

Distributivity with group terms: semantics or pragmatics?

In this poster I take a critical look at De Vries's (2012, 2013) analysis of distributivity with group nouns, presented at NELS43. I point out some problems with the analysis that can easily be fixed, namely that the analysis as is doesn't accommodate for the facts from British English Barker (1992) talks about, namely sentences in which the verb shows plural agreement with group nouns. Furthermore, I bring out a problem that is not as easy to discard, namely that De Vries's analysis, using polyadic distributivity, does not entirely account for the data she brings out. I try to account for this data using meaning postulates, and show that even this analysis encounters problems. In fact, the facts I bring out seem to indicate that the problem she addresses might not be semantic at all, but possibly entirely pragmatic.

Background information

De Vries's proposes an analysis of distributive readings that involve group terms such as *the team*, convincingly arguing, and following Barker (1992), among others, that Link's (1991) D-operator ($\lambda P.\lambda X.\forall x[x \in X \rightarrow P(x)]$) cannot access the members of the group seeing as the denotation of a group noun is not plurality but an atom. She argues that this analysis is supported by the unavailability of a distributive interpretation for sentences like those in (1) and (2).

- (1) The boy team has more coins than the girl team.
 ≠ For every boy x , x has more coins than each of the girls.
- (2) The class would be upset if John kissed their mother.
 ≠ For every pupil x , x would be upset if John kissed x 's mother.

Furthermore, for sentences with group nouns in subject, and indefinites in object position, that do allow for a distributive reading, De Vries (2013) claims that indefinites should be analyzed as properties. The distributive reading of (3) below is then due to the polyadic lexical distributivity.

- (3) The team is wearing an orange vest. (De Vries 2013)
 = There is an orange vest such that the team is wearing it. (collective interpretation)
 = Each member of the team is wearing an orange vest. (distributive interpretation)

Assuming that the indefinite is a property, $\langle e, t \rangle$, De Vries also assumes Chierchia's (1984) typeshift $\hat{\quad}$ that turns predicative expressions into their entity correlates. Thus (3) is represented as (4):

- (4) (wear($\hat{\quad}$ orange vest))(the team)

and the verb *wear* is a relation between groups and entity correlates. However, (4) does not entail the distributive interpretation of (3), at least not without additional stipulations, since it is not obvious how there would be a universal quantifier scoping over the team members. I will try to explicitly state how a distributive reading of sentences like (3) is available by using meaning postulates.

Problems this analysis encounters: British English

In British English, a distributive reading is available for sentences such as (5) and (6):

- (5) Real Madrid have more medals than Barcelona. (BrE)
 = For every Real Madrid player x , x has more medals than each of the Barcelona players.
- (6) Liverpool would be upset if someone stole their boots. (BrE)
 = For every Liverpool player x , x would be upset if someone stole x 's boots.

This should not be the case, according to De Vries. However, this set of data can easily be accommodated in her analysis if we take into account Barker's (1992) analysis of British English data where he shows that plural agreement on the verb allows the verb phrases to take noun phrases which denote sums. In cases where the verb shows plural morphology, the group noun will be interpreted as a sum, and not as an atom, therefore allowing for a distributive reading.

Polyadic distributivity issues and an alternative analysis

A more grave problem for De Vries's analysis is that fact that (4), as given, doesn't explicitly show the distributive interpretation given in (3).

However, even if we assume that the distributive interpretation is achieved with the help of a meaning postulate stating that, for all verbs, if their subject is a group term, and their object an indefinite, there is polyadic distributivity over the arguments, we will make the wrong predictions for (7):

- (7) The team is holding a trophy. (AmE)
 = There is a trophy such that all (or most) members of the team are holding it.
 = One member of the team is holding a trophy, and represents the team in doing so. (group credit)
 ≠ Individual members of the team are each holding a trophy. (distributive interpretation)

With the assumption that polyadic distributivity occurs with all predicates, there is no way to explain why (7) cannot have a distributive interpretation. The same problem persists in British English:

- (8) Barcelona are manipulating a match official. (BrE)
 = There is a match official such that all (or most) members of Barcelona are manipulating him.
 ≠ For every Barcelona player x , x is manipulating one of the four match officials.

Another route that could be taken to fix the above-mentioned problem is positing meaning postulates for individual verbs, as in (9) for *wear*:

- (9) $\forall Y \forall x [\text{wear}(Y, x) \wedge \text{kind}(x) \rightarrow \forall z [\text{atom}(z) \wedge z \leq Y \rightarrow \exists w [\text{R}(w, x) \wedge \text{P}(z, w)]]]$

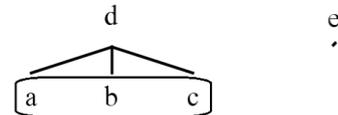
Where Y is a group individual, and R is Carlson's (1977) 'realizes' or 'is an instance of'. I assume that instances inherit all the relevant properties of kinds (every instance of the kind *orange vest* is orange and a vest). Assuming also that indefinites are properties, and following Chung and Ladusaw's (2003) approach, namely using predicate restriction that lets us interpret the property argument as a restrictive modifier of the predicate, we get the following denotation for (3):

- (10) a. $\lambda y. \lambda x [\text{wear}(x, y) \wedge \text{kind}(y)] (\lambda z [\text{orange}(z) \wedge \text{vest}(z)])$ - Restrict
 b. $\lambda y. \lambda x [\text{wear}(x, y) \wedge \text{kind}(y) \wedge \text{orange}(y) \wedge \text{vest}(y)]$
 c. $\lambda x. \exists y [\text{wear}(x, y) \wedge \text{kind}(y) \wedge \text{orange}(y) \wedge \text{vest}(y)]$ (team)
 d. $\exists y [\text{wear}(\text{team}, y) \wedge \text{kind}(y) \wedge \text{orange}(y) \wedge \text{vest}(y)]$
 e. $\forall z [\text{atom}(z) \wedge z \leq \text{team} \rightarrow \exists w [\text{R}(w, (\text{orange}(y) \wedge \text{vest}(y)) \wedge \text{wear}(z, w))]]]$

Where the step from (10d) to (10e) involves applying (9) to (10d).

I assume that group nouns have two potential denotations, namely $\{a, b, c\}$ and the atom e in this schema:

[[Team]] is therefore ambiguous between [[Team]] = e ; and
 [[Team]] = $\oplus \text{team.player}$. Therefore if the denotation of *team* in (3)
 is $\oplus \{a, b, c\}$ in this schema, based on (9), (3) has a distributive
 interpretation. If the denotation of *team* is e , (3) has a collective
 interpretation, since e itself is the only atomic part available.



Further research problems

It could be argued that in sentences like (7), *trophy* does not represent a kind, but an instance, and therefore the step analogous to one from (10d) to (10e) is not possible. However, the problems outlined still persist, because even in contexts where it is clear that the indefinite object denotes multiple instances, it is difficult or impossible to have a distributive interpretation:

- (11) *The team are wearing a medal. (BrE)
 (12) ?The team are wearing a black armband. (BrE)

If the verb being used is not *wear*, or *eat*, this becomes even more obvious:

- (13) The team are carrying an egg in a spoon. (BrE)
 ≠ For every x , x member of the team, there is an egg and a spoon such that x
 is carrying the egg in the spoon.

It is unclear to me how polyadic distributivity over two predicates can explain the uneven distribution of availability of a distributive interpretation depending on the verb. However, as I have shown, assuming a meaning postulate for individual verbs doesn't fully account for the data either. It could possibly be said that the nature of the issue is not semantic, but pragmatic, particularly if we note the contrast between (3), (11) and (12). This is in no way a final answer, but merely an extension of the set of the questions posed.

References: Barker, C. (1992). 'Group Terms in English: Representing Groups as Atoms'. *JoS* 9(1), pp. 69-93 | Carlson, G. (1977). *Reference to Kinds in English*, PhD thesis, UMass. | Chierchia, G. (1984), Topics in the Syntax and Semantics of Infinitives and Gerunds, PhD thesis, UMass. | Chung, S. and W.A. Ladusaw (2003), *Restriction and Saturation*, MIT Press. | De Vries, H. (2012), 'Lexical distributivity with group nouns and property indefinites' Poster presented at NELS43 | De Vries, H. (2013), Group distributivity and the interpretation of indefinites, ms.