The L2 Acquisition of Mass Nouns by Arab Leaners of English

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ABSTRACT

This study explores how Arab L2 learners of English acquire mass nouns. The mass/count distinction is a morphosyntactically encoded grammatical distinction. Arabic and English have different morphosyntactic realisations of mass nouns. English mass nouns take the form of bare singular whereas Arabic mass nouns can take the definite singular form or the indefinite singular, but never the bare singular form. Therefore, the study explores how Arab learners interpret English mass nouns in light of the morphosyntactic differences between the two languages. 45 upper- and lower-intermediate Arab English learners were given a context-based acceptability judgment task on English mass nouns. It was hypothesised that Arabic learners would be influenced by their first language (L1), causing them to over accept definite singulars and under accept bare singulars as grammatical in mass noun contexts. The findings are consistent with what was hypothesised, except that Arab learners were found to interpret bare singulars accurately. It is argued that learners' performance is affected by not only L1transfer but also UG accessibility where learners can structure away from L1 and more towards L2. Consequently, the findings implicate that L2 teachers should not teach grammatical structures that come for free and instead they should focus on grammatical structures that cause L2 acquisition difficulty.

INTRODUCTION

Quantification expressions are universal and found in almost all languages. However, these expressions vary from language to language in terms of development and complexity. All languages have specific positions for nouns and quantifiers that permit reference to objects in either the real or abstract world. The grammatical distinction of mass/count is encoded morphosyntactically and further connected to the conceptual/semantic distinction of object/substance (Choi, Ionin, & Zhu, 2017). The semantic component of the mass-count distinction is beyond the scope of this paper as the study focuses on the morphosyntactic aspects of this distinction.

Previous L2 acquisition findings in relation to the acquisition of English NPs indicate that noun number (singular, plural, or mass) has an effect on L2 learners' English article choices. In light of the differences in the morphosyntactic realisations of mass nouns in English and Arabic, this study aims to explore how English as a foreign language (EFL) Arab learners interpret mass nouns. To achieve this goal, the study uses behavioural data gathered via a context-based acceptability judgment test (CAJT) to examine how EFL learners recognise mass nouns compared to English native speakers.

The paper begins with an outline of the mass/count distinction in English and Arabic. The paper then provides an overview of previous L2 acquisition studies on mass nouns. The details of the current study are later provided, including information on participants, method, and analysis. Finally, the results are presented and discussed in terms of L1 transfer and universal grammar.

MASS/COUNT DISTINCTIONS IN ENGLISH AND ARABIC

English and Arabic differ in the morphosyntactic representation of mass/count distinctions. English count nouns can appear with the indefinite article, numerals, the plural marker, and quantifiers (Example 1a); they cannot appear in bare singular form or with the quantifier 'much' (Example 1b). Conversely, mass nouns in English have the opposite representation of count nouns. Mass nouns, furthermore, are considered inherently plural and that they take the feature [- singular] (Almahboob, 2009). Therefore, English mass nouns always appear in bare singular forms and cannot be accompanied by the indefinite article, numerals, the plural marker, and the quantifier 'many' (Examples 2a and 2b).

(1) a. I bought a computer / computers / one computer / two
       computers / many computers
      several computers.
      b. * I bought computer / much computer / a pound of
       computer / a piece of computer.
(2) a. * I bought a sugar / sugars / one sugar / two sugars /
       many sugars / several sugars.
   b. I bought sugar / much sugar / a pound of sugar.
          (Taken from Choi, Ionin and Zhu, 2017, p. 148-149)
   On the other hand, count/mass distinction in Arabic are
not fully grammaticalised, unlike in English. Mass nouns
take a definite singular form or indefinite singular form,
which is also the case with count nouns (Examples 3 and 4,
respectively).
(3) Mass definite
   Sarab-t   al-ma   elli   kana lala al-/awlah
   drank-lsg   def-water   that   was on def-table
   I drank the water that was on the table.
                    (Taken from Almahboob, 2009, p. 49)
(4) Mass indefinite
   ʕali   ʕandah   ʕa.~ir   fi   ai-bait
   Ali   has   indef-juice in   def-house
   Ali has some juice at home.
                    (Taken from Almahboob, 2009, p. 56)
   Furthermore, Arabic mass nouns can be accompanied by
the definite article if it has a generic reading (Example 5).
(5) Mass generic
   AI-maaiu   men   al-sawa?al
   Def-water   from   def-liquid-pl
   Water is a liquid (literally: water is part of liquids)
                    (Taken from Almahboob, 2009, p. 50)
   Due to the morphosyntactic differences between English
and Arabic in the representation of mass nouns, it is predict-
ed that Arab learners might face difficulties interpreting bare
singular mass nouns and consequently assign a grammatical
reading to the definite article in the interpretation of English
mass nouns.

THE ACQUISITION OF ENGLISH MASS NOUNS

Studies that have dealt with Arab learners' acquisition of L2
mass nouns are rare as much of the literature has focused on
either the acquisition of English articles or quantification ex-
pressions rather than specifically on mass nouns. However,
the general consensus in L2 acquisition studies of English
NPs is that noun number (singular, plural, or mass) will have
an impact on L2 learners' choice of English articles.
   One study that provided a detailed account of learners'
acquisition of English articles with mass nouns as one of the
variables was Almahboob (2009). Almahboob gave partici-
pants a forced choice elicitation task asking them to supply
an article in non-generic mass contexts. The results show
that 'the' was selected in all contexts with all NP number
types, which reflects the fact that 'the' is the preferred choice
among all proficiency groups. One reason for which 'the' was
overused with mass nouns, according to Almahboob, is that
most of the article elicitation task items included examples
such as 'the weather' and 'the sunshine', which are usually
presented to L2 students in class as unanalysable chunks. As

well as learners' preference for 'the', Almahboob's results
suggest that learners incorrectly use 'a' with mass nouns
when the noun is singular. This behaviour seems to stem
from the fact that learners might be associating 'a/an' with
singularity regardless of noun type.
   Studies on the acquisition of English mass nouns by Arab
leaners include Sarko (2009; 2011). Sarko (2009) recruited
57 Syrian speakers, 18 French speakers, and 9 native English
speakers. Participants were mostly undergraduates or post-
graduates, and most ranked at an intermediate language pro-
ficiency level based on the Oxford Quick Proficiency Test.
Sarko used a forced choice elicitation task and oral produc-
tion task (story-recall). The forced choice elicitation task in-
cluded 88 dialogues that consisted of 3 turns and included an
article gap in the third turn. The task was designed to focus
on the contrast between count singular, count plural, and
mass nouns in definite and indefinite contexts. The research-
er asked learners to provide 'the', 'a/an' or 'null'. Once
learners made a choice, they were not allowed to change it.
The story-recall task was adapted from Snape (2005). The
participants listened to each story twice and were given bare
nouns as written prompts. Participants were expected to pro-
duce a large number of count singular nouns in definite and
indefinite contexts. Native speakers' production of the sto-
ries established a comparison basis for learners' production.
   Sarko's (2009) findings showed varied behaviour be-
tween Syrian Arabic and French in certain contexts and un-
expected patterns of article use. Firstly, the learners showed
only target-like performance with count singulars and non-
target-like performance with count plurals and mass nouns.
The reason for this unexpected result, as stated by Sarko,
was because count plurals and mass nouns show more vari-
ability. They appear bare with indefinite structures and ge-
neric phrases, whereas count singulars always occur with
an article. Therefore, it is assumed that intermediate-level
learners "have not yet fully worked out how English realizes
definiteness with count plural and mass NPs" (p. 60).
   Furthermore, the acquisition of mass nouns is an area
where L1 transfer may be detected. Many L2 acquisition stud-
ies acknowledge the role of L1 transfer (Odlin, 1989; White,
2003). L1 transfer has been viewed under the generative ap-
proach through the full transfer/full access hypothesis that was
proposed by Schwartz and Sprouse (1994; 1996) which dic-
tates that L2 learners have full access to their L1 and transfer
all structures of their L1 to their L2. At the same time, L2
learners usually succeed in acquiring new structures of the L2.
In light of the feature reassembly hypothesis (Lardiere, 2009),
learners acquiring a second language have a set of their L1
grammatical features but must select new features from L2 in
addition to reassembling their L1 features to match the target
language. If L1 transfer plays a role in Arab learners' acqui-
sition of mass nouns, it could be predicted that Arab learners
will over accept definite and indefinite singulars over bare sin-
gulars as a grammatical reading for mass nouns.

MOTIVATION OF THE STUDY

Since the morphosyntactic representations of mass nouns are
different in English and Arabic, the study aims to explore

Arab learners' acquisition of English mass nouns. The difference between English and Arabic representations of mass nouns led to particular predictions on how L1 transfer can influence the acquisition of mass nouns by Arab learners of English. As Choi, Ionin, and Zhu (2017) state, the area of "count/mass distinction is a particularly interesting area for investigating the role of first language (L1) transfer…." (p.148). The role of L1 transfer has been well-acknowledged for general L2 acquisition areas (Schwartz & Sprouse, 1994; 1996) and for morphosyntactic acquisition areas specifically (Whong-Barr, 2006), it is, thus, predicted that Arab learners will over accept definite singular and indefinite singular nouns in mass contexts. This prediction is informed by the full transfer/full access hypothesis, where L1 transfer is expected because definite forms are legitimate with Arabic mass nouns.

METHODOLOGY

Participants

The participants of the study were 45 Saudi Hejazi Arabic English learners of English studying at King Abdulaziz University, Jeddah, Saudi Arabia. Most students at King Abdulaziz University study English as a foreign language for at least 6 years before joining the university.

The participants completed a language background questionnaire in addition to the context-based acceptability judgment task. The participants reported in the background questionnaire that they had never spent any long period of time in an English-speaking country, and that they mainly used English in the language classroom or on social media. Recruitment was achieved through the head of their academic department. Table 1 shows details of the L2 learners obtained by the language background questionnaire and the Oxford Quick Proficiency Test.

In addition to Hejazi Arabic learners, a group of 20 native English speakers took the same CAJT administered to the L2 learners. The study's total number of participants, including native English speakers, was 65. The native speakers were mostly students at UK universities and recruited by word of mouth. Native speakers' mean age was (M=20.43), which is close to the L2 participants' mean age reported in Table 1. Native speakers' performance acted as a comparison key in deciding if L2 learners' responses were acceptable in each target structure test item.

Table 1. Participants' language level and language background information

Number of participants	Language level	Number of years that English has been studied (at the time of study)	Age
18	Upper intermediate	M=9.06	M=18
27	Lower intermediate	M=8.67	M=18.6

Instrument

Context-based acceptability judgment task

The context-based acceptability judgment task (CAJT) was designed to deal with the interpretation of noun phrases in mass contexts. It was modelled after an acceptability judgment task taken from Ionin et al. (2011).

The task consists of 20 questions (10 test questions and 10 fillers). Each question is a short story followed by five sentences. Learners were asked to rate the five sentences on a scale from 1- 4 based on their suitability as a natural continuation of the story. The five sentences intended to measure learners' interpretation of definite singulars, indefinite singulars, bare singulars, definite plurals, and indefinite plurals as acceptable or unacceptable for a mass noun reading. 1 is for completely unacceptable sentences, 2 is for less acceptable sentences, 3 is for nearly acceptable ones, and 4 is for completely acceptable sentences. On the test instruction page, it is stated that two or more sentences may receive the same rating. Therefore, there is no requirement for learners' responses to be ranked; the availability of four choices and no middle choice for the five target sentences means that at least two sentences have to receive the same rating.

According to Ionin et al. (2011), "the use of a four-point rating scale, instead of a binary yes/no scale, allowed us to probe participants' responses to fairly subtle distinctions" (p. 261). This study also included several test sentences after the same story to create a shorter version of the task than what may have resulted from presenting each story five times, each time with a different sentence. The researchers also stated that a shorter task would prevent boredom as participants would not have to read the same story several times. The test questions target the category of mass nouns. An example of these test questions is presented in Example 6. The 10 fillers deal with aspectual interpretations unlike the test categories that dealt with nominals. The purpose of including fillers is to distract learners' attention from the focus of the task

(6) My friend Emily has been exhausted lately. I'm worried that she is not getting enough iron in her diet. I tell her to eat foods with iron in them:

a) Rices contain iron.	1 2 3 4
b) A rice contains iron.	1 2 3 4
c) The rice contains iron.	1 2 3 4
d) Rice contains iron.	1 2 3 4
e) The rices contain iron.	1 2 3 4

These 10 test items focused on contrasting the interpretation of nominals in mass contexts. Specifically, these items test the interpretation of definite singular, indefinite singular, definite plural, bare plural, and bare singular as acceptable or unacceptable in a mass context.

RESULTS

To determine how Arabic learners interpret definite singulars, indefinite singulars, bare singulars, definite plurals, and bare plurals as having a mass reading, the mean ratings of each noun type and standard deviations were calculated. Table 2 suggests that Arab learners (compared to native English speakers) gave

definite singulars much higher ratings. Participants gave a high rating to bare singulars, which is a target-like response. Indefinite singulars, definite plurals, and bare plurals, on the other hand, received the lowest ratings among all five noun types, which is also a target-like response.

The data in Table 2 is also displayed in Figure 1 below for a clearer representation. Since the data was not normally distributed, A Kruskal-Wallis Test was conducted to compare the mean ratings of the five noun-phrase types in mass contexts for the three participant groups (upper-intermediate learners, lower-intermediate learners, and native English speakers). Conducting the test on each noun phrase type showed that the two groups of learners did not differ significantly from native English speakers in ratings of the indefinite singulars, bare singulars, and definite plurals in the target context (see Table 3 below)

Running a Kruskal-Wallis Test on the ratings of the other two noun-phrase types showed that both groups of learners differed significantly from the native English group in the rating of definite singulars and bare plurals. For definite singulars, A Kruskal-Wallis Test revealed a statistically significant difference in rating definite singulars in mass contexts across the three groups (upper-intermediate learners, n=18 & lower-intermediate learners, n=27, native English speakers, n=20), χ^2 (2, n=65) = 40.38, p<.001 & r=.62 which is, according to Cohen's (1988) criteria, considered a large effect size. Finally, for bare plurals, the Kruskal-Wallis Test revealed a statistically significant difference in rating bare plurals in mass contexts across the three groups (, χ^2 (2, n=65) = 28.07, p<.001 & r=.62, which is considered a large effect size. Since learners' mean ratings for bare plurals (1.94, 1.68) were less than those of native speakers for bare plurals (2.41), their responses are considered target-like as bare plurals are ungrammatical in mass nouns. Learners gave bare plurals a low rating, which is grammatically correct response. Therefore, the only non-target like performance for L2 learners (both upper- and lower-intermediate learners) was over accepting definite singulars.

Table 2. CAJT mean ratings in mass contexts

Group type	N	Definite singular		Indefinite singular		Bare singular		Definite plural		Bare plural	
		M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Upper intermediate learners	18	**2.19	0.53	1.70	0.59	3.86	0.19	1.24	0.35	**1.94	0.6
Lower intermediate learners	27	***2.47	0.98	1.59	0.42	3.65	0.47	1.31	0.46	**1.68	0.62
Native speakers	20	1.36	0.53	1.72	0.52	4	0	1.19	0.33	2.41	0.57

Sig<0.01, ****Sig<0.001

Table 3. Kruskal-wallis test results on indefinite singulars, bare singulars, and definite plurals

Indefinite singular ratings	Bare singular ratings	Definite plural ratings
H (3)=7.28, *p*=0.122	*H* (3)=3.34, *p*=0.563	*H* (3)=2.24, *p*=0.692
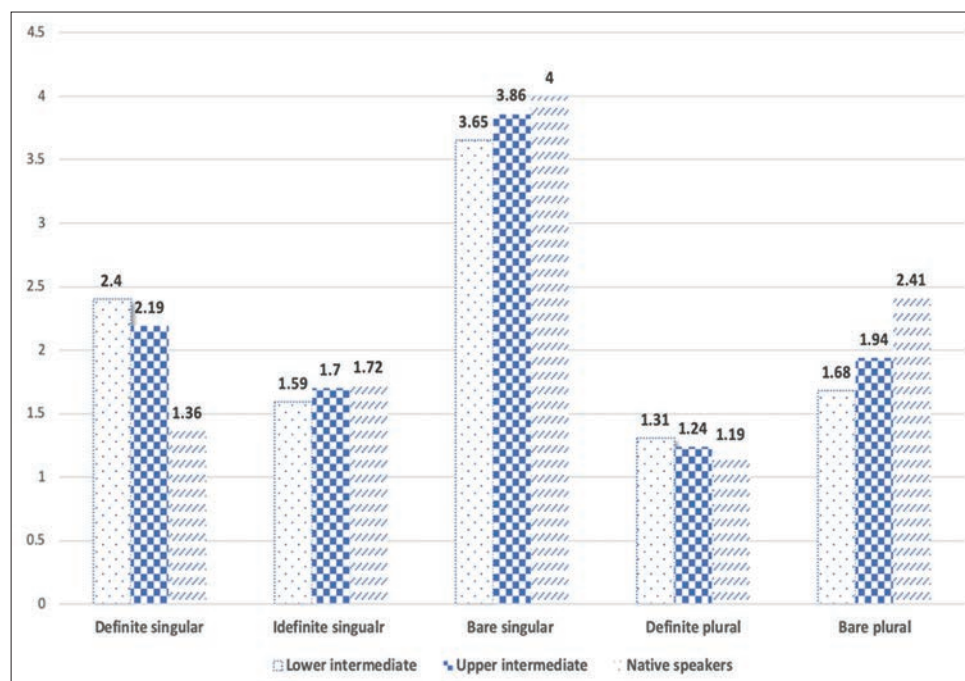
Figure 1. L2 learners and native speakers' ratings of noun phrases in mass context

DISCUSSION AND CONCLUSION

The study aimed to investigate Arab learners' acquisition of the English mass nouns. Following the discussion on morphosyntactic differences between English and Arabic in mass noun representations, it was predicted that Arab learners would over accept definite singulars and indefinite singulars in mass contexts and misinterpret bare singulars as mass noun readings.

These results support the research predictions partially. While it was found that Hejazi-Arabic EFL learners of English over accepted definite singulars significantly differently than the native control group, they were target-like in the interpretation of indefinite singulars. The high rating for definite singulars is a performance similar to that found by Almahboob (2009), where learners overused 'the' with most nominals. In addition, Arab learners' interpretation of bare singulars was target-like, which contradicted the study's predictions.

The findings show that there is evidence that in the initial stages of L2 acquisition, learners may transfer properties from their L1 grammar into their interlanguage grammars as manifested in the over acceptance of definite singulars. However, there is evidence that L2 learners restructured away from the Ll and towards L2, as can be seen in the accurate interpretation of bare singulars.

Because mass nouns are inherently plural, the evidence suggests that Arab L2 learners may be treating them as plurals because they reject the use of indefinite singulars in this context. Because the indefinite article is always associated with singular nouns and since learners did not rate it highly, they may treat mass nouns as plurals. However, the low ratings of indefinite singulars contradict Almahboob's findings, where leaners were found to overuse the indefinite article with mass nouns and '0' when the noun is plural. Additionally, Almahboob claimed that learners would choose 'a' and '0' in comparable proportions with mass nouns because there is no overt marker for mass nouns to affect their choices. The current study provides evidence against this claim in terms of participants' accurate interpretation of indefinite singulars.

Saudi Hejazi Arabic-speaking learners' over acceptance of definite singulars raises theoretical issues associated with the nature of L1 transfer. Whong-Barr (2006) argues that SLA research should attempt to explicitly articulate what exactly is transferred from L1 as the role of L1 transfer is not entirely clear beyond the initial stage of acquisition. The questions that are raised in this sense are as follows:

(1) What are the linguistic properties transferred to L2?
(2) What language structures form the initial stage of L2 acquisition, and what structures emerge relatively later as part of interlanguage development, if we take a full transfer/full access position?

One answer may be that whereas morphological properties are usually transferred first, the mapping of form/meaning is usually difficult to transfer because these mappings are typically different to L1.

Similarly, learners were found to accept bare singulars in mass contexts. This finding suggests that learners were able to structure away from L1 and towards L2. Therefore,

"in the absence of agreement as to the domain of 'L1 grammar', what transfers remains controversial" (Stringer, 2008, p. 234). This first theoretical question directly feeds the second in the sense that it is not clear which linguistic properties of the L1 form the initial stage and which elements of the L1 can be transferred at a later stage of the acquisition. Learners' over acceptance of definite singulars may be interpreted as a developmental stage in interlanguage, which does not necessarily represent a failure in transferring L1 properties. In other words, Saudi (Hejazi) Arabic-speaking learners' over acceptance of definite singulars in this context may be, as argued by Whong-Barr (2006), "a manifestation of IL development as it interacts with transfer" (p. 196).

To conclude, the main aim of the study was to investigate EFL learners' interpretation of mass nouns in light of L1 transfer and UG accessibility. The findings show an effect of L1 transfer as manifested in learners' interpretation of definite singulars which is a non-target-like response. On the other hand, EFL learners were accurate with their interpretation of bare singulars in spite of the crosslinguistic difference between the two languages in this regard. Such findings provide pedagogical implications to language teachers. In particular, language teachers can pay more attention to language structures that cause acquisition difficulty (e.g. structures requiring form/meaning mapping) and consequently give less attention to structures that are accessible through UG as learners can re-structure towards the target language and re-assemble the required features.

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