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CHAPTER

## 13 Singulative Systems

p. 275

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### Abstract

This chapter gives an overview of singulative systems, focusing on a few languages, including Arabic, Breton, Welsh. First, we introduce relevant data showing how a singulative noun is formed from a collective noun or a mass term. Second, we show that it is possible for singulative nouns to be pluralized and that, in some languages (e.g. Arabic), this plural contrasts semantically with the collective form. Third, we review existing accounts of singulatives and show that one main issue in the literature is whether the singulative operation is an inflectional or a derivational operation. Singulatives are interesting because they shed light on number and gender and show that, morphologically, the singular is not always unmarked.

**Keywords:** [singulative](#), [number](#), [gender](#), [singular](#), [plural](#), [inflection](#), [derivation](#), [collectives](#), [mass terms](#)

**Subject:** [Grammar](#), [Syntax and Morphology](#), [Linguistics](#)

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### 13.1 Introduction

CROSS-LINGUISTICALLY, the plural is often morphologically marked while the singular is morphologically unmarked (Greenberg, 1972). This can be seen in (1) for English. The singular form is the basic form and surfaces with no added suffix (1a). In order to yield a plural, the suffix *-s* is added to the word *book* as shown in (1b).

(1)

- a. one book
- b. two book-s

In other languages, including Arabic, there is a system alongside the one described above (the plural is marked with an affix while the singular is not), whereby the unmarked form can be used to refer to sums despite the absence of plural morphology (see example (2)). The derived singular form is traditionally called the SINGULATIVE.<sup>1</sup>

The Tunisian Arabic examples in (2) illustrate a morphologically realized singulative. In (2a), the base noun from which the singulative is derived (the input noun) is *bordgen* ‘orange’, a collective noun, singular in number and masculine in gender, that semantically refers to the kind ‘orange’ (the latter typically being used with kind and generic predicates). The singulative, realized as the feminine suffix in Arabic, creates an individual or a unit. In (2b), the input noun is a mass noun, *xobz* ‘bread’, and the singulative creates a portion reading.

p. 276

(2)

a. *bordgen* (orange) → *bordgen* (orange)  
 b. *xobz* (bread) → *xobz* (bread)

While in a number of languages, the singulative is expressed by gender shift, as seen for Arabic, in others the singulative is marked by a dedicated suffix that involves no gender shift (Dimmendaal, 1983, 2000; Hieda, 2006, for Nilotic languages).<sup>2</sup>

The singulative operation differs from coercion of mass and collective nouns to a count denotation. As is well known, although mass nouns cannot normally be pluralized in English, exceptions to that generalization are possible provided that the interpretation of mass nouns is coerced to that of kinds—via the Universal Sorter—as in (3a), or standard servings—via the Universal Packer, as in (3b) (Bunt, 1985a).<sup>3</sup>

(3)

a. There are only two waters available (still, sparkling).  
 b. Bill ordered two waters (glasses, bottles).

Singulativization is different from coercion. Coercion in languages such as in English is quite productive and the pluralized noun refers to kinds (kinds of water, kinds of oil, etc.) or units. Singulativization, on the other hand, is a morphosyntactic operation that targets a set of collective and mass nouns that usually refer to groups of animals, botanical species, artefacts or natural kinds, and results in sets of individuals that need not be standardized units and in many cases these individuals cannot be kinds (see Mathieu, 2012a; Deal, 2016).

The aim of this chapter is to provide an overview of singulative systems. We begin in section 13.2 with illustrating examples, focusing on Semitic languages, especially Arabic, but we also introduce examples from Celtic and Nilotic languages where singulatives are also prevalent (note that our observations on Arabic will not necessarily carry over to other languages with singulative morphology). In section 13.3, we discuss plurals of singulatives. In section 13.4, we introduce a number of existing formal analyses of the singulative found in the literature as well as competing proposals about the plural of the singulative. Section 13.5 concludes.

p. 277

## 13.2 How to create individuals with singulative markers

Most Semitic languages mark three numbers on the nominals: the singular, the plural, and the dual. However, they also have a singulative system, where the collective is the morphologically basic form from which the singulative is derived.<sup>4</sup> For Semitic languages, the collective–singulative distinction is most productive in Arabic, Maltese, and Ethiopian—with Hebrew having retained only residues of the system (Doron and Muller, 2013).

The following examples illustrate the singulative system of Arabic (4) and Maltese (5). The left column features a collective noun while the right column exemplifies singulative forms.

(4)

ant, m.c.c.c.c. black, s.t.s.c. entered, j.a.c.c. to-the kitchen  
"Black ants entered the kitchen."

(5)

ant, m.c.c.c.c. black, s.t.s.c. entered, j.a.c.c. to-the kitchen  
"Black ants entered the kitchen."

Collective nouns are always masculine in Arabic and Maltese. They trigger masculine singular agreement on verbs and other dependent categories (i.e. adjectives). Consider (6).

(6)

nemel akkal dhal l-el kajins (Tunisian Arabic)  
ant, m.c.c.c.c. black, s.t.s.c. entered, j.a.c.c. to-the kitchen  
"Black ants entered the kitchen."

p. 278 The singulative is derived from the collective through suffixation of the marker *-a(t)*. Unlike collectives, singulative nouns are feminine. This shows both morphologically and syntactically.

First, the ending, *-a(t)*, is a typical feminine ending in Arabic and Maltese and can be found in morphologically feminine nouns such as (7a) and with semantically feminine nouns such as (7b).

(7)

ant, m.c.c.c.c. black, s.t.s.c. entered, j.a.c.c. to-the kitchen  
"Black ants entered the kitchen."

Second, singulative nouns in Arabic (and Maltese) consistently trigger feminine agreement on the lexical items they control (see (8)). Compare (8) with (6). While in (6) the collective noun *nemel* 'ants', a morphosyntactically masculine singular form, triggers masculine singular agreement on the verb, its singulative counterpart *nemela* 'an ant', in (8), triggers feminine singular agreement on the verb.

(8)

nemela akkal dhal l-el kajins  
ant + SINGULATIVE black, s.t.s.c. entered, j.a.c.c. to-the kitchen  
"A Black ant entered the kitchen."

As observed by Greenberg (1966b)—linguistic Universal 35, no language is purely singulative–collective and Arabic is no exception. As illustrated in (9), Arabic also has a morphologically marked singular–plural distinction. Pluralization is realized through stem change (9a) to give a broken plural, or by suffixation (9b, c) to give a sound plural. The sound plural marks gender: *-en* for masculine plural (9b) and *-at* for feminine plural (9c).

(9)

ant, m.c.c.c.c. black, s.t.s.c. entered, j.a.c.c. to-the kitchen  
"Black ants entered the kitchen."

p. 279 Celtic languages also have a singulative system. In Breton, collective nouns are masculine, and the singulative form is obtained by adding the feminine suffix *-enn*. As in Arabic, this operation is productive in nouns denoting animals living in groups (10a), small fruits/vegetables (10b) and masses (10c).

(10)

ant, m.c.c.c.c. black, s.t.s.c. entered, j.a.c.c. to-the kitchen  
"Black ants entered the kitchen."



**Table 13.1** The singulative and its plural

singulative		plural of the singulative	
<i>tamr-a</i>	'a date'	<i>tamr-a-at</i>	'dates' (Standard Arabic)
<i>dubbi<sup>-</sup>n-a</i>	'a fly'	<i>dubbi<sup>-</sup>n-iit</i>	'flies' (Maltese)
<i>glav-enn</i>	'a raindrop'	<i>glav-enn-ou</i>	'raindrops' (Breton)

Although the concept of the plural of a unit created out of a collective can seem redundant for speakers of languages without singulative morphology, judging from Arabic, we note that the resulting form has a different denotation from the collective. While Arabic collective nouns are unrestricted in terms of number, in Arabic the plural of the singulative can only refer to a few entities (generally below ten)—see Mathieu (2014); Dali and Mathieu (2016). In other words, the plural of the singulative in Arabic is a *plural of paucity*, as defined by Ojeda (1992), or a minor number (Corbett, 2000: 22). Evidence for this comes from examples such as (13a), where *tamrāt*<sup>7</sup> ‘a few dates’ is not an appropriate complement for the adjective *melien* ‘full’. When referring to more than ten entities, Arabic speakers use the collective form, as in (13b).

(13)

Arabic script examples for (13)

The plural of the singulative, and the fact that its meaning differs from that of the collective in Arabic, raises the following question: what is the denotation of the plural in languages with singulative morphology? Is the distinction between the unrestricted plural and the paucal one limited to the singulative system? If the collective is the equivalent of the plural in an inverse system, then is there an equivalent of the plural of the singulative in the ‘regular’ number system? In other words, can the distinction in plural denotation described above go beyond the singulative paradigm?

p. 282 Examples from Tunisian Arabic and Maltese seem to corroborate the idea that there is indeed an equivalent. Tunisian Arabic, for instance, showcases such a distinction in some count nouns (Dali, forthcoming), where the feminine sound (external) plural can be used in contrast with the broken (internal) plural to denote paucity and thus strictly refer to individuals (Table 13.2). Sutcliffe (1936) makes the same observation about Maltese, where some nouns outside the collective system can also have both plural forms, resulting in different denotations. *Carruta* ‘a rag’, for example, has both a broken plural and a sound plural, as illustrated in Table 13.2, and their respective denotations are similar to those of Arabic. Sutcliffe refers to them respectively as the indeterminate/determinate plurals.

**Table 13.2** Competing plurals

singular		broken plural		sound plural		
<i>qoffa</i>	'a basket'	<i>qfoff</i>	'baskets'	<i>qoffet</i>	'a few baskets'	(Tunisian Arabic)
<i>carruta</i>	'a rag'	<i>craret</i>	'rags'	<i>carrut-iet</i>	'a few rags'	(Maltese)

(14)

It could be that the contrastive use of these different plural shapes takes root in the singulative system. There is evidence that the suffixal plural in its contemporary form is the result of more recent developments in Semitic languages (Lipinski, 2001: 242; Haelewyck, 2016: 153). Assuming a similar journey for the Breton plural (Hemon, 1975: 30), it is plausible that broken plurals originate from the former collective, with the plural of the singulative being an innovation. Note, however, that our observations concern a subset of Semitic languages: other languages with singulative morphology might be different, including Breton where more research is needed.

To summarize section 13.3: it was shown that the singulative can be pluralized, resulting in a plural with a denotation contrasting with the collective (as evidenced by Arabic). This contrastive denotation is also available in singular/plural systems, where it is often possible for a noun to take two different plural shapes. Languages with singulative morphology such as Arabic tend to have rich number morphology, such as dual marking, double plurals, paucal number, and inclusive/exclusive plurals being expressed by different morphology.

p. 283

## 13.4 Formal analyses

The individuating property of the singulative was already recognized in the typological and functionalist literature (Greenberg, 1966b, 1972), but it is only recently that formal accounts have flourished. In this section, we review existing generative accounts of the singulative. Much debate centres around the issue as to whether the singulative is an inflectional or derivational morphological device. While it is traditionally assumed that the singulative is a derivational process, many (but not all) recent generative accounts claim it is inflectional. We begin with inflectional/syntactic approaches to the singulative. Then, we turn to derivational/lexical or so-called *n* approaches to the singulative.

### 13.4.1 Inflectional/syntactic approaches to the singulative

Zabbal (2002), basing some of his ideas on Ojeda (1992), is one of the first scholars to provide a formal analysis of the singulative operation. Zabbal assumes Greenberg's (1974) definition of a classifier as a true unit-counter: an overt expression that allows us to count out the individuals of a noun by units, for nouns whose individuals cannot be counted out directly. Zabbal (2002) also assumes Cheng and Sybesma's (1999) extension to the DP structure, where classifiers are realized under a functional head called Class, giving us (15). The functional head Num corresponds to Number, hosting for examples, numerals.

(15)

Zabbal (2002) proposes that the singulative affix in Arabic is a classifier, i.e. a unit-counter, realized under the inflectional head Class, with semantics of the operator SG, defined as (16). The head Class is similar to Borer's (2005) Division head but unlike Harbour's (2011) Class head, which is a derivational head.

(16)

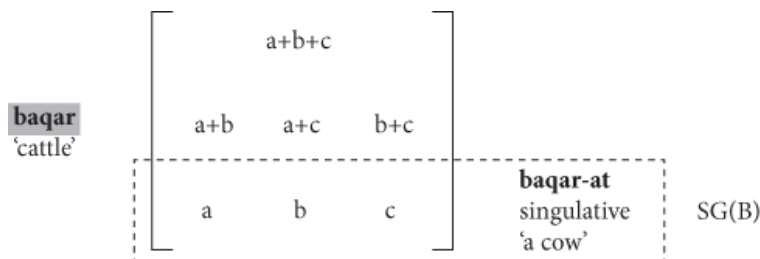
$SG(P)$ : The set of atoms for a predicate  $P$ .  
 $\llbracket SG(P) \rrbracket = \{x \in \llbracket P \rrbracket \mid \exists y (y \leq x \rightarrow y = x)\}$

(Zabbal, 2002: 113)



p. 284 The collective noun corresponds to a set of atoms and a set of sums and the singulative is an operation on that, giving us a set of individuals. Figure 13.1 (taken from Zabbal, 2002) illustrates the denotations of the collective and the singulative.

**Figure 13.1**



The singulative

(Zabbal, 2002: 113)

Fassi Fehri (2003, 2012a) has a similar analysis whereby the singulative is a kind of classifier providing a unit out of a mass or collective term. On this view, the singulative is also an inflectional process: it is productive, systematic, and unlike exceptional derivational processes.

Assuming Borer's (2005) nominal framework, Mathieu (2012a,b) proposes that the singulative is under the Division head (in DivP), as in (17).<sup>8</sup>

(17)

The singulative is, under this view, in complementary distribution with the plural (and the singular is also in complementary distribution with the plural). Like the singular, the singulative creates a unit, be it a simple unit or a portion. The input of the singulative operation is a root with a functional *n*. On this view, the singulative is a syntactic, and not a lexical operation. It is an inflectional rather than a derivational process. *nP* is the host for collective and mass nouns and the individuating operation is higher, under Div.

p. 285 Borer and Ouwayda (2010) propose something similar in placing the singulative under Division. However, there are some major differences between the two proposals, namely in relation with the plural. We come back to this in section 13.4.3.

Grimm (2012a) proposes a semantic analysis of the singulative of Welsh that is equivalent to the theories presented above (except that it will not work for all singulatives in Arabic, since in this language, the singulative can operate on a (specific) set of mass nouns). On Grimm's view, collective nouns in Welsh refer to clustered individuals. The singulative is an operation presupposing a set of clustered individuals. When given such a set, the singulative operation returns a unit, as illustrated in (18) (MSSC= maximally strongly self-connected. An MSSC entity is an individual).

(18)

*-en/-yn*:  $\lambda Q \lambda x. Q_{cluster} [x \leq Q \wedge x \in MSSC]$

According to Grimm (2012c: 601), ‘Since the singulative presupposes clustered individuals, its application to count nouns such as *cadiar* ‘chair’ is correctly ruled out. Similarly, the application of the singulative would also be ruled out for substance nouns—although substance nouns possess clustered individuals, they do not possess MSSC-individuals which would serve as the output of the operation’.

### 13.4.2 Derivational/lexical or *n* approaches to the singulative

Acquaviva (2008) proposes a different analysis, according to which the singulative is not on a syntactic head, but rather lower under *n*, as in (19) (Acquaviva 2008: 270). This is because, on his view, the singulative is a derivational process (it is not fully productive, exhibits many exceptions, has semantic import, etc.).

(19)



p. 286 Evidence for such a view is as follows: according to Acquaviva, the fact that gender shift occurs in singulativization in Breton, Welsh, and Arabic shows that it is a  $\downarrow$  derivational process. As we have seen, however, singulativization does not correlate with gender shift in all languages. For Acquaviva, ‘the derived singulative and the base it is suffixed to are distinct nouns and not inflectional forms of the same noun’ (2008: 243). It is argued that the Breton singulative suffix *-enn* is indifferent to the number of a nominal base (it can apply to singulars and plurals) and it does not even need a nominal base at all, since it can nominalize adjectives and verbs, as shown in (20).

(20)



The distribution and function of the singulative are determined by the semantics of the input lexeme and the output meaning via singulativization varies greatly (cross-linguistically, but also within one language): it refers to members of collections, atomic parts of granular masses, detached pieces of matter, but also to objects made up of material, or bounded extensions of a mass, giving for example ‘a beach’ from the mass term ‘sand’. The shifting meaning of the singulative is, for Acquaviva (2008), a sign that it involves a derivational process.

Kramer (2015) proposes an analysis of the singulative similar to that of Acquaviva’s (2008). Kramer also treats the singulative as a derivational process, based on the observation that it is not completely productive.<sup>9</sup> The singulative is formed via an *n* attaching to a collective *nP* as in (21)—Kramer (2015: 203).<sup>10</sup>

(21)



p. 287 The arguments given against the non-lexical/Div head approach are as follows: (i) singulatives have selectional restrictions; (ii) singulatives do not always spell out gender shift; (iii) singulatives can be spelled out as diminutives.

The general problem with derivational approaches is that, on the proposed accounts, two nodes are now responsible for the creation of individuals: Div (or its equivalent) and *n*. A simpler proposal involves only one functional head for the creation of individuals (see section 13.4.1). Another major problem is that, on this view, many things are lumped together under *n*: for example, exceptional plurals, collectives, mass nouns. However, there is a big difference in terms of productivity between, say, Italian plurals that change gender (*braccia* ‘arms’ vs *bracci* ‘arms (of objects)’ as plurals of singular *braccio* ‘arm’) and singulatives. Italian irregular plurals, Somali plurals, singulatives, etc. are all generated under *n* with no possibility of distinguishing their degree of productivity.<sup>11</sup>

### 13.4.3 Where is the plural of the singulative generated?

Let us now turn to plurals of singulatives. Where are they generated in the structure? Mathieu (2012a, 2013, 2014) argues that the plural of the singulative is a higher plural. Thus, plural marking can apply at different points in the structure of the DP (Acquaviva, 2008; Mathieu, 2012a,b, 2013, 2014; Dali and Mathieu, 2016; Harbour, 2008, 2011; Butler, 2012, Chapter 23 in this volume; Wiltschko, 2008, 2012, Chapter 8 in this volume). More precisely, it is distributed along the nominal spine. *n* hosts lexical plurals (e.g. abundance plurals), Div hosts plurals of count nouns (in the case of Arabic, both sound and broken plurals are generated here), and # (i.e. number, counting) hosts plurals of singulatives (see section 13.3) and plurals of plurals (we only mention plurals of plurals but do not discuss them here in any detail). The functional # node in Arabic is associated with a paucal feature [+ paucal] (or a combination of more primitive features in the style of Harbour, 2014). Other languages may not have this paucal feature associated with # (in accordance with how we view parameters, Borer, 2003; Harbour, 2014).<sup>12</sup>

p. 288

(22)



Because Borer (2005) views the plural as unique (and also because on her view, a syntactic operation can target either the head of the functional projection or the spec and not both), the plural of the singulative cannot be a real plural. The only plural that is relevant is the one under Div. In order to account for the plural of the singulative, Borer and Ouwayda (2010) propose that it is not a real plural, but mere agreement. The counting function is realized by the numeral and not by the plural. Putative evidence for such a view comes from cases in Arabic where the plural of the singulative comes with a numeral as seen in (23).

(23)

*ʃar-o sif-3 dij-3-e-3* (Libanese Arabic)  
*ʃaɣt-3i-3 se-3en-3 ʃak-3e-3 ʃak-3e-3*  
 They bought seven chickens. (Borer and Ouwayda, 2010)

Borer and Ouwayda (2010) claim that in this case the numeral is obligatory. On their view, this follows from the fact that the numeral agrees with the noun in the plural. However, this idea is problematic, because numerals are in no way obligatory in the dialects we checked (NUN = nunation).

(24)

*ʃar-o sif-3 dij-3-e-3* (Libanese Arabic)  
*ʃaɣt-3i-3 se-3en-3 ʃak-3e-3 ʃak-3e-3*  
 They bought seven chickens. (Borer and Ouwayda, 2010)

p. 289 Another problem for Borer and Ouwayda's (2010) approach is that for numbers above ten, no plural marking surfaces on the noun. Rather, a special singular form (noun of specification, where the sound *n-* is added before the singular form) is used instead. Agreement is thus not necessary between a plural and a numeral in Arabic, since the form of the plural nominal above ten is singular. Consider the following examples. In (25a), the numeral *sbaʕtaʃ* 'seventeen' is followed by the singulative form *ħut-a* 'one fish', preceded by *n-*. In (25b), the singular form *bagra* 'cow' is also preceded by an *n-*.

(25)

*n-ħut-a*  
*ħut-a*  
*n-bagra*  
*bagra*

The third problem is that in languages with singulative morphology other than Arabic the putative numeral constraint for numbers between 2 and 10 is not attested. As far as we are aware, it does not apply, for example, in Welsh, Breton, or Ojibwe.

Finally, Mathieu (2014) shows that while the sound plural and the broken plural are interpreted inclusively in Arabic (just like the English plural)—they are interpreted as 'one or more' as is the case in English examples such as (26)—the plural of the singulative is interpreted exclusively: it can only refer to 'two or more', without reference to 'one'. The English plural is like the sound and broken plurals in that it receives an inclusive interpretation.

(26)

*ħutaat*  
*ħuta*

If the plural of the singulative was just agreement, then we would not expect these semantic differences. As mentioned in section 13.3, the plural of the singulative in Tunisian Arabic is a paucal number. It refers to 'a few' entities of the collection, generally not more than ten. The sentence in (27), for example, where *ħutaat* 'fishes' is in the plural of the singulative form, would not be appropriate in a case where the speaker bought a box full of fish, or any amount that cannot be referred to as 'a few'.

p. 290

(27)

*ħi* *ħutaat*  
*ħiħtaħi* *ħutaat*  
 'I bought (a few) fishes.'  
 (Tunisian Arabic)

When used on a singulative, the plural marker in Arabic gives rise to special semantics, namely, paucal meaning. This is true for Arabic. Given its semantic contribution, this plural morpheme cannot be treated as a mere agreement marker.

## 13.5 Conclusion

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The aim of this chapter was to give an overview of singulative systems. In many languages, the plural is morphologically marked while the singular is unmarked, but in languages where the singulative is found, this is the reverse: for a subset of nouns, the singular is marked morphologically and the input to the singulative operation is a bare form that refers to sums. We reviewed existing formal accounts of the singulative, contrasting approaches that treat the singulative as inflectional with those that treat it as derivational. We saw that the singulative, although understudied, is a productive and efficient way of creating individuals in a given class of languages and, based on Arabic data, that its pluralized version is probably a higher kind of plural in the nominal structure. We focused on Arabic and many observations on the singulative were based on that language and its dialects. It is probably the case that many of our observations for Arabic do not translate to other languages with singulative morphology and that the singulative operation varies cross-linguistically. However, it seems that the basic property attached to singulative systems is that a suffix denoting the singular is attached to a base noun that denotes a collective or a mass term.

## Notes

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- 1 According to a number of authors (e.g. Greenberg, 1972), the term ‘singulative’ was first employed by Johann Caspar Zeuss (1806–56) in his *Grammatica Celtica* (1853: 299) in relation to the Brittonic branch of Celtic. In Arabic, the term *ism waḥda* (*nomen unitatis* or noun of unity) is traditionally used.
- 2 There is evidence from reconstruction studies (Hasselbach, 2014a,b) that *-a(t)* was originally not associated with feminine gender. The original function of the suffix was to mark derivatives of adjectives, specifically abstract nouns, and other usages of *-a(t)* derived from this basic function, including feminine gender (Proto-Arabic did not appear to have grammatical gender marking).
- 3 Count nouns can also be made mass via David Lewis’s Universal Grinder, as in *there was dog all over the road* (Pelletier, 1979). In certain languages, as Cheng et al. (2008) show for Mandarin, the Universal Grinder is not available.
- 4 This is an inverse/polar system of sorts (on morphological reversals, see Baerman, 2007; Harbour, 2011, 2014).
- 5 In Eastern and Southern Nilotic languages, the singulative forms are morphologically different from those in Western Nilotic languages (and from each other).
- 6 Note that in Arabic, collectives can also be pluralized directly, yielding a masculine plural of abundance (e.g. *samak* ‘fish’ → *asmak* ‘a lot of fish’).
- 7 *-at* is sometimes pronounced *-et* in Tunisian Arabic. This is phonologically conditioned and has no incidence on the meaning.
- 8 In other frameworks, NumP is used—DivP may be replaced by NumP in our summary of Borer’s (2005) ideas, since nothing hinges on this matter.
- 9 Technically, the Distributed Morphology framework makes no distinction between inflection and derivation, and between syntactic and lexical processes. However, there are lower (first merge) and higher (second merge) operations. On Kramer’s (2012) view, the singulative is a lower operation.
- 10 It is not clear at all how this adjunction process is constrained and allowed/independently motivated in the first place.
- 11 Our assumption is that productive morphology is syntactic, as in Distributed Morphology (Halle and Marantz, 1993).
- 12 Sound and broken plurals are not associated with the feature [+paucal] (although the picture is more complicated, since nouns can often have two plurals, i.e. a broken plural and a sound plural, in competition, one being paucal, the other not (see Dali, forthcoming, for details)).