavy penultimate syllable.

Table 5. Multisyllabic words including vowel epenthesis

JA word	Example	Glossary
'mra:.jeh	mi.'ra:.ja	mirror
'ṣi.nij.jah	si.'ni:.jah	tray
'kna:.feh	ka.'na:.fa	Eastern sweet
sra:.feh	sa.'ra:.fa	change
mlu.'xij.jeh	mu.lu.'ki:.ja	mulukhiya

Metrical account of Arabic L2 stress by Cebuano speakers

After the examination of patterns of Arabic L2 stress by Cebuano speakers, this section aims to account for these patterns within the metrical Theory (Hayes, 1995). The metrical theory views stress as a matter of relative prominence of the syllable instead of dealing with it as a feature of some segments. Thus, syllables combine to construct feet and feet to construct words. The foot is the smallest metrical unit that is made up of one or more syllables, one of which attracts the main stress (e.g.,

Halle & Vergnaud, 1978; Hayes, 1995; Liberman, 1975; Liberman & Prince, 1977).

Drawing on the metrical theory, a CV syllable is regarded as light since it contributes one mora; CVV syllables are heavy and contribute two moras like long vowels, while onsets are weightless. CVC syllables are language-specific; where codas contribute one mora in non-final positions, they are extrametrical, i.e., weightless in word-final position through the Weight-by-Position condition (Hayes, 1995; Watson, 2002). Thus, a CVC is light in word-final positions, but heavy elsewhere. The superheavy syllable CVVC is bimoraic, rather than trimoraic, after the final C is deemed extrasyllabic.

The findings reveal that the foot in the Arabic of Cebuano speakers conforms to the major proposal of metricality (Hayes, 1995). It is iambic (μ'μ), binary, bounded and right-headed, and foot parsing operates from left to right. The application of foot extrametricality accounts for cases where stress is placed on a non-final foot. The main stress falls on the rightmost visible foot, according to the End Right Rule. There is a weak ban against a degenerate foot, which means that stranded single moras at right or left edges are allowed in strong positions. Below is a summary of stress rules as spoken by Cebuano learners of Arabic, outlined as follows: (reproduced from Mashaqba, 2015, following Hayes, 1995).

a. Syllable Weight: CVC, CVV = /–/, CV = /ᴗ/. Final C is unsyllabified in CVVC.
b. Foot Construction Form iambs from left to right. Degenerate feet are permitted in strong positions.
c. Foot Extrametricality: Foot → ⟨Foot⟩/___] word
d. Word Layer Construction: End Rule Right

A metrical foot can comprise two light syllables (L L), e.g., *na.'bi* 'prophet' or a single heavy syllable ('H), as in *ka.'na:.fa* 'Eastern sweet'. Data in (1) and (2) explains the metrical representation of the words *ka.'na:.fa* 'Eastern sweet' and *na.'bi* 'prophet.'
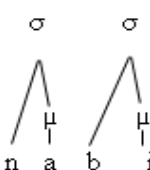
In the word *ka.'na:.fa* 'Eastern sweet', foot parsing works from the left over the word-initial light syllable *ka*. The penultimate syllable *na:* is bimoraic, and it constructs a foot that triggers the main stress. The ultimate and antepenultimate syllables *ka* and *fa* are monomoraic and, therefore, cannot construct a foot by themselves as they cannot share a foot with the neighboring bimoraic syllable; they are left unfooted as a result. Similarly, in the disyllabic words lacking a heavy syllable as in *na.'bi* 'face', the two light syllables form an iambic foot (L 'L), with the ultimate syllable receiving the main stress (cf. data in 2).

A key concept in metrical theory is extrametricality. Following the Peripherality Condition, one constituent is designated extrametrical at either edge of the word. This results in demoting word-final consonants one degree down the syllable weight, e.g., a CVC syllable is light since the final C is realized extrametrically. For example, in the word *ku.'tub* 'books' below, the final consonant fails to bear a mora through Weight-by-Position and thus is syllabified immediately to the final syllable node. This demotion renders the final syllable *tub* as monomoraic, and it forms a foot with the penultimate syllable *ku*. The ultimate syllable is more prominent, and thus the foot is iambic.
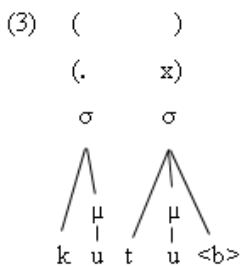

Extrasyllabicity is a remarkable concept of metrical theory. According to this notion, the final C in superheavy syllables is parsed outside the syllable and remains unsyllabified (Hayes, 1995). A frequently recorded syllable type is the superheavy CVVC syllable, which is restricted to monosyllabic words, to word-final domains, and rarely to word-medial positions. While this type always attracts stress following ERR, it raises a serious problem related to the bimoraicity of Arabic syllables. To resolve this, we assume that the final C is extrasyllabic and thus contributes no moras since it is situated outside the syllable domain. (Hayes, 1995; Mashaqba, 2015). See the metrical representation of the word *ki.'ja:r* 'cucumber' below:
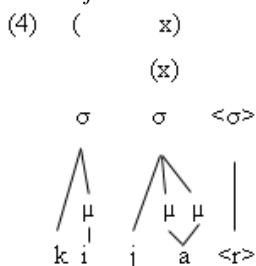

In the above grid, the initial CV syllable *ki* is monomoraic, and therefore ineligible to construct a foot, as it also fails to adhere to a foot with the final superheavy syllable; as a result *ki* is left unfooted. The final superheavy syllable *jār* is made up of the canonical syllable *yā* plus a degenerate syllable *<r>*. The canonical syllable is bimoraic and, therefore, eligible to construct a foot that receives the main stress following the ERR.

An examination of the data shows a weak prohibition against the degenerate foot, assuming that a single mora at right or left edges of the word cannot construct a foot. See the metrical representation of the word *sa.'ra:.fa* 'change'.
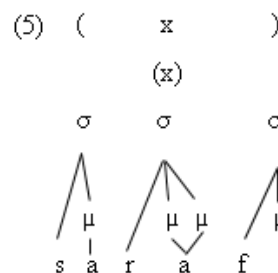

In this word, the leftmost and rightmost syllables *sa* and *fa* are light and left unsyllabified because they could not form a foot with the penultimate syllable given that there is a ban against trimoraic syllables in L2. The penultimate syllable *ra:* is bimoraic, and it constructs the single foot that attracts stress. The construction of a degenerate foot is allowed only in the case of CVC function words, e.g., *min* 'from,' where the final C contributes one mora in order to make the word bimoraic. This can be seen as a transfer effect of participants' native language, which imposes a weak prohibition on a degenerate foot (Shryock, 1993).

The rightmost visible foot thus attracts stress following the ERR. Accordingly, a final CVVC and CVV syllable always receives stress because it can construct a foot by itself. In the word *ki.'ta:b* 'book' below, for example, the initial light syllable *ki* is monomoraic and left unfooted; the ultimate syllable *ta:b* comprises a canonical syllable *ta:* plus an extrasyllabic ⟨*b*⟩. The canonical syllable is bimoraic, and, therefore, the foot made receives stress.
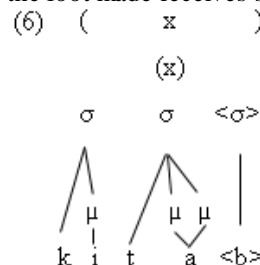
If the word has no final CVVC and CVV syllables, stress is assigned to the rightmost heavy syllable of the last three syllables, according to ERR. In the word *na.'da:.ra* 'glasses' below, the leftmost and rightmost syllables *na* and *ra* are left unfooted since they fail to construct a foot. The penultimate syllable is bimoraic

and constructs a foot. Following ERR, stress is placed on the penultimate syllable.
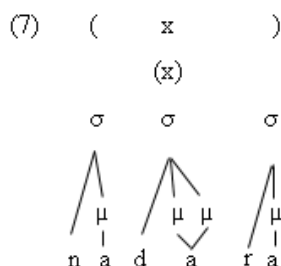
Several conclusions are thus drawn from the Arabic produced by Cebuano learners of Arabic; they are outlined in Table 6.

As shown in Table 6, Cebuano speakers do not assign Arabic word stress properly, which is attributed to the different stress systems of their L1 and L2. There is evidence in the literature that acquiring stress is more challenging for learners with different foot types (Almutiri, 2015). Additionally, participants' native language reflects on their use of Arabic in several ways, including a) producing an iambic foot (see data in 3), b) imposing a weak ban on degenerate feet, and c) placing stress on an ultimate or penultimate syllable. This emphasizes that post-puberty learners fail to attain a native-like accent, and highlights the effectiveness of the transfer process between L1 and L2 (e.g., Brown, 1980; Dulay et al., 1982; Lin, 2018; Yan, 2010).

Table 6. Metrical profile of stress in Cebuano and Arabic L2

Feature	L1	L2	Arabic as produced by Cebuano speakers
Foot type	Iambic	Trochaic	Iambic
Extrametricality	Active	Active	Active
Degenerate foot	Weak prohibition	Strong prohibition	Weak prohibition
Word layer construction	End Right Rule	End Right Rule	End Right Rule
Syllabification (vowel epenthesis)	CV.CVVC	CCVVC	CV.CVVC
Vowel lengthening	CVVC	CVCC	CVVC

Another implication drawn from the analysis is the fact that Cebuano learners are aware of the metrification of Arabic, with the minimal phonological word receiving stress is bimoraic (Huneety, 2015; Mashaqba, 2015; Mashaqba & Huneety, 2018; Watson, 2002). However, they reserve the bimoraicity condition in CVC structures by means of vowel lengthening. Given that producing geminates is challenging for learners of Arabic (Al-Mashagbah, 2010; Almutiri, 2015), then, Cebuano learners produce the Arabic word $nu_\mu s_\mu s$ as $'nu{:}_{\mu\mu}s$ 'half.' They lengthen the short vowel /a/ to compensate for the loss of the mora assigned to the geminate and thus keep the minimal bimoraicity condition of the minimum phonological word. This indicates that Cebuano learners are aware that long vowels contribute two moras and that this avoids impermissible monomoraic structures. Moreover, Arabic monosyllabic words having CCVVC are resyllabified into a CV.CVVC structure as Cebuano phonological system does not license consonant clusters except in loan/borrowed words (Malabonga & Marinova-Todd, 2007); still, the ultimate syllable receives the primary stress driven by the metrification system of L1. Pedagogically, several implications have been raised from the findings. As explained above, the participants of the study are Filipinos who have been living in Jordan for a long time, 7-11 years, and have thus been exposed to JA. They use JA on a daily basis and communicate through it with native speakers. This long period of exposure within the target-language environment and cultural milieu could be viewed as sufficient to acquire native-like oral proficiency and pronunciation. The basic assumptions outlined in the introduction means that the effect not only of L1 phonological patterns but also of other linguistic levels might not be wholly evident in L2 performance. Nonetheless, the empirical data and observation collected from the subjects are worth testing to confirm the truth or rationale of the stated hypothesis, the main motivation for the present endeavor. Moreover, comparative and contrastive studies that address how various linguistic forms or features are handled cross-linguistically can serve to provide a better understanding of the nature of language as a human phenomenon.

Furthermore, teaching the pronunciation of a foreign language is unquestionably a complicated task as it necessitates great ability of explanation in addition to good awareness of the foreign language along with the learners' L1 phonological system. This awareness enables the teachers to understand the learners' challenges so that they address them in the best way. In a study like this, the challenges facing teaching the pronunciation of a foreign language are highlighted, with some explicitly or implicitly recommended solutions based on both personal teaching and research experience. As far as the educational setting is concerned, it should be 'foreignized' in the sense that learners are given continuous listening and speaking tasks, while teachers have to master the rules of the phonological systems of both languages in order to correct learners as necessary. Finally, since a comparative analysis of any two languages highlights the areas of difficulty for L2 learners, the researchers, as classroom practitioners, feel that it is vitally important to contrast the two languages in question; the findings are of equal importance for concerned instructors.

CONCLUSION

This paper gives a theoretical account of Arabic L2 stress as used by native Cebuano speakers. It shows how Arabic words spoken by Cebuano speakers conform to the core metrical principles applied for non-native speakers of Arabic. The findings show how the L1 transfer effect accounts for many of the similarities in their L2 stress patterns, namely producing an iambic foot, imposing a weak ban on degenerate feet, and placing stress on an ultimate or penultimate syllable. This is in line with Lin (2018), who emphasized the role of the L1 prosodic system on learners' Arabic stress. Pedagogically, the study overemphasizes the role of stress in teaching Arabic, where learners should be given some continuous listening and speaking tasks that focus on the placement of stress. In addition, teachers ought to master the rules of the phonological systems of both languages in order to correct learners as necessary. Future research will focus on the production of Arabic L2 stress by Turkish learners of Arabic.

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