

Bare Nominals in Brazilian Portuguese

Chapter for the *Oxford Handbook of Grammatical Number**

Marcelo Ferreira
Universidade de São Paulo

1 Introduction

Brazilian Portuguese (BrP) is a language in which bare singulars, bare plurals and bare mass nouns are all possible in argument positions:

- (1) Cachorro odeia gato.
dog hates cat
'Dogs hate cats.'
- (2) Cachorros odeiam gatos.
dogs hate cats
'Dogs hate cats.'
- (3) Óleo não mistura com água.
oil not mixes with water
'Oil and water don't mix.'

Bare singulars in particular have drawn a lot of attention due to their absence or more limited distribution in other Romance languages (including European Portuguese). In a more general typological context this is also surprising since unlike other languages with a freer distribution of bare arguments (like Chinese), BrP displays overt plural morphology and a full range of definite and indefinite determiners:

- (4) a. o menino / os meninos
the boy / the_pl boys
b. um cachorro / uns cachorros
a dog / a_pl dogs

Moreover, typical count nouns such as *menino* 'boy' and *cachorro* 'dog' can combine directly with numerals and plural quantificational determiners, whereas typical mass

*I would like to thank Jenny Doetjes for her editorial guidance, and the anonymous reviewers who provided extremely valuable comments that helped me improve the chapter.

nouns such as *poeira* ‘dust’ and *farinha* ‘flour’ cannot:¹

- (5) a. quatro meninos, vários cachorros, ...
four boys, several dogs, ...
b. #quatro poeiras, #várias farinhas, ...
four dusts, several flours, ...

Also intriguing is the fact that singular count nouns can appear in the context of certain quantity expressions without a count/mass shift which seems to be related to the use of bare singulars in the language:

- (6) Eu vi (muito) cachorro.
I saw (a.lot) dog
‘I saw (many) dogs.’

From a theoretical perspective, according to the influential approach by Chierchia (1998) and his Nominal Mapping Parameter, argumental bare singulars are unexpected in a language with the morpho-syntactic profile of BrP. Schmitt and Munn (1999) were probably the first to notice the typological as well as theoretical issues raised by BrP bare singulars, and since then several proposals have appeared aiming at an account of their distribution and interpretation in the language.

In this overview, we will first focus our attention on bare nominals. In section 2, we lay out the basic facts about the distribution of bare singulars, bare plurals and bare mass nominals in the language. In section 3, we look at the behavior of bare nominals with respect to the singular/plural and the mass/count oppositions, paying special attention to the number neutrality that seems to characterize bare singulars. Section 4 is devoted to the semantic modeling of bare nominals, discussing some proposals and analytical tools that have been employed to account for their meaning. Section 4.1 discusses kind-level and generic sentences, whereas section 4.2 discusses episodic sentences. In section 5, we turn to non-bare uses of nominals, as in (6), as well as to the lack of plural agreement within DPs in certain registers, discussing how their form and meaning might relate to the existence of bare singulars in the language.

2 The Distribution of Bare Nominals

2.1 Bare Plurals

We start with bare plurals, noticing from the outset that they belong to formal registers, being rarely used in more colloquial situations, specially in spoken language.² No such restriction applies to bare singulars and bare mass nominals, which will be discussed in the next two subsections. Bearing this in mind, here is the basic pattern:

¹Unless they are coerced into count predicates. In an appropriate context, *várias farinhas*, for instance, can be used to refer to various types of flour.

²Incidentally, this is also true of bare plurals in Italian which, according to Chierchia (1998:383), “appear to be linked to a somewhat ‘elevated’ or ‘literary’ register (with the exception of a few more common, quasi-idiomatic phrases).”

- (7) Baleias estão em extinção.
whales are in extinction
'Whales are on the verge of extinction.'
- (8) Cachorros latem (quando estão bravos).
dogs bark when are angry
'Dogs bark when they are angry.'
- (9) João odeia cachorros.
Joao hates dogs
'John hates dogs.'
- (10) Eu vi cachorros na estrada.
I saw dogs on the road
'I saw dogs on the road.'
- (11) Cachorros estão latindo na frente da minha casa.
Dogs are barking in the front of the my house
'Dogs are barking in front of my house.'

As one can see from these data, bare plurals can appear in all sorts of argumental and syntactic positions, resembling English, and differing from other Romance languages, which either do not allow them at all (French) or only allow them in a restricted set of syntactic positions (Italian and European Portuguese, for instance).³ In (7), we have a kind-selecting predicate, i.e. a predicate that does not apply to ordinary individuals, but rather to the species or the totality of its members. (8) is a generic sentence, saying that under normal circumstances an angry dog will bark. In (9), we have the individual level predicate *odiar*, and the sentence conveys that John hates dogs in general. Finally, in (10) and (11), we have episodic sentences with bare plurals in object and subject positions, respectively. As the glosses show, bare plurals get an existential interpretation in these cases.

2.2 Bare singulars

Bare singulars have a slightly more constrained distribution than bare plurals. Starting with kind-selecting predicates, one should be aware of some controversial judgments that have appeared in the literature. While Müller (2002:ex.(25)) rejects sentences such as (12) below, Pires de Oliveira and Rothstein (2011:ex.(15)) accept them, and Menuzzi et al. (2015:ex.(6b)) judge them “a little bit weird out of context”:

- (12) Baleia está em extinção.
whale is in extinction
'Whales are on the verge of extinction.'

Judgments with other types of predicates are less controversial and what follows can be taken as the basic pattern:

- (13) Cachorro late (quando está bravo).
dog barks when is angry

³See Chierchia (1998) and Müller and Oliveira (2004).

- ‘Dogs bark when they are angry.’
- (14) João gosta de cachorro.
Joao likes of dog
‘John likes dogs.’
- (15) Eu vi cachorro na estrada.
I saw dog on_the road
‘I saw dogs on the road.’
- (16) *Cachorro está latindo na frente da minha casa.
Dog is barking in_the front of_the my house
Intended reading: ‘Dogs are barking in front of my house.’

These data show that bare singulars are fine in generic sentences and also as arguments of individual-level predicates. This does not differ from what we saw before with bare plurals. This distributional parallelism changes when it comes to episodic sentences. As the contrast in (15)-(16) reveals, bare singulars in subject position of episodic predicates are not grammatical, giving rise to a subject-object asymmetry.⁴ No such asymmetry is observed in generic sentences, in which bare singulars can appear in any argument position:

- (17) Gato come rato.
cat eat mouse
‘Cats eat mice.’

However, the ban on subject bare singulars in episodic sentences is not absolute, since they become fine in contrastive, list-like environments (example from Schmitt and Munn 1999):

- (18) Durante a festa, mulher discutiu política, homem discutiu futebol, ...
During the party, woman discussed politics, man discussed soccer, ...
‘During the party, women discussed politics, men discussed soccer, ...’

As the glosses in (15) and (18) indicate, bare singulars receive an existential interpretation in episodic sentences. Although (18) might not be so clear in this respect, other examples are.⁵ Sergio Menuzzi (p.c.), for instance, offered the following scenario: “Imagine someone throws a party in which plenty of lawyers and doctors are present. Lawyers are supposed to be lazy, and doctors too serious to tell jokes; but the party was so crazy that the cook was a lawyer, and the star of the night was a doctor who turned out to be a comedian.” Under these conditions, he adds, one can utter (19), even if only one lawyer cooked, and only one doctor told jokes.

⁴Examples such as (16) become fine under the intended interpretation if we replace the bare singular with an overt indefinite:

- (i) Uns cachorros estão latindo na frente da minha casa.
a_pl dogs are barking in_the front of_the my house

⁵Pires de Oliveira and Rothstein (2011:2168), for instance, gloss with plural definites an example very similar to (18).

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

Finally we notice that the ban on (non-contrastive) subjects is limited to pre-verbal positions. In the few cases in which post-verbal subjects are allowed in BrP, they are just fine:

- (20) a. *Carta chegou pra voce.
 letter arrived for you
 b. Chegou carta pra voce
 arrived letter for you
 ‘There arrived letters for you’

2.3 Bare Mass Nominals

Completing our overview of the distribution of argumental bare nominals, we give the basic pattern with bare mass nominals:

- (21) Petróleo vai ser raro no futuro.
 oil will be rare in_the future
 ‘Oil will be rare in the future.’
- (22) Água ferve (quando aquecida).
 water boils when heated
 ‘Water boils when heated.’
- (23) João gosta de azeite.
 Joao likes of olive-oil
 ‘John likes olive oil.’
- (24) Eu vi óleo na estrada.
 I saw oil on_the road
 ‘I saw oil on the road.’
- (25) *Água está pingando do teto.
 water is dripping from_the ceiling
 Intended reading: ‘Water is dripping from the ceiling.’

These data suggest that the distribution of bare mass nominals is very similar to the distribution of bare singulars.⁶ Indeed, even the constraint on subject positions of episodic sentences is relativized to the same environments, with examples becoming fine with contrastive as well as post-verbal subjects. Compare, for instance (25) with (26) and (27) below:

- (26) Água está pingando do teto, óleo está vazando do cano, ...
 water is dripping from_the ceiling, oil is spilling from_the pipes, ...

⁶This includes the fuzziness of judgments concerning kind predicates reported in the previous section. Although most speakers I consulted considered examples such as (21) fine, some of them commented that it sounds a little bit awkward.

- (27) Está pingando água do teto.
 is dripping water from the ceiling
 ‘Water is dripping from the ceiling.’

Thus, both bare mass nominals and bare singulars have a more limited distribution in the subject position of episodic sentences when compared to bare plurals, which do not seem to show any limitation at all.

3 Number Neutrality

In this section, we take the first step to approach the semantics of bare nominals. We discuss some general facts about them – bare singulars, in particular – that raise issues about both the singular/plural and the mass/count distinctions.

We start by noticing that although using the expression *bare singulars* to refer to bare count nouns that do not display plural morphology may suggest that they are semantically singular, there is evidence that they are not. This is particularly clear in their existential interpretation in episodic sentences, in which the singular/plural opposition seems to be blurred, giving rise to what could be informally described as a number neutral interpretation:

- (28) Eu vi **cachorro** na estrada.
 I saw dog on the road.
 a. ... **Ele** parecia doente
 ... It seemed sick
 b. ... **Eles** pareciam doentes
 ... They seemed_{pl} sick_{pl}

Besides the fact that (28) can be naturally used to describe situations in which I saw a single dog as well as situations in which I see more than one dog, as the (a)-(b) continuations show, bare singulars can be resumed by either singular or plural personal pronouns. This contrasts with overt indefinites, in which case number matching is required.

Another piece of evidence showing that bare singulars are not semantically singular comes from plural predication, illustrated here with reciprocal readings of the third-person clitic *se*:

- (29) Eu vi cachorro se mordendo.
 I saw dog SE biting
 ‘I saw dogs biting each other (or themselves)’

Here too we have an existential interpretation, and replacing the bare singular with a singular indefinite would block the reciprocal interpretation, which is presumably incompatible with singular arguments.

Although we haven’t yet discussed possible denotations for bare singulars (see next sections), the data presented above strongly suggest that whatever one’s ultimate choice be it should encode some sort of number neutrality in the sense of encompassing both atoms and pluralities in a given interpretive domain.⁷

⁷Unless, of course, one posits an ambiguity according to which bare singulars are morpho-syntactically

As for bare bare plurals, they differ from bare singulars in this regard. (30) below conveys that I saw more than one dog. Accordingly, only plural pronouns can be used anaphorically:

- (30) Eu vi **cachorros** na estrada. Eles/#Ele ...
I saw dogs on_the road. They/#It ...

However, whether this exclusive plurality is an entailment or an implicature is a matter of debate. Some speakers (including myself) find (31) false even if only one dog was seen on the road:

- (31) Eu não vi cachorros na estrada.
I not saw dogs on_the road

Additionally, dialogs like (32) sound fine to myself and these speakers:

- (32) A: Você viu cachorros na estrada?
you saw dogs on_the road
B: Sim. Mas apenas um.
Yes but only one

Müller (2002:fn.18), however, has different judgments. This seems to indicate that there might be variation in whether or not bare plurals are exclusively plural (see chapters 3 and 7, this volume, for related discussion).

Turning now to the count/mass opposition, some uses of certain bare singulars also suggest neutrality with respect to individuation or atomicity:

- (33) Maria comeu maçã esta manhã.
Maria ate apple this morning

This sentence could be naturally used to describe situations in which Maria ate a single apple, more than one apple, a few pieces of apple, or even some sauce made of apples. It differs from (34) in which a bare plural is used, and which conveys that Maria ate at least two (whole) apples:

- (34) Maria comeu maçãs esta manhã
Maria ate apples this morning

This suggests that denotations of bare singulars include not only individuals (singular and plural) but also stuff in the same sense that typical mass nouns such as *mud* do in theories as the one proposed in Link (1983). However, one must be cautious here since although this type of neutrality seems clear with nouns denoting foodstuff, it does not seem to manifest itself with many other bare singulars. (35), for instance cannot be used if only computer parts were bought by Maria:

specified as either singular or plural, but with no overt phonetic distinction between these specifications. A proposal along these lines was developed by Cyrino and Espinal (2015). Ferreira (2010) in his discussion of plural predication in connection with some uses of bare nominals also postulates an ambiguity, but one between singular marked and numberless bare singulars, which we will not have space to discuss in this chapter.

- (35) Maria comprou computador.
 Maria bought computer

The interpretive contrast between (33) and (35) might be an indication that some sort of polysemy is at play in (33) which only affects part of the lexicon of BrP.

Lack of atomization or individuation in the denotation of bare singulars as well as their relation to mass nouns have been a recurrent theme in the literature. Schmitt and Munn (1999:exs.(32)-(35)), for instance, argued against identifying bare singulars and bare mass nouns, based on contrasts like the following:

- (36) a. *Ouro pesa duas gramas.
 gold weighs two grams
 Intended meaning: ‘Pieces of gold weigh two grams.’
 b. Criança pesa 20 kg nessa idade.
 child weighs 20 kg at this age
 ‘Children weigh 20 kg at this age.’
- (37) a. *Ouro realça um ao outro.
 gold enhances one to the other
 Intended meaning: ‘Pieces of gold enhance each other.’
 b. Criança briga uma com a outra.
 child fights one with the other.
 ‘Children fight with one another.’

The assumption here is that distributive (*weigh 2 grams*) and reciprocal (*enhances/fight one another*) predicates require atomization, and the contrasting acceptability shown above leads to the conclusion that bare singulars have atomic individuals in their denotations, whereas bare mass nouns do not.

Pires de Oliveira and Rothstein (2011) reject this conclusion, claiming that the tests are biased towards some particular mass nouns, which are not naturally atomic (*gold, flour, oil*), and also toward some particular count nouns, which are naturally atomic (*child, dog, book*). As Rothstein (2004) pointed out, naturally atomic mass nouns also exist (*furniture, jewelry, silverware*) and so do non-naturally atomic count nouns (*fence, line*). The former seem to have inherently individuable entities in their denotations, and the latter may require contextual information to determine what these atoms are for purposes of counting. For instance, fences in front of two adjacent houses may count as “one fence” or “two fences” depending on a variety of factors such as whether or not the fences were built at the same time, whether or not the owners are the same, whether or not they have the same color, height, . . . As Pires de Oliveira and Rothstein (2011:2157) show, when these nouns enter the tests, the contrasts above are neutralized, with naturally atomic mass nouns being acceptable and non-naturally atomic count nouns becoming somewhat degraded:

- (38) a. Móvel (nesta loja) pesa 20 kilos.
 furniture (in this store) weighs 20 kilos.
 ‘Furniture (in this store) weighs 20 kilos.’
 b. Bijuteria (nesta loja) custa 3 reais.
 jewellery (in this store) costs 3 reais.

- ‘Jewellery (in this store) costs 3 reais.’
- (39) a. ??Cerca (nesse terreno) tem 2 metros.
 fence (in_this property) has 2 meters
 Intended meaning: ‘Fences in this property are 2 meters’
- b. ??Reta cruza uma com a outra.
 line crosses one with the other
 Intended meaning: ‘Stretches of line cross with each other.’

As they also point out, bare plurals behave differently, and are always fine in these contexts:

- (40) a. Cercas (nesse terreno) tem 2 metros.
 fences (in_this property) have 2 meters
 ‘Fences in this property are 2 meters’
- b. Retas cruzam uma com a outra.
 lines cross one with the other
 ‘Stretches of line cross with each other.’

Summing up, atomicity (or lack thereof) does not seem to oppose bare singulars and bare mass nouns.⁸ Bare plurals, on the other hand, seem to always have denotations built from a set of atomic individuals.

4 On The Denotation of Bare Nominals

Having outlined the distribution of bare nominals and made some remarks about their plurality and countability, we shall now investigate their interpretation in more detail and look at some analytic options for their semantic modeling. We first discuss kind-level and generic readings, and then episodic/existential readings. In both cases, two main issues emerge which can be used to distinguish the different approaches found in the literature: (i) do bare nominals denote kinds or properties? (ii) are they NPs or are they DPs headed by an empty D(eterminer)?

4.1 Kind-Level Predication and Generic Sentences

BrP, as many other languages, has predicates such as *estar extinto* ‘be extinct’, *ser raro* ‘be rare’, and *vir em três tamanhos* ‘come in three sizes’ that apply only to kinds, excluding ordinary individuals (see Carlson (1977); Chierchia (1998), *inter alia*). As we saw in section 2, bare plurals, bare singulars, and bare mass nominals can all appear as arguments of these predicates, with the proviso that for some speakers, bare singulars do not sound fine in these cases. One of the issues in the literature is whether bare singulars are kind denoting or not, and this section summarizes the different points of view on this debate, starting with a brief excursus into the semantics of kinds.

Assuming a domain of interpretation which includes both singular and plural entities as in Link (1983), and following the influential proposal in Chierchia (1998), we can

⁸For Pires de Oliveira and Rothstein (2011), bare singulars and bare mass nouns are indeed semantically alike.

model kinds as plurality concepts: intensional entities mapping a possible world w into a plurality corresponding to the totality of the manifestations of the kind in w . Thus, in a world in which there are only three individual whales a , b , and c , the kind *whale* will yield the sum $a \oplus b \oplus c$ (see chapter 3, this volume).

Kinds, according to this view are related to properties. These are set concepts, mapping worlds into (characteristic functions of) sets of individuals. Singular properties yield sets of atomic entities ($\{a, b, c\}$ in our previous scenario), whereas plural properties yield sets of sums formed out of these atomic entities ($\{a \oplus b, a \oplus c, b \oplus c, a \oplus b \oplus c\}$ in the same scenario). The close relationship between properties and kinds are formalized in Chierchia’s system by means of a pair of operators (\cap and \cup). \cap maps a property P into a kind by extracting for each possible world w the maximal element in P ’s extension in w . \cup , on the other hand goes in the opposite way mapping a kind K into a property which for every world w yields a set formed by all parts (singular or plural) of the plurality comprising K in w .

For our purposes, the most important aspect of this system is that only plural properties can be converted into a kind via \cap . This is so because only plural properties have maximal elements. Singular properties do not, unless they yield singletons in every possible world (we will ignore this possibility here). This is at the heart of Chierchia’s explanation for why bare plurals but not bare singulars can be kind denoting in languages with a singular/plural distinction. Both BrP and English are languages of this type. For English, Chierchia assumes that count nouns come out of the lexicon as denoting singular properties. These count nouns can be turned into kind denoting nouns via \cap , but only after they are pluralized, due to what we have just seen. As predicted, bare plurals, but not bare singulars, are attested in English. As for bare mass nouns, Chierchia assumes they are lexically pluralized and kind-denoting from the beginning. Therefore, they are also predicted to be attested alongside bare plurals.

What about BrP (which Chierchia did not discuss)? Given the similarities between the somewhat unconstrained distribution of argumental bare plurals in BrP and English, one can adopt for BrP Chierchia’s idea for English that bare plurals are kind denoting expressions. It is bare singulars which seem to challenge the whole system, as was noticed right away by Schmitt and Munn (1999). However, as discussed in the previous section, there is plenty of evidence that BrP bare singulars aren’t really singular, but rather number neutral. If so, bare singulars can be targeted by the \cap -operator and turned into kinds, just like bare plurals can, and a kind-denoting approach becomes a viable proposal within Chierchia’s framework, as was highlighted by Dobrovie-Sorin and Pires de Oliveira (2008).

Schmitt and Munn (1999) and Munn and Schmitt (1999) formalize this intuition by adopting a syntactic structure for nominal expressions in which N(oun) Phrases are dominated by a projection labeled Num(ber)P, which is in turn dominated by D(eterminer)Ps. They assume that NumPs – the locus of semantic number – can be missing in BrP, but not in English. According to them, bare singulars are Numberless count NPs covered by a null D denoting the \cap -operator. We do not find them in English because Num cannot be absent in English.⁹

Pires de Oliveira and Rothstein (2011) have a different, more lexically oriented idea.

⁹On why this might be so, see Munn and Schmitt (1999), whose proposal is based on how Num(ber) and Agr(eement) features/heads are instantiated in different languages

For them bare singulars and bare mass nouns are semantically alike and the difference between bare singulars and bare plurals isn't just a matter of number neutrality. Based on Rothstein (2010), they assume that root nouns are lexicalized via two abstract operators – MASS and COUNT – which are responsible for deriving mass and count nouns in a language. Mass and count nouns are type-theoretically different: mass nouns denote kinds, whereas count nouns denote sets. They propose that as a default case, the derivation of nouns in a language like English is subject to an ‘either/or’ principle, according to which either COUNT or MASS applies to a root noun, but not both. Root nouns such as *dog* or *fence* only combine with COUNT, while *water* and *furniture* only combine with MASS. It is only in a restricted number of cases involving foodstuff or certain substance-like concepts such as *apple* and *stone* that the default is overridden and we seem to have both count and mass versions of a single root:

- (41) John hates eating apples, but he likes apple in the salad. [Pires de Oliveira and Rothstein (2011:2165)]

Other languages, however, may not obey the ‘either/or’ principle, allowing their count nouns in general to have mass counterparts. These are bare singulars, and BrP is such a language. As the authors claim, ‘bare singulars and mass nouns are the same phenomenon. The only difference is that bare singulars have count noun counterparts, which are morphologically identical but obey the rules for count syntax’ (Pires de Oliveira and Rothstein 2011:2165).¹⁰

Back to data, if bare nominals are indeed kind denoting, examples such as (42) below become cases of simple predication in which a kind selecting predicate meets a kind denoting argument.

- (42) Baleia está extinta.
 whale is extincted
 ‘Whales are extincted.’
extinct(WHALE)

As for generic sentences, they can be analyzed as containing a (possibly silent) generic operator (GEN) binding variables in its scope (see Krifka et al. (1995) *inter alia*). Kind denoting bare arguments can contribute to restrict GEN after being turned into properties which apply to their manifestations, as sketched below for a subject bare singular:

- (43) Cachorro late.
 dog bark
 ‘Dogs bark.’
 GEN[*x*](*x* ≤[∪]DOG; bark(*x*))
 ‘Generally, if *x* is a dog, *x* barks’.

It is important to notice that for speakers like Müller, who reject bare singulars as arguments of kind predicates, adopting a kind-denoting view for them would be awkward.¹¹

¹⁰What remains an open issue, as the authors themselves acknowledge, is the fact that traditional mass nouns do not have count noun counterparts, even those that are naturally atomic, such as *bijuteria* ‘jewelery’.

¹¹Although Müller (2002:ex.(26)) also rejects bare plurals in kind predication, Müller and Oliveira

As expected, she does not assume such a view. She argues they are indefinites in the sense of Heim (1982), being interpretable as restricted variables which get bound by (possibly silent) generic operators. Thus examples with kind predicates become cases of type mismatch, whereas generic sentences receive a semantic analysis minimally different from (43):

- (44) Cachorro late.
 dog bark
 GEN[x](dog(x); bark(x))

Interestingly, Menuzzi et al. (2015) and Pires de Oliveira and Rothstein (2011) pointed out that even generic statements of the kind Müller uses to illustrate her analysis bring about some evidence for the necessity of a kind interpretation of bare singulars (at least as an option, in addition to the bound variable reading proposed by Müller). Menuzzi et al. (2015), on the one hand, mention an interpretive contrast between singular definites and singular indefinites in English discussed in Krifka et al. (1995:88-89):

- (45) a. The lion roars when it smells food.
 b. A lion roars when it smells food.

Krifka et al. (1995) notice that both sentences can be interpreted as a generalization about members of the kind *Leo leo*, and can be roughly paraphrased as follows: in general, if x is a lion and x smells food, x roars. However, they claim that the version with the singular definite also gives rise to a second reading, which emerges only under what they call a “kind-oriented mode of speaking” and in which the definite is interpreted as the kind *Leo leo* and the individual lions who smell food do not have to match the ones who roar. As they put it, (45a) “can be verified by considering the scenario in which lions live in packs, the more sensitive females smell the food, but only the oldest male has the right to roar.” As they admit, “due to our tendency to avoid the kind-oriented mode, this interpretation is chosen only rarely.” (Krifka et al. 1995:89).

What Menuzzi et al. (2015:37-39) noticed is that the contrast above can be replicated in BrP using bare singulars and singular indefinites:

- (46) a. Índio só come carne quando caça ou pesca.
 indian only eats meat when hunts or fishes
 ‘Indians only eat meat when they hunt or fish.’
 b. Um índio só come carne quando caça ou pesca.
 an indian only eats meat when hunts or fishes
 ‘An indian only eats meat when he hunt or fish.’

They claim that (45) but not (46) can be verified by a scenario in which the Indians who hunt or fish are not the same ones who eat, instantiating a kind-level interpretation.

Pires de Oliveira and Rothstein (2011:2162), on the other hand, take an example by Müller herself that they claim support a kind rather than a quantification interpretation of bare singulars:

(2004:ex.(33)) find them good.

- (47) Judeu está fazendo jejum hoje.
 jew is doing fast today
 ‘Jews are fasting today.’

They comment: “Assume this example is uttered on Yom Kippur, the Jewish festival of fasting and atonement. [(47)] as a statement about the kind Jews makes the assertion that it is a characteristic of Jews as a group that they are fasting today. A quantificational generic interpretation would assert that all non-exceptional Jews are fasting today, and in the modern 21-century world, when most Jews do not adhere to traditional practice, this quantificational reading is false. Since [(47)] can be used in the context given to make a true assertion, the data supports a non-quantificational generic interpretation in which the bare singular denotes the kind.” (Pires de Oliveira and Rothstein 2011:2162)

Thus, according to these authors, generic statements also provide support for a kind-denoting semantics for bare singulars in BrP. If so, Müller – who rejects bare singulars with kind predicates – would have to tell a different story about examples like (46) and (47), since it would be awkward to assume that they illustrate a ‘kind’ interpretation of bare singulars, an interpretation that would be missing from the much more obviously kind-oriented statements in sentences with kind-denoting predicates.

Finally it should be mentioned that all speakers seem to reject bare singulars in the object position of *inventar* ‘to invent’, a predicate that one would naturally describe as expressing a relation between individuals and kinds:

- (48) #Babbage inventou computador.
 Babbage invented computer

Using a bare plural here gives rise to a taxonomic reading (marginal to my ears). Only with definite object DPs does a genuine kind reading emerge:

- (49) ?Babbage inventou computadores.
 Babbage invented computers
 ‘Babbage invented some types of computer.’
- (50) Babbage inventou o computador.
 Babbage invented the computer
 ‘Babbage invented the computer.’

These facts are indeed unexpected if bare singulars are kind denoting expressions. We will not go any deeper into this issue, referring the reader to Beyssade (2005) for relevant discussion about the idea that predicates like *to invent* are not kind-level, and also to Krifka et al. (1995:70-73), who point out that English too requires a definite DP for expressing a (non-taxonomic) kind reading in this context.

4.2 Episodic Sentences and Existential Interpretations

The distribution and interpretation of bare nominals in episodic sentences bring additional challenges to a uniform treatment of these expressions in BrP. This is due to their existential interpretation and the subject-object asymmetry which was described in section 2 and which was seen to apply to both bare singulars and bare mass nouns, but not to bare plurals.

Consider first kind-denoting theories. Appearing as arguments of non-kind selecting predicates, kind denoting expressions cannot combine with them ordinarily via functional application or similar mechanisms. Moreover, no existential force is expected. Chierchia (1998) devised an interpretation rule named *derived kind predication* which is meant to apply in exactly these contexts, and which delivers an existential interpretation:

- (51) *Derived Kind Predication (DKP)* [Chierchia (1998:364)]
 If P applies to objects and k denotes a kind, then
 $P(k) = \exists x[\cup k(x) \wedge P(x)]$

A welcome consequence of this rule is that it helps accounting for the scopal behavior of BrP bare nominals, which they share with English bare plurals. The basic point here is that BrP bare nominals always take narrow scope with respect to other clause-mate operators, as first noticed by Schmitt and Munn (1999: section 4.1) and illustrated here with negation and an intensional verb:

- (52) Maria não comprou livro(s) este mês.
 Maria not bought books this month
 $\neg \exists x[\text{book}(x) \wedge \text{Maria bought } x \text{ this month}]$
 $*\exists x[\text{book}(x) \wedge \text{Maria didn't buy } x \text{ this month}]$
- (53) Maria quer encontrar estudante(s)
 Maria wants to meet students
 Maria wants $\exists x[\text{student}(x) \wedge \text{Maria meet } x]$
 $*\exists x[\text{student}(x) \wedge \text{Maria wants to meet } x]$

(52) denies the existence of books that Mary bought this month. It would be false, for instance, if there were books that she bought as well as books that she did not buy. As for (53), it only admits an opaque reading, according to which Mary's desire would be satisfied only in situations in which she meets students. It would be false if her desire is about meeting a particular group of people who (perhaps unbeknownst to her) just happens to be a group of students. Wide scope readings would be readily available for both (52) and (53) if we replaced the bare argument with an overt indefinite.

If kind-denoting, bare nominals would trigger the application of the DKP rule at the VP level, and this would derive the narrow scope facts we have just illustrated. The existential quantifier seen in the logical translations above would be part of the VP interpretation, appearing very early in the semantic derivation and under the scope of other operators that would eventually appear higher in the syntactic structure.¹²

Notice, however, that a similar explanation for the narrow scope, existential interpretation could be easily devised within non-kind denoting proposals. For instance, if one takes bare nominals to be property-denoting NP-predicates, type mismatches would also arise within VP, requiring some special mode of composition. A rule such as (54) below could then be posited according to which the denotation of the direct object is taken to restrict the internal argument of a transitive verb, introducing a variable which gets existentially bound:¹³

¹²see Chierchia (1998) for details and a generalization of *DKP* to n-ary predicates.

¹³See Chung and Ladusaw (2004, 2018), van Geenhoven (1998), and Krifka (2004) for discussion and implementation of variants of this idea. See also the chapter on bare nouns, this volume.

- (54) If R applies to objects and P denotes a predicate, then
 $R(P) = \lambda x. \exists y[P(y) \wedge R(x, y)]$

Being predicates and not Q(uantifier)Ps, bare nominals would not be targeted by a rule like quantifier raising, and could not take scope over other elements in the sentence, as QPs can. Details apart, it is fair to conclude that the scopal facts that arise under the existential reading do not favor either type of analysis.¹⁴

As for their distribution, recall that unless they receive contrastive stress, bare singulars and bare mass nouns are unacceptable as pre-verbal subjects of episodic sentences. They are fine, however, as objects of verbs and prepositions, as well as post verbal subjects (when the grammar allows them). In such cases, they receive a number neutral, existential interpretation.

A somewhat similar asymmetry is attested with Italian bare plurals (Chierchia (1998) and references therein). Chierchia (1998) analyzes them as DPs headed by a null determiner, whose semantic role is to turn a NP plural predicate into a kind denoting DP argument. Thus, whereas English bare plurals become kind denoting at the NP level with the application of the shifting operator $\hat{\cdot}$, their Italian counterparts become kind denoting only at the DP level, with the help of a silent determiner that combines with a NP predicate. Being a null category, this determiner requires syntactic licensing. This is the key ingredient in accounting for the subject-object asymmetry. Simplifying things a lot, complements of verbs and prepositions are licensed by these lexical heads, whereas (pre-verbal) subjects – which are not related to any such licenser – are not. They can be rescued, however, in contrastive environments (as in the list-like interpretations we saw in section 2) in which case they can be assumed to relate syntactically to certain left periphery heads, such as Topic/Focus, which would also be legitimate licensers.

The distribution observed with BrP bare singulars and bare mass nouns seen in section 2 suggests a similar analysis. This was indeed the route taken by Schmitt and Munn (1999), who (as we already mentioned) proposed that bare singulars are DPs with empty determiners and no number. A challenge to the null D analysis is to account for the fact that the subject-object asymmetry is observed only with respect to the existential interpretation in episodic sentences. It does not affect pre-verbal subjects of kind-level predicates and generic sentences. Why should that be the case? Notice that this is also an issue for a NP/kind-denoting analysis *a la* Chierchia, since no asymmetry at all would be expected, and bare singulars would behave just like (English and BrP) bare plurals

¹⁴As pointed out by Munn and Schmitt (1999:ex.(27b)) (see also Partee (1985) on related data in English), scope interaction seems to be more complicated with bare plurals and intensional verbs. When the subject of an intensional verb is also plural, as in (i) below, the bare plural can scope above the verb:

- (i) Os estudantes estão procurando artigos de linguística.
 the students are looking_for articles of linguistics
 ‘The students are looking for linguistics articles.’

The sentence is three way ambiguous. If the bare plural scopes above the verb but below the subject, then for each student there are (possibly) different articles that (s)he is looking for. If it scopes above the subject, then there must be some particular set of articles that all the students are looking for. And there is also the narrowest scope reading, with the bare plural under the scope of the verb. We point out that the contrast between (i) and an example such as (53) is not crystal clear to all speakers. Be that as it may, a wide scope reading for the bare plural might be evidence that they are, or at least can be, DPs headed by a null D, which can be targeted by quantifier raising rules.

do.

One possibility is that the surface position that pre-verbal arguments occupy in BrP is not the canonical, specifier of IP slot, but rather a left-peripheral, Topic-like position, which is not compatible with the existential interpretation observed with non-subject, post-verbal bare nominals in episodic sentences.¹⁵ This possibility is explored in different forms by Müller (2004) and Cyrino and Espinal (2015). Both proposals claim that what looks like normal pre-verbal subjects in BrP are in fact hosted under a Top(ic)P projection and resumed by an empty category within IP, as schematically represented below:

- (55) Brasileiro é trabalhador.
brazilian is hard-working
[_{TopP} brasileiro [_{IP} ∅ é trabalhador]]

One potential piece of evidence for this type of analysis comes from the fact that sentences such as (55) can be naturally paraphrased by the minimally different version in (56). The same applies to subjects of kind-level predicates, as shown in (57). In both cases, bare nominals seem to occupy a left-peripheral position and are followed by overt, pre-verbal pronouns:

- (56) Brasileiro, ele é trabalhador.
brazilian he is hard-working
- (57) Baleia, ela está quase extinta
whale, it is almost extinct

The underlying assumption is that these topic-like elements can serve as the logical subject of kind-level predicates, and also as the restrictor of generic operators, but they can never give rise to indefinite interpretations. The oddness of examples like (58) can be taken as evidence in this direction:

- (58) #Brasileiro, ele está trabalhando na minha sala nesse momento.
brazilian he is working in_the my office this moment
Intended reading: “There is a Brazilian working at my office right now.”

An important question that arises in connection with examples like (55) and the proposed structure involving an IP-external subject is whether or not all pre-verbal subjects in BrP occupy this Topic-like position, being resumed by an IP-internal empty category. Just to remain within the realm of bare arguments, consider, for instance, bare plurals in episodic sentences. Contrary to bare singulars, they are fine and receive an existential interpretation. Accordingly, bare plurals can be generated in another position, apart from the Topic position, compatible with existential interpretations. But then, what forces bare singulars to be always generated in Topic position, and never IP-internally? Müller (2004) offers a possible answer. She takes bare singulars to be property-denoting NPs, and assume that as such they cannot occupy canonical argument positions, since only DPs can. Although she does not discuss bare plurals in her paper, she would presumably take them to be DPs. As far as I can see, support for this NP/DP asymmetry remains

¹⁵For general discussion about BrP subjects, see Britto (2000); Galves (2001); Negrão (1999), and references therein.

an open issue.

Before closing this section, we notice that Schmitt and Munn (1999) tried to provide some evidence for the DP status of bare singulars, based on some facts about NP/DP coordination. Predicate conjunction – they claim – should yield another predicate. This is the case when singular NPs are conjoined under a single determiner, and the resulting DP denotes an individual who satisfies both predicates (someone who is both a friend and a relative, in the example below, taken from Schmitt and Munn 1999:ex.(44a)):

- (59) Ele encontrou o amigo e parente no aeroporto.
 he met the friend and relative in_the airport

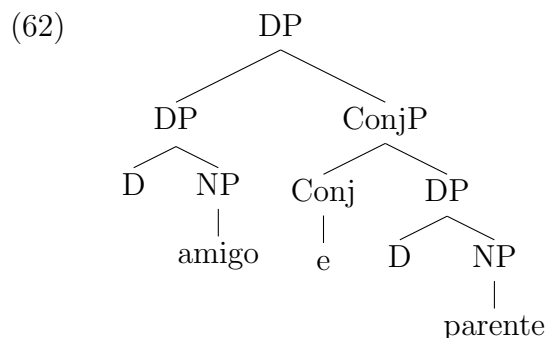
This is not the case with plurals, as also noticed by Schmitt and Munn (1999:ex.(44b)):

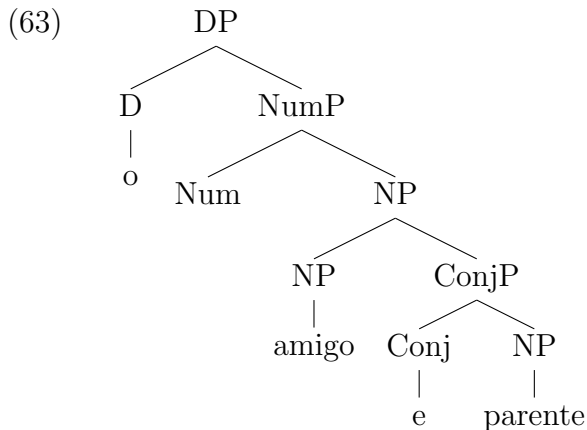
- (60) Ele encontrou os amigos e parentes no aeroporto.
 he met the_pl friends and relatives in_the airport

This sentence is ambiguous between a reading according to which he met people who were both friends and relatives, and a reading according to which he met friends and he met relatives in the airport. Schmitt and Munn argues that if bare singulars were NPs, conjoining them should only allow the conjoined predicate reading. However, as they show, this is not the case:

- (61) Ele encontrou amigo e parente no aeroporto.
 he met friend and relative in_the airport

This sentence can only mean he met people who were friends and also people who were relatives. The authors argue that these facts favor an analysis of (61) in terms of DP coordination, as in (62), whereas (59) instantiates a case of NP coordination, as in (63) (both structures taken from Schmitt and Munn 1999:ex.(46)):





Coordination of bare nominals is certainly an interesting topic to investigate, with potential to shed light at the form and meaning of these expressions. Schmitt and Munn (1999) is definitely an important first step with respect to BrP. However, there are many open issues here that should be further analyzed before any conclusion is made. In particular, this discussion should be properly embedded into a general theory of nominal coordination, with special attention to the effect that the number neutral semantics discussed in section 3 may have on bare singular coordination (see, for instance, Heycock and Zamparelli 2003, 2005).

5 Singular/Plural in Non-Bare Nominals

In this section we broaden our focus a bit and consider noun phrases which are preceded by overt functional material, including quantity expressions, numerals and (in)definite articles. We will try to get some perspective on the relation between these nominals and the bare ones with which we have been dealing so far.

5.1 Quantity Expressions

We begin by turning our attention to uses of common nouns preceded by certain quantity expressions which are close in meaning to English *many*, *much* and *few*. Strictly speaking these are not bare nominals, but as pointed out by Pires de Oliveira and Rothstein (2011), there are some interpretive similarities between these common nouns and bare nominals in argument positions. We illustrate here with *muito* which can combine with both count and mass nouns, covering what is expressed by the *many/much* opposition in English:

(64) Pedro comeu muitos sanduíches.
 Pedro ate *muito*_pl sandwiches
 “Pedro ate many sandwiches.”

(65) Pedro bebeu muito vinho.
 Pedro drank *muito* vinho
 “Pedro drank much wine.”

As can be noticed in the glosses, *muito* inflects for number when combined with count nouns, and adds to the interpretation the idea of (contextually) large cardinalities. When

combined with mass nouns, it introduces the idea of a large amount, which can be measured in terms of volume, mass, length, or even cardinality, as in the case of naturally atomic mass nouns (see also the examples in (38) above):

- (66) Pedro comprou muita móvelia.
 Pedro bought *muito* fem furniture
 “Pedro bought a lot of furniture.”

Here it might be the case that Pedro bought many pieces of furniture, or that he went to a store which sells furniture by weight, and bought a few (but heavy) pieces.

Things become more interesting for the purposes of this chapter when it is noticed that *muito* can also combine with singular count nouns:

- (67) Pedro comeu muito sanduíche.
 Pedro ate *muito* sandwich

As in the case of (64) this sentence would be true if Pedro ate many sandwiches. However, it would also be true if he ate one big foot-long sandwich weighing two pounds or so, or even if he ate only part of a good part of a huge sandwich. In these scenarios, (64) would be false. This contrast echoes what we saw before with bare nominals:

- (68) a. Pedro comeu sanduíche na festa.
 Pedro ate sandwich in_the party
 b. Pedro comeu sanduíches na festa
 Pedro ate sandwiches in_the party

Whereas the first would be true if Pedro ate half a sandwich, a whole sandwich or several sandwiches, the latter conveys that he ate at least two. Similar facts obtain with comparative *mais* ‘more’, as also discussed by Pires de Oliveira and Rothstein (2011):

- (69) a. Pedro comeu mais sanduíche que Maria.
 Pedro ate more sandwich than Mary
 b. Pedro comeu mais sanduíches que Maria
 Pedro ate more sandwiches than Mary

(69a) can be true if Pedro ate a whole big sandwich, and Mary only two tiny ones. (69b), on the other hand, requires comparison between the number of sandwiches that Pedro ate and the number of sandwiches that Mary ate.¹⁶

Pires de Oliveira and Rothstein (2011:2172) extended their analysis of bare singulars as kind denoting expressions to cases like (67), assuming that *muito* denotes a function that takes a kind as its argument, and yields a predicate of instantiations of the kind whose measurement on some appropriate scale is above some standard. This implementation raises some questions though. If *muito+singular NP* denotes a predicate, one might expect it to be available for further composition with determiners. Although this is what

¹⁶These judgments are similar to the ones reported by Bale and Barner (2009) for English nouns such as *stone* and *rope* which can appear in singular and plural forms in comparative sentences. Naturally atomic mass nouns, such as *móvelia* ‘furniture’ behave differently in the two languages. In English, according to Bale and Barner (2009), they require comparison between cardinalities, whereas in BrP they allow for comparison based on other sorts of measure functions such as volume or weight.

happens with *muito-pl* + *plural noun*, it is not possible with mass (naturally atomic or non-naturally atomic) or singular count nouns:¹⁷

- (70) Pedro *comeu* *muitos* *sanduíches*. Os *muitos* *sanduíches* que ele *comeu*
 Pedro *ate* *muito-pl* *sandwiches*. The-*pl* *muito-pl* *sandwiches* that he *ate*
fizeram ele *passar* *mal*.
 made him feel sick
- (71) Pedro *comeu* *muito* *sanduíche*. #O *muito* *sanduíche* que ele *comeu* *fez* ele
 Pedro *ate* *muito* *sandwich*. The *muito* *sandwich* that he *ate* made him
passar *mal*.
 feel sick
- (72) Pedro *bebeu* *muito* *vinho*. #O *muito* *vinho* que ele *bebeu* *fez* ele *passar*
 Pedro *drank* *muito* *wine*. The *muito* *wine* that he *drank* made him feel
mal.
 sick
- (73) Pedro *comprou* *muita* *bijuteria*. #A *muita* *bijuteria* que ele *comprou* *foi*
 Pedro *bought* *muita* *bijoux*. The *muita* *bijoux* that he *bought* was
cara pra ele.
 expensive to him

These data might be accommodated under a proposal that also sees bare singulars as kind-denoting, but takes *muito+singular NP* to denote a generalized quantifier. Since determiners require predicates as arguments, the above examples would be cases of type mismatches. Assuming that bare singulars (as well as bare mass nouns) denote kinds, understood as intensional maximal sums of its instantiations, *muito* would operate as follows: it takes a kind as its argument, convert it into a predicate of its “large” instantiations, and turn this predicate into a \exists -quantifier. This would be compatible with the existential readings observed in episodic sentences discussed above. A similar and even simpler analysis is, of course, available for theories that see bare singulars as number neutral predicate-denoting items. Under this view, *muito* would take this predicate as its argument, restrict it to “large” instantiations, and convert the modified predicate into a \exists -quantifier.

5.2 Bare Nominals and Lack of Number Agreement within DPs

We mentioned in section 2 that bare plurals belong to formal registers of BrP and it is (almost) absent in informal varieties of spoken language. Bare singulars, on the other hand, seem to be used much more frequently in informal registers, and only occasionally in formal ones. Pires de Oliveira and de Swart (2015) see this as a reflect of an ongoing process of language change, and postulate two co-existing grammars for modern BrP. According to them, bare plurals belong to one such grammar (formal BrP) - whereas bare singulars belong to the other (informal BrP). Moreover, they also tie the grammar of informal BrP to another salient aspect of its nominal system that is becoming more and

¹⁷For reasons that I do not understand, *pouco* ‘few’ behaves differently, and all examples in the text would be good if it replaced *muito*.

more frequent in the spoken language: lack of number agreement within DPs that express plurality. More precisely, spoken BrP allows the co-occurrence of non-plural nouns with plural articles, quantifiers, and numerals, as illustrated below:

- (74) Os/uns/muitos/quatro menino [*informal BrP*]
the_pl/a_pl/many_pl/four boy

All these cases would require plural marking on the noun in formal BrP. Although we will not review it here, Pires de Oliveira and de Swart (2015) offer a optimality-theoretic account for the emergence of these forms alongside with bare singulars in informal BrP, as well as their absence in formal BrP, in which only bare plurals and full nominal agreement emerge.

The point I would like to raise here is that such a tight connection between bare singulars and lack of plural agreement in non-bare nominals may not be warranted. This is a very delicate issue due to the ongoing status of the language change, and also to the fact that there has not been yet a “systematic research of the distribution of bare noun phrases in written and spoken corpora”, as is acknowledged in Pires de Oliveira and de Swart (2015:78). However, all speakers I consulted (including myself) were ready to notice that uses of bare singulars sound much less informal than uses of the non-agreeing DPs in (74). This type of judgment seems to suggest that there are variants of BrP that allow for bare singulars but not for a non-plural count noun preceded plural articles, quantifiers, and numerals. It also suggests that the emergence of bare singulars and the lack of DP-internal agreement might not have been triggered by a single factor. This would account for variants which seem to reject bare plurals as “too formal” and accept bare singulars, but which would differ from each other in their degree of acceptance of DP internal number mismatches.¹⁸

An apparently looser connection between bare nominals and the possible lack of number agreement in BrP nominals is proposed by Cyrino and Espinal (2015). They assume that D (overt or null) is always the locus of interpretable number features in BrP, and that number marking on nouns and adjectives correspond to uninterpretable features that undergo a process of (inverse-)agreement with D’s interpretable features. For the authors, BrP bare nominals are DPs headed by null Ds. Moreover, they see the morphological realization of number on the noun as a post-syntactic process, which is subject to variation. The way I read Cyrino and Espinal (2015) is that the availability of null Ds, and therefore the existence of ‘bare’ nominals is independent of the nature of the post-syntactic process that would dictate whether or not number features on nouns are phonetically realized or not. Once again, whether or not these properties are interconnected from a synchronic and/or diachronic point of view still waits further empirical and theoretical investigations.¹⁹

¹⁸To be fair, as far as I can see, Pires de Oliveira and de Swart’s OT-based approach is not inherently committed to the coexistence of bare singulars and DP-internal number mismatches. In their constraint-based system, lack of agreement and absence of overt functional material are related to different constraints, and alternative re-rankings could be proposed that would account for an alleged existence of more varieties of BrP. However, they did not develop this point.

¹⁹For more discussion about language change and variation concerning Portuguese grammatical number and agreement, see Scherre and Naro (1998a,b), Costa and Figueiredo Silva (2006), Naro and Scherre (2013).

As can be seen from these as well as several other facts discussed in the overview provided in this chapter, many topics concerning bare nominals in BrP are still open for debate. Their distribution and interpretation seem to involve an intricate set of morphosyntactic, semantic, and pragmatic factors. Much progress has recently been made with the discovery of new facts and the proposal of new theories. Of course, much work remains to be done.

References

- Bale, A. and D. Barner (2009). The interpretation of functional heads: using comparatives to explore mass/count. *Journal of Semantics* 26, 217–252.
- Beysade, C. (2005). Les définis génériques en français: noms d’espèces ou sommes maximales. In C. Dobrovie-Sorin (Ed.), *Noms Nus et Généricité*, pp. 33–63. Paris: Presses Universitaires de Vincennes.
- Britto, H. (2000). Syntactic codification of categorical and thetic judgments in Brazilian Portuguese. In M. Kato and E. Negrão (Eds.), *Brazilian Portuguese and the Null Subject Parameter*, pp. 183–208. Frankfurt am Main/Madrid: Vervuet/Iberoamericana.
- Carlson, G. (1977). *Reference to Kinds in English*. Ph. D. thesis, University of Massachusetts at Amherst.
- Chierchia, G. (1998). Plurality of mass nouns and the notion of “semantic parameter”. In S. Rothstein (Ed.), *Events and Grammar*, pp. 53–103. Dordrecht: Kluwer.
- Chung, S. and W. Ladusaw (2004). *Restriction and Saturation*. Cambridge, MA: MIT Press.
- Chung, S. and W. Ladusaw (2018). Noun incorporation. In L. Matthewson, C. Meier, H. Rullmann, and T. E. Zimmermann (Eds.), *Submitted to The Wiley Companion to Semantics*. Wiley Blackwell.
- Costa, J. and M. Figueiredo Silva (2006). Nominal and verbal agreement in Portuguese: an argument for distributed morphology. In J. Costa and M. Figueiredo Silva (Eds.), *Studies on agreement*, pp. 25–46. Amsterdam: John Benjamin.
- Cyrino, S. and M. T. Espinal (2015). Bare nominals in Brazilian Portuguese: more on the dp/np analysis. *Natural Language and Linguistic Theory* 33(2), 471–521.
- Dobrovie-Sorin, C. and R. Pires de Oliveira (2008). Reference to kinds in Brazilian Portuguese: definite singulars vs. bare singulars. In A. Grønn (Ed.), *Proceedings of Sinn und Bedeutung* 12, pp. 107–121. Oslo: ILOS.
- Ferreira, M. (2010). The morpho-semantic of number in Brazilian Portuguese bare singulars. *Journal of Portuguese Linguistics* 9(1), 95–110.
- Galves, C. (2001). *Ensaio sobre as gramáticas do Português*. Campinas: Editora da Unicamp.

- Heim, I. (1982). *The Semantics of Definite and Indefinite Noun Phrases*. Ph. D. thesis, University of Massachusetts at Amherst.
- Heycock, C. and R. Zamparelli (2003). Coordinated bare definites. *Linguistic Inquiry* 34, 443–469.
- Heycock, C. and R. Zamparelli (2005). Friends and colleagues. coordination, plurality, and the structure of dp. *Natural Language Semantics* 13, 201–270.
- Krifka, M. (2004). Bare NPs: kind-referring, indefinites, both, or neither? In R. Seattle, Y. Young, and Zhou (Eds.), *Proceedings of Semantic and Linguistic Theory XIII*, pp. 1–24. CLC Publications.
- Krifka, M., F. J. Pelletier, G. Carlson, A. ter Meulen, G. Chierchia, and G. Link (1995). Genericity: An introduction. In *The Generic Book*, pp. 1–124. Chicago: The University of Chicago Press.
- Link, G. (1983). The logical analysis of plurals and mass terms: a lattice-theoretical approach. In R. Bäuerle, C. Schwarze, and A. von Stechow (Eds.), *Meaning, Use and Interpretation of Language*, pp. 303–323. Berlin: de Gruyter.
- Menuzzi, S., M. Figueiredo Silva, and J. Doetjes (2015). Subject bare singulars in Brazilian Portuguese and information structure. *Journal of Portuguese Linguistics* 14(1), 7–44.
- Müller, A. (2002). The semantics of generic quantification in Brazilian Portuguese. *Probus* 14(2), 279–298.
- Müller, A. (2004). Tópico, foco e nominais nus em Português Brasileiro. In L. Negri, M. J. Foltran, and R. Pires de Oliveira (Eds.), *Sentido e Significação*, pp. 77–95. São Paulo: Contexto.
- Müller, A. and F. Oliveira (2004). Bare nominals and number in Brazilian and European Portuguese. *Journal of Portuguese Linguistics* 3, 9–36.
- Munn, A. and C. Schmitt (1999). Bare nouns and the morpho-syntax of number. In *LSRL 29*. University of Michigan.
- Naro, A. and M. Scherre (2013). Remodeling the age variable: Number concord in Brazilian Portuguese. *Language Variation and Change* 25(1), 1–15.
- Negrão, E. (1999). *O Português Brasileiro: Uma língua voltada para o discurso*. Universidade de São Paulo, Livre-Docência Thesis.
- Partee, B. (1985). Situations, worlds, and contexts. *Linguistics and Philosophy* 8, 53–58.
- Pires de Oliveira, R. and H. de Swart (2015). Brazilian Portuguese noun phrases: An optimality theoretic perspective. *Journal of Portuguese Linguistics* 14(1), 63 – 93.
- Pires de Oliveira, R. and S. Rothstein (2011). Bare singular noun phrases are mass in Brazilian Portuguese. *Lingua* 121, 2153–2175.

- Rothstein, S. (2004). *Structuring Events*. Oxford: Blackwell.
- Rothstein, S. (2010). Bare nouns semantics, kind interpretations and the universal grinder. In *Conference at Bare Nominals and Genericity Conference*. Paris.
- Scherre, M. and A. Naro (1998a). Restrições sintáticas e semânticas no controle da concordância verbal em português. *Forum Linguístico* 1(1), 45–71.
- Scherre, M. and A. Naro (1998b). Sobre a concordância de numero no português falado do Brasil. *Dialettologia, Geolinguística, sociologia (Atti del XXI congresso internazionale di linguistica e filologia romana)*.
- Schmitt, C. and A. Munn (1999). Against the nominal mapping parameter: bare nouns in Brazilian Portuguese. In *Proceedings of NELS*, Volume 29, pp. 339–354.
- van Geenhoven, V. (1998). *Semantic Incorporation and Indefinite Descriptions: Semantic and Syntactic Aspects of Noun Incorporation in West Greenlandic*. Stanford: CSLI Publications.