MDPI

Article

When a Dual Marker Acts as a Paucal Marker: The Case of the Dual -*e:n* in Northern Rural Jordanian Arabic

Abdulazeez Jaradat

Department of English Language and Translation, Faculty of Arts and Science, Applied Science Private University, Amman 11931, Jordan; a_jaradat@asu.edu.jo; Tel.: +962-7-98471285

Abstract: In this research paper, based on an acceptability judgment task, it is demonstrated that dual morphology can denote paucity in northern rural Jordanian Arabic (NRJA), asserting on Blanc and Brustad's observation that some Arabic varieties have pseudo-dual (or unspecified dual), i.e., it may refer to numbers above two. It is shown that the dual morpheme -*e:n* in this dialect does not only refer to an exact (dual) number, but also to an approximative (paucal) number. This implies that the paucal category, which typically evolves from the plural category in natural languages, may likewise develop from the dual category. On this basis, the paucal is peculiar in Arabic, as it can be derived by (1) plural morphology as in Standard Arabic or (2) dual morphology, as in NRJA. In addition, the paper shows how the morphosyntax of the dual in NRJA yields either dual or paucal reading. Adopting Harbour's number theory where the components of a number system are predicted by a set of bivalent number features under the number head $\#^0$, I show that the bivalent feature [±minimal] in the morphosyntax of the dual in NRJA is crucial to derive its two interpretations: [+minimal] yields the exact (dual) reading, whereas [-minimal] yields the approximative (paucal) reading. This analysis is expected to have intralingual usefulness. Specifically, it could be employed to plausibly derive the paucal category that is based on the dual category in other Arabic varieties, as descriptively reported in Blanc and Brustad's studies. Furthermore, the observation that the dual category is the source of the paucal category has cross-linguistic implications. Particularly, it implies that the paucal category does not necessarily require the plural category to be derived in a language. Additionally, this observation asserts that languages tend to use lower numerals to assign a paucal reading to them, as is the case in French (e.g., *deux ou trois*).

Keywords: paucal category; dual category; Harbour's number theory; number phrase (#P); [±minimal]; northern rural Jordanian Arabic (NRJA)

1. Introduction

Cross-linguistically, the paucal category in the number system of a language requires the plural category (Greenberg 1966; Corbett 2000; Rotge 2009; Harbour 2014; Martí 2020; Simon and Noûs 2022; Jaradat 2023), as paucity in number is commonly expressed by plural morphemes in natural languages. In other words, the paucal category is a bounded type of plurality (Ojeda 1992; Ryding 2005; Harbour 2014; Mathieu 2014; Dali 2020; Dali and Mathieu 2020; Jaradat 2023). In Standard Arabic, specific broken plural templates denote paucity (Schub 1978, 1982; Acquaviva 2008). For example, each of the singular nominals ∫ahr 'month' and *baħr* 'sea' has two broken plural forms. In (1), the plural forms are paucal. They typically refer to lower (small) numbers. Therefore, they are plural forms that are bounded. Specifically, they are often used to refer to numbers between 3 and 10, whereas the plural forms in (2) are by default unbounded (i.e., they are inclusive plurals) (Wright 1951; Al-Hamlawi 1999, pp. 155–57; Al-Samarrai 2013, pp. 157–59).

(1)　a. *ʔa ʃ.hur*　　b. *ʔab.ħur*　　　($ʔaC_1.C_2uC_3$)
　　　month.BPL　　sea.BPL
　　　'few
　　　months'　　　'few seas'

(2)　a. *ʃu.hu:r*　　b. *bu.ħu:r*　　　($C_1u.C_2u:C_3$)
　　　month.BPL　　sea.BPL
　　　'months'　　　'seas'

On the other hand, in northern rural Jordanian Arabic (henceforth NRJA), broken plural morphology is not the source of the paucal category in this dialect. For example, the two broken plural forms of *ʃahr* are used interchangeably in NRJA (i.e., none of them express paucity), and the paucal *ʔab.ħur* in Standard Arabic is non-existent in NRJA.[1]

Based on an acceptability judgment task, it is demonstrated in this paper that paucity can be expressed by dual morphology in NRJA. To clarify, the dual morpheme *-e:n* in NRJA can be a paucal marker and yield small numbers/few readings. Hence, the dual morpheme *-e:n* basically denotes an exact number (two), but it can also act as a paucal marker in NRJA. For the sake of concreteness, consider the example in (3). In (3b), Speaker's B intention of the number of books is either exactly two or few books, as shown in the two offered interpretations.

(3)　a. Speaker A:

ka-ʔinn-i	*ʃ uf it*	*b-ɣurift-ak*	*kutub*
like-that-1SG	saw.1.SG	in-room-2.SG.M	book.BPL

kθi:re
many
'I guess that I have seen many books in your room.'

　　b. Speaker B:

kull-hin	*kta:b-e:n*	*ja*	*radʒil*
all-3PL.F	book-DUAL	VOC	man

Interpretation 1: 'Man! I have only two books.'
Interpretation 2: 'Man! I have few books.'

A similar phenomenon has been previously reported by Blanc (1970) and Brustad (2000, pp. 45–46). The former calls it pseudo-dual, whereas the latter names it unspecified dual. In these works, it has been observed that some dual nominals, especially those nominals that refer to body parts that come in pairs, such as the Egyptian dual nominal *ʔin-e:n* eye-DUAL may denote plurality. Blanc (1970, p. 46) has reported that the dual nominal *ʔin-e:n* in Egyptian Arabic can be pseudo-dual. Specifically, it may denote plurality in some contexts, as in *ʔin-e:n ʔin-na:s* eye-DUAL DEF-people. This phrase should be translated as *people's eyes* instead of *people's two eyes*. Moreover, he has reported that one singular nominal can be turned into dual in two ways (i.e., using two phonetically similar dual markers) in Syro-Mesopotamian. One of these variants is true dual and the other is pseudo-dual. For instance, *ʔe:n-t-e:n* eye-F-DUAL is true dual and must refer to the exact number 'two', while *ʔin-e:n* eye-DUAL is pseudo-dual and refers to plural numbers. It is of great importance to note that the difference is not in the dual marker. The dual marker is not replaced. Instead, the epenthesis of the feminine marker *-t* preserves the basic use of the dual marker (i.e., its use as a marker that refers to the exact number 'two').

The dual reported in Blanc (1970) and Brustad (2000) and the one in the current paper seems different, as the former (specifically pseudo-dual) denotes plurality in general and sometimes can be phonetically governed (i.e., different shapes of the dual or maybe different dual markers serve different functions and convey different semantics of numbers). In contrast, the latter (the dual in NRJA) denotes paucity (paucal or bounded type of plurality), keeping its phonetic form constant. Nonetheless, the previous brief review of Blanc (1970) and Brustad (2000) indicates that the use of the dual marker to refer to numbers greater than exactly 'two' is not new. In other words, the link between the dual and the plural and the development of a semantic extension of plurality in the domain of dual morphology in NRJA is rooted in Arabic varieties. However, the documentation of this phenomenon is descriptive in the previous two studies. Therefore, the contribution of the current study is

to account for the morphosyntax of this observation. More specifically, the paucal category is morphosyntactically derived from the dual category in this dialect.

As a paucal marker, *-e:n* in NRJA acts like the paucal plural in languages such as Boumaa Fijian, which maintains an underspecified upper bound (Dixon 1988). However, *-e:n* should refer to a number smaller than the number that the plural refers to. This is inconsistent with the common paucal plural forms in Arabic, which refer to sums between 3 and 10 (Schub 1978, 1982; Acquaviva 2008; Mathieu 2014). To account for these observations, it is proposed in the present paper, following Harbour's (2014) theory of number that relies on three bivalent features to derive number systems, that the morpheme *-e:n* projects within the inflectional domain of a nominal in the counting head $\#^0$. It is also proposed that while all the other bivalent features of $\#^0$ remain constant, the bivalent feature [±minimal] is crucial to predict the two interpretations of the dual, the exact and the paucal number interpretation in NRJA (all the bivalent features will be introduced in Section 4).[2]

The outline of this paper is as follows. Section 2 is an overview of the number system in Arabic with a focus on the paucal category. Section 3 introduces Harbour's (2014) number theory, on which the current paper is based. In Section 4, the method adopted to conduct the acceptability judgment task is offered. Section 5 shows that the dual in NRJA can be treated as a paucal marker; i.e., it investigates the interpretations and the morphosyntax of the dual morpheme *-e:n* in NRJA as a dual marker and a paucal marker. Section 6 concludes the paper.

2. The Number System in Arabic

This section overviews the number system in Arabic. Note that the difference between the number system of Standard Arabic (SA) and that of NRJA is not substantial. For example, both varieties have count nouns and non-count nouns. They have almost the same dual and plural categories. They have concatenative and non-concatenative plurals. Hence, this section refers to the number system of SA and NRJA. However, it should be noted that the morphosyntactic treatment of these categories may differ in these varieties. To illustrate, the morphosyntax of singulativizing a non-count nominal may be carried out by the merger of the singulative marker in one variety but by the merger of a classifier in another variety. Further, a nominal can be pluralized by one morpheme in one variety, whereas it is pluralized by another morpheme (or more than plural morpheme) in another variety. More importantly to the current study, the dual morpheme only differs in its phonological realization in these two varieties, yet morphosyntactically it has dual nature in NRJA, unlike its nature in SA, i.e., it can be a paucal marker only in the former.

This section starts with count and non-count categories. Then, it hints at the dual category and the plural category. It shows that the plural category embeds two morphological types, namely the concatenative and non-concatenative plural. From a meaningful perspective, it shows that the plural is often unbounded (inclusive), yet it can be paucal or greater. In this section, more attention is paid to paucity and the paucal category in this language.

The Arabic number system makes a distinction between count nominals, such as *kita:b* 'a book', and non-count nominals (Ojeda 1992). Non-count nominals are divided into collective and mass nominals. Collective nominals refer to kinds or groups of objects as a whole, with no reference to the internal members (see, e.g., Talmoudi 1980; Erwin 2004; Harrell 2004; Mathieu 2013), such as *baqar* 'cows.COLL'. Collective nominals in Arabic refer to a large scale of referents, including but not limited to fruits, vegetables, grains, animals, insects, and germs (Jaradat 2023, p. 9). On the other hand, mass nominals refer to substances and materials with no discrete subsets, i.e., tiny atoms, liquids, gases, dairy products and powders, minerals, and other materials, such as *ma:ʔ* 'water'.

Count nominals are underlyingly singular (i.e., they constitute one of the components of the Arabic lexicon). Thus, a count/singular nominal, such as *kita:b* (or *kta:b* in vernacular Arabic) 'a book', enters the morphosyntactic derivation as a singular form. In other words, it does not undergo morphosyntactic division (Borer 2005). On the other hand, many

non-count nominals (most collectives and many mass nominals) can be singulativized morphosyntactically (i.e., in narrow syntax) through the suffixation of a singulative marker (Mathieu 2013). The typical singulative marker in Arabic is the feminine morpheme *-at* (or its non-liaison variant *-a*). When it attaches to a non-count nominal, it divides (e.g., *baqar* 'cows.COLL → *baqar-a* 'a cow') (Zabbal 2002; Borer 2005; Mathieu 2012, 2013; Fassi Fehri 2018).[3]

Moreover, the Arabic number system comprises the dual category. In Standard Arabic, it has two forms inflected for the case, namely the nominative *-a:(n)* and the accusative or genitive *-aj(n)* (Al-Hamlawi 1999). On the other hand, in NRJA and most vernacular Arabic varieties, the etymological reflex of *-ajn*, which in JA is *-e:n*, is used. The dual is morphosyntactically formed. It requires the suffixation of the dual morpheme to the singular. In the examples from NRJA in (4), the dual morpheme typically refers to an exact number (i.e., two instances of a kind) (Al-Hamlawi 1999).

(4) a. *kta:b*   *kta:b-e:n*
        'a book'   book-DUAL
                         'two books'
     b. *tuffa:ħ-a*   *tuffa:ħt-e:n*
        apple-SG.F   apple-SG.F-DUAL
        'an apple'   'two apples'

Concerning the plural, it is either concatenative or non-concatenative. The concatenative plural is formed when a plural morpheme is suffixed to a stem linearly. The suffixation of the feminine *-a:t* and the masculine *-u:n* generates the feminine sound plural and the masculine sound plural (e.g., *muʕallim-ah* 'female teacher' and *muʕallim* 'male teacher' are pluralized to *muʕallim-a:t* and *muʕallim-u:n*). On the other hand, the non-concatenative plural, the broken plural, is generated by mapping a plural template as a morphological unit (which can be viewed as a prosodic pattern) on a singular nominal (stem), such as *ki.ta:b* $C_1i.C_2a:C_3$ 'book' → *ku.tub* $C_1u.C_2uC_3$ 'books'. Arabic has around 31 distinct broken plural patterns (McCarthy and Prince 1990a, 1990b).[4]

The Arabic number system also contains the paucal and greater (or multal) categories (Ojeda 1992; Schub 1978; Fassi Fehri 2018), which are types of the plural category. They surface when a singular nominal has more than one possible plural form. In (5), for example, two different broken plural templates can be mapped onto the singular, and each one yields a different interpretation:[5]

(5) a. Paucal: b. Greater:
        ʔaʃ.hur ($ʔaC_1.C_2uC_3$)   *ʃu.hu:r* ($C_1u.C_2u:C_3$)
        month.BPL   month.BPL
        '3–10 months'   'above 10 months'

The paucal category is inflectional and denotes scarcity in number. Specific broken plural templates are paucal and refer to numbers between 3 and 10 (Wright 1951; Ojeda 1992), such as the following broken plural templates:[6]

(6) a. *baħr*   →   *ʔab.ħur*   ($ʔaC_1.C_2uC_3$)
        'sea'   sea.BPL
        'few seas'
     b. *ra.ɣi:f*   →   *ʔar.ɣi.fa*   ($ʔaC_1.C_2iC_3.a$)
        'a loaf of bread'   loaf.BPL
                             'few loaves of bread'

As introduced in Section 1, the sound plural can also yield a paucal reading. The plural of the singulative (the singulative form of a non-count nominal) is systematically paucal. Further, the feminine sound plural of a singular nominal (a count nominal) can be paucal if it has a broken plural counterpart:

(7)　　*sunbula*　　　　→　　*sunbul-a:t*　　　　　*sana:bil*
　　　　'a spike of wheat'　　　　Spike-PL.F　　　　Spike-BPL
　　　　　　　　　　　　　　　　'few spikes of
　　　　　　　　　　　　　　　　wheat'　　　　　　'spikes of wheat'

The previous discussion emphasizes that the inflectional paucal (denoting paucity in number) can be yielded by the sound plural and the broken plural. The main goal of the current study is to integrate another flavor of paucity, namely dual morphology. More specifically, the dual morpheme *-e:n* in NRJA, along with its dual interpretation, can express paucity in number.

In the next section, I will introduce Harbour's (2014) number theory, the theoretical framework on which the current research is based.

3. Theoretical Background

Harbour (2014) proposes a general theory of numbers that is based on three bivalent semantic number features that apply compositionally to (pro)nominal lattices to derive the typology of numbers. This theory aims at yielding the possible number systems in natural languages and differentiating between all the possible types of exact and approximative numbers, such as the singular, dual, plural, paucal, and greater/greatest plural, based on the three bivalent primitives/features.[7] Harbour (2014) adopts the common extended nominal projection in (8). It begins with the category-forming head n^0 to categorize a root. Over this derivational domain, number phrase (#P) projects and the three bivalent semantic features that act over nominal lattices are collocated in $\#^0$. Harbour (2014) also proposes that n^0 structures roots as lattices but cannot classify them into mass and count nominals. This is rather the task of #P.

(8)
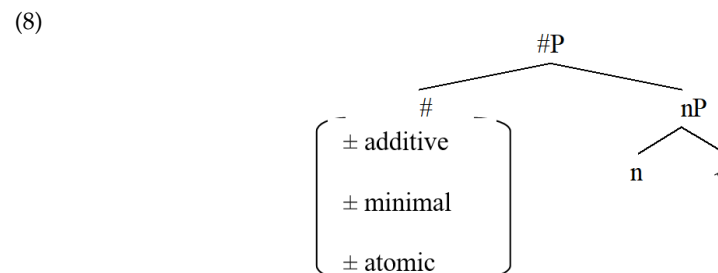
The function of n^0 can be visualized in (9) wherein n^0 structures a root into a join-semilattice. Note that in (9) the model contains only three individuals.

(9)
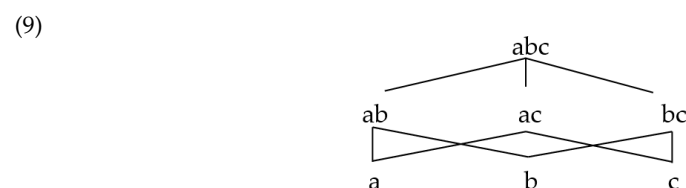
Regarding the small set of primitives (features), the feature [±additive] is introduced in Harbour's (2014) theory as a feature of approximative numbers (e.g., paucal and greater plural). The feature [-additive] indicates a bounded lattice sub-region (range) (i.e., the output set has an upper bound), whereas [+additive] indicates unbounded range. Concerning [± atomic] and [± minimal], the feature [+atomic] refers to singularity while [-atomic] refers to duality or plurality. On the other hand, [+minimal] means that the set of elements has no subparts, which is the opposite of the interpretation of [-minimal].

Harbour (2014) proposes that some or all of these bivalent features are not necessarily present in all languages. For instance, $\#^0$ is empty in classical Chinese, whereas [± atomic] is present in English, which is a language that only distinguishes between the singular nouns and the plural nouns. On the other hand, number systems that distinguish between the singular, the dual, and the plural, like Kiowa or Warlpiri (Harbour 2014), need [± atomic]

and [± minimal]. These two features are sufficient to capture this threesome number system. In (10), a number system that distinguishes between the singular, dual, plural, and paucal, which is very close to the Arabic number system, is discussed. The difference between the derivation of the singular in (10a) and that of the dual in (10b) is in the specification of the feature [±atomic]; the singular is atomic, but the dual is not. On the other hand, the difference between the derivation of the dual and that of the plural in (10c) is captured by the feature [±minimal]; the elements of the former have no subparts (i.e., [+minimal] selects the bottommost layer of the lattice, which contains only two-atoms pluralities), unlike those of the latter, which selects more complex layers. Regarding the paucal in (10d), it should have an upper bound, and therefore it is characterized by [-additive]. Note that the semantic range of this feature (the upper bound) might be constrained by social convention and can be relative to the number to which the plural refers.

(10)   a. The singular:

```
                          #P
                       /      \
                     #          nP
            ┌─────────────┐    /  \
            │ - additive  │   n
            │ + minimal   │
            │ + atomic    │
            └─────────────┘
```

b. The dual:

```
                          #P
                       /      \
                     #          nP
            ┌─────────────┐    /  \
            │ - additive  │   n
            │ + minimal   │
            │ - atomic    │
            └─────────────┘
```

c. The plural:

```
                          #P
                       /      \
                     #          nP
            ┌─────────────┐    /  \
            │ + additive  │   n
            │ - minimal   │
            │ - atomic    │
            └─────────────┘
```

d. The paucal:

```
                          #P
                       /      \
                     #          nP
            ┌─────────────┐    /  \
            │ - additive  │   n
            │ - minimal   │
            │ - atomic    │
            └─────────────┘
```
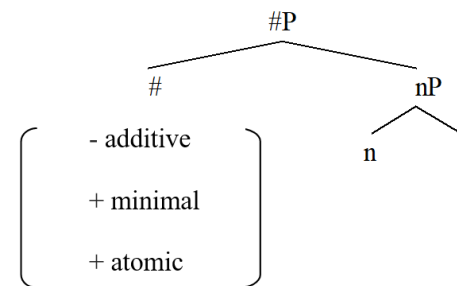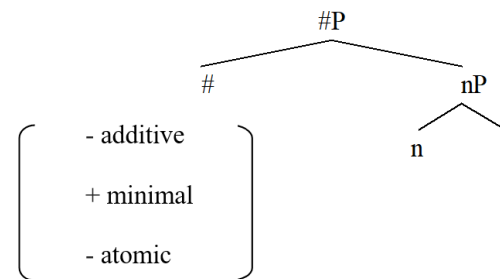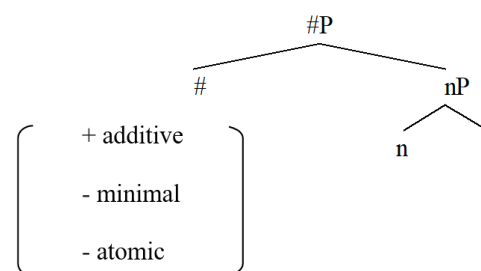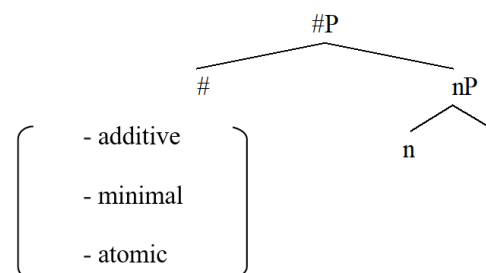
The morphosyntactic structure in (10c) gives rise to the exclusive plural, which is interpreted as *more than two*. One of the possible scenarios to account for the inclusive plural is to propose that the presence of [+atomic] in the morphosyntactic structure of the number system of a language does not always entail the presence of [-atomic] in the same language and vice versa. This implies that [-atomic] should be absent under $\#^0$ in the morphosyntactic structure of the plural when it is inclusive to the singular. For example, the English plural nominal *children* in *I have no children* is an inclusive plural, i.e., it has *one child or more* interpretation. More specifically, the speaker does not have any children. In contrast, [-atomic] is present when the plural is exclusive. To illustrate, the same plural nominal in *I have children* has a *two children or more* interpretation, i.e., the speaker has more than one child. These two scenarios occur, for example, in languages that have inclusive and exclusive plurals. Another possible scenario is to assume that #P does not project within the structure of the inclusive plural (See Martí 2020).

Nevertheless, the exclusive denotation of the plural in Arabic does not pose a problem to Harbour's (2014) system. The exclusive plural in Arabic is commonly paucal (Mathieu 2013, 2014; Dali 2020), including the feminine sound plural of the singulative, the masculine sound plural that has a broken plural counterpart, and the paucal broken templates. Hence, the term exclusive, as noted in Section 2, should not be considered a type of plurality in Arabic. It should rather be treated as a feature of the paucal plural. The paucal has both a lower bound, which is three individuals, and an upper bound. Hence, the exclusive plural that excludes the singular, as far as I can tell, is not present in Arabic. It is rather the paucal plural that can exclude the singular, alongside the dual.

Before accounting for the morphosyntax of the dual when it refers to 'exactly two' referents and when it denotes a paucal number, following Harbour's (2014) approach (note again that this function is close to the function of the unspecified or pseudo-dual reported in Blanc (1970) and Brustad (2000)), it should be verified that NRJA has this type (or function) of the dual.[8]

4. Method

To determine whether the dual has a paucal interpretation in NRJA, an acceptability judgment task was assigned to 20 native speakers of NRJA (10 males and 10 females). They were assigned 10 contexts. These contexts were structured by the researcher, as he is a native speaker of NRJA. Each context contained a sentence embedding a dual nominal that should mean either exactly 'two', 'few', or both. The informants were asked to decide the interpretation(s) of the dual nominal in each sentence. Does it only refer to 2 referents, few referents, or both? Consider the example in (11), where the target sentence from NRJA is followed by 3 possible *interpretations*. The full list of NRJA contexts and sentences is provided in Appendix A.

(11) Context: Somebody is asking his friend about books he saw in his friend's room.

a. Speakers A:	*ka-ʔinn-i*	*ʃufit*	*b-ɣurift-ak*
	like-that-1SG	saw.1.SG	in-room-2.SG.M
	kutub	*kθi:re*	
	book.BPL	many	

'I guess that I have seen many books in your room.'

b. Speaker B:	*kull-hin*	*kta:b-e:n*	*ja*	*radʒil*
	all-3PL.F	book-DUAL	VOC	man

The sentence in (1b) means:
a. Man! I have only two books.
b. Man! I have few books.
c. Both interpretations are possible.

Based on the 3 choices in (11), the following predictions are made: (i) if choice (a) is the most selected (or constantly selected), the dual marker in NRJA does not have a paucal function (or it may have a very restricted use among native speakers of NRJA). (ii) Choice (b) is not expected to be the most frequently selected choice, as the marker *-e:n*

is a dual marker. If this choice is the most selected one, this entails that the dual marker is losing its status as a marker of duality in NRJA. (3) If choice (c) is the most selected choice (or constantly selected), the dual marker has a paucal function, along with its dual interpretation. The collected responses of this task are 200 tokens (10 contexts × 20 NRJA native speakers (10 males + 10 females).

5. The Paucal and Exact Interpretations of the Dual in Jordanian Arabic

The results of the acceptability judgment task indicate that the dual marker *-e:n* has double nature. It is a dual marker and can act as a paucal marker, as choice C was selected by all 20 native speakers of NRJA as an evaluation of the intended meaning of the contextualized sentences in (1, 4, 5, 8, 9, and 10) listed in Appendix A (i.e., it is the most frequently selected choice). This evaluation means that the dual and paucal interpretations are both possible in these sentences. As for the contextualized sentences in (2 and 7), all participants selected choice B. This means that the dual interpretation is excluded, and the paucal interpretation is maintained. The exclusion of the dual interpretation is explainable. In (12), for example, the dual nominal *kta:b-e:n* is not expected to mean exactly 'two books', as it could not be imagined that a library has only two books.

(12) *Context: Two interlocutors are talking about a library.*

a. Speaker A:	*ʃa:jif*	*ma:*	*akbar*		*h-al-maktabe*
	See.2SG.M	EXCL	big.COMP		this-DEF-library
	'What a large library!'				
b. Speaker B:	*ja*	*radʒul,*	*kull-hin*	*kta:b-e:n*	*illi*
	VOC	man,	all-3PL.F	book-DUAL	that
	fi:-ha.	*ʕmilit-ha*		*kabe:r-e*	
	in-3SG.F	made.2SG.M-SG.F		big-SG.F	

Concerning the sentences in (3 and 4) in Appendix A, choice B was selected 14 times (70%) and 17 times (85%) and choice C was selected 6 times (30%) and 3 times (15%), respectively. This entails that the paucal reading is more appropriate for these two sentences for the same reason provided for the sentences in (2 and 7). The results of the semantic evaluations of the sentences in (2 and 7) indicate that the interpretation of the dual marker in some contexts is unambiguously the paucal interpretation, whereas the results of (3 and 4) entail that the paucal interpretation can be more appropriate, yet the contextual meaning can be ambiguous (i.e., the dual interpretation is less appropriate but possible).

In the rest of this section, it is shown that the dual morpheme can act as a paucal marker in NRJA. This section is divided into two subsections. Section 5.1 presents the facts related to the use of the dual as a genuine dual marker and a paucal marker in NRJA. Section 5.2 offers a morphosyntactic analysis of this observation. I show that the bivalent features of Harbour's (2014) theory of numbers predict the two interpretations of the morpheme *-e:n*. Particularly, the bivalent feature [±minimal] is crucial to predict the exact and the paucal interpretations of the dual in NRJA.

5.1. Exact and Paucal Number Interpretation

Typically, the dual morpheme *-e:n* is used to refer to exact numbers in Arabic. For instance, in (13), Speaker A asks Speaker B how much money he has in his wallet at the moment of talking. Speaker B informs him that he has only two Jordanian dinars. In this context, there should be no function to the dual morpheme other than denoting the exact number.

Context: Speaker A and Speaker B are in a bookstore and are planning to buy a book that costs five Jordanian dinars.

(13)	a. Speaker A:	*kam*	*maʕ-ak*	*flu:s*	*hassa*
		How-much	with-2SG.M	money	now
		'How much money do you have?'			

	b. Speaker B:	*maʕi*	*le:rt-e:n*
		With-1sg	lira-DUAL
		'I have two Jordanian dinars'	

	c. Speaker A:	*bukra*	*binmurr*	*w-bniʃtari:*
		tomorrow	1PL.pass	and-1PL.buy.3SGM
		'We will come back tomorrow and buy the book'.		

Most importantly, the dual morpheme in NRJA can be used to denote approximative number, i.e., it has a paucal interpretation. It refers to a small number. In (14), for instance, Speaker B expresses his viewpoint that the library that he and Speaker A are talking about is not a large one. Speaker A thinks that the library is big and contains a lot of books. Speaker B attempts to convince Speaker A that it is not that big. Speaker B uses the dual *kta:be:n* 'two books' to indicate that this library does not contain many books. Unlike the interpretation of the dual morpheme in (13), this morpheme does not refer to an exact number (i.e., exactly two books) in (14). It is unrealistic that the library contains only two books. It should rather contain a fair number of books. (EXCL =EXCLEMATION, COMP = COMPARATIVE).

(14)	a. Speaker A:	*ʃa:jif*	*ma:*	*akbar*	*h-al-maktabe*
		See.2SG.M	EXCL	big.COMP	this-DEF-library
		'look how big this library is!'			

	b. Speaker B:	*ja*	*radʒul,*	*kull-hin*	*kta:b-e:n*	*illi*
		VOC	man,	all-3PL.F	book-DUAL	that
		fi:-ha.	*ʕmilit-ha*	*kabe:r-e*	
		in-3SG.F	made.2SG.M-SG.F	big-SG.F	

		Literal translation: 'Hey man! All of them are two books that are in it. You made it big.
		Meaningful translation: 'Hey man! It does not have a lot of books. You call it a large library!'

Another example of the approximative (paucal) interpretation of the dual is offered in (15):

Context: Speaker A and Speaker B are talking about a person they both know. Speaker B thinks that this person is working too hard for trivial reward/gain, whereas Speaker B believes that this person will gain a lot of money.

(15)	a. Speaker A:	*ʕali*	*tˤu:l*	*nha:r-u*	*be:n*
		Ali	length	day-3SG.M.POSS	between
		ʔil-maħkame		*w-il-ʔara:ðˤi*	
		DEF-court		and- DEF-lands	

		Literal translation: 'Ali along the day between the court and the lands.'
		'Ali spent his day visiting the court and the Department of Lands and Survey'.

	b. Speaker B:	*ʕaʃa:n*	*mitr-e:n*	*ʔarðˤ!*
		because	meter-DUAL	land
		Literal translation: 'for two meters of land!'.		
		Meaningful translation: 'Just for the sake of two meters/few meters.'		

	c. Speaker A:	*la:, ʔis-sula:fe*		*fi:-ha*	*wirθe*	*kabi:re*
		No,	DEF-tale	in-it	legacy	big
		Literal translation: 'No, the tale is about a big legacy.'			
		Meaningful translation: 'No, he is going to inherit a lot of money (or land)'.			

The interpretation of the dual morpheme in NRJA can sometimes be ambiguous between the true dual and paucal. In (16), for example, Speaker B is attempting to convince his brother that he has exactly two Jordanian dinars or has a little amount of money (e.g., few coins).

Context: Speaker A and Speaker B are brothers. Speaker A (younger brother) is asking Speaker B (older brother) to lend him some money to buy some books for his studies.

(16)   a. Speaker A:

mihta:dӡ	*ʔaʃtari*	*ʃwajjit*	*kutub*	*l-al-fasˤil*
needy	buy.1SG	few	books	to-DEF-semester

idӡ-dӡa:j

DEF-coming

'I need to buy some books for the coming semester.'

   b. Speaker B:

ʔutˤlub	*min*	*ʔabu:-k*
ask.2SG.M	from	father-2SG.M.POSS

'Ask your father to buy you the books'.

   c. Speaker A:

ʃufit	*le:r-a:t*	*ʕala*	*tˤa:wilt-ak*
saw.1SG	lira-PL.F	on	table-2SG.M.POSS

'I have seen money (some dinars) on your table'.

   d. Speaker B:

kull-hin	*le:rt-e:n*	*ʔilli*	*maʕa:-j*
all-3PL.F	lira-DUAL	that	with-1SG.POSS

'I have only two dinars.'

Other examples where the interpretation of the dual morpheme is ambiguous are provided in (17 and 18):

Context: Speaker A is expressing his nostalgic feelings, and Speaker B is lessening these feelings.

(17)   a. Speaker A:

ma:-ni	*msˤaddig*	*arawwiħ*	*ʕal-ʔurdun*
not-I	believer	go back	on-Jordan

'I cannot wait to travel back to Jordan.'

   b. Speaker B:

ja:	*radӡil ,*	*ʃahr-e:n*	*zama:n*	*w-bitrawwiħ*
VOC man,		month-DUAL	time	and-go back.2SG.M

Literal Translation: 'Hey man! Two months and you travel back.'
Meaningful translation: 'It is only about two months (or it is only some time) and you will travel back to Jordan'.

   c. Speaker C:

ja:	*radӡil , ðˤall*	*mijje*	*w*	*sitte w*
VOC	man, remaining	hundred	and	six and

ʕiʃri:n	*jo:m*	*b-izˤ-zˤabtˤˤ* !
twenty	day	in-DEF-exact

'There are exactly 126 days remaining!'

Context: Speaker A is waiting for the report of his medical test. He seems too busy. Speaker B is asking Speaker 1 to wait for some time.

(18)   a. Speaker A:

ma:-raddu:-l-i	*xabar*	*mata*
Not-replied.3PL.M-to-1SG	news	when

bidӡhaz	*il-faħisˤ*
get.ready	DEF-medical test

'They did not contact me to inform when the medical test will be ready.'

   b. Speaker B:

ʔisˤbir-lak	*dagi:gt-e:n*
be patient-DAT.2SGM	minute-DUAL

Literal meaning: 'be patient for two minutes.'
Meaningful translation: 'Wait for some time (few minutes)!'

An important point to mention here is that the paucal interpretation of the dual morpheme in NRJA does not have a proper upper bound. However, its upper numerical bound should be lower than the bottom cut of the plural. Therefore, the dual *kta:be:n* in (14), for example, cannot be replaced with the plural *kutub* 'books' unless this plural is preceded by an appropriate quantifier, such as *ʃwajjit* 'few/little' to be equivalent to the paucal-denoting dual by selecting a set from all the individuals of the plural *kutub*.

5.2. Syntactic Analysis

As we have shown above, the dual morpheme *-e:n* is suffixed to singular or singulative nominals, as shown in (19–20).

(19)   a. *tˤa:lib*   →   *tˤa:lb-e:n*
       'student'   student-DUAL
                                   'two students'
       b. *binit*   →   *bint-e:n*
       'daughter'   daughter-DUAL
                                   'two daughters'

(20)   *bagar*   →   *bagar-at*   →   *bagar-t-e:n* (or *bagra-t-e:n*)
       cow.COLL   cow-SG.F   cow-SG.F-DUAL
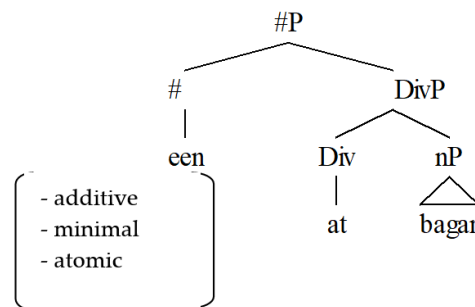   'cows'   'a cow'   'two cows'

Let us start with the morphosyntax of the collective nominal in (20). As shown in (21), the dual morpheme merges under $\#^0$, and Div^0 is occupied by the feminine singular morpheme *-at*, which is the singulative morpheme in Arabic. This means that the morpheme *-at* divides the collective *bagar*, and the dual morpheme *-e:n* gives rise to count reading. Following Harbour (2014), I propose that $\#^0$ of the dual that refers to an exact number in NRJA is specified as [-atomic], [+minimal], and [-additive], as the dual is non-atomic (not singular), does not have parts, and its upper bound is known.

(21)
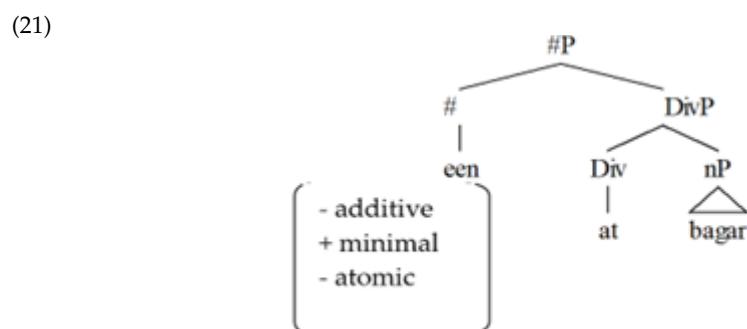
Concerning the examples in (19) (where no *-at* is used), these nominals are count (singular nouns). Following Borer (2005), it can be suggested that the dual should merge under Div^0, analogous to the plural, which is considered to have a dividing function, not a counting one. However, the interpretation of the dual morpheme is different from that of the plural of these nominals. The plural gives rise to inclusive reading (i.e., *one or more* reading), whilst the dual morpheme gives exact number reading (i.e., *only two* reading). The dual excludes the singular, and the numbers above two. Hence, the dual with singular/count nominals should be located under $\#^0$, not Div^0, as it has no dividing function.

In addition to its exact number interpretation, the dual in NRJA can be used to denote paucity (paucal), such as the dual of the nominal *le:ra* 'Jordanian dinar' in (13) above. To account for this interpretation, I propose that $\#^0$ in (22) should be specified as [-additive], [-minimal], and [-atomic]. It should have these specifications as the dual in this case is non-atomic (not singular), it should have parts, and its upper bound is relatively known (small number):
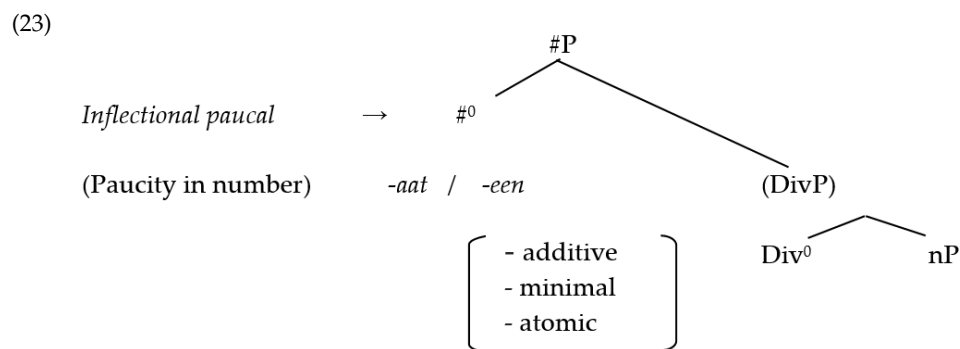
(22)

```
                                    #P
                          ┌──────────┴──────────┐
                          #                     DivP
                          │               ┌──────┴──────┐
                         een             Div            nP
        ┌─────────────┐                   │             ╱╲
        │ - additive  │                  at           bagar
        │ - minimal   │
        │ - atomic    │
        └─────────────┘
```

One point that bears mentioning here is that the paucal interpretation of the dual in NRJA is different from the paucal plural interpretation in Standard Arabic. In Standard Arabic, the lower and upper bound of paucal plurals is known (3 to 10), whereas the lower and upper bounds for the paucal dual morpheme are not specified in the same way. The paucity of the dual morpheme is defined with reference to the knowledge of the speaker (e.g., one hundred Jordanian dinars can be a small amount of money in comparison with one hundred thousand dinars, but a large amount in comparison with one thousand dinars). This implies that a socio-semantic convention between interlocutors may affect where the upper and the lower cut of a paucal number should be placed (Harbour 2014). With this being the case, the paucity-denoting dual morpheme does not have a specified and socially conventionalized upper cut; however, its upper bound can be determined with reference to the lower value of the plural, and it should be specified as [-additive].

To wrap up, the exact number reading and the approximative (paucal) reading of the dual morpheme *-e:n* are characterized by the three bivalent features as clarified in Table 1. The distinctive feature that adequately captures the two possible readings is the [± minimal]. If *-e:n* is specified as [+minimal], it yields an exact number interpretation (two). On the other hand, if it is specified as [-minimal], it denotes paucity in number. Thus, the difference in the interpretation of *-e:n* is captured in the inflectional domain of the nominal, and the difference in their morphosyntactic structures is kept to the minimum. The specification of the feature [± minimal] is provided in Table 1.

Table 1. The feature specifications of dual-denoting and paucal-denoting dual morpheme.

Dual *-e:n* in NRJA	Exact Number	Approximative Number (Paucal)
±atomic	-	-
±minimal	+	-
±additive	-	-

This implies that NRJA can derive paucity in number by exploiting the feminine plural morpheme *-a:t* or the dual morpheme *-e:n* under #^{0}, as shown in (23). Note that the masculine plural morpheme *-i:n* can also derive paucity when the same host nominal can be pluralized in a non-concatenative way (i.e., broken plural morphology). This is common in many Arabic varieties, including Jordanian and Lebanese Arabic. It is worth repeating that the morpheme *-a:t* does not occupy #^{0} unless DivP projects first (i.e., it denotes paucity in number if the target nominal is singulative). On the other hand, the morpheme *-e:n* cannot give rise to paucity in number unless it is specified as [-minimal]. Otherwise, it refers to an exact number (i.e., two).

(23)

$$
\begin{array}{l}
\textit{Inflectional paucal} \qquad \rightarrow \qquad \#^0 \\[4pt]
\text{(Paucity in number)} \qquad \textit{-aat} \ / \ \textit{-een} \qquad\qquad \text{(DivP)} \\
\end{array}
$$

#P
— #⁰
   -aat / -een
   [- additive
     - minimal
     - atomic]
— (DivP)
   Div⁰   nP

A final remark is to compare the flavors of the paucal in SA and NRJA. A point of similarity is that they both exploit the feminine sound plural *-a:t* to yield paucity/the paucal. On the other hand, SA exclusively uses specific broken plural templates to obtain paucity, whereas NRJA has the dual. As mentioned above, the use of the dual as a marker of plurality, whether paucal or not, does exist in some other Arabic varieties, as reported in Blanc (1970) and Brustad (2000). Hence, the morphosyntactic analysis provided in the paper for the dual in NRJA might be useful to account for the morphosyntax of the dual in these varieties.

6. Conclusions

In this paper, it has been argued that the dual category can be the source of the paucal category in NRJA. In doing so, the two possible interpretations of the dual number in NRJA have been investigated, namely, the exact (dual) interpretation and the approximative (paucal) interpretation, whereby the dual is used like the paucal plural in Arabic in the sense that it expresses a small set of the objects it scopes overs. It has also been demonstrated that this difference between the two readings boils down to the value of the number features under $\#^0$, where the dual morpheme merges ([±additive], [±minimal], and [±atomic]. In the exact interpretation, the specification of the relevant features is [-additive], [+minimal], and [-atomic]. On the other hand, for the approximative interpretation, the specification of the relevant features is [-additive], [-minimal], and [-atomic]. This implies that the sole difference between the two interpretations is related to the value of the feature [minimal] whose negative value gives rise to the approximative interpretation. This all speaks favorably for the theoretical power of Harbour's (2014) system in generating the different readings within the number system.[9] Finally, it is worth highlighting that one of the limitations of the study is that this study is based on the acceptability judgment of native speakers of NRJA, not on data (i.e., utterances) collected (or recorded) from a corpus of natural conversations in NRJA (to recognize the merits of corpus-based and corpus-driven analyses, see Altakhaineh (2022)). Testing the validity of the findings of the current paper against greater compiled data is left for future research. Furthermore, more scholarly research efforts should be paid to determine whether the paucal function exists in the morphology of other Arabic varieties, whether the standard one or other vernaculars.

Appendix A. Contextualized NRJA Sentences Comprising Dual Nominals

---

(1) Context: *Somebody is asking his friend about books he saw in his friend's room.*

a. Speakers A:	*ka-ʔinn-i*	*ʃufit*	*b-ɣurift-ak*	*kutub*	*kθi:re*
	like-that-1SG	saw.1.SG	in-room-2.SG.M	book.BPL	many

'I guess that I have seen many books in your room.'

b. Speaker B:	*kull-hin*	*kta:b-e:n*	*ja*	*radʒil*
	all-3PL.F	book-DUAL	VOC	man

The sentence in (1b) means:
a. Man! I have only two books.
b. Man! I have few books.
c. Both interpretations are possible.

---

(2) Context: *Two interlocutors are talking about a library.*

a. Speaker A:	*ʃa:jif*	*ma:*	*akbar*	*h-al-maktabe*
	See.2SG.M	EXCL	big.COMP	this-DEF-library

'What a large library!'

b. Speaker B:	*ja radʒul,*	*kull-hin*	*kta:b-e:n*	*illi*
	VOC man,	all-3PL.F	book-DUAL	that

fi:-ha.	*ʕmilit-ha*	*kabe:r-e*
in-3SG.F	made.2SG.M-SG.F	big-SG.F

The sentence in (2b) means:
a. I have only two books.
b. I have only few books.
c. Both interpretations are possible.

---

(3) Context: *Two interlocutors are talking about one of their relatives who is busy with distribution the father's legacy.*

a. Speaker A:	*ʕali*	*tˤu:l*	*nha:r-u*	*be:n*
	Ali	length	day-3SG.M.POSS	between

ʔil-maħkame	*w-il-ʔara:ðˤi*
DEF-court	and- DEF-lands

'Ali spent his day visiting the court and the department of lands and survey'.

b. Speaker B:	*ʕaʃa:n*	*mitr-e:n*	*ʔarðˤ!*
	because	meter-dual	land

c. Speaker A:	*la:,*	*ʔis-sula:fe*	*fi:-ha*	*wirθe*	*kabi:re*
	No,	DEF-tale	in-it	legacy	big

'No, he is going to inherit a lot of money (or land)'.

The sentence in (3b) means:
a. Interlocutors are talking about two meters of land.
b. Interlocutors are talking about few meters of land.
c. both interpretations are possible

---

(4) Context: *Speaker A is expressing his nostalgic feelings, and Speaker B is lessening these feelings.*

a. Speaker A:	*ma:-ni*	*msˤaddig*	*arawiħ*	*ʕa-l-ʔurdun*
	NEG-I	believer	go back	on-DEF-Jordan

'I cannot wait to travel back to Jordan.'

b. Speaker B:	*ja:*	*radʒil,*	*ʃahr-e:n*	*zama:n*	*w-bitrawwiħ*
	VOC	man,	month-DUAL	time	and-go back.2SG.M

c. Speaker C:	*ja:*	*radʒil,*	*ðˤall*	*mijje*	*w*	*sitte*	*w*
	VOC	man,	remaining	hundred	and	six	and

ʕiʃri:n	*jo:m*	*b-izˤ-zˤabtˤ!*
twenty	day	in-DEF-exact

'There are exactly 126 days remaining!'

The sentence in (4b) means the interlocutors are talking about:
a. The hearer should wait two months.
b. The hearer should wait few months.
c. Both interpretations are possible.

(5) *Context: Speaker A is waiting the report of his medical test. He seems too busy. Speaker B is asking Speaker 1 to wait for some time.*

a. Speaker A: *ma:*   *raddu:-l-i*   *xabar*   *mata*

                   NEG   replied.3PL.M-TO-1SG   news   when

bidʒhaz   *il-faħisˤ*

get ready   DEF-medical test

'They did not contact me to inform when the medical test will be ready.'

b. Speaker B: *ʔisˤbir-lak*   *dagi:gt-e:n*

                   be patient-2SGM   minute-DUAL

The sentence in (5b) means:

a. Wait exactly two minutes.

b. Wait few minutes.

c. Both interpretations are possible.

---

(6) Context: *Two young men are in a coffeeshop.*

a. Speaker A: *ja*   *radʒul,*   *xuð*   *nafas-e:n*

                   VOC   man,   take.IMP   breath-DUAL

b. Speaker B: *ma:*   *badaxxin*   *ja*   *xu:-j*

                   NEG   smosk.1SG   VOC   brother-1SG.POSS

                   'I do not smoke, brother.'

The sentence in (6a) means:

a. Speaker A is asking Speaker B to smoke Hookah exactly two times.

b. Speaker A is asking Speaker B to smoke Hookah few times.

c. Both interpretations are possible.

---

(7) Context: a father is asking his son to save money.

a. Speaker A: *ja*   *zamm,*   *ħawwiʃ-l-ak*   *girʃ-e:n,*   *w-ana*   *basa:ʕd-ak*

                   VOC   man,   save-to-2SG.M   penny-DUAL,   and-I   help-2SG.M

b-il-ʕame:r

in-DEF-construction

b. Speaker B: *xe:r*   *xe:r*

                   good   good

                   'Things is going to be ok.'

The sentence in (7a) means:

a. The father is asking his son to save exactly two pennies.

b. The father is asking his son to save some money.

c. Both interpretations are possible.

---

(8) Context: A man has proposed to a girl, and his mother is talking with her mother on the phone.

a. Speaker A: *saʕal-tu*   *ʕan*   *ʔibinna*

                   asked-2PL.M   about   son-1PL

                   'Have you asked about our son?'

b. Speaker B: *ʔinʃa:llah,*   *bin-ruddi-l-ku*   *xabar*   *h-al-jo:m-e:n*

                   if Allah wills it,   1PL-reply-to-2SG.M   news   these-DEF-DAY.DUAL

The sentence in (8b) means:

a. Speaker b (the girl's mother) will contact Speaker A in the coming two days.

b. Speaker b (the girl's mother) will contact Speaker A in the coming few days.

c. Both interpretations are possible.

---

(9) Context: Some people are going to visit their friend:

a. Speaker A: *ru:ħ-u*   *xalli:-na*   *n-iʃrab*   *ka:st-e:n*   *ʃa:j*

                   go-2PL.M   let-1PL   1PL-drink   cup-DUAL   tea

ʕind sˤa:ħib-na

at   friend-1PL.POSS

b. Speaker B: *la:,*   *ʔil-wagit*   *mitʔaxxir*

                   NEG,   DEF-time   late

                   'No, it is late.'

The sentence in (9a) means:

a. The friends are going to drink exactly two cups of tea.

b. The friends are going to drink some (cups of) tea.

c. Both interpretations are possible.

(10) Context: A father is planning to buy some dessert to celebrate his son's success in the secondary school graduation exams:

a. Speaker A:

ʔil-walad	nidʒīh	b-it-tawdʒīhi,	w-baddna	nħalli
DEF-boy	passed	in-DEF-Tawjihi,	and-want.1PL	in-distribute dessert

in-na:s,	bas	id-dinja	ʔaxir	iʃ-ʃahur
DEF-people,	but	DEF-life	end	DEF-month

'My son has passed secondary school graduation exams. We want to distribute dessert, but it is the end of the month.'

b. Speaker B:

kull-ha	sˤidr-e:n	kna:feh.
all-3SG.F	dish-DUAL	Knafeh

The sentence in (10b) means:

a. Speaker B is suggesting to bring exactly two dishes.

b. Speaker B is suggesting to bring few dishes.

c. Both interpretations are possible.

Notes

1. The feminine sound plural when attached to singulative nominals has been reported as paucal in Standard and vernacular Arabic (Mathieu 2013; Dali 2020), such as the paucal plural *bagar-a:t* cow-PL 'cows' of the singulative *bagar-ah* COW.COLL.F.SG 'a cow'. All examples in this paper are from Jordanian Arabic, unless otherwise stated.

2. The dual on verbs, adjectives, and determiners are beyond the scope of the current study as they can be manifestations of pure syntactic agreements (Baker 2008).

3. The singulativization of a collective nominal (e.g., fruits and grains) results in an individuation/unitization reading, whereas the singulativization of a mass nominal (e.g., minerals) gives rise to a partition reading (Fassi Fehri 2018). A point that is noteworthy here is that non-count nouns can also be divided by classifying or measuring phrases in Arabic, such as *ħabb-at tamr* 'a grain of dates'.

4. There is much debate on how this mapping operation takes place. For instance, Hammond (1988) and McCarthy and Prince (1990a, 1990b) argue for melodic transfer accounts whereby targets are categorized words. On the other hand, Kihm (2003), Lahrouchi and Lampitelli (2014), and Lahrouchi and Ridouane (2016), among others, argue for vocalic insertion accounts whereby the broken plural templates should have access to roots.

5. The morphosyntax of numbers in Arabic is one of the main topics in the literature on Arabic morphology and syntax (cf. Ojeda 1992; Zabbal 2002; Kihm 2003; Borer and Ouwayda 2010; Mathieu 2013, 2014; Benmamoun et al. 2014; Lahrouchi and Lampitelli 2014; Lahrouchi and Ridouane 2016; Fassi Fehri 2018; Dali and Mathieu 2020; Dali 2020, among others). The primary concern of such morphosyntactic studies on Arabic numbers has been to explore the morphosyntactic features and the position(s) of number markers in the architecture of DP (whether they merge within the derivational domain or the inflectional domain of the nominal spine). The plural in Arabic supports proposals that argue for the assumption that the plural is a morpho-syntactically distributed plural (under n^0, Div^0, $\#^0$, DP-external or internal adjunct), such as Greek, Blackfoot, Halkomelem Salish, Aramaic, Yucatec Maya and Innu-aimun (see Tsoulas 2007; Wiltschko 2008; Kramer 2012; Alexiadou 2011; Butler 2012; Gillon 2015; Smith 2016).

6. Broken plural is part of the Arabic non-concatenative inflectional morphology. It is formed by inserting vocalic segments into the consonantal segments of the singular. This operation changes the quality of the vowels of a singular.

7. See Corbett (2000) for a comprehensive description of numbers in natural languages and the typology of number systems.

8. Note that greater plural also exists in the number system of Arabic. Its morphosyntax is left open for future research.

9. The current paper submitted to *Languages* is part of a research project that is different from that of the paper whose full citation is 'Jaradat, Abdulazeez. (Jaradat 2023).

References

Acquaviva, Paolo. 2008. *Lexical Plurals: A Morphosemantic Approach*. Oxford: Oxford University Press.

Alexiadou, Artemis. 2011. Plural mass nouns and the morphosyntax of Number. Paper presented at The West Coast Conference on Formal Linguistics, Los Angeles, CA, USA, April 22–24; p. 28.

Al-Hamlawi, Ahmad. 1999. *ʃaða al-ʕarf fi: Fann al-ṣarf [the Scent in the Art of Morphology]* . Cairo: Dar al-Fikr al-Arabi Publisher.

Al-Samarrai, Mohammad. 2013. *al-sˤarf al-ʕarabi: Aħkam wa Maʕani [Arabic Morphology: Rules and Meanings]*. Beirut: Dar Ibn Katheer.

Altakhaineh, Abdel Rahman. 2022. Compositionality in N N compounds in Jordanian Arabic and English. *Canadian Journal of Linguistics/Revue Canadienne De Linguistique* 67: 5–21. [CrossRef]

Baker, Mark. 2008. *The syntax of Agreement and Concord*. Cambridge: Cambridge University Press.

Benmamoun, Elabbas, Abdulkafi Albirini, Silvina Montrul, and Eman Saadah. 2014. Arabic plurals and root and pattern morphology in Palestinian and Egyptian heritage speakers. *Linguistic Approaches to Bilingualism* 4: 89–123. [CrossRef]

Blanc, Haim. 1970. Dual and pseudo-dual in the Arabic dialects. *Language* 46: 42–57. [CrossRef]

Borer, Hagit. 2005. *In Name Only: Structuring Sense*. Oxford: Oxford University Press.

Borer, Hagit, and Sarah Ouwayda. 2010. Men and their apples: Dividing plural and agreement plural. In *Handout of a Talk Presented at GLOW in Asia VIII*. Beijing: Beijing Language and Culture University.

Brustad, Kerstin. 2000. *The Syntax of Spoken Arabic: A Comparative Study of Moroccan, Egyptian, Syrian, and Kuwaiti Dialects*. Washington, DC: Georgetown University Press.

Butler, Lindsay. 2012. Crosslinguistic and experimental evidence for non-number plural. *Linguistic Variation* 12: 27–56. [CrossRef]

Corbett, Greville. 2000. *Number*. Cambridge: Cambridge University Press.

Dali, Myriam. 2020. Gender and Number in Tunisian Arabic: A Case of Contextual Allosemy. Ph.D. thesis, University of Ottawa, Ottawa, ON, Canada.

Dali, Myriam, and Eric Mathieu. 2020. Broken plurals and (mis) matching of *F*-features in Tunisian Arabic. *Brill's Journal of Afroasiatic Languages and Linguistics* 12: 164–203. [CrossRef]

Dixon, Robert. 1988. *A Grammar of Boumaa Fijian*. Chicago: University of Chicago Press.

Erwin, Wallace. 2004. *A Short Reference Grammar of Iraqi Arabic*. Washington, DC: Georgetown University Press.

Fassi Fehri, Abdelkader. 2018. *Constructing Feminine to Mean*. Lanham: Lexington Books.

Gillon, Carrie. 2015. Innu-aimun Plurality. *Lingua* 162: 128–48. [CrossRef]

Greenberg, Joseph. 1966. *Language Universals, with Special Reference to Feature Hierarchies*. The Hague: Mouton.

Hammond, Michael. 1988. Templatic transfer in Arabic broken plurals. *Natural Language & Linguistic Theory* 6: 247–70.

Harbour, Daniel. 2014. Paucity, abundance, and the theory of number. *Lingua* 90: 185–229. [CrossRef]

Harrell, Richard. 2004. *A Short Reference Grammar of Moroccan Arabic: With Audio CD*. Washington, DC: Georgetown University Press.

Jaradat, Abdulazeez. 2023. Branching lexical plural into greater and paucal. *Cogent Arts & Humanities* 10: 2212462. [CrossRef]

Kihm, Alain. 2003. Les pluriels internes de l'arabe: Systeme et consequences pour l'architecture de la grammaire. *Recherches linguistiques de Vincennes* 32: 109–56. [CrossRef]

Kramer, Ruth. 2012. A split analysis of plurality: Evidence from Amharic. In *The Proceedings of WCCFL 30*. Edited by Nathan Arnett and Ryan Bennett. Somerville: Cascadilla Press, pp. 226–36.

Lahrouchi, Mohamed, and Nicola Lampitelli. 2014. On Plurals, Noun Phrase and Num(ber) in Moroccan Arabic and Djibouti Somali. In *The Form of Structure, the Structure of Form: Essays in Honor of Jean Lowenstamm*. Edited by Sabrina Bendjaballah, Noam Faust, Mohamed Lahrouchi and Nicola Lampitelli. Amsterdam: Benjamins, pp. 303–14.

Lahrouchi, Mohamed, and Rachid Ridouane. 2016. On diminutives and plurals in Moroccan Arabic. *Morphology* 26: 453–75. [CrossRef]

Martí, Luisa. 2020. Inclusive plurals and the theory of number. *Linguistic Inquiry* 51: 37–74. [CrossRef]

Mathieu, Eric. 2012. Flavors of division. *Linguistic Inquiry* 43: 650–79. [CrossRef]

Mathieu, Éric. 2013. On the plural of the singulative. *McGill Working Papers in Linguistics* 23: 1–12.

Mathieu, Eric. 2014. Many a plural. *Weak Referentiality*, 157–82. Available online: https://benjamins.com/catalog/la.219 (accessed on 2 July 2023).

McCarthy, John, and Alan Prince. 1990a. Prosodic Morphology and Templatic Morphology. In *Perspectives on Arabic Linguistics: Papers from the Second Symposium*. Edited by Mushira Eid and John McCarthy. Amsterdam: Benjamins, pp. 1–54.

McCarthy, John, and Alan Prince. 1990b. Foot and Word in Prosodic Morphology: The Arabic Broken Plural. *Natural Language and Linguistic Theory* 8: 209–83. [CrossRef]

Ojeda, Almerindo. 1992. The semantics of number in Arabic. In *SALT II: Proceedings of the Second Conference on Semantics and Linguistic Theory*. Edited by Chris Barker and David Dowty. Columbus: Ohio State University, pp. 303–25.

Rotge, Wilfrid. 2009. Plurality in English and other languages: Does it add up? *Anglophonia. French Journal of English Linguistics* 13: 101–20. [CrossRef]

Ryding, Karin. 2005. *A Reference Grammar of Modern Standard Arabic*. Cambridge: Cambridge University.

Schub, Michael. 1978. Plurals of Paucity and Abundance. *Arabica* 25: 204–5. [CrossRef]

Schub, Michael. 1982. A note on a sextual plural in Arabic and more on plurals of paucity and of abundance. *al-'Arabiyya*, 153–55.

Simon, Camille, and Camille Noûs. 2022. The grammaticalization of plurality in the languages of Amdo. *Himalayan Linguistics* 20: 49–81. [CrossRef]

Smith, Peter. 2016. Lexical plurals in Telugu: Mass nouns in disguise. *Lingvisticæ Investigationes* 39: 234–52. [CrossRef]

Talmoudi, Fathi. 1980. *The Arabic Dialect of Sûsa (Tunisia)*. Göteborg: Acta Universitatis Gothoburgensis.

Tsoulas, George. 2007. On the grammar of number and mass terms in Greek. *MIT Working Papers in Linguistics* 49: 239–66.

Wiltschko, Martina. 2008. The syntax of non-inflectional plural marking. *Natural Language and Linguistic Theory* 26: 639–94. [CrossRef]

Wright, William. 1951. *A Grammar of the Arabic Language*. Cambridge: Cambridge University Press.

Zabbal, Youri. 2002. The Semantics of Number in the Arabic Noun Phrase. Master's. thesis, University of Calgary, Calgary, AB, Canada.