Divide and Counter

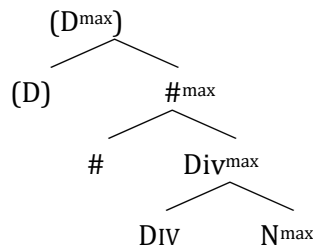Hagit Borer   and   Sarah Ouwayda
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1 Introduction

The purpose of this paper is to investigate the properties and distribution of the classifier *-ah* in Arabic. The investigation will turn out to shed light on the count-mass distinction in general, and in Arabic in particular, and will result in identifying two distinct types of plural markers, differing in their semantics, in their morphology, and in their syntax, one corresponding roughly to the type of plural marker found in English, at times referred to as *inclusive*, and the other returning solely *exclusive* plural reading. It will also result in motivating a structural distinction between quantifiers and cardinals, with the latter merging below the former.

1.1 Theoretical assumptions

Our starting point is a system in which content lexical items have no syntactic properties as such and specifically, the execution of this idea in Borer (2005) (the Exoskeletal Model).[1] In such a system the count-mass distinction must be mediated through syntactic structure. Thus regardless of its epistemological or ontological content, a nominal is count or mass in the context of some functional structure. Following Borer (op. cit.), we assume that such dedicated structure, effectively a divider, is associated with *count* properties, and that *mass* properties emerge in the absence of a divider, and do not require dedicated functional structure to be available. Illustrations of the relevant structures are in (1)-(2):[2]

1. **Count Structure**:

$$(D^{max})$$

(D) $\#^{max}$

$\#$ Div^{max}

Div N^{max}

2. **Mass Structure:**

$$(D^{max})$$

(D) $\#^{max}$

$\#$ N^{max}
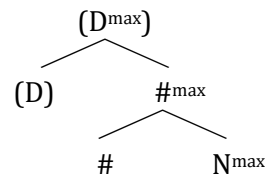
An immediate advantage of a system that views mass and count as exclusively structural properties is that it provides a direct account for the frequently observed flexibility of the mass-count distinction relative to specific lexical items, without the need to resort to additional mechanisms such as type shifting to map between two readings of the same noun. Some illustrations of such flexibility are in (3)-(5):[3]

3.   a. I'd like beer, please.
       b. I'd like a beer, please.

4.   a. There is rabbit all over the floor.
       b. There is a rabbit in the garden.

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[1] Specifically, syntactic properties are associated exclusively with (closed class) functors with a rigid designation (in the usual semantic sense but also potentially relative to a fixed syntactic function). See Gajewski (2002, 2009) for some relevant discussion.

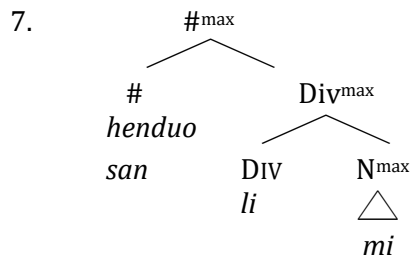[2] Where $\#^{max}$=Quantity^{max}, and where Div^{max} returns a count (non-mass) structure. We abstract away here from some aspects of the execution in Borer (2005, 2013) which are largely irrelevant for our purposes, and specifically, from the view of functional heads as variables bound by functors.

[3] And see Chierchia (1998a), i.a. for a fuller review and discussion.

5. a. That's quite a bit of carpet for the money.
   b. That's a nice carpet.

Languages with morphological non-phrasal classifiers provide a direct illustration of the structures in (1), under the assumption that such morphological classifiers are instances of D$_{IV}$. One observes, in particular, the absence of dedicated *mass* inflection, vs. the presence of dividing classifiers. Thus consider (6a-b) from Mandarin Chinese, with the proposed structure in (7) (the DP layer set aside here and elsewhere as largely immaterial):

6. a. henduo   li mi   *li*=classifier associated with elongated units   *Mandarin Chinese*
      a-lot   CL rice
      'Many grains of rice'
   b. san   li mi
      three   CL rice
      'Three grains of rice'

7.

```
              #max
            /      \
          #          Divmax
       henduo       /     \
        san      DIV      Nmax
                  li       △
                           mi
```

In the absence of D$_{IV}$, however, mass interpretation emerges and a classifier is impossible. As a consequence, *henduo* is interpreted as 'much' rather than 'many', and cardinals are barred:
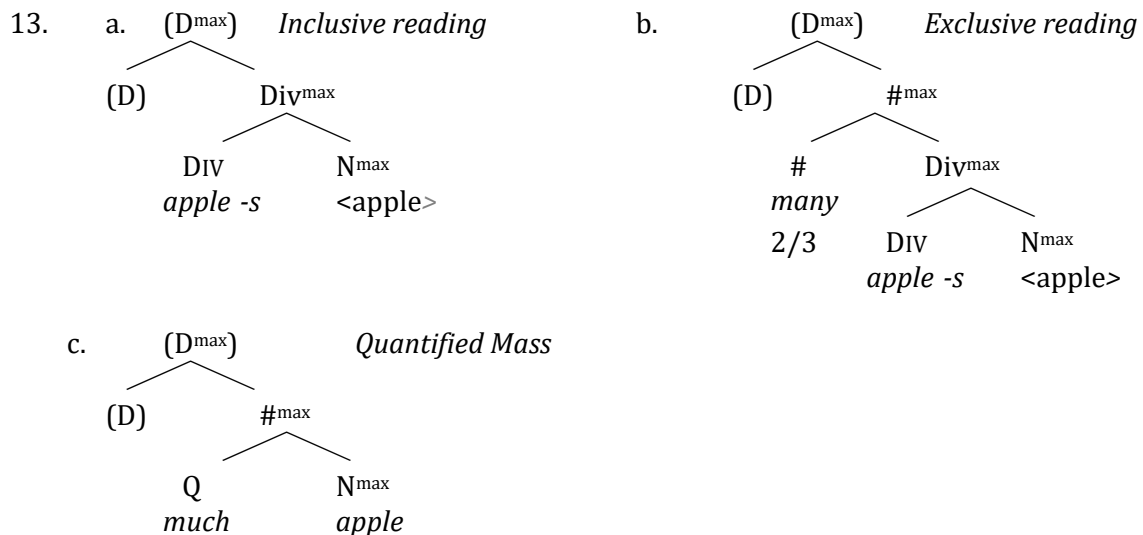
8. a. henduo   mi   *Mandarin Chinese*
      a-lot   rice
      'much rice'
   b. *san   mi
      three   rice
      'three rices/three grains of rice'

9.

```
              #max
            /      \
          #          Nmax
       henduo         △
        *san          mi
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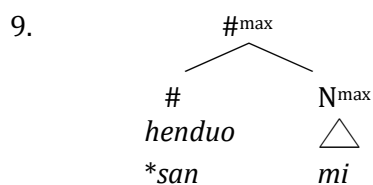
Cross-linguistically, a Chinese-type classifier is not always in evidence. Nonetheless, in English-type languages D$_{IV}$ could be marked by so-called plural marking (cf. Borer, 2005). Like morphological classifiers, plural marking may occur with nominals that are otherwise unspecified as mass or count, where it marks the entire projection as divided and hence *count* rather than *mass*. Crucially, from this perspective (so-called) plural marking in itself does not entail the existence of (coherent) atomic singulars or sums, a conclusion amply exemplified by the examples in (10)-(12) (cf. Krifka, 1995, Sauerland, 2003, Sauerland et al, 2005, Borer, 2005, and much subsequent literature):

10. a. 0.3 apples; 1.0 apples; zero apples
    b. *0.3 apple; *1.0 apple; *zero apple

11. A: Unfortunately, I noticed bananas in the fruit salad, and so I can't eat it
    B: #you shouldn't have a problem. I only put one

12. A: Do send your children to school!
    B: #Well, I guess I don't have to, as I only have the one.

In Borer (2005), the number neutral, inclusive reading for *bananas* or *children* in (11)-(12) emerges in the presence of Dɪᴠ, but the absence of # (cf. 13a). In such structures, plural marking sets the grounds, as would a classifier, for 'counting' by creating a web, or a *reticule*, of an infinite number of cells with an identical restriction, some of which may correspond to fragments of canonical individuals. Actual individuals, and consequently sums (at times referred to as *exclusive* readings), are in turn created by quantity expressions such as *many* or cardinals, which are a function from a given reticule to a specific quantity of cells (and including none, or cells which correspond to a portion of a canonical individual), with the structure in (13b). Finally, absent Dɪᴠ, a quantity-of-mass reading is returned in (13c) (copies in angled brackets):[4]

13.   a.   (D^{max})   *Inclusive reading*

              (D)   Div^{max}

                     DIV   N^{max}
                     apple -s   <apple>

      b.   (D^{max})   *Exclusive reading*

              (D)   #^{max}

                     #   Div^{max}
                     many
                     2/3   DIV   N^{max}
                             apple -s   <apple>

      c.   (D^{max})   *Quantified Mass*

              (D)   #^{max}

                     Q   N^{max}
                     much   *apple*

1.2 Challenging the analysis

The system, as formulated, directly predicts the complementary distribution of morphological classifiers and plural marking in any given nominal structure. That morphological classifiers do not, in fact, co-occur with plurals has been previously observed, and we quote from T'sou 1976 (and see also Haspelmath, 2001; Doetjes, 1996; Doetjes, 2012):

14.   [T]he study of nominal classifiers systems suggests an important hypothesis that the use of nominal classifiers and the use of plural morpheme [is] in complementary distribution in natural language. More correctly, it suggests that either a) a natural language has either nominal classifiers or plural morphemes, or b) if a natural language has both kinds of morphemes, then their use is in complementary distribution. (p. 1216) (Henceforth *T'sou's Generalization*)

A perusal of nominal structures in a broad range of languages suggests that this proposed universal is extremely robust. While a few cases have been cited as potential counter-examples, such counter-examples are infrequent to begin with and quite a few of them, upon further scrutiny, turn out not to involve 'plural' marking in the relevant sense, insofar as it is

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[4] For extensive discussions of *inclusive* vs. *exclusive* readings see Hoeksema, 1983; Schwarzschild, 1996; Sauerland, 2003; Sauerland et al., 2005; Spector, 2007; Zweig, 2009; Bale et al., 2011; Grimm, 2012a, i.a. See also Dali and Matthieu (2016) for a brief discussion of this issue in Arabic. We return to this matter in section 6.3. See Borer (2005) for the structural analysis of singulars within this approach, as well as brief comments in footnotes 7 and 21. Note, finally, that e.g. the inclusive reading in (11) is available without any clear monotone-decreasing licensor, undermining the frequent claim in the literature to the contrary.

demonstrably not an instance of DIV.[5]   The focus of this paper is to examine yet one more apparent counter example to this complementarity, this time in Arabic. As noted by Zabbal (2002, 2005) and Fassi Fehri (2004), the Arabic morpheme –*ah* (at times –*eh* in some vernaculars), frequently just a feminine ending, may be added to a certain class of (otherwise morphologically unmarked) nouns which denote mass or an indeterminate quantity (henceforth referred to as *batch* nouns). In these contexts, -*ah* (henceforth labeled *AH* in such contexts) functions very much like a divider, or a classifier, as illustrated in (15) for Lebanese Arabic (LA). Identical effects hold for Modern Standard Arabic (SA). In what follows, and unless otherwise noted, all cases in which identical effects hold in Standard and Lebanese are exemplified in Lebanese.

15. ***'batch/type' reading***   ***'unit-of' reading***
    a. ʕaSar-t   laymuun   ʕaSar-t   laymuun-eh
       squeezed-1sg   orange   squeezed-1sg   orange-*AH*
       'I squeezed orange'   'I squeezed an orange'
    b. staʕmal-t waraʔ   staʕmal-t   waraʔ-ah
       used-1sg   paper   used-1sg   paper-*AH*
       'I used paper'   'I used a piece of paper'
    c. šreb-t   biirah   šreb-t   biiray-eh
       drank-1sg   beer   drank-1sg   beer-*AH*
       'I drank beer'   'I drank a beer'

    Under the plausible assumption that –*AH* is a dividing morpheme, and hence an instance of DIV, and continuing to assume that plural marking is, likewise, an instance of DIV, we predict the complementary distribution of –*AH* and plural marking, given that they compete for the same structural (and semantic) slot. As it turns out, however, –*AH* does co-occur with plural marking, as illustrated in (16):

16. a. tlat   laymoun-eet
       three   orange-***AH***-pl
       'three oranges'
    b. štar-o   sabʕ   djeej-eet
       bought-3pl seven   chicken-*AH*-pl
       'They bought seven chicken'

    In (16), -*AH* is not immediately visible as a discreet morpheme separate from the plural marking –*eet* or at times –*aat*. However, as we will show in section 3, it must be structurally present. The resolution of the apparent conflict between the grammaticality of the examples in (16) and the analysis of plural marking as heading DIV is the starting point of this paper. The apparent conflict, once resolved, will turn out in actuality to provide evidence for two distinct types of syntactic and semantic plural markings: one which heads DIV, and which yields a number neutral, inclusive reading, and another which is inherently linked to cardinals and to #, and which gives rise, perforce, to a reading which excludes singulars (or, for that matter, any cardinality not directly specified). The resulting system, in turn, will lend additional support to a syntactic approach to the mass/count distinction in general, and to the view of (much of) plural marking as linked to DIV, rather than to sums, as such.

1.3 An outline

    Section 2 of this paper is devoted to a brief overview of gender and plural marking in Arabic. In section 3 we focus on the morphology of plural-marked -*AH* nouns (PL-*AH*-Ns),

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[5] See, i.a., Park's (2008) analysis of the Korean 'plural' -*tul* as a distributivity marker, rather than a plural marker. See De Belder (2008) for the analysis of Dutch diminutives as instances of a SIZE modifier of DIV, rather than DIV, directly.

showing that what is transcribed as *–eet* in (16a-c) must be analyzed as consisting of *–AH*+*eet*PL, rather than as a mono-morphemic plural marker which merges directly with the stem.

In section 4 we turn to a comparison between PL-*AH*-Ns and other plural-marked forms, focusing on a wide range of syntactic and semantic differences, all pointing toward the conclusion that the plural-marking attested with *–AH*-Ns, although morphologically identical to feminine plural, is nonetheless clearly distinct from plural marking on stems, in particular in requiring the obligatory presence of a cardinal (or a cardinal-like expression such as 'several'). In turn, this very distinction paves the way to motivating different structures for cardinals and quantifiers, a conclusion independently supported, specifically for Arabic, in section 5. The emerging DP structure is discussed in section 6. In section 6 as well we revisit the putative Arabic counter-example to T'sou's Generalization, arguing that the plural marking which co-occurs with *–AH* is not an instance of DIV, but rather an instance of semantically vacuous agreement with a cardinal in [Spec,#]. The interpretation of PL-*AH*-Ns as exclusive plurals, in turn, follows directly from the obligatory presence of #P. Section 7 concludes.

2 Arabic Nouns – Gender and Number Marking

2.1 The morpheme –ah

2.1.1 Gender marking

All Arabic nouns are gender-marked as either masculine or feminine, with gender membership in biologically gendered nominals following obvious lines. While masculine marking is $\emptyset$, feminine marking is typically overt and marked as *–ah*.[6] The relevant cases are exemplified in (17)-(20).

17. Biologically masculine, Grammatically masculine
    a. Sabi;   bsein;   kalb;   mhandes
       boy   cat$_M$ dog$_M$ engineer$_M$
    b. rejjeel;   HSaan;   asad;   jamal
       man   horse$_M$ lion$_M$ camel$_M$

18. Biologically feminine, Grammatically feminine
    a. Sabiy-eh;   bsein-eh;   kalb-eh;   mhands-eh
       youth-F   cat-F   dog-F   engineer-F
       young woman   cat$_F$ dog$_F$ engineer$_F$
    b. mar-ah;   ʕanz-eh;   labw-eh;   neeʔ-ah
       woman   goat   lioness   female camel
       (*mar)   (*ʕanz)   (*labw)   (*neeʔ)

19. Ontologically genderless, Grammatically masculine
    a. kersi;   maktab;   maʕmal;   daraj;   maʔlab
       chair   desk   factory;   staircase;   prank
    b. *kersi-eh   maktab-eh   *maʕmal-eh   daraj-eh   *maʔlab-eh
       *chair-fem   library   *factory-fem   degree   *prank-fem

20. Ontologically genderless, Grammatically feminine
    a. Taawl-ah;   siyyaar-ah;   ʕelb-eh;   šant-ah
       table   car   box   backpack
       (*Taawl)   (*siyyaar)   (*ʕelb)   (* šant)
    b. lawH-ah;   bineey-eh;   ʔalb-eh
       painting   building   flip
       (lawH = board) (bina = building-activity) (ʔalb=heart)

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[6] Or as *–eh* in some instances in LA. The morpheme, in both SA and LA, is pronounced as *–t*-final (*–at* or *–et*) in some phonological environments.

In anticipation of the detailed discussion of the divider morpheme –*AH*, we note that –*ah* is not a divider or a classifier as such. For one thing, -*ah* is entirely compatible with mass reading, a point we return to in section 3.1:

21. ktiir   serʕ-ah;   ktiir   maHabb-eh
    much   speed   much   affection
    <u>not</u> 'many speeds'   <u>not</u> 'many affections'

We note further that in all these cases, –*ah* need not merge specifically with a batch noun, and that frequently, there is no discernible (masculine) noun with which –*ah* merges. Rather, –*ah* appears to be a pure gender marker (and setting aside the question of how such 'pure gender marking' might be represented.)

The morpheme -*ah* is grammatically feminine in all its occurrences. However, as already exemplified briefly in (15), and in contrast with the pure gender marking function in (18), (20)-(21), in some well-defined contexts it functions as a divider of a batch noun (–*AH*) giving rise to a 'unit-of' interpretation. The *batch* nouns with which –*AH* merges are always grammatically mass, with the range of interpretations typically associated with grammatical mass (an indeterminate quantity, a collective, stuff etc.). –*AH* affixation is productive and may affect newly borrowed items:[7]

22. a. krwasan   →   krwason-eh
       croissant   croissant–*AH*
       croissant (food type)   a croissant
    b. sevenʔap   →   sevenʔappey-eh
       Seven-up (food type)   Seven-up–*AH*
       Seven-up   a bottle of Seven-up

That the batch nouns with which –*AH* merges are grammatically mass can be demonstrated with the quantifiers *ktiir*, 'much/many' and *šwayt* 'little/few'. To return a count restriction, *ktiir/šwayt* must merge with plural-marked nominals. Not so with mass expressions, as illustrated by (23). As expected, batch nouns which may otherwise be –*AH*-divided may occur bare with *ktiir/šwayt,* showing them to be grammatically mass, as in (24).[8]

23. ktiir/šwayt may;   ktiir/šwayt   Hubb ;   ktiir/šwayt   maʕrifeh;
    much/little water   much/little   love   much/little   knowledge

24. a. ktiir/šwayt   tefeeH;   ktiir/šwayt   biira;   ktiir/šwayt Tabšour;
       much/little   apple;   much/little   beer;   much/little chalk;
    b. ktiir/šwayt   hamberger;   ktiir/šwayt   sevenʔap
       much   hamburger   much   seven-up

Equally consistent with the grammatical mass property of batch nouns is the fact that in the presence of *weeHed* 'one_M' or *waHdeh* 'one_F', the batch form receives the interpretation of *kind* (i.e., 'one kind of cow'), and as such is consistent, e.g. with multiple instances of *baʔar*, 'cow'. When divided by –*AH*, on the other hand, a single unit interpretation is the only one available in such contexts, and a kind reading is excluded:

25. a. biira waHdeh ;   biiray-eh waHdeh
       beer one   beer–*AH*   one

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[7] We adopt the view of the -*ah* morpheme as a classifier first made in Zabbal (2002), who treats it as an instance of a *singulative*. We diverge from his treatment in assuming that *AH*-Ns are not inherently singular as such, and that a singular reading emerges, for such expressions, in 'singular' structural configurations, which require the identification of Div and #, a matter set aside in this paper. See Borer (2005) and Ouwayda (2014) for the relevant structural analysis.

[8] PL–*AH*-Ns cannot occur with quantifiers, a matter we return to in sections 4 and 6. They may, and indeed must, occur with cardinals.

          'one type of beer'   'one beer'
          *one beer

    b. Tabšour weeHed;   Tabšour-ah waHdeh
       chalk   one   chalk*–AH*   one
       'one type of chalk'   'one chalk'
       *one chalk

    c. baʔar weeHed ;   baʔr-ah waHdeh
       cow   one   cow*–AH* one
   'one type of cattle'   'one cow'
       *one cow

The interpretational contrast between the 'source' mass nominals and their *–AH*-divided counterparts can be nicely illustrated in the context of restrictors such as *bass* 'only' in LA or *laysa - illaa* or *la – illaa* 'not – except' in SA. As illustrated by (26a), (27a), in the case of undivided stems, what is excluded are all other (relevant) <u>kinds</u> or <u>batches</u>. With *–AH* –divided stems, on the other hand, it is <u>units</u> of the <u>same type</u> that are excluded, but crucially, nothing else. This is illustrated in (26b)-(27b):

26. a. laysa   laday-naa   illaa   tuffaH   *SA*
         not   at-us   except   apple
       'We only have apple' (and no other food, and possibly *more than a single apple*)
    b. laysa   laday-naa   illaa   tuffaH-ah
         not   at-us   except   apple-*AH*
       'We only have one apple' (and specifically no more *apples*, but possibly other food)

27. a. ken   fi   bass   ʔzeez   bi l-ʔarD   *LA*
         was   *exist* only   glass   in the-floor
       'There was only glass on the floor' (and no other kinds of objects)
    b. ken fi   bass   ʔzeez-eh bi l-ʔarD   *LA*
         was   *exist.* only   glass-*AH* in the-floor
       'There was only a single piece glass on the floor' (no other glass, but possibly other objects)

As is evident from (26)-(27), it is precisely the presence vs. absence of *-AH* which is crucial for a grammatical distinction to emerge between a count reading and a mass reading. As is further clear, it is the presence of a count interpretation which requires a higher degree of grammatical complexity, regardless of the ontological or epistemological salience of the denotation under consideration. This is by no means a trivial result. We note that at least arguably, concepts such as 'tree' or 'apple' are considerably more salient as count, and the mass or collective reading associated with them (i.e., 'apple stuff', 'forest') is conceptually derivative. One could easily imagine an inflectional grammatical system that would prioritize conceptual distinctions, with salient mass concepts displaying less grammatical complexity than their units, but salient count concepts displaying less grammatical complexity than the mass that could be formed from them. This, however, is not the case. By and large, we do find, inflectionally, dividing structures including classifiers as well as singulative and plural markers. 'Massifying' grammatical functors, on the other hand, are difficult to come by. There are no classifier-like elements which when added to count nouns turn them into mass; there are no inflectional mass-endings, to parallel plural endings, and there are no dedicated mass determiners which distinguish mass from singular, functioning as the mirror image of the indefinite count determiner *a* in English or *uno/una/unos* in Spanish. It therefore emerges that insofar as *-AH* marks division, and at times of nouns which denote concepts that are already salient as count (e.g. *apple*), it provides support for any system in which grammatical properties are divorced from the conceptual properties of open class vocabulary, and in which 'count' grammatical representations are more complex than 'mass' ones.

Our starting point, therefore, is that the structure for *–AH* is as in (28), in line with the structure proposed for count nominal in general in (1):

28.

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              (#max
            /      \
        #)        DIVmax
                  /     \
              DIV       Nmax
              -AH        △
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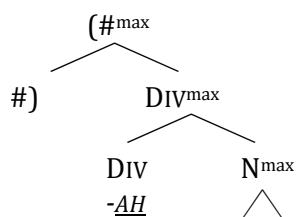
2.2 Arabic plurals – background notes

Our null hypothesis is that in Arabic, as in other languages analyzed from the relevant perspective, plural marking resides in DIV. For most instances of plural in Arabic, this assumption is rather straightforward, as we shall see shortly. Not so, however, for -*AH* marked nouns. As noted already, plural marking *does* co-occur with -*AH* marked nouns (cf. 16). If such plural marking competes for the DIV node in (28), we do not expect both -*AH* and plural marking to occur in the same noun phrase. Alternatively, as they do co-occur, we must assume that one or the other is not actually in DIV. In the following sections we will embark on showing that this is precisely the case, and that exactly in the case of –*AH*-Ns, but not in other cases, the plural marking, or what appears like it, is not in actuality an instance of DIV. To show that this is, indeed, the case, we need to embark upon a brief description of Arabic plurals, where considerable morphological complexity is in evidence.

Broadly speaking, plural markings in Arabic belong to three morpho-phonological classes. The three classes are as follows:

29. A. Broken plural (auto-segmental)
    B. Sound masculine plural (affixal)
    C. Sound feminine plural (affixal)

A. *Broken plurals*, as in (30)-(31) (glossed BR), are morphologically auto-segmental. The consonants of the root are maintained while the vowels differ in the singular (or otherwise unmarked stem) and the plural. A broken plural may occur in both masculine and feminine nouns. There are no lexical-semantic restrictions on its occurrence and it is productive, insofar as it may be associated with novel words introduced into the language, as illustrated by (32).[9]

30. *Broken plural, masculine nouns, LA (including biological gender):*
    a. rijjaal   →   rjeel
       man   man-pl_BR   'man/men'
    b. fann   →   funuun
       art   art-pl_BR   'art(s)'

31. *Broken plural, feminine nouns, LA:*
    a. šantah   →   šanat
       bag   bag-pl_BR   'bag(s)'
    b. madiineh   →   mudun
       city   city-pl_BR   'citie(s)'

32. *New coinages/borrowings - broken plurals*
    a. blouzeh   →   blouwaz   (from the French *blouse*)
       blouse   bouse-pl_BR
       blouse   blouses

---

[9] The choice of particular BR form for a given nominal stem is prosodically driven, and we set it aside here as largely orthogonal to our main point. See in particular Ghalayiini, (1912, 2006) for the relevant characteristics.

b. ʔamiis   →   ʔemsaan   (from the French *chemise*)
   button-shirt   button-shirt-pl$_{BR}$
   button shirt   button shirts

B. *Sound masculine plural* (glossed SM) occurs only in human masculine nouns. As the term implies, the stem remains 'sound', unchanged, and the plural morpheme *–iin* attaches to it.[10]

33. *Sound Masculine plural, LA*:
   a. serraaʔ   →   serraaʔ-iin
      thief   thief-pl$_{SM}$ 'thieve(s)'
   b. museeʕed   →   museʕid-iin
      assistant   assistant-pl$_{SM}$ 'assistant(s)'

C. *Sound feminine plural* (glossed SF), like Sound masculine plural, leaves the stem intact, affixing *–aat/–eet* to it[11]. Sound Feminine plural occurs in both biologically feminine nouns and in grammatically feminine nouns. It obeys no discernible lexical restrictions.

34. *Sound feminine plural, grammatically feminine nouns, LA:*
   a. mxaddeh   →   mxadd-eet
      pillow   pillow-pl$_{SF}$ 'pillow(s)'
   b. lambah   →   lamb-aat
      lightbulb   lightbulb-pl$_{SF}$ 'lightbulb(s)'

35. *Sound feminine plural, biologically feminine nouns, LA:*
   a. bsayn-eh   →   bsayn-eet
      cat   cat-pl$_{SF}$ 'cat(s)'
   b. mʕallm-eh   →   mʕallm-eet
      teacher   teacher-pl$_{SF}$ 'teacher(s)'

In feminine Sound plural forms, note, the presence of the feminine singular morpheme -*ah/-eh* is phonologically masked by the plural marking. As we show in the next section, however, *–ah/-eh* is present syntactically and semantically, excluding a derivation in which –*eet/-aat* merges directly with a masculine, or otherwise unmarked stem.

3 Plural Marking and *–AH*-Divided Nominals

3.1 One stem, two plural forms, two readings

3.1 One stem, two plural forms, two readings

    While the plural forms in (16) have been glossed as an affixation of a plural ending to *–AH*, from a phonological perspective, such an analysis is not self-evident. Another possibility would be to assume that the Sound feminine plural (SF)-*eet/-aat* merges directly with the stem, and no intermediate *–AH* affixation is involved. The alternative gloss to (16), partially repeated here as (36a), would be as in (36b), and similarly, the contrast between (36c) and (36d). Ironically enough, the reanalysis in (36) would automatically do away with the puzzle we have set out to solve – if forms such as *laymouneet* 'oranges' or *djeejeet* 'chickens' do not involve the merger of *–AH*, we would be free to assume that the SF merges as DIV, thus giving rise to a divided reading of the stem directly, with no violation of T'sou's Generalization emerging.

36. a. štar-o   sabʕ   djeej-eet   b. štar-o   sabʕ   djeej-eet
      bought-3pl seven   chicken-*AH*-pl   bought-3pl seven   chicken--**pl**$_{SF}$

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[10] SA Sound masculine plural may be marked for case, surfacing as -*uun* (nominative) or *–iin* (accusative/genitive). LA lost case morphology and the Sound masculine plural morpheme is always -*iin*.
[11] In SA, Sound Feminine is consistently -*aat*. In LA, the choice between -*aat* or -*eet* is contingent on the phonological properties of the stem.

'They bought seven chicken'

c. tlat   laymoun-eet
   three orange-**_AH_-pl**
   'three oranges'

d. tlat   laymoun-eet
   three orange-**pl**$_{SF}$
   'three oranges'

Our first task, then, is to show that the glossed parse in (16) *is* the correct one, and that the puzzle set out in section 1 is likewise real: these *are* cases in which a plural morpheme – specifically Arabic SF – attaches to a divider, and specifically Arabic –_AH_, thereby requiring accommodation if we maintain that plural marking is an instance of DIV. As we shall now show, the parse in gives rise to serious independent problems.

For our first argument against the parse in (36b) consider again masculine batch nouns. If it were the case that SF may attach directly to the stem, as in (36b), then it would emerge that such nouns may occur with two distinct plural forms: SF and broken plural. The difficulty, however, would be to account for the fact that each of these plural markers would come with its own distinct interpretation. Thus when batch nouns occur with broken plural, they denote multiple (distinct) kinds or multiple batches. With this plural marker, they *do not* denote a quantity of units with an identical extension. The very opposite situation holds when SF merges with batch nouns. In those cases, the output could *only* denote a quantity of units with an identical extension. The multiple-type/batch reading is not available:[12]

37.	A. Batch noun	B. –_AH_-Ns	C. Broken plural	D. SF Plural
a.	Tabšuur$_M$ chalk	Tabšuur-ah$_F$ chalk-_AH_ 'piece of chalk'	Tbašiir$_M$ chalk-pl$_{BR}$ 'bunches of chalk' (different) types of chalk *piece of chalk*	Tabšuur-aat$_F$ chalk-pl$_{SF}$ 'pieces of chalk' *bunches of chalk* *(different) kinds of chalk*
b.	Hajar$_M$ stone	Hajr-ah$_F$ stone-_AH_ 'a stone'	Hjaar$_M$ stone-pl$_{BR}$ 'heaps/types of stone' *stones*	Hajr-aat$_F$ stone-pl$_{SF}$ 'stones' *heaps/kinds of stone*
c.	ramel$_M$ sand	raml-eh$_F$ sand-_AH_ 'grain of sand'	rimeel$_M$ sand-pl$_{BR}$ 'heaps/types of sand' *grains of sand*	raml-eet$_F$ sand-pl$_{SF}$ 'grains of sand' *heaps/types of sand*
d.	samak fish-kind	samk-eh fish-_AH_ 'a fish''	ʔasmeek fish-pl$_{BR}$ 'kinds of fish'	samk-eet fish-pl$_{SF}$ 'multiple individual fishes'

Note that the reading associated with the broken plural forms in (37C) correlates directly with readings which typically emerge when (epistemological) mass terms are pluralized, e.g. *soups*, *juices* or *cheeses* (different kinds/batches of *soup/juice/cheese*). In turn, the reading associated with the SF forms in (37D) correlates exactly with what would be expected if that plural attaches to the –_AH_-N in (37B). One could argue that it is the SF marker itself which acts to divide the denotation of the stem in the relevant sense, and that the two plural markers differ

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[12] The forms in column D are given as bare plural forms for expository reasons. In actuality, PL-_AH_-N must always be accompanied by a cardinal, a matter to which we turn at some length in section 4. See also fn. 8

precisely insofar as one of them pluralizes kinds or batches, while the other returns 'multiple-units-of-one-kind' readings. But as we already saw, it is not the case that broken plural, in general, pluralize only kinds (cf. 30a,c), nor is it the case that SF, in and of itself, must give rise to a unit reading. To the contrary. As already noted, SF may attach to (feminine) mass forms, the result of which would be, as predictable, multiple-kind readings, and not units-of-kind readings, casting very serious doubt on the hypothesis that the –*eet/-aat* affix, in and of itself, is responsible for the creation of units-of-kind reading:

38. a. ktiir metʕah;   b. ktiir maHabbeh;   c. ktiir musiiʔa;   d. ktiir maʕrifeh;
    much pleasure   much affection   much music   much knowledge

39. a. ktiir metʕ-aat;   b. ktiir maHabb-eet;
    many pleasures   many affections
        i. kinds of pleasure   i. kinds of affection
        ii.#instances of pleasure   ii. #instances of love
    c. ktiir musiiʔ-aat;   d. ktiir maʕrif-eet
    many musics   many knowledges
        i. kinds of music   i. kinds of knowledge
        ii. #instances of music   ii.#instances of knowledge

Our second piece of evidence concerns the fact that a hypothesized direct attachment of SF to the masculine batch stems as in (36b) would give rise to a gender mismatch that cannot be easily resolved. No such mismatch emerges if the parse in (16) is adopted, in which SF merges with the *AH*-affix, and not directly with the stem. Convincing the reader of the existence of such a mismatch, however, is a rather complex matter to which we now turn.

3.2 SF and gender

Considering again the masculine batch nouns in (37A), we note that the plural-marked output formed with the broken plural, as in (37C), is likewise masculine. The masculinity of the batch nouns under consideration can be demonstrated straightforwardly through the masculine ($\varnothing$) marking on a modifying adjective, as in (40):

40. teffeeH axDar;   Tabšuur Txiin;   ramel sexen;   samak azraʔ;
    apple   green-ø   chalk   thick-ø   sand hot-ø   fish   blue-ø
    'green apple'   'thick chalk'   'hot sand'   'blue fish'

Determining the gender of the plural expressions in (37D) is, however, a trickier matter, because agreement with plural non-human expressions in Arabic show up in both adjectives and verbs as feminine singular (specifically marked as –*ah*), regardless of the gender of the modified noun.[13] The grammatical gender of plural expressions can nonetheless be determined when we consider the use of gender in singular partitives. In the partitive expressions in (41)-(42), the pronominal 'one' is marked either as masculine (*weeHed*) or as feminine (*waHdeh*), thereby corresponding to the (unambiguous) gender specification of the plural expression:

41. a. weeHed/*waHdeh men   er-rjeel   *LA*
       one_M/*one_F   of/from   the-man-pl_BR
       'One of the men'   stem: rejjeel (masculine)
    b. weeHed/*waHdeh men   el-mhands-iin   *LA*
       one_M/*one_F   of/from   the-engineer-pl_SM
       'One of the engineers'   stem: mhandes (masculine)

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[13] Help in determining gender is not forthcoming from the definite pronominal system either. In LA, plural pronouns are not marked for gender. While in SA they are, feminine plural pronouns are only licit with human antecedents, making their use inapplicable for the key cases under consideration.

42. a. waHdeh/*weeHed   men   el-bsayn-eet   *LA*
one$_F$/*one$_M$ of/from   the-cat-pl$_{SF}$
'one of the cats'   stem: bsayneh (feminine)

    b. waHdeh/*weeHed men/from   el-mhands-eet   *LA*
one$_F$/*one$_M$ of   the-engineer-pl$_{SF}$
'one of the (female) engineers'   stem: mhandeseh (feminine)

For reasons that we do not understand, a singular pronominal reference to a batch by means of the pronominal 'one' is odd in LA with either gender.[14] There is no such restriction in Standard Arabic, where partitive constructions, furthermore, do not require the preposition *men* and are rather expressed through construct state nominals. In such cases, what we find, as expected, is that the masculine pronominal form of 'one' is required, and the feminine form is ungrammatical:

43. a. aHadu/*iHdaa   l-asmaak   *Standard Arabic*
one$_M$/*one$_F$ the-fish-pl$_{BR}$
'one kind of fish'

    b. aHadu/*iHdaa   r-rimaal
one$_M$/*one$_F$ the-sand-pl$_{BR}$
'one kind of sand'

A different result emerges, however, when we apply the 'one-of' test to the SF plural forms in (37D). Here, it is the feminine form of 'one', *waHdeh*, that is required, and the masculine form gives rise to ungrammaticality, in Standard as well as in Lebanese Arabic:

44. a. iHdaa/*aHadu   s-samk-aat   *SA*
one$_F$/*one$_M$ the-fish-pl$_{SF}$
'one of the fishes'

    b. iHdaa/*aHadu   r-raml-aat
one$_F$/*one$_M$ the-sand-pl$_{SF}$
'one of the grains of sand'

45. a. waHdeh/*weeHed   men   es-samk-eet;   *LA*
one$_F$/*one$_M$ of/from   the-fish-pl$_{SF}$
'one of the fish'

    b. waHdeh/*weeHed   men   el-laymoun-eet
one$_F$/*one$_M$ of/from   the-orange-pl$_{SF}$
'one of the oranges'

djeej-eet

The contrast is of course more striking in Standrd Arabic, where the feminine inflection of 'one' in (44) can be directly contrasted with the masculine inflection for 'one' in (43), strongly suggesting that SF merges with a feminine, rather than a masculine base, and specifically, *not* with the masculine batch nouns in (37A), but rather with the already feminine –*AH* forms in (37B).

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[14] And therefore:

  i. a.   ??waHdeh/*weeHed men   el-ʔasmeek   *LA*
                   one$_F$/one$_M$ of/from   the-fish$_{BR}$
      b.   ??waHdeh/*weeHed men   el-Hjaar   *LA*
                   one$_F$/one$_M$ of//from the-stone$_{BR}$

Note that *waHdeh/weeHed* 'one.f/m' in LA are pronominal here. In their adjectival occurrence, post-nominally, no such restriction is in evidence (cf. (25)), they are adjectival in nature. For a fuller discussion of these matters, as well as for the argument that these differences do not play a role in the phenomena under discussion here, see Ouwayda (2014)

One might be tempted to suggest that SF marking in itself is complicit in bringing about a gender switch, turning what is otherwise a masculine non-plural stem (e.g. *samak.* 'fish') into a feminine stem. However, while such cases have been argued to exist in some languages, there is direct evidence to show that this <u>could not</u> the case in Arabic. As is well documented, some nouns, although masculine, are pluralized with the SF exponent, rather than with the SM exponent, as would be expected. Thus SF commonly occurs on derived nominals (46) and borrowed foreign nouns (47) (Ghalayiini, 1912, 2006), which are at least at times grammatically masculine when singular, as shown by the masculine adjective:

46. *Derived Nominals*
    a. tanaaquD   waaDeH   →   tanaaquD-aat
       contradiction$_M$ clear-ø   contradiction-pl$_{SF}$
    b. xilaaf   jaddi   →   xilaaf-aat
       conflict$_M$ serious-ø   conflict-pl$_{SF}$

47. *Borrowings:*
    a. computer   mniH   →   computer-aat
       computer$_M$ good-ø   computer-pl$_{SF}$
    b. talifoon   jdiid   →   talifoon-eet
       telephone$_M$ new-ø   telephone-pl$_{SF}$

Nonetheless, and although these derived nominals and borrowings are pluralized with an SF exponent, no gender change is attested in singular partitives. To the contrary, and regardless of the presence of the SF exponent, the masculine form of 'one', *weeHed*, is required:

48. a. weeHed/*waHdeh men   el-ittiSaal-eet
     one$_M$/*one$_F$ of/from   the-phone call-pl$_{SF}$
     'one of the phone calls'
    b. weeHed/*waHdeh   men   el-computer-aat[15]
     one$_M$/*one$_F$ of/from   the-computer-pl$_{SF}$
     'one of the computers'

The clear conclusion is that the SF exponent, in itself, is neither feminine, nor can it accomplish gender switch. Thus the SF forms in (37D) can only emerge from the configuration in (16), involving the merger of SF with the already feminine base created by the merger of a batch noun, itself mostly +M, with –*AH* – itself always +F, and with the structure [[*batch noun+AH$_F$*] SF]. Our puzzle, then, remains standing as originally formulated: in a model that assumes that plurals are instances of D$_{IV}$, how can a dividing morpheme such as -*AH* coexist with plural marking?

In what follows, we shall embark upon showing that the puzzle, nonetheless, can be dissolved once it is shown that although -*AH* and -*aat* can, and do, coexist, in the derivations with the parse in (16), they do not in actuality compete for the same slot. While -*AH* is a true divider and merges as D$_{IV}$, this is not the case for the SF instances in (16) which, we argue, are semantically vacuous cases of agreement with a cardinal in #. In order to show that this is, indeed, the case, we will now proceed to compare, in detail, the behavior of the plural forms in (37D) with the parse in (16) with plural forms which do not contain -*AH*, and where a potential conflict does not emerge.

Before moving away from the diversity of plural marking strategies in Arabic, it is worthwhile noting that in line with Acquaviva (2008), we assume an identical syntactic head for SF and BR (although unlike Acquaviva, we assume that head to be D$_{IV}$, rather than Num). We depart, however, from the analysis in Zabbal (2002), according to which there exist, alongside

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[15] And similarly in Standard Arabic:
   i. aHadu/*iHdaa   l-ittiSaal-aat
     one-m/one-f   phone call-pl$_{SF}$

regular plural marking in Num, a specialized group plural marker with distinct semantics, which is closer to the nominal head, and which may be realized exclusively as BR (although Zabbal specifically assumes both Sound and BR realization is possible in Num). Rather, we assume that a 'group' reading emerges on a par with the multiple kind reading which emerges routinely when conceptually salient mass terms are embedded within count structures such as (13a,b).

Although we will subscribe to the view that there are, indeed, two positions in Arabic which correspond to plural marking, we believe that these positions do not correlate with the semantics of BR or SF as such. Rather, one of these 'plural' markers is a divider, semantically, and it is that plural marking which merges as DIV giving rise to number neutral interpretation. The other instantiation of 'plural' marking, on the other hand, is semantically altogether vacuous, and as we shall argue, an instance of an agreement with a cardinal in #. In such cases, it is the necessary presence of the cardinal, rather than the 'plural' marking, that gives rise to 'exclusive' reading, and more specifically, to a reading that excludes all interpretations not directly tied with that of the explicitly specified cardinality.

4 PL-*AH*-Ns vs. other Plural Forms

4.1 Bare plurals

On a par with e.g. Romance, Arabic allows bare plurals (with a number neutral, inclusive reading) exclusively in weak contexts. Gender and the choice of plural exponent have no bearing on the distribution of bare plurals as shown in (49)-(51):

49. *Bare SM plural*
    a. šeft   mhands-iin bi lab el-fonetik
       saw.1s   engineer$_{SM}$ in lab the-phonetics
       'I saw engineers in the phonetics lab'
    b. šeft   šeHHaadiin ʕa beeb ej-jeemʕa
       saw.1s   beggar$_{SM}$ at door the-university
       'I saw beggars in front of the university'

50. *Bare SF plural*
    a. šeft   šarik-eet   bi   l-madiineh
       saw.1s   company-pl$_{SF}$ in   the-city
       'I saw companies in the city'
    b. šeft   mʕallm-eet   sabaaya bi   l-madraseh
       saw.1s   teacher-pl$_{SF}$ young   in   the-school
       'I saw young teachers in the school'

51. *Bare BR plural, both F and M*
    a. šeft   maraaya bi l-ouda   <u>base</u>: mreyeh (feminine)
       saw.1s   mirror-pl$_{BR}$ in the-room
       'I saw mirrors in the room'
    b. šeft   kleeb   bi   sheereʕ-na   <u>base</u>: kalb (masculine)
       saw.1s   dog-pl$_{BR}$ in   street-us
       'I saw dogs in our street'

In what is a rather remarkable contrast, however, PL-*AH*-Ns may *never* occur as bare plurals. This is illustrated in (52):

52. a. *šeft   samk-eet   bi l-bHar   <u>base</u>: samk-*AH*
       saw.1s   fish(-*AH*)-pl$_{SF}$ in the-sea
       'I saw fish in the sea'
    b. *šeft   Hajr-aat   ʕa T-Tariiʔ   <u>base</u>: Hajr-*AH*
       saw.1s   stone(-*AH*)-pl$_{SF}$ on the-road
       'I saw stones on the street'

The restriction, importantly, does not apply to the BR forms formed from the very same stems (cf. 37C), and hence cannot be attributed to properties of either the root or the base noun:

53. *BR of stems that allow –AH, licit as bare indefinites:*
    a. šeft   asmeek   bi l-baHer   base: samak (masculine)
       saw.1s   fish-pl$_{BR}$ in the-sea
       'I saw fishes (many kinds) in the sea'
    b. šeft   Hjaar   honik   base: Hajar (masculine)
       saw.1s   stone-pl$_{BR}$ there
       'I saw (various) stones there'

Importantly, equally derivationally complex forms (e.g. derived nominals with SF plural exponents) do not display a similar restriction, and the examples in (54) are fully licit:

54. *Bare pluralized derived nominals*
    a. ʕmelo   ittiSaaleet   bayneet-kon
       make   connection-pl$_{SF}$ between-you
       'Make connections with each other'
    b. baʕref   ʕileejeet   la ha-l-marad
       know.1s cure-pl$_{SF}$ to this-the-disease
       'I know of cures for this disease'

PL-*AH*-Ns, recall, are morpho-phonologically indistinguishable from other SF plural nouns. Nonetheless, and unlike all other plural forms, including those occurring with SF, they cannot occur bare. Equally remarkably, they also differ in this respect from their close conceptual relatives, namely the BR plurals formed from the same base batch nouns, but without *-AH*. The restriction amounts to allowing Arabic to express, as bare, plural expressions corresponding, roughly, to 'heaps of apple stuff', while disallowing reference, through the same grammatical means, just to 'apples', a contrast which is hard to attribute to lexical semantics or, for that matter, to the distinction between mass and count in and of itself.

4.2 Plurals and pre-nominal quantifiers

In LA, all plural exponents may occur with the quantifiers *ktiir* 'many' or *šway* 'a few', as shown in (55)-(56):[16]

55. a. šeft   ktiir/šwayt   mʕallm-iin bi ha-S-Saff   SM
       saw.1s   many/few   teacher$_{SM}$ in this-the-class
       'I saw many teachers in this classroom'
    b. šeft   ktiir/šwayt   šarik-eet   bi   ha-l-madiineh   SF
       saw.1s   many/few   company-pl$_{SF}$ in this-the-city
       'I saw many companies in this city'

56. a. šeft   ktiir/šwayt   Hjaar   ʕa š-šaTT   base: Hjar (masculine)   BR
       saw.1s many/few   stone-pl$_{BR}$ on the-beach
       'I saw many/few diverse (types of) stones by the beach'
    b. šeft   ktiir/šwayt   maraaya   bi l-ouda   base: mreyeh (feminine) BR
       saw.1s many/few   mirror-pl$_{BR}$ in the-room
       'I saw many/few diverse (types of) mirrors in the room'

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[16] With the exception of *kul+singular*, 'every/each', SA only allows post-nominal (non-complex) quantifiers, making the contrasts under discussion here moot. We briefly return to complex quantifiers in section 6.2., where some relevant contrasts between PL-*AH*-N and BR are shown to apply in SA as well. For a brief discussion non-complex, agreeing post-nominal quantifiers see section 5.3. For further discussion of all these issues, see Ouwayda (2014).

In a remarkable departure from this picture, PL-_AH_-Ns are illicit after the quantifiers 'many' and 'few'. Particularly striking is the fact that the SF form in (55b) are grammatical, while the PL-_AH_-Ns, with a phonologically indistinguishable plural suffix, are ungrammatical, as in (57a). Equally remarkable is the fact that for the very same stem, BR in (56a) may occur with quantifiers while the -_AH_-divided nominals with the same stem may not (cf. 57c):

57. a. *šeft   ktiir/šwayt samk-eet   bi l-baHer   <u>base</u>: samk-_AH_
       saw.1s   many/few   fish(-_AH_)-pl_SF_ in the-sea
       'I saw many/few fish in the sea'
    b. *šeft   ktiir/šwayt Hajr-aat   ʕa T-Tariiʔ   <u>base</u>: Hajr-_AH_
       saw.1s   many/few   stone(-_AH_)-pl_SF_ on the-road
       'I saw a many/few stones on the street'

4.3 Where are PL-<u>AH</u>-Ns licit?

When indefinite, -_AH_-divided nominals are licit only in the context of cardinals or cardinal-like expressions (e.g. ʕidda(t) 'several'). This is illustrated in (58). Without a cardinal or cardinal-like expression, an indefinite PL-_AH_-N is ungrammatical:

58. a. šeft   tesʕ samk-eet   bi the-bowl
       saw.1s   nine fish-_AH_-pl_SF_ in the-bowl   <u>base</u>: samk -_AH_
       'I saw nine fish in the bowl'
    b. šeft   arbaʕ Hajr-aat   ʕa T-Tariiʔ
       saw.1s   four   stone-_AH_-pl_SF_ on the-road   <u>base</u>: Hajr-_AH_
       'I saw four stones on the street'
    c. šeft   ʕiddat Tabšuur-aat bi d-derej
       saw.1s   several chalk(-_AH_)-pl in the-drawer   <u>base</u>: Tabšuur-_AH_
       'I saw five pieces of chalk in the drawer'

We therefore conclude that in a sense to be made explicit, indefinite -_AH_-divided nominals are licensed by the presence of cardinals, turning our attention in the next few sections to the syntactic and semantic ramifications of this conclusion.

Before proceeding, it is worthwhile noting that PL-_AH_-Ns *may* occur without a cardinal when definite, a matter to which we return in section 6.2.

5   Cardinals are not Quantifiers: Towards a Structure

One of the more striking consequences of the discussion in section 4 is that when it comes to PL-_AH_-Ns, quantifiers and cardinals part company. While the former do not suffice to license the plural marking under consideration, the latter do. In this section we turn to three other important differences between quantifiers and cardinals, specifically in Lebanese Arabic, with the aim of justifying an analysis in which the structure associated with cardinals is different from that associated with quantifiers.

That cardinals are distinct from quantifiers is by no means a novel perspective, although the literature does not necessarily agree on what, exactly, cardinals are. Thus it is frequently claimed that numerals are adjectives (Landman 2000, Link 1998:101-107, i.a.), or that they are nouns (Hurford 1975, 1987, 2003, Ionin and Matushansky, 2004, 2006, 2018, i.a.). A more nuanced perspective is proposed by Stavrou and Terzi (2008), according to which simple numerals are (weak) quantifiers, but complex numerals are nouns, with an expression such as *three hundreds* consisting of a head N (*hundreds*) preceded by a quantifier. Finally, Link (1998) proposes that cardinals are modifiers merging in the Num head, a position which appears closest to the one we will advocate below for Arabic.

An altogether distinct perspective on the matter is proposed by Corbett (2000) (and see also subsequent support in Zweig, 2005 and Corver and Zwarts, 2004) according to which 'cardinal' as such is not a syntactic category, and may be differently realized in distinct

languages. In what follows, we will proceed to show that in Arabic, specifically, cardinals cannot be adjectives and cannot be (weak) quantifiers, and that they occupy a position in the nominal spine which is below quantifiers and which, at least prima facie, is inconsistent with being a noun, thereby suggesting that at least in Arabic, cardinals may constitute a category on their own. We leave open the possibility that in at least some languages, cardinals may turn out to have nominal or adjectival properties, or for that matter, quantificational ones.

Importantly, the discussion here concerns quantifiers such as *ktiir* 'many' and *šway* 'few' which may take a plural restriction in LA, and which occur *pre-nominally* on a par with cardinals. Other pre-nominal quantifiers in LA as well as all pre-nominal quantifiers in SA are complex, head a separate partitive-like construction and take a PP complement. As such, they are clearly distinct from cardinals. [17]

5.1 Distributivity effects of cardinals and quantifiers

As is frequently the case cross-linguistically, Arabic cardinals distribute *optionally* over the verbal predicate (cf. 59). The quantifiers *ktiir* 'many' and *šway* 'a few', however, do so *obligatorily* (cf. 60):

59. arbaʕ baneet   ʕatoun-i alf
    four girl-pl   gave-me thousand
    'Four girls gave me a thousand Lebanese pounds'
        i. True in a scenario in which four girls each gave me a thousand pounds
        ii. True in a scenario in which four girls, together, gave me a thousand pounds, and none gave me a thousand on her own

60. ktiir/šway wleed   akal-ou aaleb gateau
    many/few child-pl ate-pl   pie   cake
    'Many/a few kids ate a cake'
        i. True in a scenario in which many/few kids each ate a whole cake
        ii. <u>False</u> in a scenario in which many/few kids shared a cake and none ate a whole cake on his or her own

The contrast is even stronger in modal contexts, where the subject receives a *quantity* reading, in the sense of Li (1998), as illustrated in the contrast between (61) and (62):

61. a. tlat   baneet   byeHeml-ou ha-š-šaxtuura
       three   girl-pl$_{BR}$ carry-ipfv-PL this-the-boat
           i. Can mean 'This boat is of a weight such that three girls would be able to carry it'
           ii. Can mean 'There are three girls who can each carry this boat'
    b. xams   Sebyeen   bixalls-ou   ha-l-cake
       five   boy-pl$_{BR}$ finish-ipfv-pl this-the-cake
           i. Can mean 'This cake is of a size such that five boys could finish it'
           ii. Can mean 'There are five boys who can each finish this cake'

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[17] As already noted briefly (fn. 16) quantification expressions may occur post-nominally in Arabic. Post-nominal quantifiers, unlike pre-nominal ones, show number, definiteness, and at times gender agreement with the nominal very much on a par with that attested with adjectives, and we will therefore assume, following Shlonsky (2004) i.a. that they are indeed adjectival (and see (70)-(71) for a few examples). As expected, they do not license indefinite PL-*AH*-Ns. While cardinals may occur post-nominally as well, unlike post-nominal quantifiers they are restricted to definite contexts, and do not show number agreement. Whether gender agreement is attested for such post nominal cardinals in SA (exclusively) is a matter of some debate. The reader is referred to Ouwayda (2014) for further discussion of many of these issues.

62. a. ktiir baneet byeHeml-ou ha-š-šaxtuura
  many girl-pl_{BR} carry-ipfv-PL this-the-boat
    i. <u>Cannot</u> mean #'This boat is of a weight such that many girls would be able to carry it'
    ii. Can only mean 'There are many girls who can each carry this boat'
 b. šway Sebyeen bixalls-ou ha-l-keyk
  few boy-pl_{BR} finish-ipfv-pl this-the-cake
    i. Cannot mean #'This cake is of a size such that a few boys could finish it'
    ii. Can only mean 'There are a few boys who can each finish this cake'

5.2 Cardinals and quantifiers: adjectives and scope

Cardinals may scope both over and under adjectives (cf. 63), whereas quantifiers always scope over adjectives (cf. 64), suggesting that cardinals may merge lower than some adjectives, but not so quantifiers. By transitivity, it also follows that cardinals and quantifiers do not have identical merging sites, and that quantifiers merge higher than cardinals (and note similar effects in English, reflected more directly in word order and illustrated in (65-66):

63. a. šeft   tlat jnuud bixawfo
  saw.1s three soldiers scary
    i. I saw three scary soldiers
    ii. I saw a scary three soldiers (as a group)
 b. Hmelt tesʕ ʕelab Tʔaal
  carried.1s nine box-pl heavy-pl
    i. I carried nine heavy boxes
    ii. I carried heavy nine boxes (heavy as a set)

64. a. Hmelt šwayt ʕelab Tʔaal
  carried.1s a.few box-pl heavy
    i. I carried a few heavy boxes
    ii. * I carried a heavy bunch of few boxes (heavy as a small set)
 b. šeft   ktiir jnuud bixawfo
  saw.1s many soldiers scary
    i. I saw many scary soldiers
    ii. * I saw scary many soldiers (as a group)

65. a. three heavy bags; five scary soldiers; four competent doctors
 b. heavy three bags; scary five soldiers; competent four doctors

66. a. many heavy bags; many scared soldiers; a few competent doctors
 b. *heavy many bags; *scared many soldiers; *competent (a) few doctors

Note that both the cardinals and the quantifiers in (64) are pre-nominal, while adjectives are post nominal, and that as a result the linear ordering of cardinals or quantifiers relative to adjectives is the same regardless of scope. Under the assumption, however, that differences in scope do correspond to structural differences, and taking a chapter from the word order effects in English in identical contexts, we propose that while the structure in (67a) may correspond to either quantifiers or cardinals, the structure in (67b) is licit for cardinals but not for quantifiers:

67. a. [cardinal/quantifier   [[N] adjective]]
 b. [[cardinal/*quantifier [N]]   adjective]

5.3 Null pronominals with cardinals and quantifiers

A final significant contrast emerges in the context of null pronominals. While a null pronominal restriction is acceptable with cardinals in both definite and indefinite contexts, (cf. 68), this is not the case for pre-nominal quantifiers, where null pronominals are never licit:

68. a. (t-)tleeteh fallou;   (l-)arbʕa   wesl-ou;
       (the-)three left.3p   (the-)four arrived-3p
       '(The) three left'   '(The) four arrived'
    b. jebt   (t-)tleeteh   Talabt   (l-)arbʕa
       brought.1s (the-)three   ordered.1s (the-)four
       'I brought (the) three'   'I ordered (the) four'

69. a. *(l-)ktiir   fallou;   *(š-)šway   wesl-ou;
        (the-)many   left.3p   (the-)few   arrived-3p
       '(The) many left'   '(The) few arrived'
    b. *jebt   (l-)ktiir   *Talabt   (š-)šway
       brought.1s the-many   ordered.1s the-few
       'I brought (the-)many'   'I ordered (the-) few'

Note now that the null pronominal restrictions under discussion in this subsection are plural, across the board. It thus emerges that the non-agreeing quantifiers in (69) must be pre-nominal. Post-nominal quantifiers, just like post-nominal adjectives, display full number and definiteness agreement, as well as gender, in SA, thereby lending additional support to analysing them as adjectives (gender distinctions in plural adjectives are neutralized in LA):

70. a. tʕarraft   ʕa   (l-)ban-eet (l-)azkiya   *LA*
       acquainted on   (the-)girls (the-)smart-pl$_{BR}$
       'I met (the) smart girls'
    b. tʕarraft   ʕa   (l-)ban-eet (l-)ktaar
       acquainted on   (the-)girls (the-)many-pl$_{BR}$
       'I met (the) many girls'

71. a. iltaqaytu   bi-(l-)fatayaat   (að-)ðakiyyaat   *SA*
       met   with-(the-)girls (the-)smart-pl$_{SF}$
       'I met (the) many girls'
    b. iltaqaytu   bi-(l-)fatayaat   (al-)kaθiiraat
       met   with-(the-)girls (the-)many-pl$_{SF}$
       'I met (the) smart girls'

We return to these matters briefly in section 6.2., where we link the null pronominal distribution directly to the presence of agreement.

6. Cardinal Agreement

6.1 Cardinals and quantifiers: a proposal

We established a number of important distinctions between quantifiers and cardinals in Arabic, spanning their syntax as well as their interpretation:

72. A. Cardinals are optionally distributive; quantifiers necessarily are (5.1)
    B. Cardinals may scope under adjectives; quantifiers may not (5.2)
    C. Cardinals may license null N; quantifiers may not (5.3)
    D. Cardinals license PL-*AH*-Ns; quantifiers do not (4.3)

We already noted that (72B) strongly supports the merger of adjective below quantifiers, but possibly above cardinals, a conclusion corroborated by the ungrammaticality, in English, of (66b) and similar. It further supports a higher merger site for quantifiers as compared with cardinals, and hence the schematic structure in (73), and with the label # now reserved for cardinals, and the label Q for quantifiers. The two scopal configurations in English (65) now

emerge directly from the fact that an adjective may merge either above or below #, but not above Q:[18]

73.
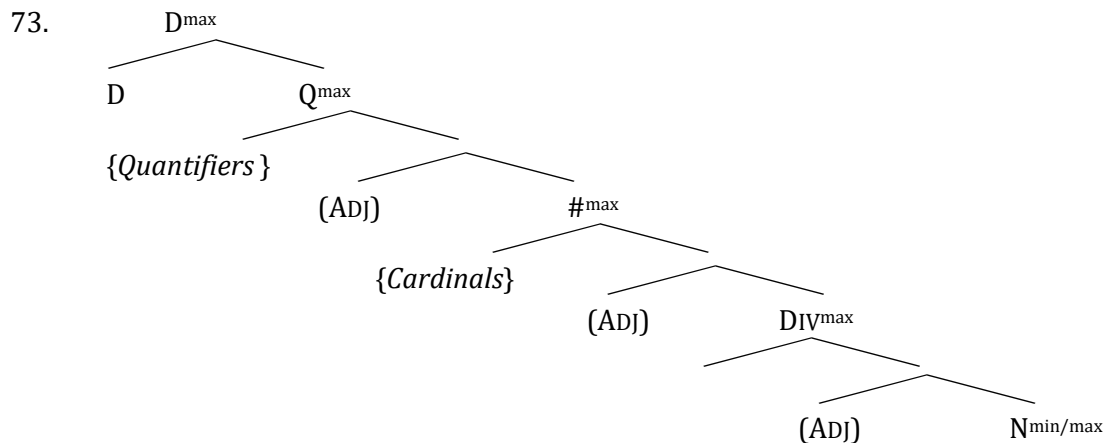
Turning to Arabic, and given the fact that adjectives are always post-nominal, but the quantifiers and cardinals under discussion are always pre-nominal, direct evidence for the structure in (73) is not available from linear order. Evidence for merging Q over # nonetheless is available from the scope contrasts discussed in section 5.2., and we will therefore proceed to assume that (73) does correspond to the hierarchical relationship within the Arabic nominal spine. In view of that, it is clear that the word order, as attested in Arabic, must be derived by syntactic movement, and we propose, specifically (and in line with Ritter, 1991, Siloni 1997, Fassi Fehri, 1999, Shlonsky 2004 and Borer, 1999, i.a.) that the operation in question involves the movement of (some portion of) the nominal over the adjective. More specifically, suppose N^{min} moves to Q (through Div and #) overtly in Arabic (and possibly covertly in English). Suppose further that cardinals, merging externally as [Spec,#], move to merge as [Spec,Q] (overtly in Arabic, possibly covertly in English). With these assumptions in mind, consider first the derivation in (74a), where, by assumption, the adjective merges above #. With the movement of N to Q and the cardinal to [Spec,Q], the resulting word order is [Cardinal Noun Adjective], as in (74b):

74. a.

→ b. tlat   maraaya   Tʔaal
       three mirror-pl heavy-pl

→c.   CARDINAL>ADJ

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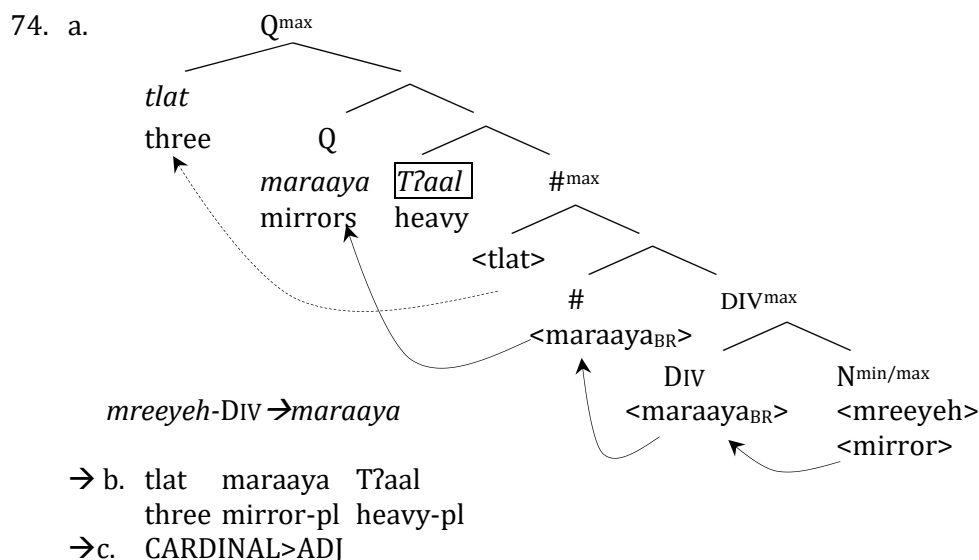
[18] The argument here is independent of whether adjectives are specifiers or adjuncts, a matter on which we take no position.

Assuming now that it is sufficient for an adjective to c-command a copy of the cardinal in order to scope over it, the scope configuration that emerges from (74) is ADJ>CARDINAL, corresponding, as such, to (63aii,bii).

Consider now a derivation in which the adjective merges below #, as in (75a). Yet again [N+DIV] moves to Q (through #) and the cardinal moves to [Spec,Q]. The resulting word order may be identical to that derived by (74), but the scope that emerges is different, given the fact that the adjective, at no point, c-commands either the cardinal or its copy. The emerging interpretation is as in (63ai,bi):

75. a.

→ b. tlat   maraaya   Tʔaal
    three   mirror-pl   heavy-pl<maraaya_{BR}>

→c. ADJ>CARDINAL
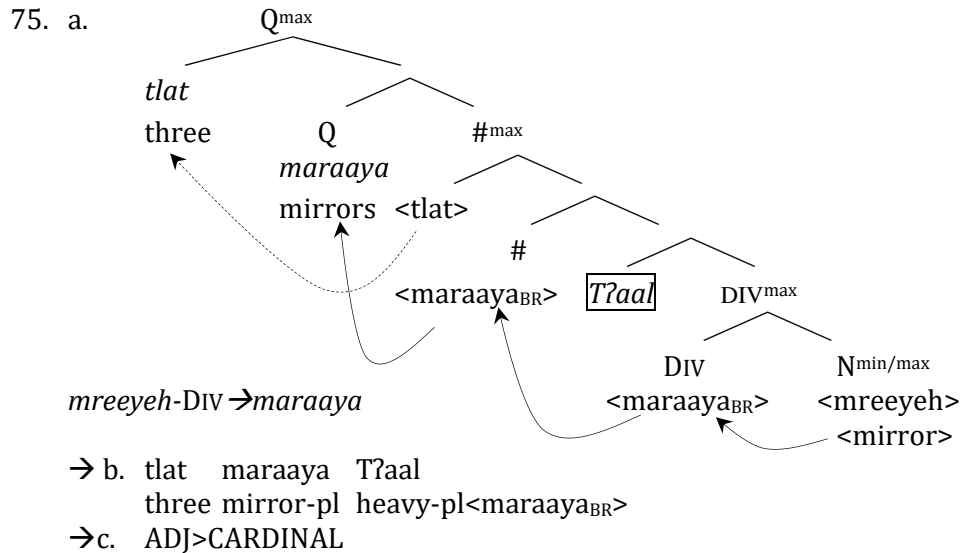
Turning now to structures containing quantifiers, we assume that such structures do not contain a # projection altogether, and that per force, the adjective merges below the quantifier. As before, N moves to Q, and the quantifier itself, by assumption, merges in [Spec,Q]. The result is as in (76), with the quantifier, at all times, scoping over the adjective:

76.   a.

→ b. ktiir   maraaya   Tʔaal
    three   mirror-pl   heavy-pl

→c. Q>ADJ
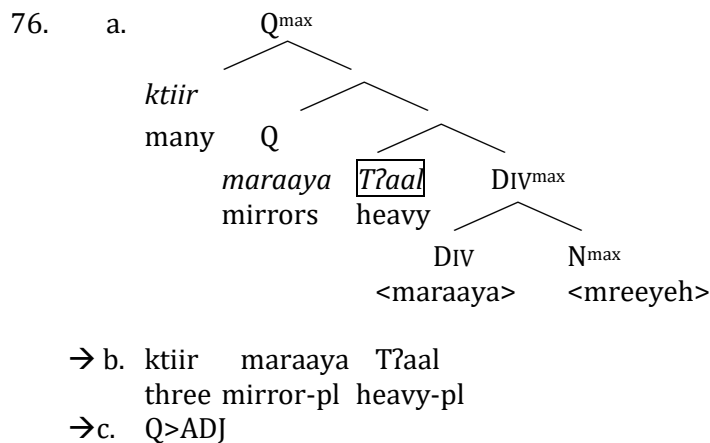
In English, neither the noun nor the cardinal move overtly, and the two interpretations are associated with two different word orders: a structure such as (74), where the adjective merges above the cardinal, results in (77a), and a structure such as (75), where the adjective merges below the cardinal, results in (77b). There is only one place for adjectives to merge in the context of quantifiers, and that is below the quantifier, as in (76). Without any movements, this gives rise to the word order and interpretation in (77c). Given that adjectives may not merge above quantifiers, we predict that (77d) would be ungrammatical, as is the case.

77. a. The heavy three mirrors
    b. The three heavy mirrors
    c. The many heavy mirrors
    d. *The heavy many mirrors

6.2. Dividing vs. agreeing plural marking

Turning now to (72D), we note that this observation has emerged directly from the investigation of our original puzzle, to which we now return, and which involves the failure of complementarity between the dividing morpheme _–AH_ and plural marking. More concretely, the discussion in the previous sections has yielded substantial differences between plural marking in the absence of -_AH_, and plural marking as it occurs in conjunction with the divider –_AH_. These differences are summarized in (78):

78. A. Unlike all other plural forms, indefinite PL-_AH_-Ns cannot occur bare (section 4.1).
    B. Unlike all other plural forms, indefinite PL-_AH_-Ns cannot occur following quantifiers that take a plural restriction (section 4.2).
    C. Indefinite PL-_AH_-Ns must occur with cardinals (section 4.3).

The set of properties in (78) now allows us to reformulate our original puzzle in considerably more informed terms, and specifically as in (79):

79. In the context of cardinals, and only in such context, the dividing morpheme –_AH_ may co-occur with the SF marking -_aat_. But if both –_AH_ and SF are instances of DIV, why is such co-occurrence licit?

An answer to the puzzle would appear to be immediately available, of course, if one were to assume that T'sou's Generalization (14) is simply wrong, and that no complementarity is to be expected between dividing morphemes, or classifiers, and plural marking. But such a move would not in actuality suffice to resolve the puzzle presented by Arabic, as the peculiar restrictions on the co-occurrence of –_AH_ and plural marking would remain without any hope of an explanation.

An account for the Arabic facts, on the other hand, is directly available without surrendering T'sou's Generalization, and in fact reinforcing it, if some instances of –_aat_ do not spell out DIV, but are, rather, instances of agreement with the cardinals. Specifically, we maintain that –_AH_ is a dividing morpheme; we also maintain that plural marking in Arabic in its various morpho-phonological exponents could be a spellout of DIV. However, not all occurrences of plural exponents in Arabic (or elsewhere) realize DIV nor, for that matter, are they necessarily semantically contentful altogether. As already noted in passim in section 5.4. agreement on adjectives is morpho-phonologically identical to semantically contentful plural marking, but by common assumptions, need not be semantically contentful on its own.[19] More concretely, we propose that some instances of –_aat_, already attested as agreement markers e.g. in adjectival contexts, are the realization of _non-singular agreement with a cardinal_. Such cardinal agreement is certainly not an instance of DIV, and hence its occurrence alongside –_AH_

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[19] Which is not to question the fact that distinct agreement may correspond, in some contexts, to syntactic properties that are semantically contentful. A powerful such example, in fact, is discussed in Ouwayda (2014, 2017), where the choice of agreement correlates with the existence of a semantic operator which is responsible for the formation of distributive reading. Importantly, however, such agreement corresponds to distinct properties from those which are semantically associated with DIV, and reflects not an _inherent_ property of such agreement marking, but rather the properties of what such agreement correlate with, syntactically and semantically.

does not constitute a violation of T'sou's Generalization. In turn, however, we expect such agreement to occur precisely in the context of cardinals, but to be excluded in their absence.[20]

With this proposal in mind, recall that in definite contexts, -*AH*-Ns can be pluralized with -*aat* even in the absence of a cardinal, as illustrated by (80) (and contrast with examples such as (52a-b) discussed in section 4.1):

80. a. s-samk-eet   muš   hon
       the-fish-*AH*-pl$_{SF}$ not   here   base: samk-*AH*
       'The fish(es) are not here'
    b. l-Hajr-aat   nramo   base: Hajr-*AH*
       the-stone-*AH*-pl$_{SF}$ thrown
       'The stones were thrown'

A natural explanation for this is available now if definite determiners, following Heim (1982) and much subsequent, are discourse anaphors which inherit their reference from a discourse antecedent (and including deixes, assuming 'pointing' to establish an antecedent in the relevant sense). We supplement this with the claim in Borer (2005), that definite determiners inherit not only reference, but also cardinality from their antecedent. Having inherited cardinality from its antecedent, the definite determiner may now value # syntactically and semantically, thereby triggering the occurrence of cardinal agreement in spite of the absence of an actual cardinal.

An interesting confirmation of this conclusion emerges when we consider the properties of pre-nominal partitive quantificational structures. In such configurations, quantifiers always take a definite restrictions. Importantly, although the restriction in these cases, in both LA and SA, is always *syntactically* definite, in actuality, the expressions are ambiguous, with the restriction interpreted as either definite or indefinite:

81. a. ra'ytu   l-kaθiir/l-qaliil/ba?Dan   min   al-ašxaaS   *SA*
       saw.1s   the-many/the-few/some   of/from   the-people
          i. I saw many/few/some people
          ii. I saw many/few/some of the people (from a mutually recognizable set)
    b. kell/ba?D/?aghlab   l-mudun   *LA*
       all/some/most   the-city-pl$_{BR}$
          i. 'all/some/most of the cities (of a mutually recognizable set)'
          ii. 'all/some/most cities'

In attempting to account for the ambiguity of (81a-b), and in particular for the indefinite restriction reading associated with (aii) and (bii), suppose we assume, following in essence Vergnaud and Zubizarreta (1992), that the definite determiner may at times be an expletive. Such an expletive clearly can inherit neither reference nor cardinality from its antecedent, giving rise to a semantic indefiniteness, in spite of the occurrence of the determiner.

Consider now the occurrence of *AH*-derived nominals in the contexts of partitive quantificational structures. Given the fact that in such structures the restriction always occurs with a definite article, we fully expect their grammaticality, a prediction which is directly verified by the examples in (82a-b). In contrast with (81a-b), however, these cases are not ambiguous. Rather, the indefinite construal is systematically excluded:

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[20] A reviewer points out that agreement should occur with singulars as well. For reasons of space, singulars are not addressed in this paper, but in essence, we follow Borer (2005) in assuming that singulars involve the identification of DIV and #, and hence we expect the singular *–AH*, effectively as an instance of the cardinal one to agree. Singular agreement, however, is not overtly marked in Arabic, making the issue moot. Ouwayda (2014) discusses, however, a case of cardinal agreement in Bulgarian, where singular cardinal agreement is overtly attested.

82. a. al-kaθiir/al-qaliil/ba?Dan   min   al-baqar-aat/at-dajaaj-aat   *SA*
       the-many/the-few/some   of/from   the-cow-*AH*-pl_{SF}/the-chicken-*AH*-pl_{SF}
           i. 'many of the cows/chicken' (from a mutually recognizable set)
           ii. *'many cows/chicken'
    b. kell/ba?D/aghlab   t-teffeeHaat   *LA*
       all/some/most   the-apple-*AH*-pl_{SF}
           i. 'all/some/most of the apples' (from a mutually recognizable set)
           ii. *'all/some/most apples'

The contrast between the ambiguous (81a-b) on the one hand, and the non-ambiguous (82a-b) on the other hand, directly establishes the fact that the definiteness required for PL-*AH*-Ns to be licit in the absence of a cardinal must be semantically meaningful, i.e. it requires a true discourse anaphor which inherits from its antecedent both reference and cardinality. When the determiner is an expletive, such inheritance is impossible and as a consequence, # may not be valued and hence must be missing. In the absence of #, however, cardinal agreement is excluded, and PL-*AH*-Ns cannot occur. As such, the behavior of partitive constructions gives us direct evidence for the common structural origin of semantically contentful definite PL-*AH*-Ns, and those PL-*AH*-Ns which occur with cardinals: only in these combinations, does the structure contain (a valued) #, thereby giving rise to the emergence of licit PL-*AH*-Ns.

Seeking to cast the cardinal agreement in terms of Agree, in the sense of Chomsky (2000) and much subsequent, suppose we assume that # has an interpretable (strong) feature, which following Zabbal we may label [CARD]. [CARD] acts as a probe, with DIV, optionally, endowed with an uninterpretable [*u*CARD] feature, thereby serving as a goal. Under such an account all cardinals, by assumption necessitating the projection of # (including decimals), would be probing and possibly valuing DIV, and –*aat* would be a realization of such probing in the context of –*AH*. By that very same logic, in the definite cases in (80), it is the definite article, having inherited the cardinality of its antecedent, that is associated with a # projection, and hence the feature [CARD], thereby acting as a probe, and with –*aat*, once again, the realization of such probe-goal relations in the context of –*AH*.[21]

We note finally that following Borer 2005), # is absent in bare (weak) DPs, where, therefore, we must assume that DIV lacks the uninterpretable optional feature [*u*CARD]. We further assume (see structure (76)) that # is absent in the presence of quantifiers in Q, where, similarly, DIV may, and indeed at times must, be realized as plural marking, but where, similarly, the uninterpretable feature [*u*CARD] must be missing. As a result, we neither expect nor get cardinal agreement on e.g. *teffeeH-AH* to give rise to bare DPs or with overt quantifiers, yielding in this fashion the ungrammaticality of PL-*AH*-Ns in such contexts.[22]

For reasons of space, we are leaving out a detailed discussion of the distinct properties of quantifiers and cardinals reviewed in sections 5.1 and 5.3, and summarized in (72A, C). By way of brief pointers, however, recall, first, that cardinals allow a collective interpretation of the nominal (cf. (59), (61)) as well as a distributive one (cf. (60), (62)), but that in Arabic, a collective interpretation is barred for quantifiers. Having now put in place a distinct projection for quantifiers (Q) and for cardinals (#), we will follow Ouwayda (2013, 2014, 2017) in assuming that # (and hence cardinals) but not Q (and hence not quantifiers) may participate in

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[21] Note that when DIV is populated by a divider other than –*AH* (e.g. 'plural' markers, or, for that matter, 'one') cardinal agreement is realized as Ø. See Ouwayda (2014) for discussion. The cardinal 1, we note, certainly doesn't trigger 'plural' agreement on its restriction, but its status is altogether quite exceptional, in general, and in Semitic languages in particular, where, unlike other cardinals, it never occurs pre-nominally and is always adjectival in nature. See Borer (2005) for the relevant discussion, as well as for an analysis of singulars based on the identification of Div and #.

[22] The optionality of associating DIV with [*u*CARD] has the direct effect of forcing the merger of # exactly when DIV is [*u*CARD] and blocking it otherwise. We note this contingency here, leaving the pursuit of its ramifications to future research.

the formation of a predicate of plurality, which is necessary for a collective reading to emerge (and see references for relevant motivation and discussion). Turning to (72C) we note that if null pronominals must be licensed by some mode of agreement, as is frequently assumed, and if cardinals trigger agreement, but quantifiers do not, the availability of a null pronominal restriction for the former, but not for the latter, follows. For additional discussion the reader is once again referred to Ouwayda (2014).

6.3 Inclusive vs. exclusive plural marking?

This article serves to establish the fact that plural marking may, and indeed at times must, be associated with two distinct positions in the nominal spine. One of these positions is DIV, by assumption the syntactico-semantic node responsible for the emergence of count (vs. mass) structure through a *Divide* function which establishes an infinite number of cells, which are then potentially countable. The second position is #, the locus not of *count,* as contrasted with *mass*, but of *counters*. In line with Borer (2005), we assume that actual individuals, including those which serve as atoms in sums, emerge not from the division of mass affected by DIV, but rather from the selection of a fixed number of cells (including portions and none) within that division, with an identical extension.

It is worthwhile pausing briefly to consider the role that these two distinct nodes play in the emergence of inclusive vs. exclusive plurals, a topic of much current interest. Within that approach, a bare plural such as *apples* denotes a divided mass, where divisions have an identical extension, but where their counting properties remain entirely undetermined. Following Borer (2005), such DIV constituents may occurs without # (or Q) altogether (see 13) and related discussion), where what emerges is a number-neutral denotation, which has an *inclusive* reading, insofar as it fails to exclude singulars (and allows, as noted in Borer, op. cit., decimals and zero as well). Relative to the cases under discussion in this article, instances of such inclusive reading would be *mxadd-eet.* 'pillows' or *bsayn-eet 'cats.f'* (cf. 34)-(35) and related discussion), which may occur bare, and which following standard tests allow both plural and singular reading (as well as zero and decimals).. In these forms the SF plural marker is that which is associated exclusively with DIV. In Arabic, however, (but not in English), another SF marking is possible, that which appends to *AH-* forms. These, as we claimed, are divided not through the occurrence of the SF itself, but rather by *AH-*, and the occurrence of SF signals not DIV, but the presence of #. In the presence of #, however, the emerging reading must involve actual counted individuals, and as such, could only give rise to an *exclusive* reading (but see fn. 23). That, now, is the interpretation associated with e.g. *samk-eet* 'fish.pl' with the parse *samak-AH-*pl. In these cases, a singular reading is excluded, not only in the presence of an overt cardinal (>1), but also in the presence of the definite article, lending further support to its presence in #.

We have, then, a minimal pair here – cases in which the plurality appears to be identically marked as *–eet*, but a distinction involving the availability, or lack thereof, of #. An inclusive plural reading is associated with a bare DIV. An exclusive plural reading is associated with the presence of both DIV and #. That such distinct interpretations emerge not only supports the analysis presented here, but also points the way toward explaining structurally the distinction between inclusive and exclusive reading, across the board.[23]

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[23] The notions *inclusion* and *exclusion* fit the picture which emerges here quite imperfectly, insofar as they fail to note that the 'exclusionary' reading, to the extent that it is associated with some cardinality, does not only exclude the singular, but excludes any denotation which is not compatible with that of the cardinality specified. Similarly, the 'inclusion' label focuses on the inclusion of the singular, but sets aside the inclusion of any entities which are neither singular nor plural, e.g. decimals and zero. Nonetheless we consider it worthwhile to make use of the exclusion/inclusion distinction, all the more so as recent accounts of it often make explicit reference to the necessity of #, or NUM, for the emergence of exclusive

7. Conclusion

The starting point of this article has been an apparent counter-example from Arabic to the generalization that dividing morphemes do not co-occur with 'plural'-marking morphemes, because these compete for the same syntactico-semantic slot, D$_{IV}$. That such co-occurrence does, indeed, occur in Arabic, pairing the dividing morpheme –*AH* with the plural marker –*aat* was established in some detail in section 3. However, a closer examination of the facts showed that in the context of the dividing morpheme –*AH*, plural-marked forms behave significantly differently from other plural-marked forms in the language: they are excluded as bare and with quantifiers, and in fact in an indefinite context are only licit with cardinals – all matters discussed in some detail in section 4. This difference between PL-*AH*-Ns and other plural marked forms in Arabic then served as our starting point for establishing a structural distinction between cardinals and quantifiers, outlined in some detail in section 5, and with evidence from the distribution of adjectives indicating that cardinals (and cardinal-like expressions such as *several*) must be lower in the nominal spine than quantifiers. A detailed structural proposal is outlined in section 6.1. More specifically, we propose that cardinals project under # and quantifiers projected under Q, and with Q^{max} dominating #^{max} when the two co-occur. In section 6.2 we finally turn to the explanation for the puzzle which served as the starting point for this article: the co-occurrence of the dividing singulative morpheme –*AH* with plural marking, proposing that the singulative divider –*AH* is, indeed, an instance of D$_{IV}$, but that the plural marking that may co-occur with it is an instance of cardinal agreement, thereby instantiated exactly when # projects, but impossible in its absence. PL-*AH*-Ns are therefore barred in all contexts which do not allow for # to project, and specifically, structures in which neither # nor Q merge, or structure in which Q may have merged, but not so #.

Interesting evidence for the agreement proposal, finally, is summoned from the distribution of PL-*AH*-Ns in definite contexts, where they are allowed without an overt cardinal, and where, demonstrably in Standard Arabic, they are <u>only</u> licit in 'definite' contexts where an inheritance of cardinality from some antecedent is clearly in place.

Finally, and making reference to the frequently-made distinction between inclusive and exclusive plural readings, we noted that the distinction, however imperfectly stated, falls naturally, within the system outlined here, from the availability of plural marking as an instance of D$_{IV}$, yielding number neutral infinite cell division, and the availability of plural marking as cardinality agreement, where the emerging reading is specifically associated with some specified cardinality, thereby excluding all cardinalities which are incompatible with it, including, of course, that of the singular.

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