

A double pattern of agreement with embedded NPs

In Italian with approximate numerals/quantifiers verbal agreement can target either the numeral item/quantifier or the noun embedded under the preposition *di* (of) that bears a θ role interpretation.

- (1) a. *un centinaio_i di senatori_k si sono dimessi_k/si è dimesso_i* Italian
 ‘a hundred senators have resigned’
 b. *una dozzina_i di tifosi_k hanno_k/ha_i cercato di aggredirmi*
 ‘a dozen fans tried to attack me’

The same pattern of Italian is available in many different languages. In (2) we show Hebrew data.

- (2) *30 axuz-im me-ha-maskoret holxim/holxet le-sxardira.* Hebrew (Danon 2013)
 30 percent-M.PL of-def-salary.F.SG goes. M.PL /goes.F.SG to-rent
 ‘30% of the salary goes to (paying the) rent.’

Relational nouns employed in analogous constructions (i.e. as kind of an approximate quantifiers) as Italian *branco* (= herd), *parte* (= part), *sciame* (=swarm) and so on sometimes display similar facts, as illustrated in (3).

- (3) a. *una parte_i del bottino_k è stata trafugata_i/stato trafugato_k* Italian
 ‘a part of the spoils has been smuggled’
 b. *uno sciame_i di cavallette_k ha devastato_i/hanno devastato_k il campo*
 ‘a swarm of grasshopper has wasted / have wasted the field’

Interestingly there are some romance varieties that do not allow agreement alternations: in some of them the verb invariantly targets the higher QP/RelNounP, as the example from the Bari dialect in (4), in others agreement targets the lower NP as for the Occitan (5a) and Matera dialect (5b).

- (4) *La croscke_i d puèrce_k s’ha_i mangiate_k/*s’han mangiate_k i bastenacce* (Bari, Pugliese)
 ‘The gang of pigs ate the carrots’
 (5) a. *Una ardada_i de lops_k *ataquèt_i /ataquèron_k la bòria*
 ‘A pack of wolves has attacked/ *have attacked the farm’
 b. *na band_i d’uagnun_k *i giut_i / so giut_k a suna’*
 [na ‘band dwa ‘jɔnə i ‘dʒutə / so ‘dʒutə a su ‘na]
 ‘A group of guys went SG / went PL to play music’

The existence of different routes of agreement raises some theoretical problems. On the one side, the current assumptions about agreement in minimalism (cf. Chomsky 2001, Pesetsky and Torrego 2004, 2007) do not account for the agreement relation between T and the different set of phi-features of the (non-nominative) lower NP, ignoring the QP/NumP/RelNounP. On the other side, some studies on the typical mistakes on subject verb agreement (Vigliocco et al.1996) have shown that the semantics of the higher noun influences the likelihood that the verb agrees with the embedded NP. In the present work we will try to show that: 1) the agreement with embedded NP is a (syntactic) parametric option in some languages and it undergoes a microparametric variation across romance languages 2) although an analysis implying the optional spell out of the *index* features (Perez-Jimenez and Demonte, to appear) at lexicon to syntax interface can account for the different route of agreement, we will that agreement with the embedded NP is crucially sensitive to different syntactic environments and that the semantics of the nouns involved is not the main or the sole responsible of the pattern of distribution of agreement. Our conclusion will suggest that minimalist assumptions on agreement should include a different notion of phase to account for the present data and that agreement with an embedded NP with a θ role interpretation is a syntactic parameter not involving fine-grained semantic distinctions within the class of noun.

Consider the following data. In Persian constructions with approximate quantifiers plus a noun embedded under the (partitive/source) preposition *æz* are sensitive to the thematic structure, namely an embedded direct object retains the accusative marker *-ra* in such context, as shown in (5). Note that the ‘nominal’ nature of (at least) the quantifier *edde-i* (some, [human]) is shown by the fact that it bears the indefinite enclitic determiner *-i*, as nouns usually do.

- (5) *man do-ta/hic-kodum/edde-i æz bæcce-ha-ro did-æm* Persian
 I two-CL//none/some-IND from child-PL-ACC saw-1SG
 ‘I saw two/some/none of the children’

Hence, we have evidence from Persian that not only T but also v/V (concerning internal argument agreement, see Baker 2008, Baker and Vinokurova 2010, a.o.) can be insensitive to the higher QP/Rel NounP, targeting the (theta marked) items embedded under an adpositional phrase.

Recent works on the topic of agreement ambiguities in quantified phrases (cf. Boskovic 2006, Croitor & Dobrovie Sorin 2010, Danon 2013, Etxeberria & Etxepare 2012, a.o.) basically resort to the assumption that QP/nouns have different (bundles of) features that may trigger different patterns of agreement. It seems to be a parametric option across languages. In many contexts it is not possible to agree in ϕ features with DPs that bear an inherent case (or are embedded under adpositional phrases), or case that is assigned with a theta-role (Chomsky 1986:193, Nevins 2011). Rezac (2008:83) states this constraint

as *Case Opacity* (see also Preminger 2011:103ff, Toosarvandani & van Urk 2014). Rezac takes *Case Opacity* to result from a PP structure that blocks ϕ -agreement. Given the intervention of a PP (or a case projection, KP) - assuming that P/K introduce a phase boundary (cf. Chomsky 2008, Gallego 2011), then the (oblique/theta marked) DP will be syntactically invisible to agreement outside the PP/KP. Nevertheless, some languages (e.g. many Iranian and Indo-Aryan varieties), allow ϕ -agreement with DPs bearing an oblique (i.e. inherent) case and Rezac himself notes that in some varieties of Basque agreement in ϕ -features is possible with DP bearing dative/oblique inflections (Rezac 2008:101ff). Given the cross-linguistic variation in the behaviour of agreement in quantified noun phrases we assume that the Case opacity constraint is subject to parametric variation: if P/K are not a phase barrier and the verbal agreement is the realization of ϕ -features on T, then the ϕ -features can be displayed by the (theta-marked) noun embedded under the PP; otherwise if P/K are a phase barrier, the ϕ -features will be invariantly displayed by the numeral/quantifier/RelNoun item. The existence of languages like Occitan (5b) where agreement is found just with the embedded NPs suggest that although the P/K are not a phase barrier, the QP/RelNounP does not agree and it may work as a classifier.

We can notice that in Italian, where P/K are not a phase barrier, agreement does not always target in the same way the embedded noun and the QP/RelNounP: there are syntactic environments that strongly favour agreement with the embedded NP. When the QP is in the subject position of a small clause complement, only the embedded noun agrees in gender and number. The subject of the small clause may undergo some *animacy* restriction (as suggested in Harley & Folli 2006 for causative) as in (6).

- (6) a. *Chiara ritiene un centinaio_i di senatori_k *stupido_i /stupidi_k*
 ‘Chiara believes that approximately one hundred senators are stupid’
 b. *Marco ritiene quella dozzina_j di tifosi_k ??aggressiva_j / aggressivi_k*
 ‘Marco believes that a dozen of supporters are aggressive’

Also constructions involving raising verbs such as *sembrare* show that agreement is only possible with the embedded NP as in (7).

- (7) a. *Un centinaio_i di senatori_k sembrano stupidi_k /??sembra stupido_i*
 ‘a hundred senators (postverbal) look stupid’
 b. *Una dozzina_i di cavalli_k sembrano aggressivi_k /*sembra aggressiva_i*
 ‘a dozen supporters (postverbal) look aggressive’

Furthermore, the preverbal status of the QP seems to favour the ‘double’ route of agreement illustrated in (1), while postverbal subjects do not allow it as shown in (8). Moreover, unaccusatives (9) show a relation with the embedded NP stronger than unergatives (10).

- (8) a. *si sono dimessi_k /*si è dimesso_i un centinaio_i di senatori_k*
 approximately a hundred senators dimitted
 b. *hanno_k /??ha cercato_i di aggredirmi una dozzina_i di tifosi_k*
 approximately a dozen supporters tried to assault me
 (9) **È arrivata_i/sono arrivati_k una dozzina_i di amici_k* *Unaccusative*
 A dozen of friends (postverbal) arrived
 (10) *?? Ha pianto_i/hanno pianto_k una dozzina_i di amici_k* *Unergative*
 A dozen of friends cried

Some authors found that agreement with complex NP may involve some mistakes depending on the semantics of the QP (Vigliocco et al. 1996): speakers produce verbs that agree with the conceptual number of the subject instead of its grammatical number (i.e. *notional concord*, Quirk et al. 1972). Nevertheless, languages like Italian and Persian clearly seems to encode in the syntax the parametric option of allowing agreement with prepositional arguments (i.e. PPs bearing a thematic relation). We can conclude that agreement with an embedded NP (with a theta role interpretation) is subject to a syntactic parameter: 1) Languages may allow or not an agreement relation with an embedded NP depending on the presence of lexical Ps/Ks that are more or less ‘transparent’ for agreement in T; 2) in languages like Italian where PP/KP is not a barrier the pattern of distribution of agreement relations seems to be a mainly syntactic phenomenon, showing that the preferential target is the theta marked item. In languages like Occitan the syntactic features of the QP also intervenes in the pattern of agreement not allowing agreement with the higher NP. These data imply an analysis of the Agree in the minimalist framework in which the notion of phase (or barrier) has a crucial definitional role.

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