

Non-agreeing degree predicates

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Introduction.

In languages where verbs agree on ϕ -features with their subjects, some predicates have nevertheless the ability to optionally disrupt this pattern. In turn, this alternation comes with important semantic consequences for the interpretation of the subject: while the subject *four pizzas* in (1) refers to particular existing pizzas of which *being vegetarian* is predicated, with the singular agreeing predicate *is enough* the subject does no longer pick out individual pizzas, but refers instead to *an amount* of four pizzas.

(1) Four pizzas {are vegetarian / is enough food}

Despite the cross-linguistic ubiquity of these Non-Agreeing Degree Predicates (NADPs), the literature contains no systematic discussion of the linguistic contexts that support them, nor of their precise semantic effects - cf. Brasoveanu [2009] and Rett [2014], for an account based on polysemy. Our main goals are thus twofold: (i) to provide a first systematic description of NADPs and to (ii) provide a first formal syntactic and semantic analysis, one where ordinary count nominals need not be polysemous.

Data generalizations.

Predicates. What kind of predicates count as NADPs? We begin by observing that the predicates that allow this type of agreement alternation together with its accompanying semantic effects are subject to two important limitations: (i) predicates express some measurement or comparison; and (ii) they must do so in a copular structure. (Here and throughout we rely on data from Peninsular Spanish.)

(2)

a. *En ajedrez [dos torres].PL es.SG más que una reina*
Comparative

- 'In chess two towers is more than a queen'
- b. **[Tres juguetes].PL** es.SG *lo mejor que le puedes regalar*
Superlative
- 'Three toys is the best that you can gift him'
- c. **[Cuatro pizzas pequeñas].PL** es.SG *lo mismo que dos grandes*
Equative
- 'Four small pizzas is the same as two big ones'
- d. **[Tres libros].PL** es.SG *demasiada lectura*
Excessive
- 'Three books is too much reading'
- e. **[Cuatro pizzas].PL** es.SG *suficiente comida*
Assetive
- 'Four pizzas is enough food'

The examples in (3) below summarize the main restrictions on predicates forming NADPs: (3a) and (3b) show that (i) verbal predicates (such as *pesar*, "to weigh") and (ii) adjectives (such as *pesado*, "be heavy") lexicalizing some measurement or comparison are both ruled out as NADPs. Despite their ungrammaticality however, the intended interpretation of both (3a)/(3b) is perfectly sensible, as shown by the NADP in (3c).

- (3)
- a. **[Tres libros].PL** { **pesa*.SG / *pesan*.PL } *demasiado*
- b. **[Tres libros].PL** { **es*.SG *demasiado pesado* / *son*.PL *demasiado pesados* }
- c. **[Tres libros].PL** { *es*.SG / **son*.PL } *demasiado peso*
"Three books weigh too much"

Subjects. Not all DPs/QPs can be subjects of NADPs. Numerals of all kinds and nonfinite clauses provide the best results (4)/(5), but other types of QPs/DPs are not grammatical in the NADP configuration, (6):

- (4) { *Más de* / *Menos de* / *Unos* } *cuatro libros es demasiado*
{More than / Less than / Some } four books is demasiado

(5)

- a. *Leer y resumir un libro { *es.SG / son.PL } dos cosas diferentes*
'Reading and summarizing a book are two different things'
- b. *Leer y resumir un libro { es.SG / *son.PL } mucho trabajo*
'Reading and summarizing a book is a lot of work'

(6)

- a. **{Varios / Pocos / Algunos / Muchos / Unos / Demasiados} libros es demasiado*
{A variety / Few / Some / Many / sm / too many} books is too much
- b. **{La mayoría de / Ambos / Los / Cada (uno de)} libros es demasiado*
{Most / Both / The / Each (one of the)} books is demasiado

Under-specification. The main semantic difference between NADPs and ordinary agreeing predicates involves the contribution of the subject. In cases where the degree predicate is not overt, plural variants like (7a) are statements about books, whereas the singular NADP variant is heavily underspecified: depending on the context, three books could be too much work, too heavy, too expensive, etc.. Such underspecification can be limited by providing an overt abstract nominal, complement to the degree predicate, as in (8).

(7)

- a. **[Tres libros].PL son.SG demasiados**
'Three books are too many'
- b. **[Tres libros].PL es.SG demasiado**
'Three books is too much'

- (8) **[Tres libros].PL es.SG demasiado {peso / dinero / trabajo / esfuerzo / ...}**
'Three books is too much {weight / money / work / effort / ...}'

Proposal.

We analyze the NADP construction as involving the following ingredients: (i) a degree predicate comparison to some degree, albeit one that does not by itself determine any specific dimension (e.g. *too much*, *enough*, *more*). (Different degree predicates will establish different types of comparisons: in comparatives, one term of the comparison is provided by the standard; in assetives/excessives, by a conventionalized threshold, etc.); (ii) a (possibly covert) abstract noun providing the required dimension (e.g. *weight*, *money*, *work*, *effort*); and (iii) a subject that acts as a unit of measurement, providing the measure that must be interpreted on the scale built upon the dimension contributed by the nominal. With these ingredients, the semantic task of *three books* in below (9) is exactly the same as that of *three kilos*: to state that a three {book, kilo} unit exceeds some threshold of weight.

(9) [*Tres {libros/kilos}*].PL es.SG *demasiado peso*
'Three {books/kilos} is too much weight'

We first focus on (9) with *libros* and we propose a syntactic structure where the degree predicate heads its own projection, taking a measure phrase – here headed by a null measuring predicate – as its complement.

(10) [_{PredP} [_{QP} tres libros] [_{Pred'} [_{Pred}⁰ BE] [_{DegP} [_{Deg}⁰ demasiado] [_{MeasP} MEASURE peso]]]]

The predicate MEASURE takes an ordinary predicate and turns it into a relation between degrees and individuals. This predicate provides the dimension of comparison by serving as the first argument to *demasiado*, which then states that such degree exceeds some contextually established threshold—as opposed to ordinary adjectives, which typically determine that a certain degree exceeds some *standard of comparison* (see Kennedy 1999 a.o.). This difference between comparison to a threshold and comparison to a standard captures the differences between e.g. *es demasiado peso* ("be too much weight") vs. *es pesado* ("be heavy").

(11)

- a. $\llbracket \text{MEASURE} \rrbracket =_c \lambda P_{(et)} . \lambda n_d . \lambda x_e . P(x) \wedge |x| = n$
- b. $\llbracket \text{demasiado} \rrbracket = \lambda G_{(d,et)} . \lambda x_e . \exists d [G(x) = d \wedge d > TH_C^{max}(G)]$

In order to account for the disrupted agreement pattern and the “widened” interpretation of the subject, we suggest that subjects of NADPs cannot simply denote fully extensional objects, but instead they denote “nonparticulars,” which we formalize as nominalized functions selected by a degree predicate: If β is a n -place predicative expression, $\downarrow\beta$ is a singular term. This is a nominalization operator in its most general form - i.e. unlike “ \cap ” in Chierchia [1998], $\downarrow f$ is defined for all $f \in D_{\langle \sigma, \tau \rangle}$ (and not just for kinds; cf. McNally 1997). The nominalization of *three books* is the entity correlate of a property *something* holds when it is three books. Since that *something* is three books, that *something* shares all qualities of three-book individuals (and has none of non-three-book individuals). The resulting truth conditions of the *libros* variant in (9) are represented below.

$$(12) \quad \llbracket (9) \rrbracket^c \Leftrightarrow \exists d [\mu_{\text{WEIGHT}}(\downarrow \lambda x_e . \text{books}(x) \wedge |x|=3) = d \wedge d > TH_C^{max}(\text{WEIGHT})]$$

For comparison, a non NADP configuration like (7a) with plural agreement and an ordinary extensional subject would denote the following proposition:

$$(13) \quad \llbracket (7a) \rrbracket^c \Leftrightarrow \exists x [\text{books}(x) \wedge |x| = 3 \wedge 3 > TH_C^{max}(\text{WEIGHT})]$$

These representations correctly capture that (i) while (7a) is a statement about *books*, (9) is not, it is a statement about *weight* – or, in the absence of the abstract nominal *peso* complement to *demasiado*, any other dimension accessible from context; consequently, only (7a) is existentially committed to some three-book individual. Moreover, (ii) an agreement disruption is expected in (9) given the singular referent of the subject selected by the degree predicate. We also gain further insight into two separate issues. First, we understand why adjectives don’t form good NADPs: while adjectives *place* individuals on a scale by comparing them to a standard degree along a lexically associated dimension, NADPs *use* individuals as units in relation to a threshold on a scale along the required dimension (provided either by context or some

abstract nominal). Second, the analysis seamlessly extends to NADPs with nonfinite subjects – which have long been argued to have nominalized interpretations – capturing the following truth-conditional equivalence (where DIM represents the contextually supplied nominal providing the relevant dimension):

(14)

a. *Leer el Quijote es demasiado.*

‘To read El Quijote is too much’

b. *La lectura del Quijote es demasiado.*

‘The reading of El Quijote is too much’

$\mu_{\text{DIM}}(\downarrow \lambda e_v . \text{read}(e) \wedge \text{Th}(e) = \text{EQ}) = d \wedge d > \text{TH}_c^{\text{max}}(\text{DIM})$

Discussion.

Descriptively, NADPs are constructions where a non-conventional unit of measurement is used on a scale formed by a dimension that is directly supplied by either context or an abstract nominal. In turn, this imposes limitations on the type of constituents that may partake in NADPs, as accounted for by our analysis.

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