CARDINALS WITHOUT PLURALITY[1]

SARAH OUWAYDA
University of Southern California

1 Introduction

In this paper, I present empirical evidence from Lebanese Arabic showing that cardinal-containing DPs are not necessarily semantically plural, and suggesting that cardinals are of type n (Zabbal 2005), and against a semantics of cardinals as modifiers of type <<e,t>,<e,t>> (Ionin and Matushansky 2006). Syntactically, I propose a DP structure in which cardinals are not merged in a unique dedicated functional projection. Rather, more than one functional projection takes an n-type argument and thus has the potential to host a cardinal numeral. In this structure, the host of the cardinal numeral determines the order of composition and thus the interpretation of the DP as a whole. The next section introduces the core empirical observation of this paper after a brief overview on number marking in Lebanese Arabic. Section 3 lays out the proposal and motivates it, section 4 discusses a puzzle and its explanation, and section 5 concludes.

2 Empirical observations

2.1 Basic facts

Nouns in Lebanese Arabic overtly mark number. Adjectives, verbs, and pronouns agree. This is illustrated in (1).

(1) a. Plural: l-wleed   š-šaaTr-iin/*-ø ?amal-u/*-ø   deuvoir-on/*-u
                      the-kid-PL   the-smart-PL/*-ø did-PL/*-ø   homework-their/*-his
      b. Singular: l-walad   š-šaaTer-ø/*-iin ?amal-ø/*-u   deuvoir-u/*-on
                      the-kid-ø   the-smart-ø/*-PL did-ø/*-PL   homework-his/*-their

Following cardinals 'three' through 'ten', nouns are plural marked (2), and verbs, pronouns, and adjectives are also all plural-marked (3).

(2) a.tlat   mhands-iin/*mhandes   b. xams   baneet/*bent
  three   engineer-PL/*engineer-ø   five   girl-PL/*girl-ø
  'three engineers'   'five girls

(3) a. tlat mhands-iin/*mhandes   ej-ou/*eja
  three engineer-PL/*engineer-ø arrived-PL/*arrived-ø
  'three engineers arrived'
 b. xams baneet/*bent   wa'a?-uu/*wa'?et
  five   girl-PL/*girl-ø   fell-PL/*fell-ø
  'five girls fell

Unlike nouns following numerals 'three' through 'ten', nouns following cardinals larger than 'ten' in Lebanese Arabic, or the quantifier *kam* 'how many'/'small number of', are never plural marked. This is illustrated in (4).

(4) a. tleetiin mhandes/*mhands-iin   c. tleeteh w ?eshriin mhandes/*mhands-iin
  thirty   engineer-ø/*engineer-PL   three and twenty   engineer-ø/*engineer-PL
  'thirty engineers'   'twenty three engineers'
 b. xamsta?shar shanta/*shanat   d. xamseh w ?eshriin shanta/*shanat
  fifteen   bag-ø/*bag-PL   five   and   twenty bag-ø/*bag-PL$_{BR}$
  'fifteen bags'   'twenty five bags'

Interestingly, following DPs such as those in (4), verbs can be either plural-marked or unmarked (whereas they must be plural marked when the noun itself is plural marked as in (2). This is illustrated in (5). Similarly, adjectives modifying the head noun in DPs containing a cardinals larger than 'ten' can be plural-marked or unmarked, and pronouns whose antecedent is a DP containing a cardinal larger than 'ten' can be plural or singular. This is illustrated in (6) and (7), respectively.

(5) a. Plural-marked verb: xamsta?shar bent   wa'a?-u
        fifteen   girl-ø fell-PL
 b. Unmarked verb: xamsta?shar bent   wa'a?-et
        fifteen   girl-ø fell-F-ø
        'Fifteen girls fell'

(6) a. Plural-marked adjective: xamsta?shar shanta T'aal
        fifteen   bag-ø heavy-PL
 b. Unmarked adjective: xamsta?shar shanta T'iil-eh
        fifteen   bag-ø   heavy-F-ø
        'Fifteen heavy bags'

(7) a. Plural pronoun: sa'alt   xamsta?shar sabi   ?an   mashrou?-on
       asked.1s fifteen   boy-ø about project-their

      b. Singular Pronoun: sa'alt   xamsta?shar   sabi   ?an   mashrou?-uh
                                asked.1s fifteen   boy-ø about project-<u>his</u>
                                  'I asked fifteen boys about their project'

Notably, the presence vs. absence of plural agreement on adjectives, verbs, and pronouns, correlates with a semantic effect: availability vs. absence of a collective reading.

2.2 Semantic effects

Given a pre-verbal subject DP containing a cardinal larger than 'ten', if a verb is plural marked in agreement with the subject, both a collective and a distributive reading of the subject are available. In the absence of plural marking on the verb, however, the only interpretation available is one in which the verb distributes over the subject DP (i.e. is true of every atom). This is illustrated by the contrast between (8) and (9).

(8) tleetiin walad   akal-u   gateau   keemel
    thirty child-ø ate-PL   cake   whole
  'Thirty children ate a whole cake'
[distributive]   True in a scenario in which thirty children each ate a whole cake, and
                 where no thirty children shared a cake
[collective]   True in a scenario in which thirty children shared a cake and where it
                 was not the case that any thirty children each ate a cake.

(9) tleetiin walad   akal   gateau   keemel
    thirty child-ø ate-<u>ø</u>   cake   whole
  'Thirty children ate a whole cake'
[distributive]   True in a scenario in which thirty children each ate a whole cake, and
                 no thirty children shared a cake
[*collective]   False in a scenario in which thirty children shared a cake and where it
                 was not the case that any thirty children each ate a cake

Similarly, plural marking on adjectives modifying the head noun in DPs containing a cardinals larger than 'ten' allows a collective reading that is unavailable for unmarked adjectives, as illustrated in the contrast between (10) and (11), and pronouns whose antecedent is a DP containing a cardinal larger than 'ten' receive, when plural, a collective reading of the DP that is unavailable when the pronoun is singular. This is illustrated in the contrast between (12) and (13).

(10) Hmelet   xamsta?shar   shanta   xfeef
      carried.1s fifteen   bag-ø   light-PL
[distributive]   True in a scenario in which I carried fifteen bags (that are each light and)
                 whose cumulative weight is small
[collective]   True in a scenario in which I carried fifteen bags that are each light
                 but whose cumulative weight is heavy

(11) Hmelet   xamsta?shar   shanta   t'iil-eh
      carried.1s   fifteen   bag-ø   heavy-F-<u>ø</u>

[distributive] True in a scenario in which the bags I carried were each heavy
[*collective] False in a scenario in which the cumulative weight of the bags I
                carried is high, but they included one or more light bags

(12) sa'alt   ?eshriin benet ?an   mashuu?-ah
      asked.1s   twenty   girl-ø about project-<u>her</u>
      'I asked twenty girls about their project'
[distributive] True in a scenario in which I asked twenty girls about their personal
                projects and it was not the case that I asked any twenty girls about a joint
                project of theirs
[*collective] False in a scenario in which I asked twenty girls about their joint project
                and where there are no twenty girls who I asked about their personal
                projects

(13) sa'alt   ?eshriin   benet ?an   mashuu?-un
      asked.1s   twenty   girl-ø about   project-<u>their</u>
      'I asked twenty girls about their project'
[distributive] True in a scenario in which I asked twenty girls about their personal
                projects and it was not the case that I asked any twenty girls about a joint
                project of theirs
[collective]   True in a scenario in which I asked twenty girls about their joint project
                and where it was not the case that I asked any single girl about her project

In fact, inherently collective verbs like 'gather' must be plural-marked following DPs containing cardinals larger than 'ten'. This is illustrated in (14) where (a) but not (b) is acceptable. Note that this is not a morphological restriction on such verbs, as (c) illustrates: collective nouns such as 'couple' can be followed by an unmarked collective verb, because one couple can engage collectively in 'meeting' or 'fighting'. Similarly, adjectives that can only modify predicates true of plural individuals like 'aligned' or 'scattered' must be plural-marked, as illustrated in (15).

(14) a. tna?shar   lee?eb   txaana'-u/tjamma?-u
          twelve   player-ø fought-<u>PL</u>/gathered-<u>PL</u>
          'Twelve players fought'/'Twelve players gathered'
      b. *tna?shar   lee?eb   txaana'/tjamma?
          twelve   player-ø   fought-<u>ø</u>/gathered-<u>ø</u>
          'Twelve players fought' /'Twelve players gathered'
      c. l-coupl   txaana'/jtama?
          the-couple-ø   fought-<u>ø</u>/met-<u>ø</u>
          'the couple fought' / 'The couples met'

(15) a. shefet   tleetiin gharad   maSfouf-iin/*maSfouf
          saw.1s   thirty   thing-ø   aligned-<u>PL</u>/*aligned-ø
          'I saw thirty aligned objects'
      b. kam   walad-ø mfarTa?-iin/*mfarTa?   za?aj-u-ni
          s.n.o. kid-ø   scattered-<u>PL</u>/*scattered-ø bothered-PL-me
          'A small number of scattered kids bothered me'

Thus, when no agreement is triggered on verbs and pronouns, only a distributive reading is available of the DP. I propose that the absence of a collective reading means the DP as a whole appears to not be interpreted as plural at all, and that no predicate of pluralities is formed within the DP in those cases, and what I have so far been referring to as a distributive reading is in fact a predication of singular individuals.

3 Towards a proposal

3.1 Main idea

Taking the availability of a collective interpretation to be an indicator of a semantically plural DP (cf. Landman 2000), these facts suggest that a cardinal containing DP, as a whole, is not always semantically plural. Rather, I propose, semantic plurality come from a pluralizing functional projection inside the DP, call it # that can, but does not have to be present in the presence of a cardinal. Without #, no predicate of pluralities is formed, and thus, no collective reading is available: the available reading, though called distributive, is not the usual distributive reading. Rather, it is simply predication to singular individuals. I also propose that # is responsible for triggering plural agreement when there is no plural marking on the noun.

That cardinal-containing DPs are not always semantically plural falls out naturally from the unavailability of a collective reading: Despite the presence of a cardinal in the DP in (9) and (12) the verb (or pronoun) is necessarily interpreted as true of atoms, and does not find a plural subject (or antecedent). Treating cardinals as modifiers that form predicates of plurality when they compose with nouns (Ionin & Matushansky 2006) or as determiners (e.g. Montague 1974) would always result in a semantically plural subject or antecedent. Given a semantics for cardinals as modifiers (16), when a cardinal, e.g. *twenty*, appears in a DP, the DP necessarily denotes a plurality that can be partitioned into twenty parts each. Thus, as (18) illustrates, such a semantics of cardinals as pluralizing modifiers predicts that a sentence like (17) would be at least ambiguous, when that is not empirically the case[2].

> (16) $[[20]] = \lambda P_{et} . \lambda x_e . \exists S_{et} [\pi(S)(x)$ and $|S| = 20$ and $\forall s \in S P(s)]$
> (i.e. 20 takes a predicate P, and returns another predicate true of individuals that, partitioned to two, each partition is such that P is true of it)

---

[2] One can propose that, maintaining Ionin and Matushansky's (2006) semantics of cardinals, the unavailability of a collective reading is due to a covert distributor that also blocks plural agreement (Heim p.c. and Ionin p.c.). Such a proposal is unlikely to be true for several reasons. One of them is that, if such a covert distributor existed, one would expect it to appear with cardinals 3-10 as much as it occurs with cardinals 11+, predicting sentences like (i) to be grammatical, which is not the case. Moreover, an overt distributor is ungrammatical with indefinite cardinal containing DPs in Arabic in general, as illustrated in (ii).

> (i) *tlatt   wleed akal   gateau   keemel (rather, akal-ou 'ate-PL' is required)
>   three child.pl ate-ø cake   whole
>   'Three children ate a whole cake each'
> (ii) a. tleetiin   walad Hakka   emm-uh
>   thirty   child talked   mother-his
>   b. *tlat wleed   Hakkou   emm-on   kell   weeHed
>   three child.pl talked-pl mother-their every one
>   c. *tlat   wleed   Hakka emm-uh   kell   weeHed
>   three child.pl talked-ø mother-his   every one
>   d. *tleetiin walad   Hakkou   emm-on   kell   weeHed
>   thirty child.pl talked-pl mother-their every one

(17) ?eshriin benet akalet gateau   keemel
        twenty   girl-ø ate-<u>ø</u>   cake   whole
     'Twenty girls ate a whole cake each' ('distributive', predicated of singular girls)

(18) [[20 girl-ø ate-ø cake whole]] = 1 iff
        ∃x: ∃S$_{et}$ [π(S)(x) and |S|=20 & ∀s∈S s is a girl] and x ate a whole cake
        i.e. a plurality of twenty girls ate a whole cake → Undesirable collective reading

   A claim that a collective reading is made possible through the formation of a predicate of pluralities inside the DP is desirable because the effects are independent of the position of the DP in the sentence, whether it is a subject (recall (8)-(9)), or an object (recall (12)-(13)). It is also supported empirically by restrictions in the presence of multiple agreeing elements: Any plural agreement within the noun phrase (e.g. adjectives) forces plural-agreement outside it (e.g. verbs and pronouns), but not vice versa. This is illustrated in the contrast between (19) and (20). Moreover, any agreement outside the DP, be it pronouns and verbs, multiple verbs, or multiple pronouns, must be homogeneous. This is illustrated in (21) and (22). (Agreement within the DP will be addressed in section 4)

(19) a. xamsiin sabi   mnazzam-iin wesel-ou/*wessel-ø
             fifty   boy-ø   organized-<u>PL</u> arrived-<u>PL</u>/*arrived-ø
           'fifty organized boys arrived' (an orderly squad)
      b. sa'alt   tleetiin telmiiz mnazzam-iin ?an   saff-on/*saff-uh
             asked.1s thirty   student organized-<u>PL</u> about class-<u>their</u>/*class-his
             'I asked thirty organized students about their class(es)'

(20) a. xamsiin sabi   mnazzam(-iin) wesel-ou
             fifty   boy-ø   organized-<u>ø</u>/-<u>PL</u>   arrived-<u>PL</u>
           'fifty organized boys arrived'
      b. sa'alt   tleetiin telmiiz mnazzam(-iin) ?an   saff-on
             asked.1s thirty   student organized-<u>ø</u>/-<u>PL</u> about class-<u>their</u>
             'I asked thirty organized boys about their class(es)'

(21) a. sa'alet   ?ešriin sabi ?an   mashrou?-uh ablma arrer   ?aleemt-uh/*on
             asked.1s twenty boy about project-<u>his</u>   before deciding grade-<u>his</u>/*-their
             'I asked twenty boys about their projects before deciding on their grades'
      b. sa'alet   ?ešriin sabi ?an   mashrou?-on ablma arrer   ?aleemt-on/*uh
             asked.1s twenty boy about project-<u>their</u>   before deciding grade-<u>their</u>/*-his
             'I asked twenty boys about their project(s) before deciding on their grade(s)'

(22) a. ?ešriin sabi xabbar emm-uh/*-on   (w   rteeH/*rteeH-ou)
              twenty boy   told-<u>ø</u>   mother-<u>his</u>/*-their (and relaxed-<u>ø</u>/*relaxed-PL)
             'Twenty boys told their mothers (and eased their conscience)'
      b. ?ešriin sabi xabbar-ou emm-on/*-uh   (w   rteeH-ou/*rteeH)
              twenty boy   told-<u>PL</u>   mother-<u>their</u>/*-his (and relaxed-<u>PL</u>/*relaxed-ø)
             'Twenty boys told their mother(s) (and eased their conscience)'

3.2 Execution

I assume that plural marking does not entail the formation of a predicate of plurality (cf. Sauerland et al. 2005, Ionin and Matushansky 2006, Borer 2005), and argue that the presence of a cardinal does not either (cf. also Landman 1989, 2000). I propose that a predicate of pluralities is formed when a (modified) star operator, call it #, ((23)a) composes with the nominal predicate.

(23)   a. $[\![\#]\!] = \lambda n_n. \lambda N_{et}. \lambda x_e.$ |Atoms(x)|$\neq$1, |Atoms(x)|=n, and $\forall$y$\in$Atoms(x), N(y)=1
      b.   <u>Paraphrase</u>: Given a cardinal n and a predicate N, return a predicate true of all individuals of cardinality n that N is true of every atomic part of (cf. Hackl, 2000:82/105)

I take the structure in (24), from Borer (2005), to be the structure of a singular count DP, and propose that the structure in (25) is the structure of a plural count DP.
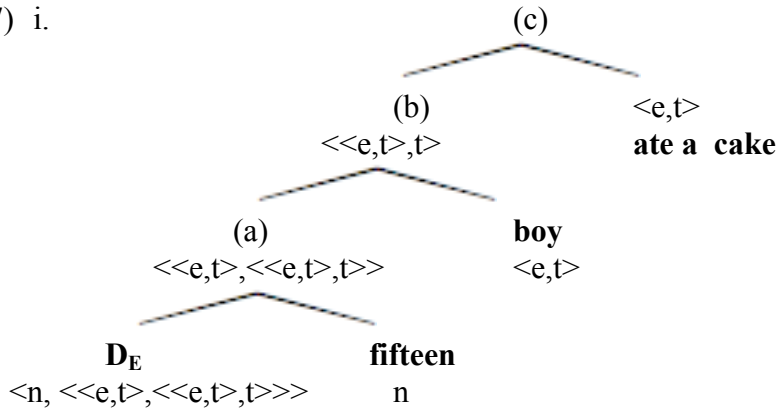
(24)   Synt.:   [$_D$ [$_Q$ [$_{DIV}$ [$_N$ ____   ]]]]]
        Sem.:   [DP   [COUNT NOUN   [NOUN   [ROOT

(25)   Synt.:   [$_D$ [$_Q$ [$_\#$ [$_{DIV}$ [$_N$ ____   ]]]]]
        Sem.:   [PLURAL DP   **[PLURAL NOUN** [COUNT NOUN   [NOUN   [ROOT

Moreover, I take cardinals to be of type n (Zabbal 2005) and to be arguments to a determiner or to #, and propose the existential quantifier to be a distributor, as in (26), adapted from Hackl's (2000:83) entry for *many*.

(26)   a $[\![D_E]\!] = \lambda n_n. \lambda N_{et}. \lambda V_{et}.$ $\exists$ S s.t. |S|=n and $\forall$x, x$\in$S entails N(x)=1 & V(x)=1
      b.   <u>Paraphrase</u>: Given a cardinal n, a predicate N, and a predicate V, there are n-many individuals x such that N is true of x and V is true of x.

The composition of a cardinal-containing DP that does not contain # (singular DP) with a VP would therefore be as in (27), and the composition of a cardinal-containing DP containing # with a VP would be as in (28).
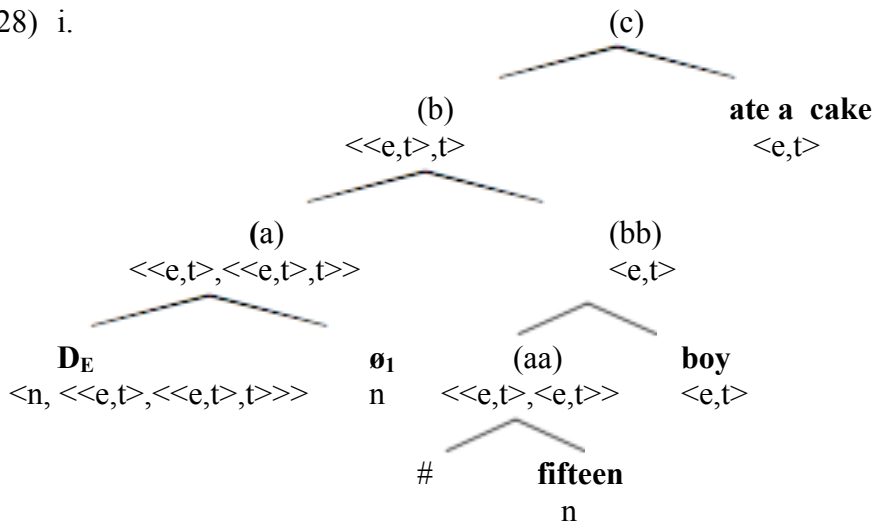
(27) i.
$$
\begin{array}{c}
\text{(c)}\\[2pt]
\diagup \quad \diagdown\\[2pt]
\text{(b)} \qquad\qquad \langle e,t\rangle\\
\langle\langle e,t\rangle,t\rangle \qquad \textbf{ate a\ cake}\\[2pt]
\diagup\quad\diagdown\\
\text{(a)} \qquad\qquad \textbf{boy}\\
\langle\langle e,t\rangle,\langle\langle e,t\rangle,t\rangle\rangle \qquad \langle e,t\rangle\\[2pt]
\diagup\quad\diagdown\\
\mathbf{D_E} \qquad\qquad \textbf{fifteen}\\
\langle n,\langle\langle e,t\rangle,\langle\langle e,t\rangle,t\rangle\rangle\rangle \qquad n
\end{array}
$$

(a) [$\lambda n_n.\ \lambda N_{et}.\ \lambda V_{et}.\ \exists$ S s.t $|S|=n$ & $\forall x, x\in S$ entails $N(x)$ & $V(x)=1$] (fifteen)

(b) [$\lambda N_{et}.\ \lambda V_{et}.\ \exists$ S s.t.$|S|=15$ & $\forall x, x\in S$ entails $N(x)=1$ and $V(x)=1$] ($\lambda x.$ x is a boy)

(c) [$\lambda V_{et}.\ \exists$ S s.t.$|S|=15$ & $\forall x, x\in S$ entails x is a boy   & $V(x)=1$] ($\lambda x.$ x ate a cake)
which, after function application is:
$\exists$ S s.t. $|S|=15$ & $\forall x, x\in S$ entails x is boy & x ate a cake

ii. <u>Paraphrase</u>: There are fifteen individuals that are each a boy, and each ate a cake

As (27) illustrates, no predicate of pluralities is formed at any point of the derivation. Rather, the sentence describes fifteen events of a boy eating a cake (on his own).

(28) i.
$$
\begin{array}{c}
\text{(c)}\\[2pt]
\diagup\quad\diagdown\\[2pt]
\text{(b)} \qquad\qquad \textbf{ate a\ cake}\\
\langle\langle e,t\rangle,t\rangle \qquad \langle e,t\rangle\\[2pt]
\diagup\quad\diagdown\\
\text{(a)} \qquad\qquad \text{(bb)}\\
\langle\langle e,t\rangle,\langle\langle e,t\rangle,t\rangle\rangle \qquad \langle e,t\rangle\\[2pt]
\diagup\quad\diagdown \qquad \diagup\quad\diagdown\\
\mathbf{D_E} \qquad \textbf{ø}_1 \qquad \text{(aa)} \qquad \textbf{boy}\\
\langle n,\langle\langle e,t\rangle,\langle\langle e,t\rangle,t\rangle\rangle\rangle \quad n \quad \langle\langle e,t\rangle,\langle e,t\rangle\rangle \quad \langle e,t\rangle\\[2pt]
\diagup\quad\diagdown\\
\# \qquad \textbf{fifteen}\\
n
\end{array}
$$

(aa) [$\lambda n_n.\ \lambda N_{et}.\ \lambda x_e.$ $|Atoms(x)|\neq 1$, $|Atoms(x)|=n$, and $\forall y\in Atoms(x), N(y)=1$](15)

(bb) [$\lambda N_{et}.\ \lambda x_e.$ $|Atoms(x)|\neq 1$, $|Atoms(x)|=15$, and $\forall y\in Atoms(x), N(y)=1$]($\lambda x.$ x is a boy)
= $\lambda x_e.$ $|Atoms(x)|\neq 1$, $|Atoms(x)|=15$, and $\forall y\in Atoms(x),$ y is a boy

(a) [$\lambda n_n.\ \lambda N_{et}.\ \lambda V_{et}.\ \exists$ S s.t. $|S|=n$ & $\forall x, x\in S$ entails $N(x)=1$ & $V(x)=1$] (1)

(b) [$\lambda N_{et}.\ \lambda V_{et}.\ \exists$ S s.t. $|S|=1$ & $\forall x, x\in S$ entails $N(x)=1$ & $V(x)=1$] ($\lambda x_e.$ $|Atoms(x)|\neq 1$, $|Atoms(x)|=15$, and $\forall y\in Atoms(x),$ y is a boy)

(c) $[\lambda V_{et}.\ \exists\ S\ |S|=1$ and $\forall x,\ x\in S$ entails $|Atoms(x)|\neq 1,\ |Atoms(x)|=15$, and
        $\forall y\in Atoms(x),\ y$ is a boy and $V(x)=1]$ $(\lambda k.\ k$ ate a cake$)$
        ➔ $\exists\ S\ |S|=1$ & $\forall x,\ x\in S$ iff $|Atoms(x)|\neq 1,\ |Atoms(x)|=15$ and
          $\forall y\in Atoms(x),\ y$ is a boy and x ate a cake

   ii. Paraphrase: There is a plural individual of fifteen atomic parts that are each a boy, and the plurality ate a cake

As (28) illustrates, in the presence of # in a carinal-containing DP, a predicate of pluralities whose size is the cardinal, is formed in the structure. In this case, since the cardinal is composing with the pluralizer, there is no cardinal to fill the n-type argument position of D_E, so the latter takes a default '1' to fill its n-type argument position. In the presence of #, the cardinal must compose with it because unlike D_E, being a pluralizer, #'s lexical semantics does not allow it to take a default '1' as its first argument.

So in (28), corresponding to the structure in (25) (but not in (27), corresponding to the structure in (26)), the DP is plural (contains a predicate of pluralities) and can result in a collective reading.

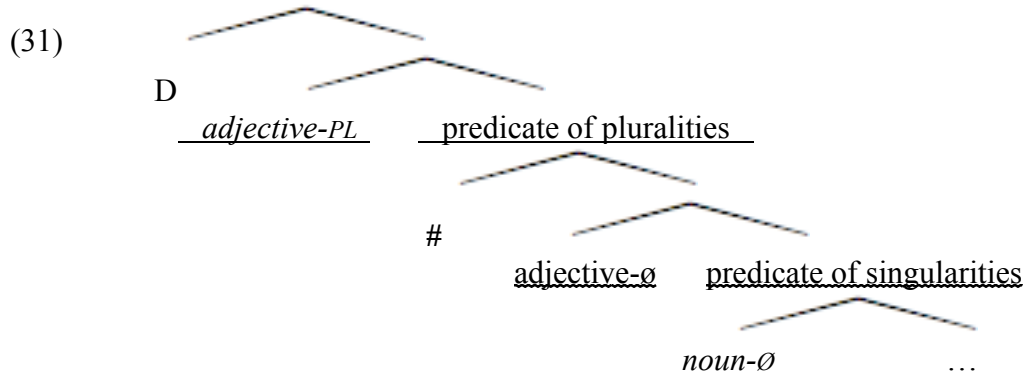# 4 Adjective puzzle: heterogeneous agreement

Unlike verbs and pronouns following a cardinal-containing DP, when a cardinal-containing DP contains multiple adjectives, the different adjectives can show heterogeneous agreement. This is illustrated in (29). Note, however, that this heterogeneity is restricted: All unmarked adjectives must be closer to the noun than all plural marked adjectives[3]. This is illustrated by the ungrammatical (30).

(29) tleetiin telmiiz   kesleen majmou?-iin Htajj-u   ?a-l-?alemeet
       thirty student-ø lazy-*ø*   gathered-PL complained-PL on-the-grades
       Thirty assembled lazy students complained about the grades

(30) *tleetiin   telmiiz   majmou?-iin kesleen Htajj-u   ?al-?alemeet
       thirty   student-ø gathered-PL lazy-*ø* complained-PL on-the-grades
      ➔ Word salad

This behavior of adjectives that separates them from verbs and pronouns is actually predicted given the proposal in section 3. Given that it is the function # that introduces plurality into the DP, anything merging lower than # is predicted to be singular: to show non-plural agreement, and to be interpreted as true of atoms. This is illustrated in (31)

---

[3] Pesetsky (2010), Asarina (2010), propose something very similar for mixed gender agreement in Russian. For more on mixed gender agreement, see these references, as well as Matushansky (2011) and references therein.

(31)

```
            D
                adjective-PL        predicate of pluralities
                                        #
                                            adjective-ø     predicate of singularities
                                                                noun-ø              …
```

5 Conclusion

In this paper, I presented empirical evidence from Lebanese Arabic showing that the presence of cardinals does not entail the formation of a predicate of pluralities (Landman 2000), using truth conditional contrasts between DPs allowing a collective reading and DPs not allowing one. I proposed a DP structure in which cardinals do merfge in a unique dedicated position. Rather, more than one functional projection takes an n-type argument and has the potential to host a cardinal numeral. I showed that whether a cardinal merges in one position or another has significant effects on the interpretation.

References

Ararina, Alya, 2009. *Gender and Adjective Agreement in Russian*. Handout from the 4th annual meeting of the Slavic Linguistics Society, University of Zadar, Croatia.

Borer, Hagit, 2005. *Structuring Sense: Volume 1: In Name Only*. Oxford University Press.

Hackl, Martin, 2000. *Comparative Quantifiers*, MIT Dissertation.

Ionin, Tania and Ora Matushansky, 2006. *The composition of complex cardinals*. Journal of Semantics 23.

Landman, Fred. 1989. *Groups I*. Linguistics and Philosophy, Vol. 12, No. 6 (Dec., 1989), pp. 723-744

Landman, Fred. 2000. *Events and plurality: the Jerusalem lectures*. Studies in linguistics and philosophy, Kluwer Academic Publishers.

Matushansky, Ora. 2011. *Gender confusion*. To appear in Cheng, Lisa, and Norbert Corver (eds.). Diagnosing Syntax, Oxford University Press

Montague, Richard. 1974. *The Proper Treatment of Quantification in Ordinary English*. in Richmond H. Thomason, ed. 1974. Formal Philosophy. Yale University Press.

Pesetsky, David, 2010. *Russian Case Morphology and the Syntactic Categories*. Ms. Massachusetts Institute of Technology lingBuzz/001120.

Zabbal, Youri, 2005. *The Syntax of Numeral Expressions*. Generals Paper. University of Massachusetts, Amherst