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Bare Nominals in Brazilian Portuguese: more on the DP/NP analysis·

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Abstract

In this paper we claim that Bare Nominals in Brazilian Portuguese come in two shapes. Real BNs, by which we mean bare count nouns not specified for number and definiteness, correspond to NPs that can only occur as objects of a reduced class of predicates (namely, those that express a HAVE-relation) and are interpreted as property-type expressions. Other BNs can be definite and, although not morphophonologically specified for number, they are DPs with null Determiners morphosyntactically specified for Number features and are interpreted as entity-type expressions. We base our analysis on the distribution and meaning of BNs, by comparing BrP with other Romance languages, mainly (Old and Modern) French on the one hand, and Spanish and Catalan on the other.

Keywords: bare nominals, DP/NP structures, Number features, null Determiner, Brazilian Portuguese, Romance languages

1. Introduction

The goal of this paper is to investigate the form and meaning of Bare Nominals (BNs) in Brazilian Portuguese (BrP). This Romance language is especially interesting to study in relation to the topic of BNs because it poses several challenges, both at an empirical and at a theoretical level: the apparent optionality of the determiner, the variation in number realization within the nominal domain (and, by extension, the variation in subject-verb number agreement), the occurrence of BNs in all argument positions, and the meaning that is to be associated with these BNs depending on the type of predicate and the type of sentence they combine with.

The first challenge is illustrated by the data in (1), taken from Müller (2002:280, exs. (1), (2), (4) and (5)). If we were to rely exclusively on the proposed English translation, it seems that what should be inferred is that the determiner does not have any effect on the meaning of the nominal expression in subject position, since they are all said to correspond to bare plurals in English. A BN is illustrated in (1c).

(1) a. O   brasileiro é   trabalhador.
        the.SG Brazilian   is hardworking
        'Brazilians are hardworking.'
    b. Os   brasileiros são trabalhadores
        the.PL Brazilian.PL are   hardworking.PL
        'Brazilians are hardworking.'
    c. *Brasileiro* é   trabalhador.
        Brazilian   is hardworking
        'Brazilians are hardworking.'
    d. Brasileiros são trabalhadores.
        Brazilian.PL are   hardworking.PL
        'Brazilians are hardworking.'

An analysis of the data in (1) is relevant with respect to a central topic in the literature on languages with and without articles, namely the debate between the *Universal-DP hypothesis* (Longobardi 1994, Cinque 2005, Pereltsvaig 2007) and the *Parametrized-DP hypothesis* (Bošković 2005, Bošković & Gajewski 2008). According to the Universal-DP hypothesis, languages with or without articles would have all nominal arguments projected as full DPs and would allow null Ds. According to the second hypothesis, however, there exist two types of languages, those with articles (like Modern French), which project DPs for argumenthood, and those

without articles (like Russian), which are postulated to project NPs. It is our aim to evaluate whether BrP supports the first or the second hypothesis.

The second challenge can be illustrated by an additional example that might be added to this paradigm. Example (2a) shows lack of number agreement between the definite article and the noun, and possible lack of number agreement between the subject noun and the verb. This example has the variant with plural agreement on V given in (2b). Notice, however, that the counterpart in (2c) is ill-formed.

(2) a. Os   brasileiro é   trabalhador.
        the.PL Brazilian is hardworking.SG
    'Brazilians are hardworking.'
  b. Os   brasileiro são   trabalhadores.
        the.PL Brazilian are   hardworking.PL
    'Brazilians are hardworking.'
  c. *O   brasileiros   é   trabalhadores.
        the   Brazilian.PL is hardworking.PL

It has long been noticed that in BrP there is variation in subject-verb agreement and in agreement within the DP. At least two language varieties have been recognized in the literature (see, for instance, Scherre 1994, Scherre & Naro 1998a,b, Costa & Figueiredo Silva 2006, Naro & Scherre 2013, among others): a more conservative and formal variety, illustrated in (1), and another more informal variety, which has been referred to as "spoken BrP", illustrated in (2).

As pointed out by Naro and Scherre (1998b), the variation in number agreement shown in (2) with respect to (1) is a case of inherent variation (Labov 1975)[1] and it has been documented in several papers that focus on the sociolinguistics of BrP (Lemle & Naro 1977; Braga & Scherre 1976; Naro 1981; Guy 1981; Scherre, 1988, 1994; among others). Considering DP internal agreement, the conclusion of all these studies has been that in the informal varieties the position to the left of the noun (i.e., the position that holds the determiner, the possessive or the prenominal adjective) is the one that favors the explicit plural markings in BrP.

In this paper, we will provide a grammatical account that explains the

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[1] Labov (1975) considers the alternation between different forms –standard and vernacular– a case of inherent variation, in the sense that this type of variation is due to the intrinsic properties of the linguistic system/dialect/variety itself, and it is not the product of an irregular mixture of dialects.

agreement variation in the DP in both the formal and the informal varieties. An analysis of the data in (2) is relevant in order to explain, in gramatical terms, the variation in agreement both within the nominal and the sentential domains.

The third challenge posed by BrP data is that this language has articles but still allows BNs in subject, object, indirect object, and in predicate position. The examples in (3a,b) are taken from Munn and Schmitt (2005:823, ex. (1b), 829, ex. (19c)), and example (3c) is provided by Müller (2004:87, ex. (50)).

(3) a. *Criança* lê   *revistinha*.
        child   read.PRES.3SG comic-book
        'Children read comic books.'
     b. João é *médico*.
        João is doctor.
        'João is a doctor.'
     c. *Coreano* vende roupa pra *brasileiro*.
        Korean   sells clothes to Brazilian
        'Koreans sell clothes to Brazilians.'

The data in (3a,c) seem to counterexemplify Chierchia's (1998) *Nominal Mapping Parameter* (NMP). The NMP predicts that Romance languages (like French) have [-arg,+pred] nouns, and, therefore, should only allow BNs in predicate position (3b). But these data show explicitly that in BrP the generalization that a determiner is required for argumenthood when nouns (common count nouns) are predicative does not seem to hold (Schmitt & Munn 1999, and subsequent works).

Furthermore, BrP BNs present a fourth challenge to the distribution of BNs in Romance languages, because –as the following data illustrate– this language allows BNs to occur in object and in subject position of all kinds of verbs (HAVE-predicates, such as *ter* 'to have'; DO-unergatives, such as *cantar* 'to sing'; unaccusatives, such as *cair* 'to fall'; and causative transitives, such as *quebrar* 'to break'),[2] and sentences (episodic –as in (4)– and generic –as in (1)–) (Müller 2002, Munn & Schmitt 2005, Lopes 2006, among others). Associated with this diverse distribution, different interpretations can be associated with the BN: sometimes a kind (the preverbal BN in (1c) in one of its readings), other times a maximal sum (the preverbal BN in (1c) in the second of its possible readings; see below footnote 12, for an explanation), an indefinite reading (the BN object in (3a)), and even a definite reading, as will become

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[2] These are the basic types of verbs within the sort of syntactic theory of argument structure developed by Hale & Keyser (2002) and Mateu (2002).

clear in the text that follows. Preverbal BNs pose the additional challenge that they cannot be indefinite (as illustrated in (1c) and (3a,c)), a phenomenon that we will relate to the expression of genericity at the sentential level.

Consider, for the time being, the BrP V + BN combinations in (4).

(4) a. Maria teve *carro*.
      Maria had   car
      'Maria had a car.'
  b. João cantava *modinha*.
      João sang   modinha.
      'João sang popular songs.'
  c. Vai cair *livro* no   chão.
      go fall   book on.the floor
      'The book is going to fall on the floor.'
  d. João limpava *banheiro*.
      João cleaned   bathroom
      'João cleaned the bathroom.'

The occurrence of BNs in all argument positions seems to support Pereltsvaig's (2006) hypothesis that the distinction between argumental DPs and argumental NPs can be made language-internally, because within the language we find both DPs and NPs in canonical argument position (see the contrasts between (1a-c, and 1b-d)). We are going to pursue a similar line of analysis in that we will show that both DPs and NPs can be found in argument positions in BrP, but we will argue that only DPs are canonical syntactic and semantic arguments in this language. NPs can only occur as syntactic arguments of a restricted class of predicates, but –rather than saturating the predicate– they simply modify it (Espinal & McNally 2007, 2011).

In addition, we are going to argue that BrP does not provide counterarguments to the Universal-DP Hypothesis, and that what look like BNs in argument position are mostly DPs with null Determiners that carry Number specification, encode determined reference, and are interpreted as entity-type expressions, although the BN itself may not be overtly specified for number. Other BNs are real BNs, by which we mean bare count nouns unspecified for number and definiteness, interpreted as property-type expressions.

As for the NMP hypothesis, Schmitt & Munn (1999, 2003) have already argued that it seems to be both conceptually and empirically problematic with regard to BrP: like English, but unlike most other Romance languages, BrP allows bare plurals and mass nouns in argument positions and, furthermore, unlike English, BrP

also allows what look like singular count nouns to appear in argument positions as well. In spite of this challenging distribution of BNs, we are going to provide evidence that BrP behaves like Modern French with respect to the NMP. In these two languages, Num(ber) features are morphosyntactically specified and interpretable not on Nouns, but on Determiners. BrP, however, has a null Determiner, which French doesn't have.

Concerning the meaning associated with BNs (either as entity-type or property-type expressions), in different argument positions of different types of predicates and in different sentences, we will investigate how this meaning is constrained by the syntactic structure of the nominal expression, the argument structure of the verb, and the syntactic position of the nominal expression with respect to the whole sentence.

In order to develop these ideas, the paper is organized as follows. In Section 2, we examine the various forms that definite descriptions may have in BrP relative to the instantiation of number and discourse reference, and show that BNs in BrP can be definite. We assume that BrP allows null determiners (Munn & Schmitt 2005), but we further hypothesize that in this language Number is morphosyntactically specified and interpretable on D.

In Section 3, we examine the structure and meaning of BNs and we discuss how they correlate with different argument structures of various classes of verbs. We claim that BNs correspond to NPs or full DPs depending on the argument structure of the verb. HAVE-predicates (Espinal & McNally 2011) are the only ones that may combine with NPs in syntactic object position. We compare the distribution of BNs in Spanish and BrP. We also show a parallel between BrP null objects and Catalan clitic *en* (they both have nominal status, similar to common nouns), a behaviour which must be distinguished from the BrP pronoun *ele* and the Catalan accusative third person clitic *el/la.*

In Section 4, we provide syntactic and semantic arguments in support of an analysis of BNs not occurring with HAVE-predicates in BrP that relies on a full DP structure with a null D specified for an i(nterpretable) Num(ber) feature (i.e., [iNum]). In this section we also argue that an analysis based on the lack of a Number projection, such as the one assumed by Munn & Schmitt (2005), cannot properly account for the data we will provide. Finally, we analyze the internal structure of the DP in minimalist terms by proposing a full DP structure with an [iNum] D that acts as

a Goal c-commanding an [uNum] Probe, the relevant operation being an Inverse Agree relation, as defined by Biberauer and Roberts (2011), and Biberauer and Zeijlstra (2012).

In Section 5 we refine our analysis and we discuss why BNs are allowed in preverbal position in BrP, and what is the meaning they have in this position. We will defend that preverbal BNs are not mere NPs, but strong DPs with null Ds that constitute the logical subjects of categorical judgments (Kuroda 1972). We will show that they must refer either to definite kinds (cf. definite generics, Carlson 1977; singular generics, Chierchia 1998), or to maximal plural objects of generic statements (cf. Sharvy 1980, Beyssade 2005); we will clarify these notions below. In this section we will also show how these hypotheses explain the possibility for preverbal BNs to combine with individual-level, kind-level and stage-level predicates, both in generic and in episodic contexts.

Finally, in Section 6, we summarize the conclusions of this study.

2. Definite descriptions and BNs in BrP

In this section, we are going to present various forms that definite descriptions may have in BrP, and we will show that BNs can be definite in this language. We will also advance our working hypothesis that will aim at explaining the facts concerning the variation in BrP DP internal agreement.

Recall, to start with, the examples given in (1) and (2), where we illustrated the apparent optionality of the definite article and the variation on number realization and number agreement.[3] The question we ask is: are all of these nominal expressions definite descriptions? We will answer affirmatively.

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[3] There are at least two cases where the definite article is not optional in BrP. Preceding proper names in vocative constructions, it is obligatorily absent (Longobardi 1994; see Espinal 2013 for similar facts in Catalan). In combination with predicates that are usually said to require kind-referring objects (e.g., *inventar* 'to invent'), it is obligatorily present. Consider (i) from Borik et al. (2012).

(i)   Jack Dorsey inventou *(o) Twitter, Steve Jobs inventou *(a) Apple, Mark Zuckerberg
        inventou *(o) Facebook, J.K. Rowling inventou *(o) Harry Potter,…
        http://imodeme.blogspot.com/2010/09/entrando-no-armario.html

See Beyssade (2005) for the proposal that objects of verbs like *inventer* 'to invent' in French refer to concepts/prototypes, which are different from kinds. We leave this topic for further research.

That BrP allows for definite descriptions, both with or without explicit articles specified for Number, can be argued for on the basis of the distribution of the pronoun *ele* 'it'. This pronoun imposes strong restrictions on the antecedent it may have. It can only refer to an entity-denoting expression. In (5), we show that the antecedent of this pronoun can neither be an adjective (5a), a concealed question (5b), nor a bare nominal predicate (5c), but a definite nominal expression is possible (5d).[4]

(5) a. O João é *bonito,*   mas o   Pedro não é ∅/*ele.*
        the João is handsome but   the Pedro not is ∅/it
        'João is handsome but Pedro is not.'

   b. O   João sabe   (*a*) *hora,* mas o   Pedro não sabe   ∅/*ela.*
        the João knows the time   but the Pedro not knows ∅/it
        'João knows (what) the time (is), but Pedro doesn't.'

   c. O   João é *professor,* mas o   Pedro não é *ele.*
        the João is professor   but   the Pedro not is ∅/it
        'João is a professor but Pedro is not.'

   d. O   João viu *o   carro,* mas não comprou *ele.*
        the João saw the car   but not   bought   it
        'João saw the car, but didn't buy it.'

In Section 3 we will show how a discourse relation with *ele* fails when the antecedent of the pronoun is a real BN object of a HAVE-predicate. But, for the time being, consider the data in (6) and (7), where the pronoun *ele* is licensed whether or not the definite article is present.

(6) a. Eu limpei   *o   banheiro* ontem.   Deixei *ele* bem brilhante.
        I   cleaned   the bathroom yesterday left   it   well bright
        'I cleaned the bathroom yesterday. I left it completely spotless.'

   b. Eu limpei *banheiro* ontem.   Deixei *ele* bem brilhante.[5]

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[4] It has been pointed out in the literature that BrP has lost third person clitics (Cyrino 1997), which were replaced either by a null object or a full pronoun *ele*. We follow Galves (2001) and Kato (2002) for whom BrP third person pronouns in object position are different from clitics in other Romance languages.

    Syntactically, third person pronouns are not strongly deficient as this term was defined by Cardinaletti and Starke (1999) and, accordingly, they may or they may not be adjacent to the verb, they can occur in coordinate structures when [+animate], and they may refer to a [-animate] antecedent. Semantically, third person pronouns cannot have a proposition/predicate as antecedent in the way clitics can.

[5] A reviewer suggests that discourse relations are not the same for full DPs and for BNs in view of the data in (i). However, as will become clear below, we propose that these data provide an argument in support of the hypothesis that an interpretable Num feature is located on the determiner. In (ia) the determiner is specified for singular and the pronoun can only be singular. In (ib) the covert determiner can be specified for singular or plural Number and, accordingly, both *ele* and *eles* are possible in the following discourse.

(i) a. Eu limpei   *o   banheiro* ontem.   Deixei *ele/*eles* bem brilhante.
        I   cleaned   the bathroom yesterday left   it   them well bright
        'I cleaned the bathroom yesterday. I left it completely spotless.'

I   cleaned bathroom yesterday left   it   well bright
'I cleaned the bathroom/a bathroom yesterday. I left it completely spotless.'

(7) a. *Os   coelho* vê o   mundo de outra maneira, porque
the.PL rabbit sees the world of other manner   because
eles são muito pequenos.
them are   very   small.PL
'(The) rabbits see the world in a different manner, because they are very
  small.'
   b. *Coelho* vê   o   mundo de outra maneira, porque
rabbit sees the   world of other manner   because
eles são muito pequenos.
them are very small.PL
'(The) rabbits see the world in a different manner, because they are very
small.'
(Munn & Schmitt 2005:825, ex.(8b))

The reading we are interested in for (6b) and (7b) is the one which is synonymous
with (6a) and (7a), respectively. Note that the expressions in italics all correspond to
nominal expressions with discourse reference, as shown by the fact that discourse
relationships with the pronoun *ele(s)* are similar independently of the presence of an
explicit article or what looks like a BN.

Note also that the BN *banheiro* 'bathroom' in (6b) occurs in object position of
a causative transitive verb in an episodic sentence, whereas the BN *coelho* 'rabbit' in
(7b) occurs in preverbal position of a stative transitive verb in a generic sentence.
That is, independently of the sort of verb, sentence and relative position with respect
to the verb, these BNs satisfy the requirements of canonical argumenthood and
correspond to entity-denoting expressions, exactly as if they were preceded by an
overt determiner (Ghomeshi et al. 2009).

Another interesting piece of data for our discussion about the occurrence of
BNs in BrP comes from the distribution of full DPs in informal BrP, as we illustrate
in (8) and (9). As we have mentioned above in Section1, it has been pointed out in the
literature that there is variation in DP internal number agreement in BrP. According to
these studies, in addition to Costa and Figueiredo Silva (2006), Lopes (2006), and
Simioni (2007), sentences (8) and (9) are all well-formed in oral BrP, although they
differ in the way Number is instantiated: in every constituent of the nominal

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   b.   Eu limpei *banheiro* ontem.   Deixei *ele/eles*   bem brilhante(s).
I   cleaned bathroom yesterday left   it them   well bright(.PL)
'I cleaned the bathroom/the bathrooms yesterday. I left it/them completely spotless.'

expression (see (8a) and (9a)), in the D and in the N (see (8b) and (9b)), or only in the D (see (8c) and (9c)).[6]

(8)a. O João viu *as*   *meninas bonitas* ontem.
    the João saw the.PL girl.PL   pretty.PL yesterday
    'João saw the pretty girls yesterday.'

  b. O João viu *as*   *meninas bonita* ontem.
    the João saw the.PL girl.PL   pretty yesterday
    'João saw the pretty girls yesterday.'

  c. O João viu *as*   *menina bonita* ontem.
    the João saw the.PL girl   pretty yesterday
    'João saw the pretty girls yesterday.'

(9) a. *As*   *meninas bonitas* vê(em)   televisão.
    the.PL girl.PL   pretty.PL watch(.PL) television
    'The pretty girls watch television.'

  b. *As*   *meninas bonita* vê(em)   televisão.
    the.PL girl.PL   pretty watch(.PL) television
    'The pretty girls watch television.'

  c. *As*   *menina bonita* vê(em)   televisão.
    the.PL girl   pretty watch(.PL) television
    'The pretty girls watch television.'

So far, we have shown that canonical arguments allow the omission of the article (see examples (6b) and (7b)), and they also allow that number be overtly specified only on the article (see examples (8c) and (9c)). We have also shown the instantiation of a discourse relation between the pronoun *ele* and a DP antecedent, independently of the fact that the definite determiner be overtly specified or not (see examples (5)-(6)-(7)).

In order to explain that BrP patterns with other Romance languages in requiring determiners for argumenthood (Longobardi 1999, 2000), we postulate that a determiner is necessary, either overt or covert, as an argument-creator and as a bearer of definiteness.[7] Without a null D hypothesis it would be difficult to explain the

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[6] See also Menuzzi (1994).

[7] For bare plurals in BrP, we assume the traditional proposal that a null determiner is required for argumenthood in Romance (Longobardi 1994, Chierchia 1998):

(i)   João   comprou *livros*, mas ainda não leu   *eles*.
    João   bought   books but yet   not read   them
    'João bought books, but has not read them yet.'

Bare plurals in other Romance languages, such as Catalan and Spanish, might be also claimed to have null determiners. On the other hand, French *des* and Italian *dei/degli/delle*, which precede what look like a bare plural in other Romance languages, are indefinite articles for which a complex determiner structure has been postulated (Gross 1967, Kayne 1977, Ihsane 2012), one that encodes plural semantics (Farkas 2006).

licensing of the entity-type anaphora *ele*. We further postulate that BrP patterns with French in having D as the trigger of discourse reference, and we link this claim to two hypotheses: (i) that D is the locus of Number in both languages, and (ii) that Number is essential for extensionalizing the property denoted by the Noun (Bouchard 2002, Dobrovie-Sorin 2012). In other words, number realization facts point to the crucial role of D in making reference possible. Consider, in this respect, the data in (10) and (11).

(10)a. Os   brasileiro é   trabalhador. (= (2a))
      the.PL Brazilian is hardworking
      'Brazilians are hardworking.'
  b. *O   brasileiros   é trabalhador.
      the   Brazilian.PL is hardworking

(11)a. *As   menina bonita* vê(em)   televisão. (=(9c))
      The.PL girl   pretty watch(.PL) television
      'The pretty girls watch television.'
  b. *A meninas bonitas*   vê(em)   televisão.
      The girl.PL   pretty.PL watch(.PL) television

The contrast in (10) and (11) shows that sequences that specify Number only on D are well formed, those that specify Number features on a (modified) Noun, but not on an overt D, are ill-formed. Hence, the crucial difference between English and BrP has to do with the locus of Number morphosyntactic specification. Unlike English, a language that allows morphosyntactic specification of Number on N (e.g., Brazilian*s*, the pretty girl*s*), BrP –like Modern French, as discussed below– encodes Number morphosytactic specification and interpretability on D.

     Let us now consider the meaning of the BNs we have seen so far. The question that we want to address at this point is to what extent a BN can be considered to be definite. Following von Heusinger (2011:9), "in a pretheoretical definition, an expression is definite if it unambiguously denotes or refers to one object, i.e. if the object can be identified as the only one that is denoted by the expression. The fixed reference of a definite expression depends on different grounds: it can be determined by lexical material, by semantic rules or by pragmatic strategies". Semantic definiteness relates to notions such as uniqueness, familiarity and saliency, whereas pragmatic reference requires access to the common ground and to the identification of

a referent.[8] With these considerations in mind, let us look at the examples in (12) and (13).[9]

The BN *revistinha* in (12B) can have a definite interpretation, as proved by the fact that this nominal expression can be anaphoric to a previous DP, *uma revistinha,* in the discourse.

(12) A. Por que a   Aninha está quieta hoje?
  why   the Aninha is   quiet today
  'Why is Aninha so quiet today?'

  B. Porque ontem   ela comprou   uma revistinha $_i$, e   hoje ela
  because yesterday she buy.PAST.3SG a   coloring-book and today she
  passou o dia todo assim,   quieta, pintando *revistinha* $_i$.
  spent the day whole that-way quiet painting coloring-book
  'Because yesterday she bought a coloring book, and today she spent the whole day painting that coloring book.'

The BN *disco* in (13) also refers to a unique object accessible from the encyclopaedic context. This exemple illustrates that in those contexts where the unique reference of the nominal is salient in a given context the determiner can be dropped.[10]

(13)   [Situation: Catalan TV broadcasting company organizes each year a maraton to get funding for research on different diseases. For this occasion a unique CD is published, a different one each year, where well-known singers promote new songs related to the topic of that year's maraton (VIH, cancer, etc.).]
  O João vai comprar *disco da   maratona da   TV3* este ano.
  the João go buy   CD of.the maraton of.the TV3 this year
  'João is going to buy the CD of the TV3 maraton this year.'

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[8] See von Heusinger (2011) for an overview of different approaches to definiteness.

[9] Notice that the BNs in italics in (12) and (13) could both be preceded by an overt definite article, as was the case in examples (6) and (7) above in the text.

[10] Additional attested examples of the unique atomic reference for postverbal BNs in object position are found in the online version of the magazine *Almanaque Brasil*. One such example is given in (i) where the BN *aliança* can only refer in the discourse to the object antecedent *a minha aliança* 'my ring' and to the DP *seu anel de casamento* 'his wedding ring'.

(i)   "Perdi *a minha aliança*!", gritou Didi. Às   vésperas   da   Copa do   Mundo de
  lost   the my   ring   shouted Didi at.the day.before of.the Cup of.the World of
  1958, o meio-campista parou o treino da   seleção   canarinho
  1958 the mid-camper   stopped the training of.the selection canary.little
  para procurar *seu anel de casamento*.[…] E   nada   de encontrar *aliança*.
  to   look.for his ring of wedding   and nothing of find   ring
  (http://www.almanaquebrasil.com.br/index.php?option=com_content&view=article&id=1073
  4:lambe-lambe&catid=12916:esporte&Itemid=137) 02.09.2013
  'I have lost my wedding ring!' cried Didi. On the day before the 1958 World Cup, the middle-field player stopped the training of the Brazilian National team in order to look for his wedding ring. […] And it was impossible to find it.'

Hence, the examples in (12) and (13) show that BNs can be definite specific in BrP: that is, it is possible for a BN to have a fixed reference and, therefore, to refer back to an entity either already introduced in the discourse or part of the common ground, without the support of an overt determiner.[11]

Next, we will show that BNs in BrP may also have a generic interpretation (in preverbal position), associated with either a definite kind term or a maximal sum, and an indefinite reading (in postverbal position).[12] Consider the examples in (14).

(14) a. *Brasileiro* é trabalhador. (Müller 2002: 280, ex. (4))
    Brazilian is hardworking
    'Brazilians are hardworking.'

  b. *Criança* lê   *revistinha*. (Munn & Schmitt 2005:823, ex. (1b))
    child   read.PRES.3SG comic-book
    'Children read comic books.'

  c. Eu vi   *criança* na   sala. (Munn & Schmitt 2005:825, ex. (7))
    I   see.PAST.1SG child   in.the room
    'I saw a child/children in the room.'

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[11] Similar examples are given by Mathieu (2009:126, ex. (9)), who argues that Old French BNs can also be interpreted as definites.

(i)   Et li visquens   [...] avoit un rice palais par devers *un gardin*. [...]
          and the viscount   had   a   rich palace by front   a   garden
          Il i   avoit   une fenestre par devers *le gardin* [...]
          it there had   a   window by   front the garden
          Et si   oï   le lorseilhol center en *gardin* [...]
          and   thus heard tge nightingale sing in   garden
          'The viscount owned a rich palace with a garden in front of it. There was a window overlooking the garden. And one could hear the nightingale sing in [the] garden.'

[12] We acknowledge that there exists a well-established analysis of D-genericity (cf. Krifka et al. 1995) according to which nominal expressions that refer to kinds of individuals take the form of bare plurals, and more exceptionally of definite generics (cf. the 'well-established' kind restriction, Carlson 1977; but see Dayal 2004 for a criticism). For English, this neocarlsonian approach seems to account appropriately for the meaning of bare plurals in generic sentences and, in fact, it has deeply influenced most of the literature on kind reference in other languages (e.g., Chierchia 1998; Longobardi 2001, 2005; Zamparelli 2002, for Italian; and Schmitt 1996, Dobrovie-Sorin & Pires de Oliveira 2008, for Brazilian Portuguese, among others).

Our goal in this paper is to show that in BrP D is the category that is required for argumenthood and that this category encodes reference by specifying Number. Therefore, a bare plural in BrP cannot have kind reference by itself. We follow previous work by Borik and Espinal (2012, 2013) that shows that: a) kind-referring nominal expressions are not uniform in their morphosyntactic appearance across languages; b) definite kind terms, which we understand that denote abstract intensional entities, constitute the default way to refer to kinds in Romance (namely Spanish), since definite kinds do not refer to any instantiation of the kind due to the absence of Number; and c) generic plural definites cannot arguably be assumed to be equivalent in meaning to bare plurals in English. This approach is in accordance with the well-known observations that bare plurals in Romance cannot obtain a kind reading, but only an existential one (cf. Laca 1990, 1999; Longobardi 1994, 2001; Dobrovie-Sorin & Laca 1996, 2003; Beyssade 2005; de Swart 2006), and that, by contrast, definite plurals are used in Romance to render a logically equivalent kind interpretation.

We hold that the English translations that are usually given for this type of examples (namely, bare plurals and singular indefinites) do not reflect the meaning of BNs appropriately and, furthermore, have influenced the analysis that linguists have provided for them in the literature.

Example (14a) is a generic sentence in which an i-level predicate combines with a generic argument that can either refer to 'the Brazilian' kind term or the maximal sum of all the individuals of this class: 'the Brazilians'.

Example (14b), which corresponds to a generic sentence, has a verb that denotes a stage-level predicate in the present tense. It introduces a BN in preverbal position that has a plural generic interpretation. We argue that *criança* refers to the maximal sum of individuals of the *criança* type relevant in the world(s) being considered, as in *As criança(s) lê revistinha* 'The children read comic books'. The definite D, either overt or covert, is interpreted as an operator of maximality (Sharvy 1980, Link 1983, Chierchia 1998), which selects the maximal sum of elements of the set denoted by the Noun. In other words, what looks like a bare singular corresponds semantically to a generic plural definite description (cf. Krifka et al. 1995, Ferreira 2005, de Swart 2006; see also Section 5 below). Note, furthermore, that the corresponding example in another Romance language like Spanish would be *Los niños leen revistas* 'The children read comic books', with an overt definite description specified for plural number in subject position that refers to the maximal sum of individuals that share the property of being child and are involved in a plurality of reading events.

On the other hand, the object BN in (14b) can be associated with either a definite or an indefinite reading, either singular or plural, and these different readings, constrained by formal features of the nominal structure, will be felicitous depending on the type of available contextual information. All in all, we aim at explaining why the meaning associated with *criança* is 'the children' and the meaning associated with *revistinha* is 'the comic-book, a comic-book, the comic-books, comic-books'. We will argue later in this paper that the different meanings of the two BNs are constrained by structural factors[13].

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[13] We assume that the indefinite reading of postverbal BNs also involves a null D (see also footnote 7). Note, however, that we are not going to study this indefinite reading in this paper.

Example (14c), which corresponds to an episodic sentence, introduces a BN in subject position of a secondary predication: *criança na sala* 'a child/children in the room'. Under the assumption that in Romance languages a noun is basically predicative and a determiner is required for argumenthood, we develop an analysis for BrP according to which the fact that the BN *criança* can mean 'the child, a child, the children, children' is to be attributed to the feature geometry associated with D (that is, definite, indefinite, singular or plural).

In this paper, we account for the structure and meaning of BrP BNs given so far in this section by postulating that they are DPs with a null D specified for Number, and we argue that in this type of structure there is no place for number neutrality: an interpretable Num feature denotes either atomicity or a plurality of individuals.

In order to explain the observed variation on number agreement between the D and the N in BrP, we postulate the following working hypothesis (Cyrino & Espinal 2011, 2012):

(15)   Number is morphosyntactically specified and interpretable on D.

A first version of the hypothesis in (15) was posed for French by Bouchard (1998, 2002), who claimed that this language encodes semantic number on D, whereas English encodes it on N.[14] Delfitto and Schroten (1991) and Bouchard propose that there are languages in which Number is marked on the N (like English) and other languages in which Number is marked on the D (like French). Bouchard (2002) argues for this distinction based on the following correlations: a) number is audibly marked on D in French (the *–s* plural is not pronounced in the nouns); b) [V+N] compounds function as a compound N in French whose head is the V and, because of that, number may not appear in the compound but only on D (cf. *l'ouvre-boîte, les ouvre-boîte*); c) there is no plurality of reference when the D is singular in conjoined structures: (e.g., *La secrétaire de Jean et collaboratrice de Paul est/*sont à la gare);* d) it is possible to conjoin determiners in French and indicate number

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[14] See Krámsky (1972) and Harris (1977, 1980) for an account of the obligatory insertion of determiners in Romance linked to the change in agreement morphology (e.g., from the noun in Old French to the determiner in Modern French). Mathieu (2009) proposes a minimalist account of the obligatory insertion of determiners in Modern French.

See more recently Dobrovie-Sorin (2012) for the claim that the features of Number do not project a syntactic category, and for the postulation of a parameter: in Romance, a Num feature attaches to D, whereas in English it attaches to little *n*.

See also Sauerland (2003) for the proposal that semantically contentful number is not interpreted on the Noun but in a syntactic category above the Determiner.

uncertainty (e.g., *Vous prendrez le ou les garcons que vous trouverez)* (see Bouchard 2002: 41-43).[15]

These four tests also apply in BrP: a) number is audibly marked on D (*as menina* 'the girl'); b) [V+N] compounds function as a compound N (*o conta-gota, os conta-gota* 'the droper');[16] c) there is no plurality of reference when the D is singular in conjoined structures (*a secretária de João e colaboradora de Paulo está/*estão na estação*); and d) it is possible to conjoin determiners and indicate number uncertainty (*Pegue o ou os livro que quiser* 'Take the books that you want'). This means that BrP shares with French significant syntactic properties, the difference between these two languages being that French requires overt determiners, whereas BrP allows for covert (null) determiners.

In order to account for these facts, we postulate that N in BrP is associated with a [uNum] feature that needs to be valued by a matching [iNum] feature for the syntactic well formedness and the meaning composition of the sentence to be guaranteed.[17] In accordance with this analysis a lexical head N in BrP might morphophonologically instantiate Num features only at the PF-component. We postpone the details of this analysis to Section 4.3.

We assume that count nouns inserted in N° are number neutral, in the sense that they are compatible with atomicity as well as non-atomicity entailments (cf. Farkas & de Swart 2003). From a semantic perspective the category Number is required in order to explain how the meaning of a Noun can make reference to objects: it corresponds to an instantiation or realization operation (Carlson 1977, Müller 2002, Déprez 2005), responsible for type shifting from (number neutral) properties of kinds $\langle e^k, t \rangle$ onto (singular or plural) properties of objects $\langle e^o, t \rangle$ (Espinal 2010; Borik & Espinal 2012, 2013). The definite D, which semantically corresponds to the iota operator, is required to turn properties of objects into the

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[15] See Bouchard (2002) for additional sets of differences that follow from the fact that Number is realized on D in French (but on N in English).

[16] We remind the reader that agreement on the Noun is subject to variation. Thus, one could also find in BrP: *os conta-gotas.* Besides the form given in the main text, a formal variant of the compound N is: *o conta-gotas*.

[17] We hereby refer exclusively to Num features, because we argue that determiners are the constituents capable of satisfying the [uNum] feature of the N. No mention will be made to other φ-features. See Picallo (2008) for the relationship between Gender and Number.

maximal set of individuals <e> having that property. The structure that will be defended in Section 4.3 has the form in (16).

(16)

```
                    DP <e>
                   /\
                  /  \
         Dº [iNUM]    NumP <eº,t>
                     /\
                    /  \
          Numº [iNUM]    NP <eᵏ,t>
                        /\
                       /  \
                 Nº [uNUM]
```
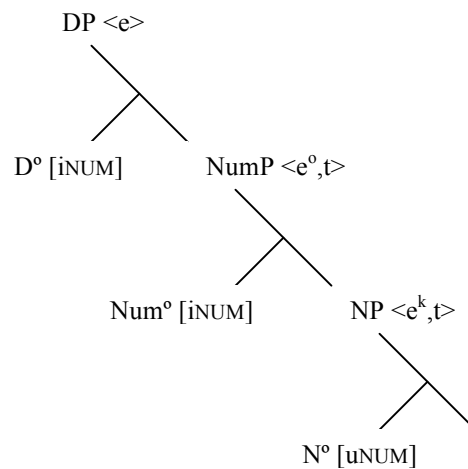
To sum up, our analysis of BNs in BrP reveals that not all BNs in this language are real BNs, and that, although BrP allows what look like BNs freely in all argument positions, these nominals are only apparently bare; most of them require a null Determiner specified for Number. The absence of morphosyntactic Number specification on N in BrP is parallel to its loss in the history of French (Mathieu 2009), and it might be related to the compulsory emergence of determiners (overt or covert).

3. BNs and argument structure

After having shown that BNs in BrP may behave like definite descriptions and may correspond to DPs, in this section we are going to argue that the structure and meaning of BNs can vary depending on the argument structure of the various classes of verbs BNs can occur with (Hale & Keyser 2002).

It has been pointed out in the literature that BrP allows BNs to freely occur with all kinds of verbs (Müller 2002, Müller & Oliveira 2004, Munn & Schmitt 2005, Lopes 2006, among others) (see Section 1). However, we would like to remark that it is necessary to look at the different argument structures of the various classes of verbs in order to fully understand in what sense BrP differs from other Romance languages.

Dobrovie-Sorin *et al.* (2006) and Espinal and McNally (2007, 2011) show that BNs in Catalan, Romanian, and Spanish can only occur in object position of a

restricted class of predicates that denotes a HAVE-relation, which excludes DO unergatives, unaccusatives and transitives. More specifically, Espinal and McNally (2011), following Borthen's (2003) study on BNs in Norwegian, postulate that BNs in Spanish and Catalan are licensed only if the verb phrase denotes a characterizing property of the external subject in a specific context of use. This property is not necessarily a prototypical, stereotypical or institutionalized attribute, but rather it entails the existence of a HAVE-relation in some relevant possible world.[18] In these languages BNs can only occur as internal arguments of relational categories (V, P) to which bare nouns can incorporate at some point during the derivation. BNs can neither occur as internal arguments of DO-unergatives, unaccusatives and complex transitive verbs (consider the Spanish examples in (17b-d)), nor as external arguments (17e).[19]

(17) a. María tenía *coche*.
    Maria had   car
    'María had a car.' (María was a car-haver; she could have one or more than one car)

   b. *Juan cantaba *madrigal*.
    Juan   sang   madrigal

   c. *Va a caer *libro* en el piso.
    go to fall book in the floor

   d. *Juan limpiaba *baño*.
    Juan   cleaned   bathroom

   e. *Brasileño es *trabajador*.
    Brazilian   is hardworking

The Spanish examples in (17) contrast with the BrP data in (4) and (1c) above. This contrast suggests that there is a structural difference between the BNs that occur with different types of verbs and in different structural positions in these two Romance languages. To account for the data in (17), it has been proposed that BN objects of HAVE-predicates are the only ones that are real Ns (or NPs), the rest requires a specification of plural number or an overt determiner or quantifier (Dobrovie-Sorin *et al.* 2006; Espinal and McNally 2007, 2011; Espinal 2010; Espinal and Mateu 2011). The analysis of these authors rests on the three following ingredients: a) only the BN

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[18] We are not convinced by the arguments given by Lazaridou-Chatzigoga (2011) that aim to show that the class of HAVE-predicates is larger in Greek than in Spanish and Catalan, because the data this author provides include secondary predications, weak definites, and verbs of consumption whose objects have massified readings, for all of which a syntactic structure larger than NP should be postulated (Espinal & Mateu 2011).

[19] See Suñer (1982), Kallulli (1999), Espinal & Mateu (2011) for discussion of a structural constraint on subjects/specifiers, namely that they must be properly licensed by appropriate functional categories.

in (17a) is number neutral; b) it denotes a property, not an entity (see the contrast between (17a) and *María tenía un coche* 'María had a car'); and c) the semantic relation between the V and the NP is one of modification. BN objects of HAVE-predicates have been argued to be not canonical arguments but simple modifiers of an internal participant of the verb. As a result, the semantics of (17a) is similar to what we might have for the English sentence 'María was a car-haver'.

Another ingredient of the analysis argued for in Espinal and Mateu (2011), which will become immediately relevant for BrP, is that if a BN expression is allowed in syntactic complement position of a HAVE-relation (17a), a full NumP, DP, or F(unctional)P can also occur in that position. In Catalan and Spanish this syntactic structure is overtly manifested by means of a bare plural or a DP with an overt determiner. In this case the semantic relation is not one of modification.

Let us now consider BrP. Since this language has the verb *ter* 'to have' and can be characterized as a HAVE-language (see Harves & Kayne 2012), we expect that the class of HAVE-predicates will be close to the one described for Catalan, Romanian and Spanish. The question now is whether the analysis proposed for these Romance languages also applies to object BNs of the BrP HAVE-predicate *ter* 'to have'. We think that the answer is affirmative: in this context the BN object may denote a property that restricts the HAVE-relation. When this happens the following discourse allows a null object to refer back to the N (or NP).

Consider (18). Null objects in BrP are instances of ellipsis (Cyrino 1997), and they can refer to properties, propositions, and entities. Notice that a null object is well-formed in both (18a-b). In contrast to null objects, third person pronouns (i.e., *ele*) can only refer to entities (see the discussion around (5)-(7) above).[20]

(18)a. O João tem *maçã*. Comprou ∅/#*ela*/#*elas* ontem.
     the João has apple bought ∅ it them yesterday
     'João has an apple (João is an apple-haver). He bought apples yesterday.'

  b. O João tem *maçã*. Comprou ∅/*ela*/*elas* ontem.
     the João has apple bought ∅ it them yesterday
     'João has an apple/apples. He bought it/them yesterday.'

In (18a), the predicate *ter maçã,* lit. have apple, entails number neutrality for the object, since the meaning conveyed is that a characteristic property of the external argument in an appropriate context of use is 'to be an apple-haver', independently of

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[20] In relation to the semantics of pronouns, with a special reference to Japanese, see Tomioka (2003).

the fact that this external argument may have one or more than one apple. In this situation it is inappropriate to use a weak pronoun in the subsequent discourse.

The surprising fact, however, is that *ela/elas* are allowed in (18b), but only under a different interpretation of the BN. We can suggest two possible explanations for (18b), a syntactic one and a pragmatic-related one. The syntactic explanation relates the BrP data to Espinal and Mateu's (2011) generalization presented above, and with the claim already made that the pronoun *ele* requires a DP antecedent in BrP: in (18b) a discourse relation can be established between *ela/elas* and *maçã*, because the BN in this particular case must correspond to a DP specified for Number. Therefore, it is assigned a discourse reference and is no longer number neutral (i.e., it is either singular or plural). That is, the difference between (18a,b) is due to the fact that in (18a) the BN has an NP structure, whereas in (18b) the BN has a DP structure.[21] Section 4 is devoted to argue that the antecedent of *ele* is a DP with a null D specified for Number.

A second possibility is that the third person accusative pronoun is licensed not through a direct discourse anaphoric relationship to the antecedent BN, but by presuppositional accomodation of the antecedent to the common ground. However, we will not consider this line of analysis in this paper.[22]

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[21] We think that some data discrepancies that have been raised to us by native speaker reviewers are due to the NP/DP structure that can be attributed to BN objects of HAVE-predicates.

[22] As pointed out by Espinal and McNally (2011) the possibility of alternation between the Catalan property-type anaphora *en* 'one' and the entity type anaphora *el* 'it' does not necessarily imply that there is any direct anaphoric relation between the clitic *el* and the supposed BN antecedent. Consider the contrast in (i).

(i) a. En Joan té *mòbil*. *En* té   des   dels   catorze anys.
        the Joan has mobile PROP has since of.the.PL fourteen years
        'Joan has a mobile (He is a mobile-owner). He has one since he was fourteen years old.' (He may have had one mobile or more than one)
     b. En Joan té *mòbil*. *El* porta sempre a la butxaca.
        the Joan has mobile it wears always in the pocket
        'Joan has a mobile. He always has it in his pocket.'

The two pronouns seem to require different discourse rethorical structures. The first sentence of each discourse introduces a BN that does not identify a discourse topic, it simply describes a specific having-relation. In the second sentence of each discourse we find a verb that in both cases also denotes a HAVE-relation, either *tenir* 'to have' or *portar* 'to wear'. So, where is the difference? The clitic *en* 'one' in (ia) refers back to the antecedent property denoted by the Noun *mòbil,* but cannot introduce a discourse reference to a particular mobile. By contrast, the third person accusative clitic *el* 'it' is licensed in the second discourse because it identifies a new discourse topic; for this possibility to arise the locative prepositional complements *a la butxaca* plays a crucial role. In other words, the third person accusative clitic is licensed as a result of accomodating information to the common ground at the time of utterance understanding, a process which increases the identifiability of a unique token referent by both speaker and hearer.

Consider now an additional example to add to the paradigm in (18):

(18)c. O João tem *maçã* na   cesta. Comprou ∅*/ela/elas* ontem.
the João has apple in.the basket bought   ∅ it   them yesterday
'João has the apple/an apple/the apples/apples in the basket. He bought it/them yesterday.'

Like in (18b), this example shows that the BN is not syntactically a bare NP: it is the subject of a PP secondary predicate *na cesta* 'in the basket', and it must be a DP in order to be licensed as a canonical argument, both syntactically and semantically. In such a situation, BrP allows the pronominal forms *ela/elas* 'it, them', in addition to the null object, to refer back to *maçã* 'apple'. The possibility of having *ela/elas* in this example can be accounted for if –as we postulate here– the structure corresponding to the antecedent BN is a DP with a null D bearing an [iNum] feature morphosyntactically specified for either singular or plural. Again, as in (18b), the syntactic configuration corresponding to (18c) does not entail number neutrality for the BN, but either atomicity or non-atomicity of the referent.

An additional semantic argument for the NP/DP structure associated with object BNs of HAVE-predicates is given in (19) and it is based on adjective modification of the BN. The verb *usar* 'to wear' is a HAVE-predicate whose nominal complement *vestido* 'dress' is modified either by a classifying PP or a qualifying adjective.

(19)a. Maria usa   vestido *de festa*
Maria uses dress   of party
só   quando as   amigas compram ∅*/#ele* de presente para ela.
only when   the.PLfriends buy   ∅ it of present   for   her
'Maria wears a party dress, only when her friends buy one for her.'
   b. Maria usa   vestido *novo*
Maria uses dress   new
só   quando as   amigas compram ∅*/ele* de presente para ela.
only when   the.PLfriends buy   ∅ it of present for   her
'Maria wears a new dress, only when her friends buy it for her.'

In (19a) the BN *vestido* is modified by a PP that classifies the nominal expression and, together with the noun (*vestido de festa* 'party dress'), denotes a property of a

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It is beyond the scope of this paper to explore the accommodation approach any further. We refer the reader to the following references on this topic: Lewis (1979), von Fintel (2000), Simons (2003), Beaver & Zeevat (2007), among others.

subkind of dress (Espinal 2010). Since *de festa* is not a modifier that makes it explicit we are talking about some specific dress, the subsequent discourse only allows a null object; third person pronouns are awkward when referring to property-type nominals. The BN is a bare NP and no reference is made to a specific individual token entity by means of such expression. Hence, the pronoun is disallowed to refer back to the BN in (19a). In (19b), by contrast, the BN is modified by an adjective that denotes a property of token individual entities. This is demonstrated by the fact that the subsequent discourse allows the pronoun *ele* 'it' to refer to individual entities. The null object is allowed in either context, as expected.

Based on these observations, we conclude that when a HAVE-predicate combines with a real BN, this nominal expression only has an N (or NP) structure, it denotes a property and it restricts by modification the HAVE-relation. However, a HAVE-predicate may also combine with a more complex nominal expression; in this case, and assuming the canonical structure for argumenthood in Romance (Longobardi 1994), the complement of the verb must be a DP structure, which refers to an entity that saturates the predicate. We have related this structural distinction to the distribution of third person pronouns *vs.* null objects.

In the rest of this section we apply this same test to the discourse relations of BNs that occur with different types of verbs (cf. (4)). We compare BN objects of HAVE-predicates (see example (18a), repeated in (20a)), with BN objects of DO-unergatives *correr* 'to run' (20b), internal subjects of unaccusatives *chegar* 'to arrive' (20c), and objects of causative transitives *quebrar* 'to break' (20d).

(20) a. O   João tem *maçã*. Comprou ∅/#*ela*/#*elas* ontem. (=18a)
        the João has apple bought   ∅/it   them   yesterday
        'João has an apple (João is an apple-haver). He bought apples yesterday.'

   b. O João correu *maratona* este ano, e   depois criticou   ∅/*ela*/*elas*.
        the João ran   marathon this year and then   criticized ∅/it/them
        'João ran the marathon/marathons this year, but then he criticized it/them.'

   c. Vai chegar *parente* em casa   e   o   João vai cumprimentar ∅/*ele*/*eles*.
        go arrive relative at home and the João go greet   ∅/him/them
        'A relative/relatives is/are going to arrive at home, and João is going to greet him/them.'

   d. O João vai quebrar *copo* se colocar∅/*ele*/*eles* no   chão.
        the João go break   glass if put   ∅/it/them in.the floor
        'João is going to break a glass/glasses if he puts it/them on the floor.'

BrP does not have third person accusative clitics in informal speech (see footnote 4). Therefore, as illustrated in (20), anaphoric relations can either be

expressed by third person pronouns or by null objects. The former are allowed in all examples except in object position of HAVE-predicates (20a), under the relevant interpretation we want for this sentence, namely that both the BN and the null object refer to a property.[23] Null objects, on the other hand, are allowed with any type of verb; that is, they can refer back to bare NPs (20a) and denote properties, or refer to full DPs (20b-d) and denote entities.

Besides what we have said so far, it is interesting to notice that the only context where the pronoun *ele* is not allowed in the subsequent discourse in BrP (precisely (20a)) is exactly the one where a property-type nominal expression is the option in Catalan (see (21a) below). Catalan shows a correlation between the possibility of having a BN in object position of a HAVE-predicate and allowing a property-type anaphora (as the clitic *en* 'one', a Pro-N, in terms of Déchaine & Wiltschko 2002). BNs, like *en,* cannot be used to introduce discourse referents to token individuals of the sort that accusative clitics *el/la/els/les*, which correspond to entity-token anaphoras, can. None of the second coordinated clauses in (21b-c) or the subordinate clause in (21d) allows *en* to refer back to the object. The reason for this ungrammaticality is to be related to the fact that these verbs, being either DO-unergatives, unaccusatives or transitives (e.g., *córrer* 'to run', *arribar* 'to arrive', *trencar* 'to break', respectively), require full DPs (but not NPs) as canonical arguments and, therefore, the following discourse only allows accusative third person clitics (not the clitic *en*).

(21) a. Segur que en Joan té *mòbil. En* porta sempre.[24]
      sure that the Joan has mobile PROP wears always
      'I'm sure that Joan has a mobile. He always has one with him.' (He may have one mobile or more than one)

  b. En Joan va córrer *la marató* aquest any, i després *la* /
      the Joan PAST run the maraton this year and then it.ACC.SG.FEM
      en va criticar.
      PROP PAST criticized

  c. Va arribar *un parent* a casa i en Joan *el* / *en* va
      PAST arrive a relative at home and the Joan him.ACC.SG.MASC PROP PAST

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[23] Additional support for the correlations presented here comes from the study in Casagrande (2010). Her results, although not conclusive, show that a third person weak pronoun, as opposed to the null object, is rejected by native speakers in sentences where the antecedent of the pronoun/null object is a BN in complement position of a HAVE-predicate. It should be pointed out that the author did not rely on the classification of verbal predicates that we have presented in this section, but the sort of data she obtained supports our account of the data.

[24] See note 22.

saludar.
greet

d. En Joan va   trencar *els vasos* perquè *els/*   *en* va
the Joan PAST break   the glasses because them.ACC.PL.MASC PROP PAST
posar a terra.
put   on floor

This discussion confirms that there is a strong parallel between BrP and other Romance languages (namely, Catalan and Spanish): a) only objects of HAVE-predicates have a property-type denotation to which a property-type anaphora can refer back to; and b) –beyond accommodation– third person pronouns cannot refer back anaphorically to NPs but only to DPs. To explain these facts our analysis consists in postulating that objects of HAVE-predicates, and only objects of HAVE-predicates, allow a genuine NP structure.

In the next section we look more closely to the structure of BNs other than nominal objects of HAVE-predicates.

4. **BNs and the DP analysis**

4.1. Additional arguments for the necessity of a Determiner projection

BrP is a language that allows nominal expressions with and without explicit articles to occur in the same argument positions. In this section, we will argue that these nominal expressions, in order to introduce a (token) discourse referent, have to specify Number, and that, since in Romance Number became obligatory on determiners through time (Mathieu 2009), the category D must be the one capable of valuating the [uNum] feature of N. Accordingly, we postulate that in BrP only DPs, but not both DPs and NPs, are canonical arguments, and that D° is the locus of definiteness and Number specification.

Syntactic arguments for a DP analysis of BNs are based on the distribution of pronouns, anaphoric binding and coordination of nominal expressions. Semantic arguments for a DP analysis of BNs are based on a referential, individuated interpretation of the BN, the semantics of bare habituals, and the possibility of obtaining a wide scope interpretation for the BN with respect to negation.

The first syntactic argument, based on the distribution of third person pronouns *vs.* null objects in BrP, was mentioned in (20). We showed that third person

pronouns require DPs as antecedents, whereas null objects may refer back to both DPs and NPs.

The second syntactic argument for a DP analysis is based on the possibility of anaphor binding (Pereltsvaig 2006). The reader should have in mind that, considering languages like Russian, Perelstvaig (2006) argues for Small Nominals, which are structures smaller than DPs (either NPs or QPs, in her analysis). In order to show that these structures are not full DPs, the author relies on the fact that Small Nominals cannot be antecedents of anaphors. Let us consider the BrP data in (22).

(22)a. A   Maria$_i$ tem *empregada*$_j$ para *se*$_{i/\#j}$ vestir
       the Maria has maid   to   se.3.SG.REFL dress
       de odalisca no   carnaval.
       of odalisque in.the carnival
       'Maria has a maid to dress herself as an odalisque for carnival.'

  b. A   Maria$_i$ tem *uma empregada*$_j$ para *se*$_{i/j}$ vestir
       the Maria has a   maid   to   se.3.SG.REFL dress
       de odalisca no   carnaval.
       of odalisque in.the carnival
       'Maria has a maid to dress herself as an odalisque for carnival.'

  c. A   Maria$_i$ contratou *empregada*$_j$ para *se*$_{i/j}$ vestir
       the Maria hired   maid   to   se.REFL dress
       de odalisca no   carnaval.
       of odalisque in.the carnival
       'Maria hired a maid to dress herself as an odalisque for carnival.'

The example in (22a) shows that a BN object of a HAVE-predicate, when this BN is a real N (or NP), cannot be the antecedent of an anaphor like the reflexive pronoun. This is the situation in which *ter empregada* is associated with the meaning 'to be a maid-haver' (i.e., compatible with the number neutral interpretation according to which the external subject *a Maria* could have one or more than one maid). Interestingly, if *empregada* refers to a particular individual, as in (22b), both *Maria* and *empregada* can be the antecedents of the reflexive pronoun. What example (22c) adds to this paradigm is that either the object or the subject of a causative transitive verb like *contratar* 'to hire' can serve as antecedents of a reflexive pronoun, whereas the NP object of a HAVE-predicate cannot.[25]

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[25] In contrast to (22a), a reviewer has suggested to us the example in (i). We attribute the well-formedness of this example to the structural ambiguity that can be associated with objects of HAVE-predicates: the object complement of a HAVE-predicate can be a DP, in addition to an NP (cf. Espinal & Mateu's 2011 generalization).

(i)   Ele$_i$ tinha   *secretária*$_j$ para   *se*$_{i/j}$ lembrar   dos   aniversários por ele.
          he   had   secretary   to   se.REFL remember   of.the   birthdays   for   him

The third syntactic argument is based on Longorbardi's (1994) test of coordination of nominal expressions. Longobardi (1994:620-621) shows that when two morphologically singular nominal projections are coordinated with the exclusion of the determiner, the argument of the clause has to refer to a single individual, whereas when the coordination includes the determiner, the reference is to more than one individual. In BrP, we have the same possibilities with overt determiners, as in (23). In order to present this argument in a way that is parallel to Longobardi's, we consider here the formal variety of BrP in which there is subject-verb agreement.

(23) a. A   gerente   e   a   diretora trabalham no   banco.
        the   manager   and   the   director work.PL   in.the bank
        'The manager and the director work at the bank.' [Two persons]
    b. A   gerente e   diretora   trabalha no   banco.
        the   manager and director   work.SG in.the bank
        'The manager and director work at the bank.' [One and the same person]

Crucially, if the determiners are null, the contrast remains.

(24) a. Gerente e   diretora   trabalham no   banco.
        manager and director   work.PL   in.the bank
        '(The) manager and (the) director work at the bank.' [Two persons]
    b. Gerente e   diretora   trabalha no   banco.
        manager and director   work.SG in.the bank
        '(The) manager and director work at the bank.' [One and the same person]

Therefore, we are led to conclude that in (24a) we have a coordination of two DPs that refer to two different people, and the verb may manifest plural morphology. By contrast, in (24b) the null determiner is excluded from the coordination of NPs, only one person is referred to by means of the DP, and the verb requires singular morphology.

On the semantic side, the relevant factor is that those BNs that are canonical arguments, antecedents of reflexive pronouns and antecedents of the pronoun *ele* can be used in individuated / referential contexts. This means that BNs can be interpreted as definite and refer back to an entity already introduced in the discourse, without the support of an explícit article (see (6), (7), (12) and (13)). Due to this semantic similarity between BNs and overt definite expressions, we draw the conclusion that BrP BNs can be DPs.

'He had a secretary/secretaries to remember birthdays for him.'

A second semantic argument in support of the DP analysis for BNs comes from the work on bare habituals (cf. Ferreira 2005, de Swart 2006) and the study by Beyssade (2005) on generic definites in Romance, French in particular. Let us consider again some examples previously introduced in (3a) and in (7b), repeated in (25).

(25) a. *Criança* lê   revistinha. *Elas/*ela* gosta(m) dos   desenhos.
child   read.PRES.3SG comic-book they/she like   of.the drawings.
'(The) children read comic books. They like the drawings.'

b. *Coelho* vê o   mundo de outra maneira, porque
rabbit   sees the world of other manner   because
*eles/*ele* são muito pequenos.
them/it   are very   small
'(The) rabbits see the world in a different manner, because they are very small.'

Although the BNs in preverbal position in these two sentences do not have an overt determiner, the default interpretation is that they refer to the maximal sum of all the individuals of the *criança/coelho* type. We know that this is so because in the following discourse, we refer to these BNs by means of the plural pronominal forms *elas/eles*, respectively. This anaphoric relation and this interpretation, together with the fact that in other Romance languages (e.g., Catalan, French, Spanish) a definite plural must be used, supports a DP analysis. Furthermore, Ferreira (2005) analyzes bare habitual sentences such as (25a,b) in terms of plural definite descriptions of events, where a covert definite determiner (meaning what the nominal determiner *the* means) is postulated to quantify over events (THE_e).[26]

Finally, we would like to present an argument based on the possible wide scope interpretation of BNs in object position with respect to negation. Consider (26).

(26) a. [Situation: There is a Christmas tree in the living room that Maria was supposed to decorate, but she didn't. Her mother says:]
Maria não decorou   *árvore de Natal*.

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[26] At this point the interpretation we are interested in for the preverbal BNs exemplified in (25) should be contrasted with the definite generic kind interpretation, which correlates with the pronominal form *ele*. An additional example of this correspondence has been given to us by one of the reviewers:

(i)   *Adolescente* tem uma fase   assim. *Ele* quer   e   não quer   ser tratado
adolescent   has a   phase   like.that he   want and not want   be treated
como   criança.
as   child
'The adolescent has phases like that. (S)he does and does not want to be treated as a child.'

See also Ionin et al. (2011) for an empirical investigation of NP interpretation in English, Spanish, and BrP in generic contexts. We postpone the discussion of preverbal BNs to Section 5.

Maria not decorated tree   of Christmas
'Maria hasn't decorated the Christmas tree.'

b. [Situation: Maria was supposed to decorate the Christmas tree she has at home, the one she bought for her students at school, and the one at the entrance of the church where she goes every Sunday, but she has been ill and we suspect that she might not have completed this task. Someone says:]
Maria não decorou   *árvore de Natal*.
Maria not decorated tree   of Christmas
'Maria hasn't decorated a Christmas tree.'

In the situation described in (26a) the BN allows a definite specific interpretation, which is scopeless with respect to negation (Carlson 1977). In the situation described in (26b), the BN allows an indefinite non-specific reading with a wide scope interpretation, such that there is at least one Christmas tree (maybe more than one) she failed to decorate. Sentence (26b) does not necessarily mean that she failed to decorate all of the trees, in which case, the narrow scope interpretation would be inferred. Therefore, what this suggests, with respect to the structure of BNs in BrP, is that if an apparent BN may have wide scope it is not a real NP, it is a DP.

In the next section we present some arguments to show that Number specification is required in the DP structure of BNs in BrP.

4.2. On the necessity of Number

So far we have illustrated that BrP does not necessarily manifest agreement morphology on the noun, and we have provided evidence in support of the claim that interpretable features, which distinguish between singularity and plurality, must be located on the determiner, like in Modern French (Delfitto & Shroten 1991, Bouchard 2002, Déprez 2005). In this section, we will argue for the necessity of Number. We distinguish between (i) a Number projection, which we take as the locus of numerals and as the semantic function that shifts properties of kinds (the denotation of common nouns) into properties of objects (the denotation of common nouns specified for syntactic Number) (see the text above (16)); (ii) (interpretable and uninterpretable) morphosyntactic Num features, which constrain singularity or plurality at the time of meaning composition; and (iii) morphophonological Number, which may overtly instantiate a plural morpheme at the PF-component.

The arguments we will present are based, on the one hand, on Number agreement within the DP when a numeral is explicit, and on potential subject-verb agreement; and, on the other hand, on the distribution and meaning of reciprocal

expressions, as well as the presence of relative clauses and the interpretation of anaphoric *se*. Finally, we will argue against Munn and Schmitt's (2005) proposal for number neutrality in BrP.

An argument for the necessity of a Number projection is based on Number agreement within the DP when a numeral expression is made explicit. Consider (27).

(27)a. (as)   quatro coisas
     the.PL four   thing.PL
   b. (as)   quatro coisa
     the.PL four   thing
   c. *a quatro coisas
     the four   thing.PL

The contrast between (27a-c) suggests that the overt determiner in such expressions must share plural number with the overt numeral; otherwise, the sequence would be ungrammatical. Furthermore, the examples in (27) show that Number morphology is only optional on the noun, a fact that suggests that the overt plural morphology spelled out on the noun in (27a) is purely morphophonological. This means that: (i) [iNUM] formal features are only obligatory on D and Num in the corresponding syntactic structure; (ii) the head Num encodes an interpretable Num feature, [iNum], that must be shared with the Num feature on D and, therefore, in this particular example must entail plurality (see below Section 4.3);[27] and (iii) the numeral is located in the specifier position of NumP (Biberauer & Roberts 2011).

An argument for the necessary specification of an interpretable Num feature, [iNum], on D focuses on the variation not only within the nominal domain but also in subject-verb agreement. The BrP examples in (28) show that, given that number morphology appears obligatorily on the determiner and optionally on the prenominal adjective, D is the category that obligatorily encodes an [iNum] feature, capable of checking the [uNum] features of the noun and the adjective, and responsible for triggering potential number agreement on the verb.

(28) a. *Os*   *bons*   *meninos* chega(m) cedo.
    the.PL good.PL boy.PL   arrive(PL) early
    'The good boys arrive early.'
   b. *Os*   *bom menino* chega(m)   cedo.
    the.PL good boy   arrive(PL) early
    'The good boys arrive early.'
   c. **O* *bons*   *meninos* chega(m) cedo.

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[27] For a technical implementation within minimalist terms of the notion of SHARE, see Ouali (2008).

the good.PL boy.PL arrive(PL) early

Another argument for the necessity of Number is based on the distribution and meaning of reciprocal expressions. Consider first the contrast between (29) and (30).

(29) a. *A   criança briga *uma com a   outra*.
        the.SG child   fights one with the other
    b. *O   homem *se* beija na   França. (Schmitt & Munn 1999:11, ex. (36b))
        the.SG man   se kisses in.the France

(30) a. As   criança briga *uma com a   outra*.
        the.PL child   fights one with the other
        'Children fight with each other.'
    b. Os   homem *se* beija na   França .
        the.PL man   se kisses in.the France
        'In France, men kiss each other.'

The reciprocal expression *uma com a outra* requires a plural DP antecedent. Similarly, the antecedent of the reciprocal pronoun *se* must also be associated with a plural DP. In the reciprocal interpretation (29a,b) are both ungrammatical. The examples in (31) further illustrate that the antecedent of this reciprocal expression may have a null D specified for plural number.

(31) a. *Criança* briga *uma com a   outra.* (Schmitt & Munn 1999:10, ex. (35))
        child   fights one with the other
        'Children fight with each other.'
    b. *Homem se* beija   na   França. (Dobrovie-Sorin & Laca 2003:277, ex. (69b))
        man   se kisses in.the France
        'In France, men kiss each other.'

Furthermore, we would like to add an argument close to the previous one that deals with relative clauses and the meaning of the pronoun *se*. BrP allows this type of clauses specifying a BN with a definite or an indefinite reading in object position. Consider the example in (32).

(32)   Eu conheci *empresário*   *que* estava *se* ajudando.
       I   met   businessman   that were   se helping.
       'I met the businessman/a businessman that was helping himself.'
       'I met the businessmen/businessmen that were helping themselves/each other.'

According to our analysis, the DP structure corresponding to the BN *empresário* can be specified either for singular or for plural. If it is specified for singular, the reflexive pronoun *se* refers back to one businessman, and it licenses a reflexive singular reading. If it is specified for plural, then the pronoun *se* refers back to businessmen, and can be interpreted as licensing either a reflexive plural reading or a reciprocal one (as already pointed out by Ferreira 2010). Therefore, this argument shows that, even

though the antecedent of the relative pronoun and of the pronoun *se* does not show plural morphology, we have to postulate that Number needs to be specified in its nominal projection.

All together the arguments discussed so far strongly support the hypothesis that a specification of Number is necessary in order to be able to account for the syntactic and semantic properties of a substantial set of BrP BNs. The postulation of NumP is also a function of the theoretical hypothesis that syntactic projections are maximally tripartite (Boeckx 2008) and, in particular, that the projection of N requires a medial projection of Number and a maximal projection of definiteness, parallel to the tripartite structure postulated for sentences (i.e., [CP[IP[VP]]]). Semantically speaking, NumP is to be conceived as a realization operator according to which properties of kinds are instantiated or realized into properties of objects, either atomic individuals or non-atomic sums.

This notwithstanding, BNs have been claimed to be number neutral, for example, by Munn and Schmitt (2005), who claim that "bare singulars [our BNs, C&E] in BrP (…) are DPs with an empty determiner and *no number projection* [our emphasis, C&E]. This predicts that they should behave as unspecified for number rather than as semantic singulars" (Munn & Schmnitt 2005:825). In what follows, we will discuss two of their arguments and show that they are not sufficient to support the absence of a Number projection.

One of the arguments that Munn and Schmitt (2005:825, ex. (7)) present in support of the claim that BNs are not specified for Number and, therefore, in their understanding, they are number neutral, is based on the fact that *criança* in (33) can antecede either a singular or a plural pronoun:

(33) Eu vi *criança* na   sala. E *ela* estava/*elas* estavam ouvindo.
      I   saw child   in.the room and she was   they   were   listening
      'I saw a child/children in the room. And she was/they were listening.'

Note, however, that this is not a convincing argument for the postulated number neutrality of the BN, since the nominal in argument position of the stative transitive verb *ver* 'to see' has a subsequent secondary predication *na sala* 'in the room'. Following our analysis, *criança* 'child' does not qualify as a DP without a Num projection because in this particular sentence it corresponds to a canonical syntactic and semantic argument of a small clause predication. We have been arguing in this paper that canonical syntactic and semantic arguments correspond to full DP

structures that include NumP. Additionally recall from footnote 12 that in our analysis only definite kinds lack NumP (see also (40) in Section 4.3 below); but the BN *criança* in (33) cannot refer to a definite kind term. In the analysis we have introduced in Section 4.1, the possibility of having *ela/elas* 'it, them' in the second sentence follows from the properties that are attributed to the structure of the DP in BrP, which are different from what has been proposed by Munn and Schmitt (2005). In our analysis, *ela* requires a singular DP antecedent (i.e. with a D specified for [-PL]), whereas *elas* requires a plural DP antecedent (i.e. with a D specified for [+PL]).

A second argument provided by these authors (Munn & Schmitt 2005:825, ex. (8b)) in order to support the purported number neutrality associated with the absence of a Number projection is based on the interpretation of the example given in (34), where the BN antecedes a plural pronoun.

(34)　*Coelho* vê　o　mundo de outra maneira porque
　　　　rabbit　sees　the　world　of other manner　because
　　　　eles　são muito pequenos.
　　　　they　are　very　small
　　　　'Rabbits see the world in a different way because they are very small.'

Crucially, however, this very same example with the third person pronoun in the singular is ungrammatical, in the relevant generic reading where the antecedent of the pronoun refers to the maximal sum of individuals of the *coelho* type in the discourse domain. This suggests that the BN is a DP specified for plural number that requires a discourse relation with the plural pronoun *eles*, and we take this correlation as evidence for the plurality of the antecedent subject (cf. Schmitt & Munn 1999). By contrast, example (35) is grammatical only under a definite kind reading, one according to which the antecedent of the pronoun refers to the whole class without considering its individuals.

(35)　*Coelho* vê　o　mundo de outra　maneira porque
　　　　rabbit　　sees　the　world　of　other manner　because
　　　　ele é　muito　pequeno.
　　　　it　is very　　small
　　　　'The rabbit sees the world in a different way because it is very small.'

Our explanation for the data observed in (33)-(35) has two parts. First, as we have already argued, we postulate that BrP third person pronouns *ele/eles/ela/elas*, like accusative clitics in European Portuguese, Spanish and Catalan, require that their antecedent be a DP. Second, as previously shown, we take seriously the hypothesis that in BrP Number is not morphosyntactically specified on Nouns, but on

Determiners (cf. Delfitto & Schroten 1991, Bouchard 2002, Simioni 2007, Mathieu 2009), and, therefore, *criança* 'child' and *coelho* 'rabbit' are not number neutral, but are specified for Number, either singular or plural.

Something similar must be inferred from example (1c), which allows the discourse relations manifested through the pronominalization test illustrated in (36).

(36)   *Brasileiro* é   trabalhador.   *Ele(s)...*
         Brazilian   is   hardworking   he/they

This example is ambiguous. The preverbal BN can either refer to the kind or species itself (i.e., *the Brazilian*, like *the owl*, Carlson 1977), or to the maximal sum of representatives of the kind (i.e., the maximal sum of individuals of the Brazilian kind, like *the Brazilians*) (see above footnote 12). Under the definite kind interpretation, we rely on the proposal made in the literature (Espinal 2010; Borik & Espinal 2012, 2013) that there is no Number projection and no Number feature, and in this linguistic context both the verb and the pronoun take the default third person form. However, the BN *brasileiro* in (33) may also refer to the maximal sum of all the individuals of the Brazilian kind. To obtain this interpretation a full DP specified for an interpretable plural Num feature must be postulated. In this situation, the null D is specified morphosyntactically for plural number, and the subsequent pronoun must be *eles.*

In the next section we will provide the form of the two DP structures we have described so far.

4.3 The structure of the DP in BrP

We take canonical arguments in BrP to have the basic DP structure in (37) (cf. Longobardi 1994, Zamparelli 1995, Chierchia 1998, Biberauer & Roberts 2011). We here refine the structure presented in (16) and we introduce the category that is supposed to be responsible for the categorization of roots as Nouns and for the valuation of Gender; that is, little *n* (Marantz 1997). This is the only difference between (37) and (16) above.

(37) $[_{DP}\ D_{[iNUM]}\ [_{NumP}\ Num_{[iNUM]}\ [_{nP}\ n_{[uNUM]}\ [_{NP}\ N]]]]$

Number valuation is the output of an operation of Agree, involving elements that carry semantically interpretable and semantically uninterpretable features. This Agree relation appears to hold in an inverse fashion than what is the standard situation of Agree (Chomsky 2001), and is called *Inverse Agree* (Biberauer & Roberts 2011,

Biberauer & Zeijlstra 2012). Whereas in the standard case of Agree a Probe bears unvalued features and searches its c-command domain for an active element bearing the valued counterparts of its unvalued features, in Inverse Agree the agreement relation operates top-down, with the [iNUM] features c-commanding (possibly multiple) uninterpretable [uNUM] feature.[28] Elements that are only formally specified for Number bear [uNUM] and lack the semantics of Number (in (37) only little *n* is specified [uNUM]). Elements that are specified [iNUM] are semantically interpretable (in (37) the feature [iNUM] is shared by D and Num). An overt element bearing [uNUM] necessarily requires the presence of an element carrying [iNUM], in order to have its [uNum] feature valued. Since D and Num share the same [iNum] feature, this feature is transferred to little *n* by Inverse Agree (i.e., the [uNUM] feature of little *n* is assumed to be valued by c-command).[29] Furthermore, the [iNUM]-bearing element does not necessarily have to be overtly realized in BrP: if no overt element in a well-formed structure seems to be responsible for the valuation of a [uNUM] feature, a covert element (i.e., D) must be assumed to be responsible of this task.[30]

Let us now consider how this system works. Below, we present the DP structures that we want to postulate for the definite nominal expressions seen so far. Consider (38), postulated for (27a): *(as) quatro coisas* lit. the four things.

(38)a.

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[28] The main characteristic of Inverse Agree is that "the goal may have an uninterpretable feature checked against a higher probe" (Zeijlstra 2012:491). A technical definition of Inverse/Reverse Agree is provided by Zeijlstra (2012:514):

(i) [Inverse / Reverse] Agree
    α can Agree with β iff:
    a. α carries at least one uninterpretable feature and β carries a matching interpretable feature
    b. β c-commands α
    c. β is the closest goal to α

The operation of Inverse / Reverse Agree is further supported by the mechanics of Delayed Valuation (Carstens 2013), which guarantees that an unvalued feature with no match in its c-command domain can be valued either ex situ (by raising to c-command a matching feature in a higher phase) or in situ (by a matching feature within the same phase). We thank S. Tubau (p.c.) for this comment.

[29] We tend to think that this analysis, proposed for BrP, is the right one for French as well, but a thorough study of other Romance languages considered in this paper, namely Catalan and Spanish, awaits further research. On the one hand, in these languages Number is obligatorily specified both on the Determiner and on the Noun, but, on the other hand, these languages share with French and BrP a significant number of the properties described by Bouchard (2002).

[30] The present proposal follows closely the analysis of Negative Concord proposed by Biberauer and Zeijlstra (2012). An alternative analysis would be to follow the proposal by Tortora (2009, 2012) and Blanchette (2012) based on the notion of Feature Spreading.

[DP as/∅[iNUM] [NumP quatro [Num [iNUM]] [nP n[uNUM] [NP coisa]]]]

b.

[DP as/∅[iNUM] [NumP quatro [Num [iNUM]] [nP coisa[iNUM] [NP ~~coisa~~]]]]

In (38a) a numeral is overtly realized, and is assumed to occur in NumP. The Num head is specified by a [iNUM] feature shared between D and Num. That is, the feature [iNUM] is an inherent syntactic feature of D and Num, no matter whether D is overt or covert. In (38b), the root *coisa* is moved to *n* to value a Gender feature (not represented here), and the [uNUM] feature of *n* is checked by a matching [iNum] feature. Morphophonological number agreement on the noun is postsyntactic and it is not represented in this structure.

The DP structure in (39a) is the one that corresponds to (1b) *os brasileiros*, (1c) *brasileiro* (in one of the interpretations of this sentence), (1d) *brasileiros,* and (2) *os brasileiro*.

(39)a.

[DP os/∅[iNUM] [NumP Num[iNUM] [nP n[uNUM] [NP brasileiro]]]]

b.

[DP os/∅[iNUM] [NumP Num[iNUM] [nP brasileiro [iNUM] [NP ~~brasileiro~~]]]]

The operations involved in (39) are exactly the same as the ones in (38), the only difference being that NumP does not contain an overt numeral. This analysis supports our proposal that variation on morphophonological number realization on the noun (*brasileiros, brasileiro*) is postsyntactic, and that, in spite of the superficial variation, the syntactic structure is (39a), from which (39b) can be derived.

A parallel analysis can be postulated for DPs specified with singular Number. Thus, the derivation to be assigned to *(o) banheiro* in (6a,b) replicates the same pattern we have just presented.

In all these structures an Agree relation can account for Number valuation within the DP domain. The key to understand this relation is that there are constituents specified with an [uNum] feature that must be valued by a matching [iNum] feature. This relation is syntactic and is ruled by the principle of c-command.

The Noun ends up with an [iNum] feature valued by the c-commanding D and Num. We refer to this relation as DP-internal Agree.

Thus, we can account for two of the challenges described in the literature on BrP, namely the apparent optionality of the determiner and the variation on number realization within the nominal domain. The determiner is not optional because this language allows null Ds. On the other hand, the variation on number realization is not due to the shift from [uNum] to [iNum], but to the fact that number agreement on Nouns is postsyntactic in BrP.

Following Espinal (2010) and Borik and Espinal (2012, 2013), a second type of DP structure is postulated for the definite kind reading attributed to (1a) and (1c) *(o) brasileiro*, where the DP refers to an abstract intensional entity. Consider (40).

(40)

[$_{\text{DP}}$ o/∅ [$_{\text{nP}}$ n [$_{\text{NP}}$ brasileiro]]]

This structure, which neither specifies a category Number nor a Number feature that participates in a syntactic Agree relation, allows both overt and covert Ds. This being the situation, this structure is very similar to the one that Munn and Schmitt (2005) postulate for elsewhere BNs. The difference between our analysis and theirs is that we understand that (40) can only constrain a definite kind interpretation, when the DP refers to the largest entity, the class itself, satisfying the property denoted by N (i.e., the kind Brazilian), without taking into consideration the set of object individuals that might instantiate (by means of Number) the kind.

Let us sum up what we have shown in Section 4. First, we have provided evidence for a DP analysis of those BNs in BrP that are canonical arguments. Second, we have argued that they also require a specification of Number. Third, we have shown what the structure of these DPs looks like, something that depends both on the distribution of [iNUM] and [uNUM] features, and on the presence of an overt or a covert determiner in this language. Our proposal is that, in spite of the fact that BNs might not show morphophonological number overtly specified on the Noun in BrP, they, nevertheless, may encode a morphosyntactic Number feature on the null Determiner that is shared between D and Num. An [iNum] feature is required for valuating any [uNum] that may occur in the nominal domain. Morphosyntactic Number encodes semantic number; therefore, if plural, the denotation of the whole

DP is a maximal sum of individuals; if singular, the denotation of the whole DP is the maximal individual object that satisfies the property denoted by the noun.

In those structures where there is no intervening Number between D and N, a different DP structure is responsible for a different meaning, namely the definite kind interpretation.

Having introduced the structures of BNs that correspond to DPs, as opposed to those BNs that are mere NPs, in the next section we will discuss the question why BNs are broadly allowed in preverbal position in BrP, in contrast to other Romance languages that have a very restricted distribution of BNs in that position. We will argue that preverbal BNs are well formed in BrP because they are the output counterpart of strong DPs: they are DPs (with null Ds) in a left peripheral position with respect to the sentence. We will relate their strong reading (i.e. they can neither be interpreted as weak definites nor as weak indefinites) to the fact that they constitute the logical subjects of categorical judgments.

5. Preverbal BNs and categorical judgments

This section will be devoted to justify the need for a DP analysis of preverbal BNs in BrP, taking into account both the type of predicate they combine with and the type of statement in which they occur. We will propose that preverbal BNs can neither be construed as definite specific nor as indefinite unless an overt determiner appears.[31] They must both be also distinguished from weak definites (which are never subjects) and from weak indefinites (which in Romance cannot occur in preverbal position). The question that we want to address is why preverbal BNs that correspond to external subjects must be interpreted as having strong plural or definite kind reference, while postverbal BNs that correspond to internal subjects do not have this requirement.

The sentences that we have presented so far with preverbal BNs could be claimed to be counterexamples to the structural constraint on subjects/specifiers mentioned above (see footnote 19), whereby BNs in subject position must be properly

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[31] It is interesting to relate this claim to Ghomeshi's (2003) analysis of plural nouns in Persian. She accounts for the fact that plural nouns in this language are construed also as definite, unless an overt marker of indefiniteness appears, and she postulates that nouns are contained within DP/QP structures with null Ds.

licensed by appropriate functional categories. More specifically, these sentences also seem to contradict the *Naked Noun Contraint*, according to which "an unmodified common noun in the preverbal position cannot be the surface subject of a sentence under conditions of normal stress and intonation" (Suñer 1982:209).[32] In this section we will defend that preverbal BNs do not violate any of these constraints. First, because they are not bare, since –as we have already argued– they are full DPs with a null D that is the locus of definiteness and number marking. Second, because –as we will show– they are not mere syntactic subjects, but specifiers located in a left periphery position.

In what follows we will not pursue a syntactic explanation for the possibility of encountering preverbal BNs in BrP, though. Rather, we will put forward a semantic account for the observation that preverbal BNs must have a strong reading, having either a plural reference or a definite kind reading. This observation applies to all examples given so far in the text. For a definite singular interpretation of preverbal BNs, an overt definite article is required, as we will mention below. Postverbal BN subjects, on the other hand, can have a definite interpretation as well as an existential reading, with either singular or plural reference (e.g. *Chegou trem* lit. arrived train, can be interpreted either as 'The/A train arrived' or 'The trains/Trains arrived').

Another question that arises is why should this contrast between preverbal and postverbal BNs happen in the language. And here is where we think that a semantic answer becomes relevant. This answer is based on Kuroda's (1972) distinction between categorical and thetic judgments (and previous works by Franz Brentano and Anton Marty; Brentano 1862, 1867, and Marty 1918). We will also refer to the conection that Ladusaw (1994) made between categorical/thetic judgments and strong/weak readings for nominal expressions, and i(ndividual)-level/s(tage)-level predicates (Kratzer 1989, 1995). These distinctions, applied to BrP, amount to the claim that preverbal BNs are logical subjects (i.e., topics) with strong construals (i.e., they must have a presuppositional interpretation). Let us first briefly consider how these notions work.

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[32] The Naked Noun Constraint was originally proposed for Spanish (Suñer 1982), and presumably it applies to other Romance languages like Catalan, Italian, and European Portuguese, which are languages that do not allow BNs in preverbal position unless they are modified, coordinated, or focused, and, at the same time, are languages which allow the VS order (cf. Contreras 1986, 1996). Since BrP does not allow VS order (this being only possible with unaccusative verbs), one could think that the Naked Noun Constraint might not apply to this language.

A categorical judgment conforms to the traditional and philosophical structure of a subject and a predicate; it involves an entity and a property. In other words, a categorical judgment is assumed to consist of two separate acts: one act of recognition of that which is to be made the subject, and the act of affirming or denying what is expressed by the predicate about that subject. By contrast, a thetic judgment represents simply the recognition or rejection of material of a judgment; it does not contain a logical subject, and it simply introduces a description of an eventuality of a certain type.

This opposition correlates with the presuppositional nature of the subject of a categorical judgment, as opposed to the existential entailment of the subject, if any, of a thetic judgment. It also correlates with the strong/weak distinction of nominal interpretation (cf. Ladusaw 1994, Dobrovie-Sorin 1997, McNally & van Geenhoven 1998). If the verb is generically interpreted (either because it corresponds to an i-level or a k(ind)-level predicate, or because it is expressed in some generic tense/aspect form: present or imperfective), the subject cannot usually be interpreted as indefinite.[33] This is due to the fact that the subject of a categorical judgment is associated with a speaker presupposition of existence, which means that prototypically categorical judgments combine a strong subject with a generic predicate.

Strong readings can be said to be the result of presupposition and usually involve special operators (e.g., the iota operator corresponding to the definite determiner, or a generic operator), whereas weak readings of indefinites can be said to be the result of existential closure at the VP, due to a thetic mode of judgment. According to Ladusaw (1994), strong vs. weak construals of nominal expressions correspond to a quantificational vs. a descriptive division, which he claims to be epiphenomenal on the underlying distinction between judgment types. Strong readings are generic or specific, whereas weak readings are existential and non-specific. Finally, an interaction has been postulated (Ladusaw 1994) between these

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[33] The avoidance of indefinites is a tendency, not an absolute, as already pointed out by Kuroda (1972:167): "if one were to make a judgment according to which one assigns a certain attribute expressed by the predicate to the subject, he would in fact be assigning this property to an arbitrary individual entity that might be named by the particular attribute used to refer to it". It is possible to express categorical judgements where the subject is a non-specific indefinite expression. See, for example, (41c) in the text.

notions: i-level predicates must have strong subjects, and the subject of a categorical judgment must have a strong construal.

The only way to express a strong reading of a nominal expression in a Romance language (e.g., Catalan and Spanish) is by means of a strong DP (containing either a definite determiner, a strong quantifier in Milsark's 1977 sense, or a focalized/coordinated NP in Contreras's 1996 sense). This distribution correlates with the ban on weak NPs as preverbal subjects and, more specifically, with the ban on bare plurals occurring in preverbal position (Suñer 1982; Contreras 1986; Laca 1990, 1999, 2011; Dobrovie-Sorin & Laca 1996; Leonetti 1998, among others).

If we now consider BrP, Britto (1998, 2000) postulates that categorical judgments in this language are built by means of left dislocated constructions with a full DP containing an overt determiner in a topic position. For these sentences the subject (specific definite, as in (41a,b), or generic indefinite, as in (41c)) is taken back by a resumptive third person pronoun.

(41) a. [A população neotrentina]$_i$ *ela*$_i$ é meio flutuante (...).
the population neotrentian it is half floating
'The neotrentian population is relatively unstable (...)'.
(Britto 2000:20), ex. (8a))

b. [Esses rapazes]$_i$ *eles*$_i$ são muito bonitos.
these guys they are very handsome.PL
'These guys are very handsome.'
(Britto 2000:196, ex.(1))

c. [Um homem comum]$_i$ *ele*$_i$ tem um conforto compatível com (…).
a man common he has a comfort compatible with
'A common man has comfort compatible with (…)'
(Britto 2000: 200, ex. (9b)

Our analysis of preverbal BNs is an extension of Britto's proposal and consists in postulating that preverbal BNs express the subject of categorical judgments. This analysis is borne out by applying the same test illustrated in (41), namely the use of resumptive subject pronouns.

(42) a. Brasileiro *ele* é trabalhador.
Brazilian he is hardworking

b. Brasileiro *eles* são trabalhadores.
Brazilian they are hardworking.PL
'Brazilians are hardworking.'

c. Brasileiro *pro* é trabalhador.
Brazilian is hardworking

Britto (1998, 2000) does not mention the fact that BNs are also possible in categorical judgments in BrP. However, considering the parallel between (41) and

(42a,b), we pursue the following analysis: a) preverbal BNs in BrP are instantiations of logical subjects of categorical judgments; b) these logical subjects, though, are not syntactic subjects: they are DPs in a left Topic position necessarily linked by means of a syntactic chain to a resumptive pronoun in subject position, in order to comply with argumenthood requirements on DPs; and c) in the case where no overt third person pronoun is present (see (42c)), a null pronoun (*pro*) must be postulated in subject position.[34] In our analysis the null pronoun corresponding to the third person overt pronoun refers to a full DP.[35]

With these ideas in mind, in the rest of this section we will be devoted to discuss the structure and meaning of three different groups of preverbal BNs: (i) those that combine with individual and kind-level predicates (named Group 1), (ii) those that combine with stage-level predicates in generic/habitual contexts (named Group 2), and (iii) those that combine with stage-level predicates in episodic contexts (named Group 3).[36] These three groups of data are exemplified in (43), (44) and (45), respectively.

(43) a. *Brasileiro* é trabalhador.   (= 1c)

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[34] In this way, we differ from Britto, who follows Figueiredo Silva (1996) in that in BrP the null form of the pronoun only occurs in expletive and quasi-argument uses.

[35] In contrast to those categorical judgments in (41) and (42), it is important to point out that BNs in BrP may also occur in preverbal position of thetic judgments. In that case they occur in subject position (Britto 2000), as proved by the fact that: a) a resumptive pronoun is not possible, and b) they have an existential interpretation, not a generic one. For these BNs we assume that they are DPs, internal arguments, first moved to a preverbal [Spec,IP] subject position, and later semantically reconstructed within the VP in order to guarantee their existential interpretation. Interestingly, it should be noticed that primary stress is on V (ia) or on a constituent within the VP (ib). We use the symbol ' to mark the syllable with primary stress.

(i)   a. Turista(s),   'tem   em Barcelona.
           tourist(.PL)   have in Barcelona
           'As for tourists, there are many/some in Barcelona.'
       b. Bispo(s),   tinha 'vários no   congresso.
           bishop(.PL)   had   several in.the conference
           'As for bishops, there were several at the conference.'

As pointed out by one of the reviewers, these examples are parallel to left dislocations associated with an existential interpretation in other Romance languages:

(ii)   a. Turistas, los   hay   en Barcelona.   [Spanish]
           tourists them   have.there in Barcelona
           'As for tourists, there are some in Barcelona.'
       b. De turistes, n'hi   ha   a   Barcelona.   [Catalan]
           of tourists PROP.there has in   Barcelona
           'As for tourists, there are some in Barcelona.'

[36] We assume the well-established distinction between three types of predicates: k(ind)-level, i(ndividual)-level and s(tage)-level (cf. Carlson 1977; Condoravdi 1992b; Kratzer 1989, 1995).

Brazilian   is hardworking
'Brazilians are hardworking.'
(Müller 2002:280, ex. (3))

    b. Não há um problema de extinção. *Panda* é comum   na   China.
       not has a   problem of extinction panda is common in.the China
       'There is not a problem of extinction. Pandas are common in China.'

(44) a. *Criança* pinta   revistinha.
       child   paint.PRES.3SG coloring.book
       'Children paint coloring-books.'

    b. *Professor* trabalhava   muito antigamente.
       teacher   work.PAST.IMP.3SG a lot   in the past
       'Teachers worked a lot in the past.'

(45) a. ??*Deputado*   vai   visitar salas de aula.[37]
       representative go.3SG visit   classrooms
       'REPRESENTATIVES will visit classrooms.'

    b. ??*Menino* jogou   bola.
       boy   played.PAST.PERFECTIVE.3SG ball   .
       'BOYS played soccer.'
       (Pires de Oliveira & Rothstein 2011:2160, ex. (25a))

In spite of the English translation we give for these examples, we would like to point out that none of these preverbal BNs are bare plurals and, furthermore, they cannot receive a weak reading. This observation even applies in the examples in (45), which do not have a natural episodic interpretation, a remark already pointed out by Pires de Oliveira and Rothstein (2011). The BNs in (43) and (44), but not those in (45), are in free variation with a generic counterpart that contains an overt definite or indefinite determiner (e.g., *O/Um brasileiro ele é trabalhador, As criança elas pinta revistinha, Uma criança ela pinta revistinha*).[38]

We are going to examine the three groups of BNs and we are going to propose that they are all strong DPs.

5.1. Preverbal BNs with individual-level and kind-level predicates.

Let us consider closely the sentences in (43), repeated here as (46) for convenience.

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[37] The symbol ?? is used to represent that the examples in (45) are felicitous only when associated with a contrastive or a list interpretation for the BN, as already pointed out in the literature by Schmitt and Munn (2003), Munn and Schmitt (2005), Müller (2004), and Pires de Oliveira and Rothstein (2011).

[38] As we will see, this free variation is only possible for generic interpretations of the BN, and it is neither possible for the deictic interpretation of the definite determiner, nor for the existential interpretation of the indefinite determiner (Condoravdi 1994).

(46) a. *Brasileiro* é trabalhador.
     Brazilian is hardworking
     'Brazilians are hardworking.'
     (Müller 2002:280, ex. (3))
   b. Não há um problema de extinção. *Panda* é comum na China.
     not has a problem of extinction panda is common in.the China
     'There is not a problem of extinction. Pandas are common in China.'

We observe that the preverbal BNs contained in these sentences occur in combination with individual (46a) and kind-level (46b) predicates.

According to what we have argued for in Section 4, the preverbal BNs of these examples are structurally ambiguous, being schematically associated with either (47a) or (47b):

(47) a. $[_{DP} \varnothing [_{NP} N]]$
   b. $[_{DP} \varnothing [_{NumP} \varnothing [_{NP} N]]]$

On the other hand, having in mind Britto's (1998, 2000) argument for categorical judgments the full syntactic structures for the sentence in (46a) should be as in (48a) and (49a), respectively. With an overt third person pronoun these structures have the form in (48b) and (49b).

(48) a. $[_{TOP} [_{DP} ø [_{NP} brasileiro]] [_{IP} pro é trabalhador]]$
   b. $[_{TOP} [_{DP} ø [_{NP} brasileiro]] [_{IP} ele é trabalhador]]$

(49) a. $[_{TOP} [_{DP} ø [_{NumP} ø [_{NP} brasileiro]]] [_{IP} pro é trabalhador]]^{39}$
   b. $[_{TOP} [_{DP} ø [_{NumP} ø [_{NP} brasileiro]]] [_{IP} eles é trabalhador]]$

Structures (47a) and (48) license a definite kind interpretation (Borik & Espinal 2012, 2013), that is, the DP names a kind of thing, with no reference to the members of the kind. On the other hand, structures (47b) and (49) correspond to a generic plural definite interpretation, where the meaning of the subject refers obligatorily to the maximal sum of individuals of the Brazilian kind for which it is claimed that they are hardworking. That is, since the overt third person pronoun in (49b) is plural, we infer that the Number specification on the antecedent DP must be plural as well. The same explanation applies if the pronoun is null, as in (49a). In the next two subsections we will hold this same type of analysis whenever we have a preverbal BN associated with the structure in (47b).

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[39] Recall that the verb in these structures takes the default third person singular form, but it could well be plural (e.g., *Brasileiro eles são trabalhador(es)*), as pointed out in Sections 1 and 4.2.

Now, under the assumptions (i) that Number is a realization function (Carlson 1977, Déprez 2005) that turns properties of kinds into properties of objects (Espinal 2010, Borik & Espinal 2013), (ii) that the definite article imposes maximality (Sharvy 1980, Link 1983) and is canonically used for deictic and anaphoric reference (Partee 1987), and (iii) that both i-level and k-level predicates do select for kinds (Carlson 1977, Krifka et al. 1995), a definite DP specified for Number is not expected to occur in argument position of a predicate selecting for kinds. However, as the examples in (46) show, preverbal BNs do combine with i-level and k-level predicates even when they correspond to plural DPs denoting the maximal sum or set of individual objects sharing the property denoted by the Noun. To explain this subject-predicate mismatch we postulate that a plural definite DP can combine with a predicate that selects for kinds when the iota operator is further intensionalized (cf. cap $^\wedge$ operator; Chierchia 1998 for Italian), turning an entity correlate of a property (as encoded by the definite article) into an individual concept (as required by k-selecting predicates).

In accordance with this discussion, and inspired on the work on definite kinds and generic definite plurals developed by Borik and Espinal (2013) for Spanish, we postulate that the ambiguity of (46a) can be represented as in (50). (50a) corresponds to the definite kind reading, and (50b) to the generic definite plural interpretation.

(50) a. $\iota x^k[\text{brasileiro}(x^k) \wedge \text{trabalhador}(x^k)]$
   b. $^\wedge \iota x^o \exists x^k [\text{brasileiro}(x^k) \wedge R(x^o, x^k) \wedge x^o \in \text{Sum} \wedge \text{trabalhador}(x^o)]$

Last, notice that in the eventual situation where an example such as (46a), with an i-level predicate, were to be used to refer to a particular token individual (describing, for example, some specific student in a multicultural classroom), an overt definite article would be required in BrP (*Nesta sala de aula o brasileiro (ele) é trabalhador, mas o francês (ele) é preguiçoso* 'In this classroom the Brazilian (student) is hardworking, but the French (one) is lazy'), but this explicit singular article is only possible with a contrastive/pair-list interpretation.[40]

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[40] A reviewer has raised the question of how our analysis of preverbal BNs, as denoting maximal sums in intensional domains, can be made compatible with the well-known claim that definite plurals are underspecified with respect to the level of granularity (distributivity) and exhaustivity (maximality). As discussed by Malamud (2012), and references therein (Link 1983, Landman 1989, Schwarschild 1991, Brisson 1998), the variation in collective/distributive and maximal/non-maximal interpretations is dependent on the semantics of the predicate, and also on pragmatic factors such as the speakers' estimates on each other's beliefs, and the participants' goals on the computation of truth conditions, from which the optimal selection of entities within the NP denotation is driven.

To sum up, so far we have considered preverbal BNs that combine with i-level and k-level predicates and license a generic interpretation, either because no Number is expressed at the DP level, or because a plural definite DP is coerced to a generic interpretation at the time its semantic composition with the predicate takes place. Preverbal BNs, therefore, correspond to DPs with a strong construal: they can have a definite kind or a generic definite plural reading. This claim correlates with the fact that the sentences in (46) are generic and express categorical judgments.

Let us now move to group 2 of preverbal BNs.

5.2. Preverbal BNs with stage-level predicates in generic/habitual contexts.

Consider the sentences in (44), repeated below as (51).

(51) a. *Criança* pinta   revistinha.
        child   paint.PRES.3SG coloring.book
        'Children paint coloring-books.'
     b. *Professor* trabalhava   muito antigamente.
        teacher   work.PAST.IMP.3SG a lot   in the past
        'Teachers worked a lot in the past.'

Both examples have preverbal BNs with s-level predicates (*pintar* 'to paint', *trabalhar* 'to work') in generic/habitual contexts. For these BNs we propose, as before (see (47b)), a null D in a DP structure specified for plural Number. We repeat the relevant structure in (52).

(52) $[_{DP} \varnothing [_{NumP} \varnothing [_{NP} N]]]$

Support for this structure appears in (53), which shows that the examples in (51) are also subject to the test that identifies categorical judgments, as presented in the previous section.

(53) a. Criança *elas* pinta(m)   revistinha.
        child   they paint(.PL) coloring.book
        '(The) children paint coloring-books.'
     b. Professor *eles* trabalhava(m) muito   antigamente.
        teacher   they worked(.PL) a lot   in the past
        '(The) teachers worked a lot in the past.'

These examples show explicitly that preverbal BNs are plural and, furthermore, since they are in topic position, they are interpreted generically and cannot be indefinite specific (Kuroda 1972, Cohen & Erteschik-Shir 2002).

Our proposal is that the preverbal BNs in (51) are in a left periphery Topic position. The sentences that contain these preverbal BNs express a generalization over

situations or events (Krifka et al. 1995). For our purposes a representation of the meaning of (51a) looks like (54). [41]

(54)   GEN$_{(e)}$ $\iota x \exists y[*$criança$(x) \wedge$ revistinha$(y) \wedge$ pinta $(x,y,e)]$

In this representation the meaning of the preverbal BN is dependent on a generic operator, conceived as a modalized universal quantifier that binds event variables. The null D postulated for the preverbal BN is translated as a iota operator that binds a variable x of the *criança* type over which the plural operator * applies (Link 1983). The null D postulated for the object BN is translated in (54) as an existential operator, which would give an indefinite existential reading for *revistinha* 'a colouring-book, colouring-books'. In case the logical representation should correspond to the definite reading for the object (i.e., 'the colouring-book, the colouring-books') the iota operator would have to be used instead of the existential.

    Additionally, we have to account for the fact that the preverbal BNs in (51) seem to allow a different interpretation corresponding to the definite kind interpretation, since the examples in (55) are also well formed.

(55) a. Criança *ela* pinta   revistinha.
        child   she paint colouring.book
        'Children paint colouring-books.'
     b. Professor *ele*   trabalhava   muito antigamente.
        teacher   he   worked   a lot in the past
        'Teachers worked a lot in the past.'

In these examples the preverbal BN is once more the logical subject of a categorical judgment, but notice that –in contrast to (53)– the resumptive pronoun here takes the singular form of the weak third person pronoun *ele/ela*. Our account of these data has to solve the semantic mismatch that arises at the time of combining the denotation of the preverbal BN (namely, a definite kind) with that of the predicate, which is an s-level predicate. In order to account for this mismatch we would like to propose that an s-level verb might be coerced (de Swart 1998) into an i-level predicate when certain

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[41] See de Swart (2006) for an alternative analysis of French generic sentences with definite plurals. In her analysis a bijection one-to-one relationship stands between the atomic members of two intensionally defined sets of individuals considered at the group level.

(i)   a. Les   Français portent des   cravates jaunes.
          the   French   wear   INDEF.PL ties   yellow
          '(The) Frenchmen wear yellow ties.'
       b. $\exists_{max}X \exists Y$ [French(X) & yellow-ties(Y) & wear(X,Y) & X x Y is a bijection]

syntactic conditions are met. That is, verbs like *pintar* and *trabalhar,* in spite of being s-level, become i-level predicates in generic/habitual contexts, and when this happens the predicate can combine with kind expressions and, consequently, preverbal BNs of group 2 behave like those in group 1.

An additional example that supports the claim just made is given below.

(56)   Coelho vê   o   mundo de outra maneira.
rabbit   sees the world   of other manner
'(The) rabbits see the world in a different manner.'

In spite of the fact that the verb *ver* 'to see' is s-level, the whole predicate *ver o mundo de outra maneira* 'to see the world in a different way' should be considered an i-level predicate.[42] In fact, the preverbal BN can neither receive an existential interpretation nor a definite specific reading, and it must be interpreted as the external argument of a generic sentence. Why? Because the preverbal BN is the external topic/subject of a categorical judgment in the present/imperfective tense, and it must have a strong discourse reference. Therefore, as expected, what looks like a BN in subject position is a DP occurring in the specifier position of an external topic, and –as represented in the structure in (57a,b)– a null/weak third person pronoun occurs in subject position. The formula in (57c) introduces the semantic representation of the sentence in (56), with a coerced predicate; that is, with an operator C that turns s-level into i-level predicates.

(57) a. $[_{TOP}[_{DP}$ ø $[_{NP}$ coelho]] $[_{IP}$ *pro* vê o mundo de outra maneira]]
    b. $[_{TOP}[_{DP}$ ø $[_{NP}$ coelho]] $[_{IP}$ ele vê o mundo de outra maneira]]
    c. $\iota x^{k}[\text{coelho}(x^{k})] \wedge [[C_{s\text{-}i}(\text{ver-o-mundo-de-outra-maneira})](x^{k})]$

Finally, notice that in the eventual situation where native speakers intend to refer to particular token individuals, either specific or non-specific in episodic contexts (describing, for example, what some specific child is doing), they must use an overt, definite or indefinite, determiner (e.g., *A/uma criança está pintando revistinha*).

Let us now move to group 3 of preverbal BNs.

5.3. Preverbal BNs with stage-level predicates in episodic contexts.

In this section, we are going to focus on those preverbal BNs with s-level predicates in episodic sentences exemplified in (45), repeated here as (58) for convenience.

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[42] We thank O. Borik (p.c.) for making this comment to us.

(58) a. ??*Deputado*   vai   visitar salas de aula.
      representative go.3SG visit   classrooms
      'REPRESENTATIVES will visit classrooms.'
   b. ??*Menino* jogou   bola.
       boy   played.PAST.PERFECTIVE.3SG ball   .
       'BOYS played soccer.' (Pires de Oliveira & Rothstein 2011:2160, ex. (25a))

In these examples we consider we have full DPs with a null D specified for plural in a left periphery position.[43] According to our analysis, the BNs in these sentences should have the following structure, which is exactly the same we have proposed in (47b) and (52).

(59)   [$_{DP}$ $\varnothing$ [$_{NumP}$ $\varnothing$ [$_{NP}$ N]]]

The BN *deputado* 'representative' in (58a), for example, can only be interpreted as referring to a plural set of individuals, as proved by the fact that the pronoun that occurs overtly in the subsequent sentence must be plural. Hence, the ungrammaticality of (60b).

(60) a. ??*Deputado* vai   visitar salas de aula. *Eles* vão/vai ficar contente(s).
      representative go.3SG visit   classrooms   they go.3PL/SG be   happy.(PL)
      'Representatives will visit classrooms. They will be happy.'
   b. **Deputado*   vai   visitar salas de aula. *Ele* vai   ficar contente.
      representative go.3SG visit   classrooms   he go.3SG be   happy

    Additionally, it is interesting to note that these BNs have been associated in the literature with two readings: a contrastive reading and a pair-list reading (Pires de Oliveira & Rothstein 2011).[44]

    In the contrastive reading, the BN in (58a), for example, must be interpreted in contrast to an alternative set. It can be uttered, for instance, in the following situation:

(61) A. Vai ter   senador visitando salas de aula na   festa da   escola?
       go have senator visiting   classrooms in.the party of.the school
       'Are there going to be senators visiting classrooms at the school party?'
   B. Não, DEPUTADO   vai   visitar salas de aula.
       no   representative go.3SG visit   classrooms
       'No, REPRESENTATIVES are going to visit classrooms.'

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[43] See Müller (2004) for an analysis of this type of BNs as NPs in topic position. We do not follow this analysis because, as argued in Section 2 and 4, preverbal BNs are not NPs; they are DPs specified for Number.

[44] As pointed out by one of the reviewers, it might be the case that these two readings should not be kept apart, because in both of them several factors as contrastiveness, topichood, intonation/stress, seem to intervene at the time of composing their meaning. We do not commit ourselves with this unification at this point.

Notice that *deputado* is used in contrast to the BN *senador* in (61A). According to the literature on information structure (cf. Vallduví 1990, Ward & Prince 1991, Büring 1997, Cohen and Erteschik-Shir 2002, among others), contrast involves the partitioning of a set available in discourse. A contrastive element is always specific; hence it may always play the role of a topic. In our analysis, we claim that the BN is not in subject position, but it is outside the IP (i.e., the sentential domain), in a Topic position. This explains why sentence (58a) cannot be the answer to *Quem vai visitar salas de aula* 'Who will visit classrooms?', where the BN *deputado* would be the focus, according to the traditional tests (see Cohen & Erteschik-Shir 2002:136). Note, however, that, if we build the contrastive context into the wh-question, as in *Quem vai visitar salas de aula na festa da escola, deputado ou senador?* 'Who will visit classrooms at the school party, representatives or senators?', then the BN *deputado* in the answer *DEPUTADO vai visitar salas de aula* would be possible.

The second possible reading for a BN with an s-level predicate in an episodic sentence makes available a pair-list answer (May 1985), as a reply to a multiple wh-question. Sentence (62B) is the answer to (62A).

(62) A. Quem vai visitar o que?
    who go visit the what
    'Who will visit what?'
  B. *Deputado*   vai   visitar salas de aula, *senador* vai   visitar quadras.
    representative go.3SG visit   classrooms   senators go.3SG visit   courts
    'Representatives will visit classrooms, senators will visit courts.'

As pointed out in the literature, the subject wh-phrase in a pair-list reading is interpreted as a topic, because the question ranges over a discourse-specified set (Erteschik-Shir 1997, 2007). This is in accordance to our analysis of these preverbal BNs (*deputado*, as well as *senador*) being in a left periphery Topic position.

We would like to point out that, in addition to these two readings, the sentence in (58a), given an appropriate discourse, also allows a functional reading for the BN in preverbal position.[45] In this case, the BN expresses a generalization restricted to the actual set of individuals that has to be considered on a particular occasion (see Condoravdi's 1992a, 1994). Consider (63).

(63)   Amanhã, vai ter uma festa para políticos na escola.
        'Tomorrow, there will be a party for politicians at school.'
  a. *Deputado*   vai   visitar salas de aula.
    representative go.3SG visit   classrooms

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[45] We thank L. McNally (p.c.) for making this comment to us.

'Representatives will visit classrooms.'
   b. Deputado *at that party at that time* vai visitar salas de aula.

The BN *deputado* in preverbal position in (63a) is not anaphoric to any previous nominal expression; the existence of entities satisfying the descriptive content of the Noun is not asserted, but their existence is presupposed from the previous context. Example (63a) is an assertion about the totality of the contextual relevant representatives whose existence in the actual world seems to be presupposed, and in this sense the BN *deputado* has a functional reading: the context makes salient that we are referring to all the representatives that will be at the school party at the time mentioned in the discourse context specified in (63). In this situation the output interpretation for the DP instantiated by *deputado* 'representatives' is that it denotes the maximal sum of individuals relevant in the context described.

Semantically, what the three readings associated with the preverbal BN in (58a) share is that the BN must be interpreted as the logical subject of a categorical judgment. In order to build this semantic interpretation for the sentence, we have argued for a syntactic structure with a topic followed by a sentence that contains its own grammatical subject. See the structures in (64).

(64) a. [$_{TOP}$ [$_{DP}$ ∅ [$_{NumP}$ ∅ [$_N$ deputado]]] [$_{IP}$ *pro* vai visitar salas de aula]]
    b. [$_{TOP}$ [$_{DP}$ ∅ [$_{NumP}$ ∅ [$_N$ deputado]]] [$_{IP}$ eles vão visitar salas de aula]]

That these are the correct structures for the sentences in (58a) in any of the possible readings we have described for the preverbal BN is proved by the fact that we can apply once more Britto's test, as illustrated below.

(65) *contrastive reading*
   A. Vai ter   senador visitando salas de aula na   festa da   escola?
      go have senator visiting   classrooms in.the party of.the school
      'Are there going to be senators visiting classrooms at the school party?'
   B. Não, DEPUTADO   *eles*   vão   visitar salas de aula.
      no   representative they go.3PL visit   classrooms
      'No, REPRESENTATIVES are going to visit classrooms.'

(66) *pair-list reading*
   A. Quem vai visitar o   que?
      who   go visit the what
      'Who will visit what?'
   B. Deputado   *eles* vão   visitar salas de aula, senador *eles* vão   visitar
      representative they go.3PL visit   classrooms   senator they go.3PL visit
      quadras.
      courts
      'Representatives will visit classrooms, senators will visit courts.'

(67) *functional reading*

        Amanhã, vai ter uma festa para políticos na escola.

        'Tomorrow, there will be a party for politicians at school.'

   a. Deputado   *eles* vão   visitar salas de aula.

      representatives they go.3PL visit   classrooms

      'Representatives will visit classrooms.'

   b. Deputado *at that party at that time* eles vão visitar salas de aula.

In this section we have shown that preverbal BNs in episodic sentences are also DPs with null Ds that correspond to logical subjects of categorical judgments. These preverbal BNs cannot have an indefinite generic interpretation because, for this reading to arise, an overt indefinite in a generic context is required: *Um deputado ele visita salas de aula no início do mandato* 'A representative visits classrooms at the beginning of the term of office'. A definite kind interpretation is not possible either, as predicted from the combination with s-level predicates.[46] As was also the case with the other preverbal BNs discussed in Sections 5.1 and 5.2, for a definite singular interpretation, the definite article must be used (as in *O deputado vai visitar salas de aula* 'The representative will visit classrooms'), and for an indefinite existential reading an indefinite determiner must be used (as in *Um deputado vai visitar salas de aula* 'A representative will visit classrooms').

6. Conclusions

In this paper, we explored the relation between the structure and meaning of BNs in BrP. On the basis of the distribution of null objects and third person pronouns, anaphoric binding, scope, occurrence of reciprocal expressions, among other arguments, we have argued for both an NP and a DP analysis, in different contexts. BNs in object position of HAVE-predicates are NPs with a number neutral interpretation and a property-type denotation, whereas BNs in other argument and peripheral positions are DPs specified for Number and an entity-type denotation. We have accounted for the variation of number realization within the nominal domain by

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[46] A reviewer points out that it is not impossible for a definite kind term to appear as the subject of a stage-level predicate as, for example, in *The pig arrived in North American in 1600*. However, in this example *the pig* does not seem to refer to a kind term, but to a prototypical representative of a kind. See Krifka et al. (1995), Dayal (2004), Borik and Espinal (2013), among others, for discussion on this issue.

postulating that in BrP Number is morphosyntactically specified and interpretable on D, that Number is valued by means of an operation of Inverse Agree (involving elements that carry interpretable and uninterpretable Number features), and that morphophonological Number agreement is postsyntactic. DP structures without a Number projection have been postulated only in association with a definite kind interpretation.

We have shown that, depending on the position, the type of predicate and the type of sentence they appear in, what look like BNs in BrP may convey either a definite or an indefinite interpretation, a strong or a weak reading, and a generic or an existential interpretation. In preverbal position BNs have a generic interpretation, and they refer either to a maximal sum of individuals or to a definite kind. In postverbal position BNs allow both a definite and an indefinite existential interpretation. The fact that BNs in BrP allow a definite (individuated, referential) interpretation is very challenging because it runs counter to the received wisdom according to which BNs cannot be definite. However, we have shown that these BNs are DPs and that they can be interpreted as definite specific in object position, a property that was also described for Old French by Mathieu (2009:131-132).

We have argued that preverbal BNs are DPs with null Ds, which semantically correspond to logical subjects of categorical judgments. As such, they are topics interpreted generically, with a strong construal. We have shown how this reading combines with i-level and k-level predicates, and with s-level predicates in generic/habitual contexts. In episodic contexts we have argued that preverbal BNs that combine with s-level predicates have either a contrastive, a pair-list, or a functional reading, but in common with the rest of preverbal BNs that are strong DPs with a null D they can never be interpreted existentially.

Having said that, there is still a remaining question that needs to be addressed: why would a language with definite and indefinite articles, and singular and plural morphosyntactic markings make use of covert determiners (that is, null Ds) in order to convey what could apparently be expressed by non-empty morphemes (*o/a/os/as, um/uma/uns/umas*). This general question may be formulated into two more refined questions. Is there a real optionality of the determiner? And, if we go back to the paradigm in (1) and (2), repeated here as (68) and (69), do these sentences encode the same meaning, as Müller's (2002) English translations appear to suggest?

(68)a. O   brasileiro é   trabalhador.

the.SG Brazilian is hardworking
'Brazilians are hardworking.'
b. Os brasileiros são trabalhadores
the.PL Brazilian.PL are hardworking.PL
'Brazilians are hardworking.'
c. *Brasileiro* é trabalhador.
Brazilian is hardworking
'Brazilians are hardworking.'
d. Brasileiros são trabalhadores.
Brazilian.PL are hardworking.PL
'Brazilians are hardworking.'

(69)a. Os brasileiro é trabalhador.
the.PL Brazilian is hardworking.SG
'Brazilians are hardworking.'
b. Os brasileiro são trabalhadores.
the.PL Brazilian are hardworking.PL
'Brazilians are hardworking.'
c. *O brasileiros é trabalhadores.
the Brazilian.PL is hardworking.PL

Our answer to the first question is negative, and it is grounded on the assumption that a category D is required for canonical argumenthood in Romance. Only objects of HAVE-predicates can be smaller than DPs.

Our answer to the second question is also negative, because the presence or absence of articles in preverbal position may be related to different readings. In sentence (68a) we have an overt definite DP with two structures, one with no Number projection that constrains the definite kind interpretation, and another one with Number that constrains a definite singular interpretation, only available (for this type of generic sentences) in constrastive contexts.

By contrast, the BN in (68c) is ambiguous. Two structures and two meanings are available for it: (i) a simpler DP structure similar to the one postulated for (68a), which does not specify Number and constrains a definite kind interpretation (the largest entity, that is, the class itself, satisfying the property denoted by N: the kind Brazilian), without taking into consideration the object individuals that might instantiate the class; and (ii) a full DP structure, which constrains a maximal sum interpretation (the Brazilians).[47]

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[47] The question that remains to be answered is why this preverbal BN cannot have a definite singular interpretation as the one that can be attributed to the definite description in (68a). The overt determiner seems to be responsible for this reading, but we leave this issue for further research since this might be related to more general phenomena of natural languages.

For the rest of the sentences, that is, (68b,d) and (69a,b), the presence or absence of a plural article is not to be associated with different meanings. The preverbal nominal expression in these sentences has the same DP structure containing a D necessarily specified for plural number, and this structure conveys a maximal sum interpretation. Our syntactic analysis predicts the ungrammaticality of (69c).

We come to the conclusion that in BrP the presence or absence of articles is relevant only in preverbal position, and that a preverbal vs. postverbal asymmetry emerges with regard to the possible interpretation that BNs may have.

From a syntactic perspective, our analysis also accounts for the fact that the same group of native speakers can sometimes select an overt determiner and, alternatively, a covert one: this is due to the fact that these speakers have only one grammar, a grammar that specifies Num on D, be it overt or covert. Agreement between D and N is postsyntactic. Therefore, our analysis is appropriate for both the informal and the formal varieties of BrP, and we conclude that the optionality of the D is only apparent, since all the preverbal nominal expressions in (68) and (69) must be associated with a full DP structure.

Our analysis is in accordance with the proposal that the obligatory insertion of determiners in the evolution of Romance languages is tied to the change in agreement morphology (Mathieu 2009). BrP determiners, like Modern French ones, are the constituents that specify Number and, in addition, like Old French ones, they can be null.

Recall that in the introduction we mentioned the relevance of the BrP data in (68) with respect to the debate between the Universal-DP Hypothesis and the Parametrized-DP Hypothesis. Although it seems that BrP poses a problem for the Universal-DP Hypothesis, we conclude that this is not the case. BrP does not escape the Universal-DP Hypothesis because, other than object position of HAVE-predicates, there is no other argument position in which a real BN can occur. With this study we also support previous conclusions by Espinal and Mateu (2011) according to which the distribution of BNs must be related to the argument structure of verbs and subject-object asymmetries. In fact, by showing that real BNs are NPs that occur only in object positions of HAVE-predicates, the prediction made is that other apparent BNs are DPs.

It should also be noted that BrP does not challenge the Nominal Mapping Parameter either. There is no reason not to think that BrP is a [-arg, +pred] language

like French (Chierchia 1998). In these two languages, Num features are morphosyntactically specified not on Nouns, but on Determiners. BrP, however, has a null Determiner that French doesn't have.

This study has several additional welcome consequences. (i) We are able to understand the distribution of third person pronouns in BrP and the impossibility of their referring back to a property-type expression. (ii) We predict that there is no number neutrality in BrP BNs, except for real NPs in object position of HAVE-predicates, for which the literature has proposed an incorporation analysis in the semantics (Dobrovie-Sorin et al. 2006, Espinal & McNally 2011).

Last but not least, this paper makes a contribution to our understanding of BNs in a language that seems to be unrestrictive with regard to the distribution of these expressions. More specifically, the novelty of this paper lies on our argumentation for the claim that BrP, in spite of being a language with articles that allows BNs in all argument positions, shows a canonical behavior with respect to other Romance languages. We have shown that, on the one hand, BrP patterns with Catalan and Spanish in allowing bare NPs in object position of HAVE-predicates. On the other hand, BrP patterns with Modern French, in that, within the DP structure, Number features are morphosyntactically specified and interpretable on D, not on N.

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