Reciprocal Predication and Bare Singulars in Brazilian Portuguese

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1 The Puzzle: Bare singulars and Reciprocal Readings (Ferreira 2010)

(1) Eu vi **aluno** se cumprimentando. (*BS+gerund*)
I saw student SE greeting (refl/reciprocal)
'I saw students greeting themselves/each other.'

(2) Eu vi **aluno** que estava se cumprimentando. (*BS+finite_T*)
I saw student that was SE greeting (refl/*reciprocal)
'I saw students who were greeting themselves.'

(3) A mulherada se cumprimentou. (Collective NPs)
the bunch-of-women SE greeted-sg (refl/reciprocal)
'The women greeted each other.'

Generalizations:

- BSs built with gerunds, see (1), yield ambiguity (reflexive and reciprocal reading), whereas finite Tense marked as SG, as in (2), blocks the reciprocal reading. Ferreira (2010) showed that the contrast between gerunds and finite relative clauses wrt reciprocal readings is replicated wrt the group-internal readings of mesmo 'same' as well as wrt cumulative readings.

- Singular marking on the verb allows inherently plural readings just in case the subject is collective (collective DPs or QPs built with partitive quantifiers followed by a definite plural, e.g. *a maioria dos alunos* 'the majority of the students'), see (3).

Ferreira's proposal:

(a) BSs that are (or are syntactically related to) subjects of finite verbs marked as singular refer to (or quantify over) singular individuals.

(b) BSs that are (or are syntactically related to) subjects of non-finite/plural verbs (morphologically unmarked for Number/marked as plural) can be number-neutral/plural.

Problem: The BS in (2) is naturally resumed by a plural pronoun, on a par with bona fide number-neutral BSs. Thus, (4) is a natural continuation of (2):

(4) Eles pareciam malucos.
They seemed crazy

2 Pluralized Atom Predicates and Inherently Plural Predicates

- Atom/distributive predicates (*boy*, *sleep*, *round*) come out pluralized from the Lexicon (Lexical Cumulativity, Krifka 1992) or get pluralized via the pluralization of one-argument predicates, e.g., VP-denotations:

(5) $[\![\text{sleep}]\!] = {}^{*}\lambda x.\ \text{sleep}(x)$ (x is an atom)

- Inherently plural predicates (*friends*, *meet*, *work together*, *hate each other*, *mulherada* 'bunch of women') denote sets of pluralities (Dobrovie-Sorin and Mari 2007a,b, Dobrovie-Sorin 2014)

(6) $[\![\text{hate each other}]\!] = \lambda X.\ \text{hate\_each\_other}(X)$ (X is a sum)

- In (6) we have ignored the possible pluralization of inherently plural predicates, which yields readings that are not relevant for our present purposes.

- Group predicates (*mafia*, *elect*, *numerous*) differ from inherently plural predicates (Winter 2002).

(7) $[\![\text{mafia}]\!] = {}^{*}\lambda x.\ \text{mafia}(x)$ (x is an impure atom)

3 The Number Constraint on Inherently Plural Predicates

- The contrast between reflexive and reciprocal readings cannot be attributed to the external argument itself, which is a plurality-referring BS in both cases.

- The difference between the reflexive and reciprocal readings can be viewed as a difference between distributive and collective readings, which are arguably independent of the referential properties of the external argument and instead depend on the denotation of VP.

- Therefore, if any morphological marking related to the collective vs distributive distinction exists, it is expected to be interpreted on V-Tense.

- We build on Kratzer (2009), according to whom locally bound pronouns, in particular reflexive [and reciprocal] pronouns are not directly bound by the external argument but instead they are bound by a λ-operator on the VP, which takes its features from the verb (more precisely little v in Kratzer's implementation).
- For our present purposes, Kratzer's view can be adapted by saying that the features on Tense V are transferred to the λ-operator underlying reflexive-reciprocal predicates, which in turn constrains the features of the variable it binds: if Tense is marked as SG,AT(omic), the variable over the external argument is necessarily atomic (being bound by a λ-operator marked as SG,AT).

(8) **A VP-predicate marked as SG and AT denotes a set of atoms. It can apply to a plurality only if it gets pluralized via Link's star operator.**

- It is only due to a default application of the star operator (which does not need to correlate with morphological Number marking) that such a predicate can apply to a plurality. The resulting interpretation is necessarily distributive, inherently plural readings are blocked.

(9)
a. $^{*}[\lambda x.\ \text{se}_{\text{REFL}}\text{cumprimentar}_{\emptyset}(x)]$ — reflexive reading (gerunds)
b. $[\lambda X.\ \text{se}_{\text{REC}}\text{cumprimentar}_{\emptyset}(X)]$ — reciprocal reading (gerunds)
c. $^{*}[\lambda x.\ \text{se}_{\text{REFL}}\text{cumprimentar}_{[\text{SG,AT}]}(x)]$ — reflexive reading (T_{SG})
d. $^{*}[\lambda x.\ \text{se}_{\text{REFL}}\text{cumprimentar}_{\text{PL}}(x)]$ — reflexive reading (T_{PL})
e. $[\lambda X.\ \text{se}_{\text{REC}}\text{cumprimentar}_{\text{PL}}(X)]$ — reciprocal reading (T_{PL})

- The predicate in (10) violates the constraint in (8) (indicated by #):

(10) $\#\ [\lambda X.\ \text{se}_{\text{REC}}\text{cumprimentar}_{[\text{SG,AT}]}(X)]$

Back to the examples:

Example (1) on the reflexive reading (intersection of $[\![\text{aluno}]\!]$ and (9a)):

(11) $[\![\text{aluno se cumprimentando}]\!] = \lambda X.\ [\![\text{aluno}]\!](X)\ \&\ ^{*}[\![\text{se}_{\text{REFL}}\text{cumprimentar}_{\emptyset}]\!](X)$
(This set contains sums of self-greeting students)

Example (1) on the reciprocal reading (intersection of $[\![\text{aluno}]\!]$ and (9b)):

(12) $[\![\text{aluno se cumprimentando}]\!] = \lambda X.\ [\![\text{aluno}]\!](X)\ \&\ [\![\text{se}_{\text{REC}}\text{cumprimentar}_{\emptyset}]\!](X)$
(This set contains sums of students that greet each other)

Example (2) on the reflexive reading (intersection of $[\![\text{aluno}]\!]$ and (9c)):

(13) $[[\text{aluno que se cumprimentou}]] = \lambda X.\ [\![\text{aluno}]\!](X)\ \&\ ^{*}[\![\text{se}_{\text{REFL}}\text{cumprimentar}_{[\text{SG,AT}]}]\!](X)$
(This set contains sums of self-greeting students)

Notes:

- The fact that the reciprocal reading is unavailable for (2) is due to the illegitimate nature of the predicate in (10), which violates (8).

- The predicates in (9d-e) cannot combine with BSs because (i) the rules of Agreement in BrP require the Number features of the external argument and the main V to be identical and (ii) BSs are marked neither as PL nor as [SG,COLL]; the only option is SG marking.

- (9d-e) can apply to Bare Plurals (as well as DPs marked as PL), hence ambiguity:

(14) Eu vi alunos que estavam se cumprimentando.
I saw students that were SE greeting
'I saw students who were greeting themselves/each other.'

On the Interpretaton of (3):

- Nouns such as 'mulherada' denote sets of pluralities. We assume that such nouns carry a lexical feature [COLL(ective)] that percolates to Det.

- Via lexical agreement (i.e., agreement in a lexical feature) with a subject marked as COLL, V-Tense is marked COLL.

- Due to the COLL feature on Tense, the main predicate can denote a set of pluralities:

(15) a. $[\lambda X.\ \text{se}_{\text{REC}}\text{cumprimentar}_{[\text{SG,COLL}]}(X)]$ reciprocal reading
b. $^{*}[\lambda x.\ \text{se}_{\text{REFL}}\text{cumprimentar}_{[\text{SG,COLL}]}(x)]$ reflexive reading

The generalization (regarding the possibility of reciprocal readings with collective Ns and SG marking on V) holds croos-linguistically:

(16) a. This couple really despises each other
b. Dieses Paar hasst einander.
c. Ce couple se déteste.

Compare Ns that describe 'impure atoms'. The reciprocal readings are blocked because Tense agrees with the features SG and AT of 'the mafia'.

(17) a. #The mafia$_{[\text{SG,AT}]}$ hates$_{[\text{SG,AT}]}$ each other.
b. #Die Mafia hasst einander.
c. #La mafia se déteste.
d. #A mafia se abraçou (on reciprocal reading)

Generic CBNs

(18) Normalmente, gato se odeia.
Usually, cat SE-hates
'Usually, cats hate each other.'

Kind-referring CBNs: such nominals denote intensional maximal pluralities (obtained by applying Chierchia's Down operator, an intensional maximality operator, to a pluralized singular noun), and as such they carry a COLL feature, which - via transfer to Tense - allows reciprocal predications.

4 Agreement

Asymmetric Agreement

- The Brazilian Portuguese data examined above seem compatible with the largely adopted view according to which Agreement is asymmetric: features (in particular Number features) are directly valued on the DP from where they are transferred to V-Tense.
- Some fine-tuning is nevertheless necessary:
  - **(i)** if BSs are assumed to lack Number, the SG marking on Tense must be assumed to be directly valued (rather than inherited from the BS)
  - **(ii)** if we want to assume that SG marking on a finite Tense built with a BS is obtained via asymmetric Agreement, we need to assume that BSs have a Number feature valued as SG, which goes against Munn and Schmitt (2005).

Agreement Mismatches as relying on Symmetric Agreement

- (Number) features are directly valued on both DPs and Tense. See Barlow 1988, Kratzer 2009 and Ackema and Neelman 2013, a.o.
- For examples of the type in (19), acceptable in British English, the label 'semantic agreement' is related to the hypothesis that 'the mafia' carries some covert PL feature, which is the 'source' of the PL-marking on Tense. For a particular implementation of this general hypothesis see Sauerland's Phi-Head hypothesis.

(19) The $\text{mafia}_{\text{SG,AT}}$ hate_{PL} each other.

- Alternative: non-directional/symmetric Agreement: PL is directly valued on Tense

Basque

- Etchevaria and Etxepare (2012) on Basque: *much NP* never carries plural marking on the NP, but allows for 2 patterns of agreement on the V: either sg or pl. With sg agreement, reciprocal reading is blocked!

(20) a. Ikasle askok elkarren antz handia dute
student many.erg each other-gen look aux.pl
'Many students look like each other.'

b. *Ikasle askok elkarren antz handia du
student many.erg each other-gen look aux.sg

(21) a. Irakasle askok elkar/bata_bestea iraintzen dute
professor many.erg each_other/one_another insult aux.pl
'Many professors insult each_other/one_another.'

b. *Irakasle askok elkar/bata_bestea iraintzen du
professor many.erg each_other/one_another insult aux.sg

- Etchevaria and Etxepare (2012) assume directional Agreement + hidden PL feature on *much NP*.
- Alternative: non-directional agreement: V-Tense is valued as PL, whereas the *much NP* is not marked for Number.
- French Copular Sentences with *on*('one') in subject position

(22) a. On est ami avec qui nous ressemble.
'One is friends with whoever resembles him/her'
b. On est amis si l'on se ressemble.
'One is friends (with each other) if one SE resemble (each other).'

Crosslinguistic Variation

- The difference between Basque or English vs BrPort concerns the possibility vs the impossibility of 'agreement mismatches' in which Tense is valued as plural but the subject DP does not carry Number (or is marked as SG).
- A deeper understanding of this parameter goes beyond our present goals.

5 Crosslinguistic Generalizations

- The Number features on Tense constrain the reciprocal reading of SE-verbs.
- Semantic agreement with a COLL feature is found crosslinguistically.
- There is crosslinguistic variation with respect to agreement mismatches.

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