(word count: 9.035)

The Semantics of DPs

Marcelo Ferreira Clara Nunes Correia

1. Introduction

This article discusses properties of definite and indefinite DPs (Determiner Phrases) in Portuguese related to their potential to refer to or quantify over entities belonging to a certain universe of discourse. We will limit our attention to DPs introduced by the definite article and a few indefinite determiners and followed by a noun phrase, leaving out other quantifier determiners, as well as personal pronouns. Our focus will be on the interaction between (in)definiteness and other semantic properties, emphasizing theoretically relevant facts and puzzles. The article is organized in three sections: we discuss DPs introduced by the definite article in section 2, DPs headed by indefinite determiners in section 3, and the so-called bare nominals (NP/DPs not preceded by any overt determiner) in section 4.

2. Definites

Portuguese definite article *o*, like its English counterpart *the*, combines with noun phrases (NPs) to form determiner phrases (DPs). From a pragmatic perspective, these definite DPs relate to the retrieval of information previously introduced, explicitly or implicitly, in the universe of discourse. Operating at the referential level, they convey a sense of familiarity. They contrast with indefinite articles, which are used to introduce new discourse referents, conveying a sense of novelty. (1), below, should be enough, to illustrate this general point:²

(1) A Maria comprou um gato. *O gato* é muito bonito. Maria bought a cat. The cat is very cute

Semantically, a definite DP can be taken to denote a contextually salient individual (or group of individuals) that belongs to the NP denotation. A singular definite DP, for instance, conveys that that there is only one such individual, and denotes this unique individual. More explicitly:

(2) A singular DP of the form [o/a NP-sg] denotes the unique contextually salient individual that belongs to the denotation of NP-sg, if there is one. If there is none, its denotation is undefined.

Thus, the DP *a presidente do Brasil em 2014* 'The president of Brazil in 2014' has a denotation, since there is a unique president of Brasil in 2014, namely Dilma Rousseff. On the other hand, The DP *a rainha do Brasil em 2014* 'The queen of Brazil in 2014' has no denotation, since there is no such individual. For NP denotations with larger cardinalities, we must rely on the context dependency alluded for in (2):

(3) Um brasileiro e um português se encontraram. *O brasileiro* estava feliz.

A Brazilian and a Portuguese met. The Brazilian was happy.

Plural definites are similar but also a little bit different, since they denote groups of two or more individuals. If we assume that plural NPs have such groups in their denotations, we can have the following:

(3) A plural DP of the form [os/as NP-pl] denotes the largest contextually salient group of individuals that belong to the denotation of NP-pl, if there is such a group. If there is none, its denotation is undefined.

Thus, both the DPs as presidentes do Brasil em 2014 and as rainhas do Brasil em 2014 do not have denotations. On the other hand, a DP such as os brasileiros denotes the largest group of Brazilians that is contextually salient.

Besides being used to refer to specific individuals (or groups of individuals), definite DPs also have non-specific uses, as when they occur under the scope of a quantified phrase:

(4) Toda mulher casada levou *o (seu) marido* pra festa. Every married woman brought the (her) husband to the party.

In this example, the singular definite DP does not refer to any particular individual. Its denotation can be paraphrased as *the husband of x*, with x being interpreted as a variable bound by the subject quantifier phrase. Note, however, that the definite article is used because uniqueness is still ensured: whatever the married woman x, (assuming legal western arrangements) x has only a unique husband y, whoever y is.

With this minimal background in place, we discuss two facts about the use of the definite article in Portuguese that raises some interesting theoretical points.

2.1 Definite Article with Proper Nouns

Most semantic theories treat proper nouns as referential expressions denoting individuals. They differ from common nouns, which are assumed to denote predicates, and need the support of a determiner in order to become a referential expression. According to this perspective, combining a definite article with a proper noun, as in (5) below, would be incoherent, since proper nouns *per se* identify a unique individual as its referent. However, both (5) and (6) are well formed, and their subjects seem to refer to the same individual:⁴

- (5) O Pedro é inteligente. The Pedro is intelligent
- (6) Pedro é inteligente. Pedro is intelligent

If we stick to the traditional view that proper nouns denote individuals, we are left with no option, but to assume that the article in (5) is an expletive determiner, with no semantic content.⁵ An alternative is to take proper nouns to denote predicates. The noun Pedro, for instance, would be interpreted as the predicate *being Pedro*, or more explicitly, *being identical to Pedro*. (5), then, would denote the unique individual that satisfy this predicate, which, of course, is Pedro. Notice that under this view proper nouns will always denote a singleton set, and therefore, always satisfy the definite determiner's uniqueness requirement.

As for (6), we need to postulate a null determiner with the same meaning of its overt counterpart.

We remain neutral about which option – postulating an expletive or a null determiner – is better. Either way, the semantic analysis will need to be supplemented with considerations of a more pragmatic nature, since the choice of using or not the determiners usually correlates with atitudes that the speaker has towards the referent of the proper noun. This in turn is subject to considerable sociolinguistic variation. As an illustration, consider European Portuguese, which normally uses the definite article in front of a proper noun. Even in this variety, and specially in formal registers, when the referent of the name is, say, culturally distinguished, the article is dropped:

(7) Aristóteles foi um grande filósofo. "Aristóteles was a great philosopher"

However, if the name 'Aristóteles' refers not to the great Greek philosopher, but to my cat, the article should be used:⁶

(8) O Aristóteles voltou a fugir.

The Aristóteles has run away again
"Aristóteles has run away again"

Thus, even within a single dialect, the 'rules' governing whether or not an article should/can be used in front of a proper noun do not seem to be semantic in nature, and depends on the cultural salience of the referent, as well on the degree of formality required by the context of speech.⁷

2.2 Kind Referring Definite DPs

Consider (9) below, which is fine in Brazilian Portuguese:

- (9) O urso polar está quase extinto. [BP, *EP]
 The polar bear is almost extinct
- (9) does not seem to be about any contextually salient bear. Moreover, 'be extinct' is not a predicate that applies to ordinary individuals, but rather to species or natural kinds. A possible analysis for this sentence is to treat *polar bear* as a proper noun (the name of a kind) and see (9)'s subject as just another instance of a definite article preceding a proper noun, as we saw in (5). However, something will have to be said about the grammatical status of examples such as (10), in which there is no article (we will discuss this again in section 3):
- (10) Urso polar está quase extinto. [?BP, *EP]
 Polar bear is almost extinct

Although there are speakers of Brazilian Portuguese who accept examples like (10), there are also many speakers who do not. Moreover, even among those who reject (10), there are many who accept (6), in which an ordinary proper noun is used without a definite article. Thus, although treating *polar bear* and related singular nouns/noun phrases as names of kinds seems attractive in face of examples such as (9), additional stipulations would still be needed to account for the limited acceptability of (10).

Consider now the case of plural definites:

(11) Os ursos polares estão quase extintos. [BP, EP]
The polar bears are almost extinct

This sentence is fine in both Brazilian and European Portuguese. Treating the plural noun *polar bear* as the name of a kind raises some issues here too with respect to EP, since it cannot stand alone without the article in this language (see section 3):

(12) Ursos polares estão quase extintos [BP, *EP]
Polar bears are almost extinct

Moreover, if *polar bear* is a proper noun referring to a species, it is not clear what the role of plurality is in this case. One might assign (11) a taxonomic reading, according to which the plural definite refers to the sub-kinds of polar bears. However, although this is certainly a possible reading for (11), it is not the only one, and (11) is fine even if it is assumed that there is only one species of polar bears. Thus, it seems that the best analytic option for EP in this case is to maintain the more conventional view that *polar bears* is just an ordinary plural NP predicate and to assume the existence of an intensional definite determiner (homophonous to its extensional counterpart) that turns properties of individuals (the NP intension) into the corresponding kinds, viewed as intensional pluralities (the plural concept *the polar bears*).⁸

As for BP, both options – kinds as proper nouns and kinds as intensional plural DPs – would be available. Needless to say, more empirical and theoretical research needs to be done to see what (if any) differences in meaning and use there are between (9)-(12) and how they can be accounted for under this double identity of kind denoting DPs.

3. Indefinites

This section discusses indefinite noun phrases introduced by um 'a/one' and algum 'any', as well as their plural counterparts uns and alguns. At a very general and intuitive level, what makes them a natural class from a semantic point of view is their existential flavor. By that we mean that a sentence of the form [[(alg)um/uns NP] VP] can be easily paraphrased as saying that there is/are (an) individual(s) belonging to the class denoted by the NP that also belong(s) to the class denoted by the VP. We take this intuition as our starting point, and treat these indefinites as existential quantifiers over individuals. However, it is important to bear in mind that the study of indefinite noun phrases has played a major role in the development of natural language semantic theories focusing on discourse facts about reference, anaphora and quantification, such as Kamp (1981), Heim (1982), and many others after them. These theories have challenged the inherent quantificational force of indefinites, and have proposed alternatives according to which they simply introduce restricted variables, which get bound by other operators or interpretation procedures. 10

In what follows we do not discuss this discourse-related aspect of Portuguese indefinites, but rather concentrate on their 'sentential' behavior, for which a quantificational view seems well suited, and which we believe can be integrated one way or another into dynamic theories. We focus on four semantic properties: epistemicity, positive polarity, partitivity, and scope taking. We believe these properties provide a very good illustration of similarities and differences between *um*, *uns*, *algum* and *alguns*, as well as the challenges their complex behavior poses for any semantic theory of indefinites.

3.1 Epistemicity

Consider the following two sentences:

- (16) O professor está conversando com um aluno. "The professor is talking to a student"
- (17) O professor está conversando com algum aluno. "The professor is talking to some student"

The first point to notice is that both *um* and *algum* are interpreted existentially, and both sentences above convey that there is (at least) one student to whom the professor is talking. However, there is a clear difference between them. (17) suggests that the speaker is not in direct contact with the student, and is not able to identify who he is. For instance, imagine that I am in my office, and the conversation between the student and the professor is taking place in the office right in front of me, where I can see them. Now, suppose the phone in my office rings, I pick it up, and the person who called asks if the professor is available; then, I can answer with (16), but not with (17). (17) would be fine, however, if I were locked in my office and could not see what was happening in the other office, but still could guess the professor is talking to a student, because I can hear his voice and I noticed that he is giving academic advice to a person. Thus, *algum*, but not *um*, conveys an epistemic effect of ignorance of the speaker about the identity of the referent to which the indefinite phrase is connected. One important thing to notice is that this epistemic effect does not seem to be cancelable, unlike what happens with *um* 'a':

- (18) ??O professor está conversando com algum aluno, o Pedro. The professor is talking to some student, namely, Peter
- (19) O professor está conversando com um aluno, o Pedro. The professor is talking to a student, namely, Peter

However, the epistemic effect seems to vanish when the indefinite appears under the scope of certain operators, such as the determiner *todo* 'every' or the adverb of quantification *sempre* 'always':

- (20) Todo professor reprovou algum aluno. "Every professor rejected some student"
- (21) Todo professor que reprovou algum aluno se arrependeu. "Every professor that rejected some student regretted it"
- (22) Sempre que o professor reprovou algum aluno, ele se arrependeu. "Every time the professor rejected some student, he regretted it"

The first sentence can be followed by a list with names pairing professors and students: professor X rejected student A, professor Y rejected student B, ... The second sentence is about professors that rejected students, and it does not suggest that the identity of any of the students is unknown to the speaker or the professor. The third sentence generalizes over the same type of situations, including the ones in which the identity of the student is known. In these examples, replacing *algum* by *um* does not seem to result in any difference in meaning, if the indefinites are interpreted as having narrow scope.

Interestingly, the epistemic effect discussed above with *algum* is not observed with the plural form *alguns*. In fact, both (23) and (24) below could be used in the scenario described above with the speaker in his office watching what was happening in the other office, but with the professor talking to a group of students.

- (23) O professor está conversando com uns alunos. "The professor is talking to some students"
- (24) O professor está conversando com alguns alunos. "The professor is talking to some students"

The situation is puzzling. The facts we presented before contrasting *um* and *algum* suggest a decomposition of *algum* into two pieces, *alg*- and *um*, with the former carrying some semantic ingredient that triggers the epistemic effect. However, this extra component of *alg*-seems to be missing when the plural morpheme -s is added, and it is far from obvious what plurality and the ignorance effect have to do with each other. A more precise characterization of the epistemic effect as well as its interaction with plurality and other elements, such as the operators in (20)-(22), is beyond the scope of this paper, and at the moment we are not aware of any unified proposal in this direction. We only want to point out here that epistemic determiners are attested in other languages as well, including Spanish *algun*, Italian *un qualque*, German *ingendein*, and English *some*, all conveying some sort of ignorance about who is the individual satisfying the existential claim, but differing in which type of ignorance they convey.

3.2 Positive Polarity

One salient feature of both *algum* and *alguns* is that they cannot be interpreted under the scope of a clause-mate negation:¹⁴

- (25) O professor não aprovou algum aluno. (* neg >> algum) "The professor did not approve some student"
- (26) O professor não aprovou alguns alunos. (* neg >> alguns) "The professor did not approve some students"

These sentences are never used to convey that the professor did not approve any student. Such a situation would require the negative quantifier *nenhum* 'no':

(27) O professor não aprovou nenhum aluno.

The professor not approved no student
"The professor did not approve any student"

What (25) and (26) express is the existence of students who the professor did not approve. This becomes clear when the indefinites are resumed by a pronominal anaphora, in which case the pronoun refers to the individual(s) whose existence was stated in the previous discourse.

(27) O professor não aprovou alguns alunos. Eles ficaram decepcionados. "The professor did not approve some students. They were disappointed." That these facts are connected to negation, and not to some general tendency of out-scoping clause-mate operators, can be seen in examples such as (28):

(28) Todo professor aprovou algum/alguns alunos. "Every professor approved some student(s)"

In the most salient reading of this sentence the students co-vary with the professors, showing that the indefinite can be interpreted under the scope of the universal quantifier *todo*.

The fact that *algum* and *alguns* cannot occur under the immediate scope of negation makes them members of some class of positive polarity items. The question is what particular class they belong to. Marti (2006) classifies the plural indefinites *uns* and *alguns* (as well as their Spanish counterparts) as items that cannot be interpreted under the immediate scope of a clause-mate anti-additive operator, such as the negation $n\tilde{a}o$, the preposition *sem* 'without' and the negative quantifier *ninguém* 'nobody':¹⁵

- (29) O prefeito não convidou alg(uns) políticos para o seu aniversário. (*não>>(alg)uns) "The mayor did not invite some politicians to his birthday party"
- (30) O prefeito celebrou seu aniversário sem (alg)uns políticos. (*sem>>(alg)uns) "The mayor celebrated his birthday without some politicians"
- (31) Ninguém conversou com (alg)uns políticos durante a festa. (*ninguém>>(alg)uns) "Nobody talked to some politicians during the party"

We agree with Marti and believe that her claims can be extended to the singular indefinite *algum*, always bearing in mind its epistemic component discussed above:

- (32) O prefeito não convidou algum político para o seu aniversário. (*não>>algum) "The mayor did not invite some politician to his birthday party"
- (33) O prefeito celebrou seu aniversário sem algum político. (*sem>>algum) "The mayor celebrated his birthday without some politician"
- (34) Ninguém conversou com algum político durante a festa. (*ninguém>>algum) "Nobody talked to some politician during the party"

Judgements seem more complex with *um*. The counterparts of (29) and (30) sound fine with the indefinite taking narrow scope, as long as we emphasize it:¹⁶

- (35) O prefeito não convidou UM político para o seu aniversário. (ok não>>um) "The mayor did not invite UM politician to his birthday party"
- (36) O prefeito celebrou seu aniversário sem UM político. (ok sem>>um) "The mayor celebrated his birthday without UM politician"

This type of emphasis is phonologically similar to the prosodic contour that is used when emphatic words like $\acute{u}nico$ ('single') or sequer ('whatsoever') appear in the noun phrase that accompanies the indefinite:

(37) O prefeito não convidou um único político para o seu aniversário. (ok não>>um)

"The mayor did not invite a single politician to his birthday party"

(38) O prefeito celebrou seu aniversário sem um político sequer. (ok sem>>um) "The mayor celebrated his birthday with no politician whatsoever"

It is important to bear in mind that neither the emphatic contour nor the co-occurrence with *único* or *sequer* are available to the determiners *uns*, *algum* or *alguns*.

Finally, we notice that the counterpart of (31) with um is fine under the relevant interpretation even without emphasis:¹⁷

(39) Ninguém conversou com um político durante a festa. (ok ninguém>>um) "Nobody talked to a politician during the party"

We will not attempt to provide an explanation for the polarity/scopal behavior of *um* here, but we believe it is worth pointing out that the word *um* is also the word for the numeral 'one'. We speculate that this interpretation might be the one targeted by the emphasis or by words like *único* and *sequer*. It could also be responsible for the narrow scope detected in (39), since cardinal noun phrases can easily scope under negative quantifiers:

(40) Ninguém levou dois parentes para a festa. (ok ninguém>>dois) "Nobody took two relatives to the party"

It might then be possible to generalize to singular *um* and *algum* Marti's claim that the plural indefinites *uns* and *alguns* are polarity itens that do not occur under the immediate scope of anti-additive operators. One only needs to bear in mind that the form *um* is also a numeral and can behave as such in certain circumstances.

3.3 Partitivity

We now discuss the behavior of um, uns, algum, and alguns in partitive constructions of the form indefinite + de ('of') + plural definite, which introduce quantification over a salient group of individuals (denoted by the plural definite). Consider, for instance, the following sentences:

- (41) O professor reprovou algum dos alunos. "The professor rejected ALGUM (some, sg.) of the students"
- (42) O professor reprovou alguns dos alunos. "The professor rejected ALGUNS (some, pl.) of the students"
- (43) O professor reprovou um dos alunos. "The professor rejected UM (one, sg.) of the students"
- (44) ??O professor reprovou uns dos alunos "The professor rejected UNS (one, pl.) of the students"

While both singular *algum* and its plural counterpart *alguns* are fine in these constructions, singular *um* contrasts with its plural counterpart *uns*, as shown in (43) and (44). Although this might be an idiosyncratic feature of the form *uns*, a different (and one might say, conceptually more interesting) way to look at this paradigm is to attribute the acceptance of

- (43) to the fact that *um* is also the word for expressing the numeral *one*, as we already pointed out in the previous subsection. This behavior of *um* in (43) would then be on a pair with the behavior of other numerals, which are fine in partitive constructions:
- (45) O professor reprovou cinco dos alunos. "The professor rejected five of the students"

Since numerals do not pluralize in Portuguese (*cincos, 'five, pl.'), the form uns in (44) is unambiguous – that is, it must be an indefinite quantifier, and not a numeral. This would make it possible to state that the indefinite forms um/uns do not enter into overt partitive constructions. This could follow from a compositional treatment of these indefinites, if we follow Marti (2006) and assume that alg- and um are separate morphemes, and the ability to enter into a partitive construction is introduced by alg-. Moreover, it would make the contrast between alguns and uns seen above consistent with what happens in covert partitives, when de+os ('of+the') does not appear overtly:

- (46) O professor reprovou alguns alunos. Os outros, ele aprovou. "The professor rejected some students. The others, he approved."
- (47) O professor reprovou uns alunos. ?? Os outros, ele aprovou. "The professor rejected UNS students. The others, he approved."

For many speakers, there is a clear contrast here. The definite *os outros* is totally natural in (46), but its use in (47), if acceptable at all, seems to require some sort of accommodation on the part of the hearer. This would follow if *uns* is not compatible with partitive interpretations. Marti's idea is that *uns* is a plain existential quantifier, and that *alg*- acts as a modifier, leaving the assertive meaning of *uns* intact, but introducing an implicature. For instance, the first sentences in (46) and (47) both mean that there are students who were rejected by the professor. However, due to the presence of *alg*-, (46) implicates that are also students who were not rejected. In other words, only *alguns*, as part of its meaning, would make the complement set of the students immediately salient and available for being picked by *os outros*.

3.4 Scope Taking

The last property we would like to consider is scope taking. Indefinites have been reported to be insensitive to scope islands or at least to be more liberal than other quantified phrases in how far from their surface position they can scope. This has been claimed to be the case for English *a/some* and special scopal mechanisms have been proposed to account for this fact. In this respect, both *um* and *algum* do not seem to obey island constraints that are known to limit syntactic movement. Here we provide two cases, adapted from the literature:

- (48) Se (alg)um parente do Pedro morrer, ele herdará uma fortuna. "If some relative of Pedro dies, he inherits a fortune"
- (49) Todos os livros que eu emprestei pra (alg)um aluno sumiram. "All books that I lent to some student disappeared"

Judgements are delicate in these cases, but it seems that under appropriate discourse circumstances, the indefinites can take matrix scope in these examples. In (48), the indefinite

is inside an adverbial *if*-clause. If it scopes inside this clause, the sentence will mean that the death of any relative of Pedro's will make him inherit a fortune. This reading is certainly possible and, in fact, seems to be the most salient one. The wide (matrix) scope reading in this case would express a situation in which there is a particular relative of Pedro whose death would make Pedro inherits a fortune. In this case, the death of any other relative of his might be irrelevant. Although this reading may not be very salient, it seems to arise in discourses like the following:²⁰

(50) Eu tenho certeza que se (alg)um parente do Pedro morrer, ele herdará uma fortuna. Eu só não me lembro qual parente é esse.

"I am sure that if a relative of Pedro dies, he inherits a fortune. I just cannot remember which relative it is."

In sentence (49) the indefinite is inside a relative clause. In this case, the narrow scope reading would mean that no student who borrows a book from me returns it. Once again, this is certainly a possible reading for the sentence. However, the wide scope reading is also possible. In this case, the sentence would mean that there is one particular student such that every book that I lend to him never comes back to me. This reading becomes salient in contexts such as the following:

(51) Todos os livros que eu emprestei pra um aluno sumiram. Só ele age assim! Todos os outros alunos devolveram os livros que me pediram emprestados.

"All books I lent to some student disappeared. He is the only one that does that. All other students returned the books that they had borrowed from me."

Replacing *um* by *uns*, *algum* or *alguns* in the examples above does not seem to affect the judgements, if similar contextual environments are established.

We conclude this section by noticing that scopal freedom contrasts with the previous three properties that we presented before in applying (for some speakers at least) to all four Portuguese indefinites we looked at. This can be taken as indicative that this freedom should not be theoretically tied to any of those other properties. What exactly is behind this peculiar trait of indefinites is still a debatable matter.²¹[1]

4. Bare Nominals

Both European and Brazilian Portuguese (EP/BP) allow for bare nominals in argument positions. By bare nominals we mean noun phrases headed by common nouns not preceded by overt functional material such as determiners and numerals, as in the following example:

(52) Pedro viu *estudantes* na festa. Pedro saw students at the party

In (52) we have an instance of a bare plural in object position. As we will see below, bare plurals are allowed in both varieties of Portuguese, but their distribution is constrained by different factors, BP being more liberal than EP. Bare singulars, on the other hand, are not allowed with count nouns in EP, but are fine in BP, as shown in (53):²²

(53) Pedro viu *estudante* na festa. (*EP/√BP) *Pedro saw student at the party

We start our discussion with the use of bare plurals in both varieties, and then proceed to bare singulars in BP.

4.1 Bare Plurals

In episodic sentences such as (52), bare plurals receive an existential interpretation. (52) is true if there are students that Pedro saw at the party, and false otherwise. In this respect, bare plurals can be paraphrased as DPs formed with *uns* or *alguns*:

(54) Pedro viu uns estudantes na festa.
Pedro saw some students at the party

Despite the similarity in interpretation between (52) and (54), when scope-taking expressions are present in the same clause, the interpretation of bare plurals is different from that of overt indefinites. For instance, they always take scope below a clause-mate negation, whereas this is not the case with overt indefinites, as we saw in the last section:

- (55) Pedro não viu estudantes na festa. (ok não >> ∃; *∃ >> não) Pedro didn't see students at the party
- (56) Pedro não viu (alg)uns estudantes na festa. (* não >> ∃; ok ∃ >> não) Pedro didn't see some students at the party
- (55) is true if, and only if, Pedro saw no students at the party. The indefinites in (56), on the other hand, are positive polarity items and only allow for the inverse scope reading. The same is true with respect to other clause-mate negative elements:
- (57) a. Ninguém viu estudantes na festa. Nobody saw students at the party
 - b. Pedro consertou a máquina sem ferramentas. Pedro fixed the machine without tools

Bare plurals are also interpreted with narrow scope when embedded in the complement of intensional verbs:

(58) Pedro quer encontrar estudantes. Pedro wants to find students

In (58), Pedro's desire is not directed towards some specific group of students. A continuation such as *Eles estão na casa da Maria*, in which the pronoun refers to a group of five students who are at Mary's house, sounds weird.²³ This would be perfectly fine if we had an overt indefinite, as in (59):

(59) Pedro quer encontrar (alg)uns estudantes. Pedro wants to find some students

As for their syntactic distribution in episodic sentences, bare plurals cannot appear in preverbal, subject positions in EP, but are fine in BP:²⁴

(60) Cachorros morderam o Pedro. (*EP/ \sqrt{BP})

Dogs bit Pedro

In this regard, BP is like English whereas EP resembles Spanish and Italian.²⁵ The same contrast is observed in non-episodic sentences. This includes both generic statements and kind predication:

- (61) Cachorros (normalmente) não mordem os seus donos. (*EP/√BP) Dogs (normally) don't bite their owners
- (62) Dinossauros estão extintos. (*EP/√BP)
 Dinosaurs are extinct
- (61) is a generic statement that assigns to every (normal) dog the property of not biting her owner. Although this is a generic statement about dogs, genericity does not seem to be tied to the presence of a bare plural, but rather to tense and aspect (simple present in Portuguese, as in English, only gives rise to habitual readings with eventive predicates) or an adverb of quantification. Replacing a bare plural by an overt (singular) indefinite would not change the generic character of the interpretation:
- (63) Um cachorro (normalmente) não morde o seu dono. A dog (normally) doesn't bite his owner
- In (62), we have a predicate that applies to kinds and not to ordinary individuals. The interpretation is that members of the kind ceased to exit. In this context, replacing a bare plural by an overt indefinite is not possible (except, maybe, under a taxonomic interpretation):
- (64) Um dinossauro está extinto. (*EP/*BP) *A dinosaur is extinct

Good paraphrases are obtained with an overt definite, as we saw in section 1:

(65) Os dinossauros estão extintos. (EP/BP) The Dinosaurs are extinct

Accounting for the distribution of bare plurals has been a challenge for syntactic and semantic theorists working on many languages. As we have just seen, even closely related dialects can impose very different constrains on their distribution. To present and discuss such theories is, of course, beyond the scope of this paper. We just want to point out that the ungrammaticality of bare plurals with kind predicates in EP makes it implausible that they denote kinds in this language. A more plausible alternative is to treat bare plurals as DPs headed by a covert indefinite determiner. Its sensitivity to subject/object asymmetries might then be related to the licensing of empty categories, which is known to be affected by lexical government by verbs and related matters. This is the route taken by Chierchia (1998) for Italian (see also Longobardi 2000). Of course, how the scopal behavior of bare plurals discussed above is to be accounted for by such a theory remains to be spelled out (the same is true for the heaviness constraint mentioned in note 17).

Treating bare plurals as kind-denoting expressions seems more promising for BP (as well as for English), though taking them to denote predicates that can be type-shifted to kinds

or existential quantifiers is also an option, as argued for by Pires de Oliveira and Rothstein (2011).

4.2 Bare Singulars

BP allows for bare singulars in argument positions. However, their distribution is not the same as the one we have just seen for bare plurals. We start with an example in which a bare singular occurs in the object position of a transitive verb in an episodic sentence.

(66) Pedro viu *estudante* na festa. *Pedro saw student at the party

In this sentence, the bare singular receives an existential interpretation. In this respect, it behaves like a bare plural, as we saw in (54) above. Bare singulars also behave like bare plurals with respect to the scopal properties discussed in the previous section. For instance, they can only take scope below a clause mate negation. (67), below, is true if, and only if, there is no student that Pedro saw at the party.²⁷

(67) Pedro não viu estudante na festa.
*Pedro didn't see student at the party

There are differences, however. Whereas (54) conveys that at least two students were seen by Pedro, (66) is neutral in this respect. The existence of a single student seen by Pedro is enough to make the sentence true and felicitous. Moreover, the neutrality observed with bare singulars concerns not only plurality, but also the count/mass distinction. This is illustrated below with the count noun *melancia*.

(68) O bebê comeu melancia/melancias.
The baby ate watermelon/watermelons

The version with a bare singular can be true if the baby ate only some small pieces of a watermelon, or even some kind of sauce made with the fruit. It can also be used in less plausible cases in which a whole watermelon was eaten or in which more than one fruit was eaten by a hungry child. Though grammatical, the version with a bare plural sounds a bit odd at first, because it conveys that at least two watermelons were eaten by the baby.

As for their distribution, bare singulars seem not to be acceptable in the subject position of episodic sentences:²⁸

(69) *Cachorro mordeu o Pedro ontem.

*Dog bit Pedro yesterday

They are fine, however, in the subject (as well as in the object) position of generic sentences. In these cases, replacing the bare singular by a bare plural results in no obvious difference of interpretation:²⁹

(70) Cachorro, normalmente, não morde o próprio dono. *Dog, normally, doesn't bite its owner

Bare singulars also seem to be fine, at least for some speakers, as subjects of kind predicates in BP:³⁰

(71) Dinossauro está extinto. *Dinosaur is extinct

Notice that (72) is very close in form to sentences with a kind predicate and a bare mass noun as subject:

(72) Petróleo está escasso. Oil is rare

Notice further that bare mass nouns behave like bare singulars in being ungrammatical in the pre-verbal subject position of episodic predicates, but perfectly fine in generic statements:³¹

- (73) *Vinho vazou no chão da adega. (cf. Vazou vinho no chão da adega) Wine spilt on the cellar's floor
- (74) Vinho vaza quando não é posto em um barril bem vedado. Wine spills when it is not in a sealed barrel

Similarities like these have led Pires de Oliveira and Rothstein (2004) to propose that bare singulars and bare mass nouns are semantically alike. This may sound odd at first due to the fact that typical bare singulars such as *cachorro* ('dog') or *estudante* ('student') seem to refer to naturally atomic properties, which apply to individuals or groups of individuals, whereas typical mass nouns such as *vinho* ('wine') or *óleo* ('oil') do not refer to atomic properties and do not apply to individuals. However, the authors point out that several mass nouns are also naturally atomic: *furniture*, *jewelry*, *silverware* are some examples. Refuting previous arguments by Schmitt and Munn (1999) against the parallel between bare singulars and bare mass noun phrases based on distributive predication, they present examples such as (75) below in which we see distribution down to atomic individuals with both types of bare noun phrases:

- (75) a. Criança pesa 20 kg nessa idade. Child weighs 20kg at this age
 - b. Bijouteria custa 10 dólares nesta loja. Jewelry costs 10 dolars at this store
- (76) a. Tinha brinquedo espalhado por todo quarto. There was toy scattered all over the room
 - b. Tinha bijouteria espalhada por todo o balcão.
 There was jewelry scattered all over the counter

Pires de Oliveira and Rothstein (2004) propose to capture these similarities by treating both bare singulars and bare mass nouns as kind denoting expressions. An issue that deserves further attention before one can fully evaluate this type of proposal is how kind denoting arguments interact compositionally with their predicates in episodic sentences and why (non-contrasting) bare singulars are not acceptable in pre-verbal, subject positions of such sentences.³²

As the above presentation made clear, a comprehensive and detailed analysis of the syntax, semantics, and pragmatics of are singulars in BP remains an open and challenging topic.

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Notes

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¹ Unlike *the*, the Portuguese definite article inflects for gender (masculine/feminine) and number (singular/plural), giving rise to four different forms: (i) *o*, for masculine singular; (ii) *a*, for feminine singular; (iii) *os*, for masculine plural; (iv) *as*, for feminine plural.

² See Heim (1983) for a semantic/pragmatic theory of (in)definiteness in which novelty/familiarity plays an important role. See Lyons (1999) for a detailed discussion of the variety of morphological, syntactic, semantic and pragmatic issues connected to the notional category of definiteness.

³ It should be noted that not every theory (most notably Bertrand Russell's) treats definite descriptions as referential expressions. For presentation and discussion of different proposals in this area, see, for instance, Neale (1990), Heim (1991), Abbott (2010), Elbourne (2013). As far as we can see, Portuguese data do not raise any new issues that would help pending for one or the other side in this debate.

(i) A: O Paulo vai querer mais uma taça de chá? Will Paulo (=you) want another cup of tea?

Note that such "2nd person" uses require the use of the definite article, such that (ii), if possible at all in EP, really is a question to some addressee B (who is not Paulo) about Paulo's wishes:

(ii) A: Paulo vai querer mais uma taça de chá? Will Paulo want another cup of tea?

Of course, we see here, again, the effects of "familiarity" in the use of the definite article. We thank a reviewer for reminding us about this fact.

- (i) Todo fazendeiro que tem (alg)um burrinho bate nele. "Every farmer who owns a/some donkey beats it"
- (ii) Todo fazendeiro que tem (alg)uns burrinhos bate neles. "Every farmers who owns some donkeys beats them"

(i) O professor deve estar conversando com algum aluno. "The professor must be talking to some student."

⁴ Portuguese is not unique in this respect. Languages (often subject to dialectal variation) that allow or require the presence of a definite article with proper nouns include Modern Greek, Albanian, German, and Western Armenian (see Lyons 1999: 121ff).

⁵ See, for instance, Longobardi (1994), who postulates a pleonastic determiner for Italian DPs in which a proper noun is preceded by a definite article. He also proposes that article-less proper nouns in Italian occupy (via syntactic movement) the Determiner position that the definite article otherwise occupies.

⁶ It might be worth noticing here another characteristic feature of European Portuguese, which is the use of proper names as 2nd person expressions, as in (i), in which Paulo is A's addressee:

⁷ This variability too is not exclusive to Portuguese. Lyons (1999:122), for instance, comments about German that "it is common in colloquial usage to use the article with first names (*die Claudia*, *der Hans*), and this usually conveys familiarity. With surnames the use of the article is not necessarily colloquial, and carries complicated pragmatic and sociolinguistic connotations."

⁸ See Chierchia (1998) for the idea of kinds as intensional maximal pluralities. See Carlson (1977) for a treatment of English bare plurals as kind-denoting expressions. For excellent overviews of the complex issues surrounding the semantic notion of genericity, including kinds and kind-denoting expression, see Krifka et al. (1995) and Beyssade et al. (2013).

⁹ These are the masculine forms. The feminine ones are: *uma*, *alguma*, *umas*, *algumas*. Since gender does not play any relevant role in the constructions we discuss, we only employ the masculine forms in our examples.

¹⁰ But see Heim (1990) for re-evaluation of some of the data and analysis. We only mention here that typical examples that have motivated a non-existential, unselective binding approach are easy to construct with all these indefinites:

¹¹ Even in this context, some speakers still consider (17) somewhat marked and would prefer to add an overt epistemic modal verb such as *deve* ('must'), as in (i) below:

¹² For a concrete proposal for Spanish *algunos*, see Alonso-Ovalle and Menéndez-Benito (2011).

(i) O professor não aprovou aluno algum.

The professor not approved student some
"The professor did not approve any student (at all)"

We will not discuss this post-nominal use of *algum* in this paper.

- (i) Pedro não beijou Maria ou Sandra = Pedro não beijou Maria e Pedro não beijou Sandra.

 Pedro did not kiss Maria or Sandra = Pedro did not kiss Maria and Pedro did not kiss Sandra.
- (ii) Ninguém beijou Maria ou Sandra = Ninguém beijou Maria e ninguém beijou Sandra. Nobody kissed Maria or Sandra = Nobody kissed Maria and nobody kissed Sandra.
- (iii) Pedro saiu sem Maria ou Sandra = Pedro saiu sem Maria e Pedro saiu sem Sandra.

 Pedro left without Maria or Sandra = Pedro left without Maria and Pedro left without Sandra.

For discussion on positive and negative polarity items, see Szabolsci (2004) and the references therein.

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(i) [[um]] = \lambda P. \lambda Q. \exists x: P(x) \& Q(x)
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(ii) [[alg-]] = λR . λP . λQ . R(P)(Q) implicature: $R(P)(\sim Q)$

(iii) [[algum]] = [[alg-]]([[um]]) = λP . λQ . $\exists x$: P(x) & Q(x)Implicature: $\exists x$: $P(x) \& \sim Q(x)$

¹³ For more discussion on Portuguese *algum*, see Silva (2012), for Spanish *algun/algunos*, see Alonso-Ovalle and Menéndez-Benito (2010, 2011). For a cross-linguistic perspective, see Alonso-Ovalle and Menéndez-Benito (2013) and the references therein.

¹⁴ The singular form *algum* can also be used after the noun, forming a negative-polatity item:

¹⁵ Formally, an operator f is anti-additive if f(x or y) is equivalent to [f(x) and f(y)]. (i)-(iii) below illustrate this property for $n\tilde{ao}$, $ningu\acute{e}m$, and sem:

¹⁶ In European Portuguese (at least for some speakers), adding prosodic emphasis is not enough to get the desired interpretation. Emphatic expressions similar to 'a single' or 'whatsoever' need to be used, as illustrated in (37) and (38).

¹⁷ Although, for many speakers, the use of 'nenhum político' ('no politician'), instead of 'um político' ('a politician'), would make the sentence sound more natural.

¹⁸ Here is a sketch of Marti's (2006) compositional implementation of this idea (ignoring number):

¹⁹ For relevant discussion, see Fodor and Sag (1982), Ruys (1992), Reinhart (1997), and Winter (1997), among many others.

²⁰ For some speakers, this reading is easily available with *um*, but very hard to get with *algum*.

²¹ However, as observed in note 16, some speakers reject the wide scope reading for *algum*. For those speakers, one might pursue an analysis according to which *algum* turns its NP complement into an existential quantifier, making it inaccessible for whichever mechanism is responsible for the wide-scope readings. For instance, under the choice function approach (see Reinhart 1997, and Winter 1997, among others) *algum* would block the insertion of a choice function variable that takes the NP as an argument. *Um*, on the other hand, would not block this insertion, and in fact, it could even be taken to denote this variable.

Pedro só viu estudante na festa. (stress on "estudante") (i) Pedro only saw student at the party

Other speakers, however, find (53) fine, even if the bare NP is un-focused.

Os estudantes estão procurando artigos de linguística. (i) "The students are looking for linguistics articles"

In this example, it seems that the bare plural can take scope above the intensional verb. If it scopes below the subject, then for each student there are (possibly) different articles that (s)he is looking for. If it scopes above the subject, then there must be some particular set of articles that all the students are looking for. We wanted to point out that judgments are subtle and the contrast between (i) and (58) was not obvious to some of the speakers we consulted.

Amigos de Coimbra partiram ontem. "Friends from Coimbra left yesterday"

The same is true in Italian, as reported in Chierchia (1998) and Longobardi (2000).

Os americanos inventaram transistores. (only taxonomic reading) (i) The Americans invented transistors

Pedro não viu estudantes na festa. (i) Pedro did not see students in the party

Moreover, dialogues like (ii) sound coherent to these speakers:

Havia estudantes na festa? (ii) A: Were there students at the party?

> Sim. Mas apenas um. B:

Yes. But only one

However, conflicting judgments have been reported in the literature (see Muller 2002, for instance). This seems to indicate that there is variation in whether or not bare plurals are inherently plural. For discussion of this issue with respect to English, see Spector (2003) and Zweig (2009).

²² Judgements are not always crystal clear. A reviewer judged (53) a bit weird out of the blue, but fine under

²³ Matters become more complicated when bare plurals appear under intensional verbs whose subjects are plural. This has been pointed out for English by Partee (1985), as well as for Portuguese by Munn and Schmitt (2005).

²⁴ Bare plurals in subject positions become grammatical in EP if they are *heavier*, as in (i) below, taken from Oliveira and Muller (2004):

²⁵ The parallel between English and Brazilian Portuguese breaks up when bare plurals occur in the object position of creation verbs, such as *inventar* ('invent'). In BP (and also in EP), they can only have a taxonomic ('types of') interpretation:

²⁶ See Carlson (1997), Krifka et al. (1995), Chierchia (1998), Krifka (2004) among others for thorough discussion of English bare plurals.

²⁷ It is not obvious that bare plurals behave differently in situations in which there is only one student that Pedro saw. Many speakers find (i) false in this case:

²⁸ Bare singulars are acceptable in contrasting, list-like environments, as noticed by Schmitt and Munn (1999):

(i) Durante a festa, mulher discutiu política, homem discutiu futebol, ...
During the party, woman discussed politics, man discussed soccer, ...

At first sight, bare singulars do not seem to receive an existential interpretation in these cases. In (i), for instance, they seem to refer to the totality of women and the totality of men who were at the party. But this is not necessarily the case, as a reviewer pointed out to us. The reviewer offered the following scenario: someone throws a party in which plenty of lawyers and doctors are present. Lawyers are supposed to be lazy, and doctors too serious to tell jokes; but the party was so crazy that the cook was a lawyer, and the star of the night was a doctor who turned out to be a comedian. With this scenario in mind, the reviewer adds, one can certainly utter (i), even if only one lawyer cooked, and only one doctor told jokes:

(ii) A festa foi realmente louca: advogado cozinhou, médico contou piada, ... The party was really crazy: laywer cooked, doctor told jokes, ...

Understanding the role played by contrastiveness in the licensing of these subject bare singulars is a topic that certainly deserves further attention. See Schmitt and Munn (1999) for other cases in which bare singulars can receive this interpretation. See also Dobrovie-Sorin (2010) for discussion and comparison with certain uses of bare plurals in English discussed by Condoravdi (1992,1994).

²⁹ An overt indefinite 'um cachorro' ('a dog') would also be fine here (as it would in EP, which does not allow (70)).

- ³¹ As a reviewer pointed out, like count bare singulars, bare mass nouns also become fine in episodic sentences, if list-like or contrastive situations of the type discussed in note 23 are provided:
- (i) Foi uma bagunça! Vinho caiu na mesa, comida caiu no chão, ... It was a mess! Wine spilt on the table, food fell on the floor, ...
- ³² See Pires de Oliveira and Rothstein (2004) for some preliminary discussion. Also relevant is their observation that even in object position, bare singulars are sometimes unacceptable in episodic sentences. They mention, for instance, the following contrast:
- (i) Maria comeu bolo. Maria ate the cake
- (ii) ??Maria costurou blusa. Maria sewed the blouse

Although they do not develop a detailed analysis for these cases, they suggest that the contrast might be related to perfective aspect and the way non-kind predicates apply to kind denoting arguments. Needless to say, one definitely needs to discuss more types of NPs and VPs before any conclusion can be taken.

KEYWORDS: [...]

BIOGRAPHICAL NOTE: [no more than 50 words; it should include name, position, and affiliation; after, concise details of research or key/recent publications]

MARCELO BARRA FERREIRA is [...]

CLARA NUNES CORREIA is [...]

³⁰ Muller and Oliveira (2004), however, judge bare singulars unacceptable in kind predication.