

Bare plurals in article-less languages as weak definites*

Tamari Berulava
Massachusetts Institute of Technology

Clemens Mayr
Göttingen University

Abstract Bare plural arguments (BPs) in article-less languages (ALs) occurring in episodic contexts have received unambiguously existential analyses and ones ambiguous between definite and narrow-scope existential interpretations. Based on novel data from six ALs we propose a third option, building on suggestions by Dayal (2013); Modarresi & Krifka (2021) and Mirrazi (2021): we argue that at least in these languages BPs receive definite interpretations via a weak definite operator. BPs are shown to be fully parallel to English definite plurals in their ability to occur in so-called non-maximal contexts. This perspective aligns with Heim (1982)’s and Schwarz (2009)’s distinction between the two dimensions of definiteness – familiarity and maximality. We argue that the latter is a defining feature of BPs.

Keywords: bare plurals, article-less languages, (non)-maximality, weak definites

1 Status quo: Argument BPs in ALs

Bare Plural arguments (BPs) in article-less languages (ALs) like Farsi, Hindi, Mandarin, Russian, Teotitlán del Valle Zapotec, and Turkish allow for various interpretations (Chierchia 1998; Mirrazi 2021; Dayal 2004, 2013; Deal & Nee 2018; Borik 2016; Bronnikov 2006; Saĝ 2019 a.o.). Specifically, in episodic contexts, BPs are acceptable in scenarios that license definite (1) and indefinite plurals (2) in English, as illustrated here with Georgian¹ and Russian:

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¹ Readers might find it relevant to know that BPs in Georgian give rise to species-oriented readings when they appear in the argument position of a kind-level predicate, and to generic readings with object-level predicates:

- | | | |
|------|---|-----------------|
| (i) | dinozavr-eb-i 65 milioni clis cin gadašendnen.
dinosaur-PL-NOM 65 million year ago became-extinct.PST
'Dinosaurs became extinct 65 million years ago.' | <i>Georgian</i> |
| (ii) | spielo-eb-i balaxs čamen.
elephant-PL-NOM grass eat.PRS
'Elephants eat grass.' | <i>Georgian</i> |

- (1) DEFINITE SCENARIO: *Ann has three dogs. She hears all her three dogs barking outside and says:*
- | | | | |
|--------------------------|----------|-----------------------------|---------|
| a. The dogs are barking. | ✓ | b. (Some) dogs are barking. | ✗ |
| c. ჯაღლ-ებ-ი ჰეპ'ენ. | ✓ | d. собак-и лают. | ✓ |
| dog-PL-NOM bark.PRS | Georgian | dog-PL.NOM bark.PRS | Russian |
- (2) INDEFINITE SCENARIO: *Checking into a hotel, Ann hears barking and says:*
- | | | | |
|--------------------------|----------|-----------------------------|---------|
| a. The dogs are barking. | ✗ | b. (Some) dogs are barking. | ✓ |
| c. ჯაღლ-ებ-ი ჰეპ'ენ. | ✓ | d. собак-и лают. | ✓ |
| dog-PL-NOM bark.PRS | Georgian | dog-PL.NOM bark.PRS | Russian |

This pattern is compatible with at least three analytical possibilities that have been explored in the literature: (i) BPs refer to kinds, and in episodic contexts they can receive a narrow-scope existential or a definite interpretation (Chierchia 1998; Dayal 2004, 2013; Deal & Nee 2018; Sağ 2019); (ii) BPs are definites (Dayal 2013; Mirrazi 2021; Modarresi & Krifka 2021), and (iii) BPs are ambiguous between kind terms and indefinites (Krifka & Gerstner-Link 1993; Diesing 1994), i.e., in episodic contexts such as (1-2), they always get interpreted existentially. Notice that in episodic contexts, the speakers of ALs could, in principle, get by with existential interpretations for BPs as there is no competition between a stronger and a weaker alternative due to the absence of definite articles (Heim 2011). Such an existential analysis would have to be complemented with an additional ingredient to account for embedding under negation, as demonstrated by the following Georgian example:

- (3) ჯაღლ-ებ-ი არ ჰეპ'ენ.
 dog-PL-NOM not bark.PRS
 'There are no dogs barking.'
not available: 'There are dogs that are not barking.'

The inferences that BPs deliver under negation could be explained by either of the following options. On an existential analysis, on the one hand, one could require a narrow-scope interpretation (e.g. via Chierchia's (1998) Derived Kind Predication rule). On an analysis in terms of definiteness, on the other hand, the homogeneity property associated with definite plurals could be the culprit.

In what follows, we explore the commonalities that BPs share with English definite descriptions to demonstrate that BPs align more closely with English definite plurals rather than with indefinite plurals. In particular, BPs in six ALs are shown to fully parallel definite plurals regarding their ability to occur in non-maximal contexts. We show that a semantics for BPs in terms of weak definiteness straightforwardly accounts for this when coupled with homogeneity. Moreover, we show that this view can be easily extended to data more commonly considered in the literature on BPs if domain restriction and presupposition accommodation are taken into account.

Sentences with a definite plural and a distributive verbal predicate such as in (4a) appear to have truth-conditions equivalent to those of the corresponding universal sentence in (4b), i.e., the sentence where *the NP-pl* is replaced by *every NP-sg*.

- In the following we adopt [Link’s \(1983\)](#) view of the semantics of plural NPs coupled with [Sharvy’s \(1980\)](#) analysis for definite descriptions in terms of maximality.² Accordingly, (4a) has an LF similar to (5a), *the doors* denotes the maximal door plurality, i.e., it denotes a plural individual (5b). The distribution down to atomic doors is contributed by the distributive operator *DIST* in (5c). The truth-conditions thus amount to (5d). We call this the maximal interpretation of definite plurals.

- ## 2.2 Non-maximal interpretations of definite plurals

Definite plurals do, however, not always receive maximal interpretations. They have been noted to be felicitous in contexts where exceptions can be tolerated (Lasnik 1999; Malamud 2012; Križ 2016; Križ & Spector 2021; Bar-Lev 2021). Take the following scenario adapted from Krifka (1996) as an illustration: although not every door was open, (6a) is still judged to be acceptable, i.e., as true in some sense:³

- (6) *A bank robbery is to take place. There are four doors, each of which leads to the safe. Last night, only one door was locked. John asks Bill—the burglar—if he could reach the safe. Bill says:*
- a. Yes, the doors were open. ✓
- b. Yes, some (of the) doors were open. ✓

3 Notice that (4b) is not true in this scenario. This means that the truth-conditions of (4a) and (4b) should not be seen as being fully equivalent.

Definite plurals do not allow exceptions in every context. In scenarios where maximality is enforced, non-maximal interpretations are blocked. To illustrate, (6a) would no longer be acceptable in a slightly modified scenario where the context is such that it requires every door to be open in order to get to the safe:

- (7) *A bank robbery is to take place. There are four doors that must be passed to reach the safe. Last night, one door was locked. John asks Bill—the burglar—if he could reach the safe. Bill says:*
- a. No, but the doors were open. ✗
 - b. No, but some (of the) doors were open. ✓

Definite plurals allow a non-maximal interpretation only if it resolves the question under discussion (QUD) in the same way as the maximal interpretation would (Krifka 1996; Lasersohn 1999; Malamud 2012; Križ 2016; Bar-Lev 2021; Križ & Spector 2021). The QUD in (6) is existential – ‘*Was one of the doors open?*’ – as one door is enough to get to the safe. Both the maximal and the non-maximal interpretations of (6a) resolve that QUD positively. In (7), the QUD is universal – ‘*Were all of the doors open?*’ – all doors must be passed to get to the safe. The non-maximal interpretation of (7a) does not resolve that QUD, whereas the maximal one resolves it positively. Because of this difference the non-maximal interpretation is only available in (6a). There are several concrete implementations of this idea we could adopt (e.g., Bar-Lev 2021; Križ 2016; Križ & Spector 2021). Consider the one by Križ (2016). According to this view, (4a) actually receives trivalent truth-conditions along the lines of (8). With this, (6a) and (7a) semantically receive the third value rather than falsity in their respective contexts, i.e., they are semantically neither true nor false.⁴

$$(8) \quad \llbracket (4a) \rrbracket^w = \begin{cases} 1 & \text{if every atom in the maximal door plurality in } w \text{ was open in } w \\ 0 & \text{if no atom in the maximal door plurality in } w \text{ was open in } w \\ \# & \text{if some but not every atom in the maximal door plurality in } w \\ & \text{was open in } w \end{cases}$$

only defined if there is a door plurality

Whenever a sentence with a definite plural in it receives the third value, there’s still a chance for it to be pragmatically *true enough*. In particular, this situation obtains

⁴ For concreteness, assume that it is *DIST* that contributes trivalence. Križ (2015) argues against this view, but cf. Bar-Lev (2024) for a competing view. For our purposes this is not crucial.

$$(i) \quad \llbracket \text{DIST} \rrbracket = \lambda f_{et}. \lambda X_e. \begin{cases} 1 & \text{if } \forall x \preceq X : f(x) = 1 \\ 0 & \text{if } \forall x \preceq X : f(x) = 0 \\ \# & \text{if } \exists x \preceq X : f(x) = 1 \wedge \exists x \preceq X : f(x) = 0 \end{cases}$$

when the truth-condition and the gap-condition resolve the QUD in the same way.⁵

- (9) **True enough:** If $\llbracket \phi \rrbracket^w = \#$ but there is a w' such that $\llbracket \phi \rrbracket^{w'} = 1$ and there is a cell c in the partition defined by the QUD such that $w' \in c$ and $w \in c$, w and w' are indistinguishable with respect to the QUD. In that case $\llbracket \phi \rrbracket^w$ is true enough (pragmatically true).

When John asks Bill - the robber - in (6) whether he could reach the safe, he poses an existential QUD, which divides the logical space into two cells. The first cell is the proposition that positively resolves the QUD, i.e., the union of the worlds where all the doors were open and the worlds where only some doors were open. The second cell is the proposition that negatively resolves the QUD, i.e. the set of worlds where none of the doors were open. Given this any world in which (4a) is semantically true is indistinguishable from any world in the context of (6), i.e., worlds in which (4a) is semantically the third value: in both types of worlds the existential QUD is resolved positively. Thus (6a) is true enough in (6).

The partition of the logical space is different in (7). Now, in order to get to the safe one needs to go through all the four doors. When John asks Bill whether he could reach the safe, he therefore poses a universal QUD, which divides the logical space into the following two cells: the positively resolving proposition consisting of those worlds where all the doors were open, and the negatively resolving one, which is the union of the worlds where only some doors were open and the worlds where none were open. In contrast to the preceding case, worlds in which (4a) is semantically true are distinguishable from worlds in the context of (7): only the former positively resolve the QUD. Consequently, (7a) is not true enough and the non-maximal interpretation is not licensed in (7).

2.3 A prediction for BPs in ALs

Note now that while the acceptability of the sentences embedding definite plurals depends on the QUD, the ones with indefinite plurals in (6b) and (7b) are acceptable regardless of whether the QUD is universal or existential. This is as expected. The sentences with indefinite plurals are semantically true as soon as some doors are open. This is the case in both scenarios.

⁵ Formally, a QUD is a partition of the logical space, defined as in (ia), and resolving a QUD is defined based on this as in (ib).

- (i) a. A QUD is a partition P of the logical space W such that for each $w \in W$ there is a cell $c \in P$ such that $w \in c$ and there is no $c' \neq c$ such that $w \in c'$.
b. p and q resolve P in the same way iff there is a cell $c \in P$ such that $p \subseteq c$ and $q \subseteq c$.

Consider now what this means for BPs in ALs. The observation just made leads us to anticipate that as soon as BPs can be interpreted existentially, BP sentences of the form *door-pl were open* in these languages should be acceptable in both maximal and non-maximal scenarios. If a definite interpretation were obligatory, however, we should find the same pattern as with English definite plurals. In the following section, we present novel data testing this prediction.

3 Novel Data

Remember once more that a maximal context is one giving rise to a universal QUD. A non-maximal context comes instead with an existential QUD (Križ 2016; Križ & Spector 2021). The QUD in (6) repeated in (10) is existential. Definite plurals can therefore lend themselves to non-maximal interpretations. We now observe that the sentences in the six ALs under investigation in (10a) to (10f) are also acceptable here. These sentences crucially have BPs where (6a) has the definite plural *the doors*. The acceptability of these sentences is expected on all accounts of BPs. Even if we took BPs to only allow for existential interpretations the sentences below should be fine in (10) given that even the English (6b) with an indefinite plural is fine here.

- (10) **QUD: Was one of the doors open?** *A bank robbery is to take place. There are four doors, each of which leads to the safe. Last night, only one door was locked. John asks Bill—the burglar—if he could reach the safe. Bill says:*

- a. ki, kar-eb-i gia iqo. ✓
yes, door-PL-NOM open be.PST *Georgian*
- b. da, dver-i byli otkryty. ✓
yes, door-PL.NOM be.PST.PL open *Russian*
- c. evet kapı-lar açık-tı. ✓
yes, door-PL.NOM open-ASP *Turkish*
- d. haan, daravaaje khule the. ✓
yes, doors open were *Hindi*
- e. Shi de, men zhiqian kai-zhe. ✓
yes, door earlier open-ASP *Mandarin*
- f. Are, Dær-ha baz bud-æn ✓
yes, door-PL open be.PST-3PL *Farsi*

(7) is a maximality-imposing context since the QUD that it gives rise to is universal. Recall that in such scenarios English indefinite plurals remain felicitous, while definite plurals become unacceptable since a non-maximal interpretation is no longer licensed. The infelicity of the sentences in (11a) to (11f) shows that BPs in our

six ALs pattern with English definite rather than indefinite plurals. BPs in these languages do not seem to have access to existential interpretations.

- (11) **QUD: Were all of the doors open?** *A bank robbery is to take place. There are four doors that must be passed to reach the safe. Last night, one door was locked. John asks Bill—the burglar—if he could reach the safe. Bill says:*

- a. ara, magram kar-eb-i ğia iqo. ✗
no, but door-PL-NOM open be.PST *Georgian*
- b. net, no dver-i byli otkryty. ✗
no, but door-PL.NOM be.PST.PL open *Russian*
- c. Hayır, ama kapı-lar açık-tı. ✗
no, but door-PL.NOM open-ASP *Turkish*
- d. nahin, lekin daravaaje khule the. ✗
no, but doors open were *Hindi*
- e. Bù, dānshì men zhiqian kai-zhe. ✗
no, but door earlier open-ASP *Mandarin*
- f. Næ, æma Dær-ha baz bud-æn ✗
no, but door-PL open be.PST-3PL *Farsi*
Intended: 'No, but some doors were open.'

All our informants agree that hearing the sentences in (11a) to (11f) in the maximal scenario would lead them to infer that the reason Bill couldn't gain access to the safe has nothing to do with the doors – all four of them were open; Instead, another factor might have come into play, such as the alarm going off or the guard being extremely cautious, preventing Bill from entering the safe.

The unacceptability of the sentences in (12a) to (12g) in the scenario in (12) borrowed from Lasersohn (1999) is yet another illustration that BPs in the six ALs do not always tolerate exceptions. In this situation, if one utters any of these sentences, each and every subject must be asleep. Again, if an existential analysis for BPs were available, the sentences should be fine because in the scenario some participants in the experiment are asleep.

- (12) **QUD: Are all the subjects asleep?** *An experiment on the nature of sleep is conducted. Several people serving as experimental subjects are in the lab, lying on beds, dozing off one by one. For the experiment to proceed, all of them must be completely asleep; otherwise the experiment is ruined. One participant is still awake. A student assistant informs the lab manager:*

- a. The subjects are asleep. ✗
- b. (ek'sperimentis) monacile-eb-s sžinavt'. ✗
(experiment) participant-PL-DAT sleep.PRS *Georgian*

- c. učastnik-i (eksperiment-a) spjat. ✗
 participant-PL-NOM (experimnt-GEN) sleep. *Russian*
- d. denek-ler uyuyor. ✗
 subject-PL.NOM sleep *Turkish*
- e. pratibhaagi so gaye haiN. ✗
 participant(s) sleep go.PFV.PL 3.PL.PRS *Hindi*
- f. (Shíyàn) duìxiàng-men shuìzháo-le. ✗
 (experiment) subject-PL sleep-PST *Mandarin*
- g. suzhe-ha xab-an. ✗
 subject-PL sleep-PRS.3PL. *Farsi*
Intended: 'Some subjects are asleep.'

All of the examples considered so far involve BPs in subject position. It has been common in the literature to distinguish subject and object BP arguments when giving an account of their (in)definiteness status. More concretely, there are suggestions that subject or external argument BPs are interpreted as definites while objects or internal argument BPs are free to receive existential interpretations: Dayal (2004) does not include object BPs in her analysis since she assumes that their seemingly existential readings might result from (pseudo-)incorporation. Trinh (2019) argues that while Mandarin bare nominals in subject position always get definite interpretations, in object position, they can get existential interpretations too. Moreover the critical ingredient of the analysis proposed by Modarresi & Krifka (2021) for Farsi is to differentiate internal and external verbal arguments by assuming mandatory existential closure over the vP.

We should consequently expect some asymmetry between BPs in subject and object position with respect to maximality. The data, however, indicate that BPs in object position show the same pattern as those in subject position. In non-maximal scenarios sentences with object BPs are acceptable:

- (13) **QUD: Did Ann read at least 7 books?** *There are 10 books on the reading list. In order to pass one needs to read 7 out of 10 books. Ann read 8. John is asking Mary whether Ann passed and she replies:*

- a. Ana-m cign-eb-i caikit'xa. ✓
 Ana-ERG book-PL-NOM read.AOR *Georgian*
- b. Ana pročitala knig-i. ✓
 Ana read.PFV book-PL *Russian*
- c. Ann kitap-lar-ı okudu. ✓
 Ann book-PL-ACC read *Turkish*

- d. Ann ne kitaab-eN padh liN haiN. ✓
Ann ne book-PL read take.PFV.PL 3PL *Hindi*
- e. Anna ketab-a ro khund ✓
Ann book-PL RA read.3.SG.PST *Farsi*
- f. Ana dú-le shū. ✓
Ann read-ASP book *Mandarin*
Compatible translations: 'Mary read the books.'; 'Mary read some books.'

In maximality-enforcing scenario, however, the very same utterances become unacceptable or misleading. This means that despite the syntactic position of BPs, they are forced to get maximal interpretations if the QUD is universal:

- (14) **QUD: Did Ann read all of the books?** *There are 10 books on the reading list. In order to pass one needs to read 10 out of 10 books. Ann read 8. John is asking Mary whether Ann passed and she replies:*
- a. Ana-m cign-eb-i caikit'xa. ✗
Ana-ERG book-PL-NOM read.AOR *Georgian*
- b. Ana pročitala knig-i. ✗
Ana read.PFV book-PL *Russian*
- c. Ann kitap-lar-ı okudu. ✗
Ann book-PL-ACC read *Turkish*
- d. Ann ne kitaab-eN padh liN haiN. ✗
Ann ne book-PL read take.PFV.PL 3PL *Hindi*
- e. Anna ketab-a ro khund ✗
Ann book-PL RA read.3.SG.PST *Farsi*
- f. Ana dú-le shū. ✗
Ann read-ASP book *Mandarin*
Intended: 'Ann read some (of the) books.'

The data presented above show that BPs in ALs behave similarly to English definite plurals, allowing non-maximal interpretations only when the QUD is non-universal. The way to make sense of this is to assume that BPs do not have access to existential interpretations at all.

4 Proposal

4.1 A weak definite operator with contextual restriction

In order to account for the data presented in the previous section we assume that argument BPs in the six ALs looked at undergo covert type-shifting via a weak

definite *THE*. While not equivalent to the approaches outlined by Modarresi & Krifka (2021) and Mirrazi (2021) regarding Farsi and by Dayal (2013) for Hindi, the following treatment can be seen as a generalization to all BP arguments and extension of their suggestions to all ALs under consideration.

The entry for *THE* is given in (15), similar to the treatment of the definite article in (Heim & Kratzer 1998). Here $g(C)$ is a domain restriction, X is an atom or a plurality, and ι requires X to be the maximal entity in $g(C)$ making the nominal predicate f true. ι is defined as in (16). Taken together this is only defined if there is an individual in the restriction $g(C)$ making the nominal predicate f true. If that is the case, the function returns the maximal individual in $g(C)$ making f true.⁶

$$(15) \quad \llbracket \text{THE}_C \rrbracket^g = \lambda f_{et} : \exists X \in g(C) : f(X) = 1 \cdot \iota X \in g(C) : f(X) = 1$$

$$(16) \quad \iota X \in C : f_{et}(X_e) = 1 := \text{the individual } X : C(X) = f(X) = 1 \wedge \forall Y [C(Y) = f(Y) = 1 \rightarrow Y \preceq X]$$

Applying (15) to the BPs in the sentences in (10a) to (11f) yields the maximal door plurality in the domain C . Together with *DIST* we get the trivalent truth-conditions for the full sentence in (17). These are parallel to those for the English (4a) with a definite plural stated in (8), modulo the domain restriction:

$$(17) \quad \llbracket [\llbracket \text{THE}_C \text{ door-pl} \rrbracket \text{ DIST open}] \rrbracket^{w,g} \\ = \begin{cases} 1 & \text{if every atom in the maximal door plurality in } w \text{ in } g(C) \text{ is open in } w \\ 0 & \text{if no atom in the maximal door plurality in } w \text{ in } g(C) \text{ is open in } w \\ \# & \text{if some but not every atom in the maximal door plurality in } w \text{ in } g(C) \\ & \text{is open in } w \end{cases} \\ \text{only defined if there is a door plurality in } w \text{ in } g(C)$$

These semantic truth-conditions together with the pragmatic notion of *true enough* discussed in section 2.2 immediately account for the empirical patterns seen in section 3. Whenever the semantic truth- and gap-conditions in (17) resolve the contextual QUD in the same way, a non-maximal interpretation is possible. That is, the explanation of the data in section 3 is fully parallel to that given in section 2.2 for the judgments of the English sentence with a definite plural in (4a) in the non-maximal and maximal scenarios.

4.2 Accounting for perceived indefiniteness

As just said, our conclusion that BPs in the six ALs considered are best analyzed as definite plurals straightforwardly makes sense of the data in section (3). Can

⁶ As is standard, distributivity regarding the nominal predicate f is assumed to be provided by f itself.

this treatment be extended to data traditionally considered in the literature on BPs? Consider once more the contrasting scenarios (1) and (2) that were outlined in section 1 and are repeated here as (18) and (19). Crucially, the Georgian and Russian sentences with BPs are acceptable in both scenarios. Moreover, when uttered in (19) an intuition that the BP receives an existential interpretation is often reported.

(18) DEFINITE SCENARIO: *Ann has three dogs. She hears all her three dogs barking outside and says:*

- | | | | | | | | |
|----|------------|----------|----------|----|------------|----------|---------|
| a. | žaɣl-eb-i | kep'en. | ✓ | b. | sobak-i | lajut. | ✓ |
| | dog-PL-NOM | bark.PRS | Georgian | | dog-PL.NOM | bark.PRS | Russian |

(19) INDEFINITE SCENARIO: *Checking into a hotel, Ann hears barking and says:*

- | | | | | | | | |
|----|------------|----------|----------|----|------------|----------|---------|
| a. | žaɣl-eb-i | kep'en. | ✓ | b. | sobak-i | lajut. | ✓ |
| | dog-PL-NOM | bark.PRS | Georgian | | dog-PL.NOM | bark.PRS | Russian |

The role of domain C is crucial to account for the acceptability of the BP *dog-pl* in both scenarios. In (18) $g(C)$ can be assumed to denote a set of salient entities, as in (20a). Given this, the sentences in (18a) and (18b) will be semantically true iff every atom of the maximal salient dog plurality is barking, as in (20b). In a scenario like (18) the most salient dogs might be Ann's dogs, which means that the truth-condition will effectively say that each of Ann's dogs is barking. This is straightforwardly true in (18).⁷

- (20) a. $g(C) = [\lambda X.X \text{ is a salient entity}]$
 b. $\llbracket (18a)/(18b) \rrbracket^{w,g}$

$$= \begin{cases} 1 & \text{if every atom in the salient maximal dog plurality in } w \text{ is barking in } w \\ 0 & \text{if no atom in the salient maximal dog plurality in } w \text{ is barking in } w \\ \# & \text{if some but not every atom in the salient maximal dog plurality in } w \\ & \text{is barking in } w \end{cases}$$

 only defined if there is a salient dog plurality in w

In (19) we might assume that $g(C)$ denotes a set of individuals in the vicinity, as in (21a). The resulting truth-conditions look as in (21b). While (19) is compatible with every dog in the in the near vicinity barking, it is also compatible with only some of them doing so. Therefore, the sentence will be either semantically true or receive the third value.

- (21) a. $g(C) = [\lambda X.X \text{ is in Ann's vicinity}]$

⁷ Of course, $g(C)$ could be even further restricted directly all the way down to Ann's dogs in this particular case.

$$\begin{aligned}
 & \text{b. } \llbracket (18a)/(18b) \rrbracket^{w,g} \\
 & = \begin{cases} 1 & \text{if every atom in the maximal dog plurality in Ann's vicinity in } w \text{ is} \\ & \text{barking in } w \\ 0 & \text{if no atom in the maximal dog plurality in Ann's vicinity in } w \text{ is} \\ & \text{barking in } w \\ \# & \text{if some but not every atom in the maximal dog plurality in Ann's} \\ & \text{vicinity in } w \text{ is barking in } w \\ \text{only defined if there is a dog plurality in Ann's vicinity } w \end{cases}
 \end{aligned}$$

Even if the sentence receives the third value, it can still be pragmatically true enough and thus felicitous in this context. Since the QUD is arguably existential, namely ‘*Is there barking?*’, the sentence ends up being true enough, i.e., assertable in this scenario. Therefore the intuition that BPs in ALs can have existential meanings can be explained by the combination of the domain restriction encoded in the semantics of the weak definite *THE* as well as the ability of definite plurals to acquire non-maximal readings.⁸

4.3 Negated BPs without negation of existence

It has been noted in the literature (Bar-Lev 2021; Augurzky, Bonnet, Breheny, Ebert, Romoli, Steinbach, Mayr & Sudo 2023 a.o.) that there is an asymmetry regarding the licensing of non-maximal interpretations between positive and negative sentences, which is not captured by the approach adopted. According to Križ’s (2016) framework, one should be able to utter negative sentences embedding definite plurals even when the verbal predicate is false for only some atomic parts of the maximal plurality in the denotation of the nominal predicate, as long as the utterance resolves the QUD in the same way as it would if the sentence were semantically true. To put it differently, while a sentence like *The dogs are barking* can get quasi-existential interpretations, i.e. ‘some but not all the dogs are barking’, its negated counterpart – *The dogs are not barking* – does not seem to yield parallel weak interpretations.

It turns out that this asymmetry is also found with BPs in the six ALs considered. To illustrate the asymmetry, let’s consider the following two scenarios. In (22), where Bob means to communicate that none of the dogs are barking, the negative English

⁸ One might contemplate an alternative. Assuming that the contextual restriction restricts the domain of quantification to salient individuals also in the case of (19), one might argue that the salient dogs are those that are barking, as these are salient to Ann. On this account one might even say that really all of the relevant dogs are barking, i.e., semantic truth would follow. Since moreover the extension of the set of salient dogs is not known, one might say that the feeling of indefiniteness results from this. A problem for this approach, however, is the fact that the resulting truth-condition would effectively be trivial as they would say that every dog that is barking is barking.

sentence (22a) including a definite plural is felicitous. The Georgian variant with a BP in (22b) is equally acceptable. This is as expected given what has been said so far. With negation reversing the truth- and falsity-conditions in (21b), the sentences are semantically true here.

(22) *Ann says some but not all the dogs are barking. Bob seeing that none of the dogs is barking says:*

- a. The dogs aren't barking. ✓
- b. *žaḡl-eb-i ar kep'en.* ✓
dog-PL-NOM not bark *Georgian*

The scenario in (23) gets a little bit trickier: now Bob means to communicate that some but not all the dogs are barking. This conforms to the gap-condition in (21b). Note that crucially in such situations, even if the proposition is not semantically true, it could still be expected to count as pragmatically true enough. Given that the QUD in (23) is arguably universal, i.e., *Are all the dogs barking?*, the truth-condition saying that none of the dogs are barking and the gap-condition saying that only some are barking resolve the QUD in the same way, namely negatively. The infelicity of (23a) and (23b) is therefore not predicted.⁹

(23) *Ann says all the dogs outside are barking. Bob seeing four dogs barking and three not barking says:*

- a. The dogs aren't barking. ✗
- b. *žaḡl-eb-i ar kep'en.* ✗
dog-PL-NOM not bark *Georgian*

There are at least two options to account for the absence of non-maximal readings in negative sentences. One way to go is to maintain the trivalent framework and assume that negation blocks the projection of the truth-value gap. That is, we might stipulate that negation looks as follows:

$$(24) \quad \llbracket \text{not} \rrbracket = \lambda p_t. \begin{cases} 1 & \text{if } p = 0 \\ 0 & \text{if } p \neq 0 \end{cases}$$

In contrast to that, one could adopt the implicature account of definite plurals proposed by Bar-Lev (2021). According to this bivalent account the maximality

⁹ Note that in accounts where BPs can receive either an analysis as definite plurals or as narrow scope existentials, the asymmetry is predicted because wide scope existential interpretations are blocked by assumption. The present view in terms of definiteness and trivalence offers a fresh perspective on this long debated issue, as it draws a hitherto unnoticed parallel between negated definite plurals in English and negated BPs in ALs.

inferences characteristic of positive sentences embedding definite plurals are the result of strengthening the literal weak meaning via *EXH*. Crucially, even on the implicature account, the definite plurals are treated as denoting the maximal relevant entity. That is, *the dogs* would refer to the plurality consisting of all the dogs. On our present view, the corresponding BP would too. According to Bar-Lev, it is the pluralization operator $\exists\text{-PL}$, adopted to our needs as in (25), – essentially an existential version of *DIST* – that introduces existential quantification. It first takes domain C as an argument, then a verbal predicate f and finally an individual X . From this it yields true if and only if there is an atomic part x of X in C such that x makes f true.

$$(25) \quad \llbracket \exists\text{-PL} \rrbracket = \lambda C_{et}. \lambda f_{et}. \lambda X_e. \lambda w_s. \exists x \in C : x \preceq X \wedge f(x) = 1$$

The resulting literal meaning of the positive sentence *The dogs are barking* is existential, amounting to the proposition that some dogs are barking. Feeding this proposition to *EXH* the stronger universal, i.e., the familiar maximal interpretation is derived. For this alternatives propositions varying in the denotation of the definite plural – namely, parts of the maximal individual – are excluded. Non-maximal interpretations come about by pruning of alternatives. This pruning is subject to the QUD along the lines considered above. Crucially though, in the negative case negation applies to the literal existential interpretation just sketched and derives the strongest possible meaning directly. There is no need to invoke *EXH* for strengthening. Since non-maximal interpretations are dependent on pruning of alternatives and therefore on *EXH*, non-maximal interpretations for negative sentences should not be found. This can be straightforwardly extended to BPs. (23b) on our view is a definite plural. Because of negation it will not involve *EXH* and non-maximality becomes impossible.

In the following we will work with the first option for expository purposes.

4.4 Seeming support for narrow scope existential interpretations

4.4.1 Apparent negation of existence and strong *the*

Consider the negated Georgian sentence from above, repeated in (26b), once more and note that while it might not be fully natural in scenario (26) it is still acceptable there. In this scenario its existential presupposition is, however, not satisfied, as there might not be any salient dogs whatsoever for all that Ann knows. Notice also that the English sentence with the definite plural in (26a), in contrast to (26b), is not acceptable here, presumably for exactly the reason that its existential presupposition is not satisfied. Taken at face value, this contrast might be seen as evidence for the view that existential interpretations of BPs in ALs are possible after all. On such

a view the facts immediately follow: negating the existential reading of the BP in (26b) would make the meaning compatible with (26), i.e., with the possibility that there are no salient dogs to begin with. For the English case this analytical option would not be available given the explicit definite plural.

(26) *Checking into a hotel, Ann is relieved to find that there is no barking and says:*

- a. The dogs aren't barking. ✗
- b. žaḡl-eb-i ar kep'en. ?✓
dog-PL-NOM not bark Georgian

This move would, however, also allow for existential interpretations in the case of the crucial data considered in section 3 above and would leave the patterns observed there unaccounted for. We therefore propose that the existential presupposition is locally accommodated under negation in (26b) as in the LF in (27a) via the help of the operator in (27b) (Beaver & Krahmer 2001; Fox 2013). Here we keep presuppositions and the third-value contributed by homogeneity apart. That is, presuppositions are treated in terms of definedness conditions as in (Heim & Kratzer 1998) and homogeneity is treated as a truth-value gap as in (Križ 2016). Now, A maps an undefined truth-value to falsity, thereby blocking projection of the presupposition. Note that with this the falsity condition of the X -constituent below negation in (27a) obtains if either there are no dogs or there are and not all of them are barking, as in (27c). The negation of this therefore yields truth in scenario (26) in which there either are no dogs or not all of them are barking, as demonstrated by (27d).¹⁰

(27) a. $[_Y \text{ not } [_X A [\text{THE}_C \text{ dog-pl DIST is barking }]]]$

$$b. \llbracket A \rrbracket = \lambda p_t. \begin{cases} 1 & \text{if } p = 1 \\ 0 & \text{if } p = \text{undefined or } p = 0 \\ \# & \text{if } p = \text{defined and } p = \# \end{cases}$$

$$c. \llbracket X \rrbracket^{g,w} = \begin{cases} 1 & \text{if there is a salient dog plurality in } w \text{ and} \\ & \text{every atom in it is barking in } w \\ 0 & \text{if there is no salient dog plurality in } w \text{ or there is and} \\ & \text{no atom in it is barking in } w \\ \# & \text{if there is a salient dog plurality in } w \text{ and} \\ & \text{some but not every atom in it is barking in } w \end{cases}$$

¹⁰ Notice two things: First A lets the presupposition be accommodated in the third value as well. Since the case of undefinedness is covered by the falsity condition, it is hard to see how this could be different. Second, adopting the solution from above where negation blocks projection of the third value, the Y -constituent does not have a third-value.

$$d. \llbracket Y \rrbracket^{g,w} = \begin{cases} 1 & \text{if there is no salient dog plurality in } w \text{ or there is and} \\ & \text{no atom in it is barking in } w \\ 0 & \text{if there is a salient dog plurality in } w \text{ and} \\ & \text{some atom in it is barking in } w \end{cases}$$

Assuming that local accommodation is a costly operation – as standardly held – this account is in a position to address the question why (26b) is not perfect in scenario (26). The question why the English (26a) with a definite plural is not acceptable here is still open, though. Why is local accommodation seemingly blocked here?

We conjecture that English *the* unlike *THE* requires strong familiarity (Heim 1982; Schwarz 2009). Following Heim (2011), we implement this through an index i on *the* interpreted via the assignment function as a pronoun, as in (28). The values of pronouns generally have to be contextually salient, i.e., familiar. the_i is only defined if the value of i makes the nominal predicate true. When defined it returns that value.

$$(28) \quad \llbracket the_i \rrbracket^g = \lambda f_{et} : f(g(i)) = 1 \cdot g(i)$$

With *the* thus defined, (26a) receives the truth-conditions in (29). For these to yield truth in the scenario in (26), there must be dogs. This conforms to our intuitions regarding the sentence.

$$(29) \quad \begin{aligned} & \llbracket [\text{not } [\text{the}_2 \text{ dog-pl }] \text{ DIST barking }]] \rrbracket^{w,g} \\ &= \begin{cases} 1 & \text{if no atom in } g(2) \text{ is barking in } w \\ 0 & \text{if some atom in } g(2) \text{ is barking in } w \end{cases} \\ & \quad \text{only defined if } g(2) \text{ is a dog plurality in } w \end{aligned}$$

If one were to locally accommodate under negation the definedness condition about the pronominal index, the truth-conditions would look as in (30). In order to return truth without there being dogs, the speaker must intend to convey that $g(2)$ is not a dog plurality. This does not make the sentence acceptable in the scenario either, however. For the sentence to be utterable and convey this meaning there must be some value for $g(2)$ furnished by the context. So if $g(2)$ indeed were not a dog plurality this information would have to be common ground and the sentence would not convey new information.

$$(30) \quad \begin{aligned} & \llbracket [\text{not } [\text{B } [\text{the}_2 \text{ dog-pl }] \text{ DIST barking }]]] \rrbracket^{w,g} \\ &= \begin{cases} 1 & \text{if } g(2) \text{ is not a dog plurality in } w \text{ or it is and no atom in } g(2) \text{ is barking in } w \\ 0 & \text{if } g(2) \text{ is a dog plurality in } w \text{ and some atom in } g(2) \text{ is barking in } w \end{cases} \end{aligned}$$

Recall briefly the issue of maximality and non-maximality discussed in section 2.2 and note that the empirical pattern observed there is compatible with the view

of *the* just sketched. We saw that with weak *THE* maximality is relative to the contextual restriction *C*. In the case of strong *the* something similar happens. Here maximality is relative to the contextually furnished value for *i*. Since homogeneity is not contributed by *the* but is either contributed by *DIST* or constitutes a general property of pluralities (see Haslinger 2024 and Bar-Lev 2021, 2024 for differing views), non-maximality is expected under the right conditions.

4.4.2 Opacity

Dayal (2004) suggests that the predicate in a BP when embedded under an attitude predicate like *think* can only receive an opaque construal. That is, it is claimed that it can only be evaluated relative to the attitude holder's doxastic alternatives and never relative to the matrix world of evaluation. Dayal takes this to support the idea that BPs can get existential interpretations and crucially only narrow scope ones.

This claim appears to rest on the assumption that transparent construals of embedded predicates only come about via scoping. Consider the non-maximal scenario in (31) now. The Georgian sentence with the BP embedded under *think* is acceptable here. The BP here is both interpreted non-maximally – John thinks Mary read eight of ten items – and transparently – John thinks she read articles whereas the speaker reports this as books as this is what is required to be read in the scenario. The latter means that *books* is evaluated in the matrix world of evaluation and not in John's doxastic alternatives.

- (31) *To pass one needs to read 7 of the 10 books from the reading list. John, however, thinks that one needs to read 7 articles. He likes Mary who is taking the course and would like her to pass. He is convinced that she read 8 articles. You ask why John is happy:*

Jons hgonia rom marim c'ign-eb-i	c'aikit'xa	✓
John thinks that Mary book-PL-NOM read		Georgian

'John thinks that Mary read the books.' $\rightsquigarrow$ John thinks that Mary passed.

This suffices to show that BPs can receive transparent construals, i.e., the argument for narrow scope existential interpretations does not go through.¹¹

¹¹ One could still maintain that BPs can only receive narrow scope existential interpretations given all this, though. It is independently known that transparent construals are not dependent on scoping (Fodor 1970; Bäuerle 1983 a.m.o.). All else being equal, a transparent interpretation of BPs would actually be expected to obtain even if it were true that only narrow scope existential interpretations are available for them.

4.4.3 Adverbial distribution

The salient interpretation of (32) is one that Dayal (2004) argues should be paraphrased by scoping the universal adverbial over a BP interpreted existentially. This way the places quantified over by the former distribute over dogs. This appears to be strong evidence for the availability of an existential interpretation.¹²

- (32) sag-(h)a alan hame-ja pars mikonan ✓
 dog-PL now every-place bark do.PROG.3PL. Farsi
 ‘At every place some dog is barking.’

Again, this at first blush seems incompatible with an analysis of BPs in terms of definite plurals. We, however, point to the relevance of data like (33) for this discussion. The definite plural together with the universal quantifier here can receive a cumulative analysis paraphrasable in the way indicated. There is debate about how these particular constructions can give rise to cumulative readings (see Schein 1993; Kratzer 2002; Haslinger & Schmitt 2018; Chatain 2021 a.o.). What is crucial for us is that existential quantification here is over atoms of the dog plurality. Thus this strategy could lie behind (32) too. If so, its full meaning would be better paraphrased as ‘every dog is barking in some place and in every place some dog is barking’.

- (33) The cooks opened every oyster.
 ‘Every cook opened an oyster and every oyster was opened by a cook.’

5 Conclusion

This paper provided evidence that BPs in six ALs are best analyzed as definite plurals. The evidence came from their non-acceptability in scenarios in which definite plurals cannot receive non-maximal interpretations. If BPs could be interpreted existentially, they should be acceptable there. Since they are not, we concluded that they are definite plurals. The particular analysis relied on weak definiteness in terms of an existential presupposition and an assertive component contributing maximality. Apparent existential interpretations were shown to be due to the homogeneity property of definite plurals and contextual restriction. Cases of BPs embedded under negation where existence seemingly is negated were analyzed as local accommodation of the existential presupposition. In this regard, we briefly conjectured that English *the*, in contrast to the definite operator in BPs, is strong in the sense that it relies on familiarity, which we analyzed as anaphoricity.

¹² Notice that it is not direct evidence for an obligatorily narrow scope existential interpretation given that the wide scope reading would also be incompatible with world knowledge.

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Tamari Berulava
Department of Linguistics and Philosophy
Massachusetts Institute of Technology
32 Vassar Street
Cambridge, MA 02139
berulava@mit.edu

Clemens Mayr
Department of English Philology
Georg-August-Universität Göttingen
Käte-Hamburger-Weg 3
37073 Göttingen
clemens.steiner-mayr1@uni-goettingen.de