Issues in the formal semantics of referentiality[*]

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On October 21st, and 22nd, 2013, during the Conference "On Referentiality", which took place in Curitiba, Paraná, Brazil, the papers that compose this issue were first discussed. The conference is one of the activities of the Cooperation Project CAPES-NUFFIC, between universities in Brazil and the Netherlands, entitled *The Effects of Modification on Referentiality* (CAPES process number 040/12). The aim of this project is to investigate the effects of modification in the licensing and blocking of nominal phrases. The project's main hypothesis is that "modification" introduces a feature of referentiality, precisely the notion the conference aimed at clarifying.

The conference focused on the notion of referentiality as it is constructed by grammar cross-linguistically. Thus, all the papers in this volume discuss, from different perspectives, how referentiality and grammar are related. Several languages are discussed, but special emphasis is placed on Brazilian Portuguese.

In a first approximation, referentiality indicates, via grammar, the sort of individual denoted by the nominal phrase. The ontology is then sorted into different types of individuals, identified by different structural/formal relations: object level individuals and kinds are examples. This is precisely what we find in Menuzzi, Figueiredo Silva & Doetjes' paper. In *Subject Bare Singulars in Brazilian Portuguese and Information Structure*, they argue that the condition of felicity for bare singular subjects in Brazilian Portuguese (BrP), as exemplified in (1), is reference to kinds:

(1) Mulher discut-iu   futebol na   festa.
     Woman discuss-PERFsoccer in+the party.
     'Women discussed soccer in the party.'

They claim that the bare singular subject in episodic sentences denotes a kind with an "incomplete involvement" reading, in the sense of Landman (1989). This explains the constraints that are found on the felicity of bare singular subjects in episodic sentences: these sentences may contain a bare singular subject only if an utterance about a kind is 'contextually relevant' (cf. Roberts 1996). The "incomplete involved" kind reading is also argued to be present in certain generic sentences, offering further evidence for a kind interpretation of the bare singular subject. Thus, at least in subject position, the bare singular seems to be the grammaticalization of a referential relation: it denotes the kind.

Referentiality is, then, both linguistic and ontological, since it relates the licensing of grammatical structures with the sorts of individuals that inhabit – the semantic model, and the way these individuals are structured. A subtle example of the relation between grammar and ontology is discussed in *Generic and Weak Demonstratives. The Realm of Kinds* by Basso & Pires de Oliveira. The paper argues that the behavior of demonstratives in contrast with that of definites in generic contexts testifies that grammars are sensitive to ontological differences: the definite, in (2a), only denotes the kind, whereas the demonstrative, in (2b), cannot denote the maximal node of a taxonomy; it must be about a sub-kind:

(2) a. O   cachorro está   em extinção.
        The dog   be.3PS.PRES   in extinction
        'The dog is in extinction.'

    b. Esse cachorro está   em extinção.
        This dog   be.3PS.PRES   in extinction
        'This dog is in extinction.'

Moreover, the authors argue for the need to distinguish sums and taxonomies: taxonomies do not have the same entailments as sums. Not only individuals are differently organized in the ontology, but more importantly, grammar is sensitive to this distinction. The definite article is not specialized for kind reference, as the contrast with (3a) and (3b) show:

(3) a. Menino   está com   fome.
        Boy   be.3PS.PRES   with hungry.
        'Boys are hungry.'
    b. O   menino está   com   fome.
        The boy   be.3PS.PRES   with   hungry
        'The boy is hungry.'

The sentence in (3a) is interpreted as a statement about the kind, while (3b) cannot be about the kind; it is about the individual. Thus, the definite seems to be insensitive to the sort of individual: it may combine with object level and kind individuals. In the kind domain, it always denotes the maximal entity, whereas the demonstrative always denotes the subkind.

Languages show a variety of devices to sort the domain of reference. One of the main issues is how grammars differ with respect to these devices, and maybe with respect to the ontology. A language that has no nominal morphology – no articles, and no plural morphology – cannot express referentiality in the same way as Brazilian Portuguese (BrP), a language that not only has a complete article system (definite and indefinite articles), and plural morphology, but also all types of bare nominals: the co-existence of bare plurals, bare singulars, and bare mass nouns, as partially exemplified below, is surprising:

(4) João compr-ou   o livro/um livro/livro/livro-s
      João buy-3PS.PERF   the book/a book/book/book-PL

Pires de Oliveira & de Swart, in *Brazilian Portuguese Noun Phrases: an Optimality Theoretic Perspective*, propose the synchronic coexistence of two grammars: bare plurals appear in the formal variety of BrP, which maintains plural agreement, and bare singulars appear in informal spoken BrP. Under this analysis, BPs denote a set of pluralities, while BSs get a non-atomic semantics that covers both mass and plural interpretations. The proposal crucially relies on blocking: BSs in informal BrP tolerate both mass and plural readings, because plural morphology is not operative in this register. However, the presence of a definite (singular and plural) article, and an indefinite singular article in the grammar blocks the possibility of atomic reference, and drives the indefinite interpretation of bare nominals in BrP.

The strong hypothesis is that the bare nominal, i.e. the nominal phrase without any morphological mark, denotes structures that are open to both measuring and counting. From a slightly different perspective, Donazzan & Müller's *Reduplicated Numerals as Pluractionals: Distributivity as a Window to the Individuation of Events* confirms this hypothesis, since they assume that the bare nominal in both Mandarin and Karitiana has cumulative reference, i.e. it denotes in the mass or plural domain. They show that adverbial reduplicated numerals in these two languages, which are bare languages (no articles and no number morphology), are pluractional operators. Pluractionality expresses plurality of events, and it is achieved via the pluralization of the external or internal participants. These participants have their identities specified in terms of cardinality and individuality. The individuation of the sub-events is achieved via their participants by stating that they act as the witnesses for the individuation of the events. A number of issues about referentiality are raised by this paper, among them the idea that

root nouns are cumulative and grammar individualizes participants and events. Moreover, events are another type of individual and the relation of the events with the sub-events is not captured in terms of sums or taxonomies.

Finally, Rodrigues & Foltran, in *Small Nominals in Brazilian Portuguese Copular Constructions*, aim to explain the structures in (5) in which the predicate exhibits an unmarked form for gender and number (masculine singular), despite the presence of the feminine and/or plural form of the noun in subject position:

(5) Mulher(es) é complicado.

The authors argue that "the subject is a Small Nominal (they are not projected as full DPs) which lacks index features that trigger external agreement (Pereltsvaig 2006)." If this is the case, then both the bare singular and the bare plural in such a structure are NPs, and do not denote individuals, but sets of individuals. However, the authors also claim that this NP denotes a situation, an idea that needs to be worked out.

The set of papers in this special issue thus reflects different perspectives on the relation between grammar and ontology, and addresses questions about referentiality raised by articles (or the absence thereof), demonstratives, number morphology, and quantificational expressions in Brazilian Portuguese and in other languages. It would not have been possible without the support of many. We would like to thank the editors of the *Journal of Portuguese Linguistics* not only for opening a special issue for us, but also for their help. The Cooperation CAPES-NUFFIC financially supported the conference, and the missions both to Brazil and to Holland.

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