Cumulative readings of Italian *ogni**

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Abstract

It has been observed that quantifiers headed by *every* exhibit an asymmetric behavior with respect to the availability of a cumulative reading, and different analyses of this fact have been proposed. Italian universal quantifiers headed by *ogni* behave the same as *every* when it comes to the data taken in consideration in the literature. In this squib I provide a more comprehensive description of the distribution of the cumulative readings of *ogni* and I thereby argue that no existing analysis proposed for *every* is generalizable to the Italian case. This picture presents novel challenges for a theory of cumulative quantification in Natural Language which, I argue, should also account for the role that information structural properties seem to play in this kind of asymmetries.

1 Introduction

Consider the following pair of sentences:

(1) a. Kim and Jane insulted every guest in the room.

  b. Every guest in the room insulted Kim and Jane.

Both sentences have a run-of-the-mill distributive reading, illustrated in 1 (assuming there are 5 guests): this reading makes (1a) true in case every guest was insulted both by Kim and by Jane, and makes (1b) true in case there both Kim and Jane were insulted by every guest.
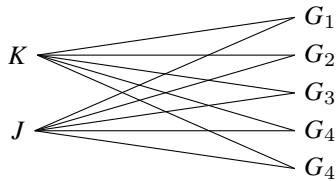

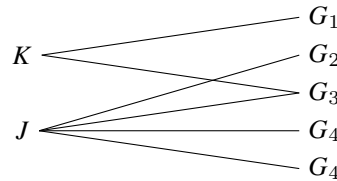Figure 1: A distributive scenario.   Figure 2: A cumulative scenario.

However, as it has already been observed and discussed in the literature (a.o. Champollion 2010; Kratzer 2000; Schein 1993), while (1b) has *only* this

distributive reading, (1a) has another reading, which I call here cumulative following Scha (1981) among others.[1] This reading is characterized by its weak truth conditions: under its cumulative reading, (1a) is true in case both of the following conditions hold:

(2) a. Each guest in the room was insulted by at least one person (i.e. either by Kim, or Jane, or both); represented in Figure 2 by the fact that there is no item on the right column which is not linked to one on the left column.

   b. Kim insulted at least one guest in the room and Jane insulted at least one guest in the room.

Thus, the scenario in Figure 2 is one that makes (1a) true under its cumulative reading. At first look, this is a subject-object asymmetry: the availability of the cumulative reading seems to depend on the subject vs. object status of certain expressions. A crucial fact which leads us to relate the asymmetry to the quantifier headed by *every* rather than to the coordinate structure *Kim and Jane* is that if *every guest in the room* in (1) is replaced with expressions like a plural definite, a bare or modifier numeral, another coordinate structure, a quantifier headed by a different determiner (like *all*[2]) this asymmetry disappears, in the sense that both sentences can have both readings, provided that plausibility conditions are met for each reading.[3] For example, the following pair of sentences where the two arguments of the verb are a coordinate structure and a plural modified definite does not reproduce the asymmetry of (1) — both (3a) and (3b) have both a cumulative and a distributive reading:

(3) a. Kim and Jane insulted the five guests in the room.

   b. The five guests in the room insulted Kim and Jane.

This fact suggests that the cause of the puzzling asymmetry in (1) is in some way related to the meaning of *every*.

1.1 Two proposals for *every*

In this section I briefly summarize two prominent analyses that have been proposed in the literature in order to account for the asymmetric distribution of the cumulative reading of *every*: Kratzer (2000) and Champollion (2010) are the main sources I discuss. The two analyses are technically very different and their predictions are different as well: while Kratzer (2000) captures the distribution on the basis of the Thematic Relations associated with the arguments, Champollion (2010) proposes a purely structural account that uses the notion of superficial asymmetric c-command between two arguments.

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[1]Views on how the kind of relation I call here cumulative should be treated compositionally differ quite radically in the literature (see e.g. Beck and Sauerland 2000; Winter 2000). Given the descriptive nature of this squib I will not take a position in this debate.

[2]But arguably not *each* (see Thomas and Sudo 2016).

[3]The obvious condition of plausibility is implicitly stated throughout this squib.

1.1.1 The Agent argument generalization

Kratzer (2000), building on the discussion in Schein (1993), analyzes the asymmetry related to *every* in a Neo-Davidsonian framework and argues that the distribution of the cumulative reading is an argument for having the Agent role as the only one expressed in the semantic composition. In this framework, a simplified semantic representation of *Brutus kissed Caesar* would be:

(4) $\exists e[\text{Agent}(b, e) \wedge \text{kiss}'(c, e)]$.

The hypothesis is that *every*-DP cannot have a cumulative reading if it is linked to the Agent Role. The semantic composition Kratzer (2000) argues for is such that the cumulative reading only comes about if the Agent argument is distinct from the *every*-DP, because the scope of the latter is prefixed by an existential quantifier over the mereological parts of the main event the subject is predicated to be the Agent of. A representation[4] of (1a) in this spirit would be:

(5) ⟦ Kim and Jane insulted every guest in the room ⟧ =
$\exists e \exists x[\text{K\&J}'(x) \wedge \text{Agent}(x, e) \wedge \forall y[\text{guest}'(y) \rightarrow \exists e'[e' \leq e \wedge \text{insulted}'(y, e')]] \wedge \exists y[\text{guest}'(y) \wedge \text{insulted}'(y, e)]]$.

The Agent argument, being severed from the verb (i.e., here, being predicated of the main event) enters in the cumulative relation. Accordingly, the empirical prediction of this analysis is that the restrictor of distributive quantifiers (like *every*, *each*) can be in a cumulative relation only with a plurality which bears the Agent argument. A case where a DP headed by *every* is the Agent argument and has a cumulative reading would then be a counterexample to Kratzer (2000)'s generalization.

1.1.2 The c-command generalization

Champollion (2010) proposes an alternative generalization,[5] which is able to account for (1) and for an alleged counterexample to Kratzer (2000), namely the fact that sentences like the following appear to have a cumulative reading:

(6) Gone with the Wind was written by every screenwriter in Hollywood.
(Bayer 1997, p. 206)

According to Champollion (2010), DP headed by *every* can only cumulate with arguments which are not in its syntactic scope (i.e. superficially c-commanded by it): this is the empirical generalization that characterizes the distribution. Cumulation is obtained by letting DPs headed by *every* be referential expressions, denoting the mereological sum of all the individuals in the extension of the restrictor of *every* and by applying the Star operator[6] that pluralizes the arguments of the relation denoted by the verb.

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[4]The irrelevant details are ignored in these representations, in order to avoid clutter.

[5]Essentially the same generalization is proposed in Champollion (2017) and implemented there in a very different framework. Since the predictions of the two analyses are the same, I will concentrate on what is discussed in Champollion (2010).

[6]For the uses of this operator in deriving cumulative readings see Beck and Sauerland (2000), Krifka (1986), and Sternefeld (1998) among others.

To find a genuine counterexample to Champollion (2010) would then be to find a case where a DP headed by *every* (or by the determiner whose asymmetric cumulative reading we want to examine) can enter in a cumulative relation with another expression that is in the former's c-command domain.

2   The case of *ogni*

The Italian determiner *ogni* shares several properties with *every*, most prominently:

- it selects a morphologically singular restrictor NP (unlike *all* and Italian *tutt-*)

- it cannot float (both *every* and *ogni* must always be adjacent to their restrictor NP, unlike e.g. *all* and *each*)

- it heads DPs which are incompatible with collective predicates[7]

Furthermore, *ogni* reproduces the basic asymmetry illustrated by (1). It will turn out that the distribution of cumulative *ogni* (i.e. a DP headed by *ogni* that, in the given context and syntactic configuration, has a cumulative reading) is best described by partitioning the space of possible cases in two: there are syntactic configurations that make the cumulative reading unavailable across the board, and there are cases where a cumulative reading is possible in principle, but its prominence is affected in various degrees by non-syntactic factors.

2.1   Neither proposal holds for *ogni*

In this section I present some data which shows that the behavior of *ogni* cannot be captured by either proposal presented above.

2.1.1   Against the Agent Argument generalization

Consider the following sentence, true in the described scenario:

(7)   Scenario: The water supply in Watertown is managed by two companies, Fresh Water and Clean Water, which provide with water half of the houses in the city each. It turns out that, albeit in different form, both companies ignored basic safety measure and the water they supplied kept being poisonous for some time. The news says, announcing the two class actions involving each citizen of the town against the two companies: "This might be a milestone day for consumer's rights, due to the engagement of the citizens of Watertown: in fact...
Fresh Water e   Clean Water sono state denunciate da ogni   cittadino
fresh water and clean water are   been sued   by every citizen
   di Watertown.
   of Watertown

Fresh Water and Clean Water have been sued by every citizen of Watertown.

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[7]Collective predicates are predicates that accept only pluralities as argument. Typical cases are verbs like *meet, gather, surround* and similar. Both in English and in Italian it is possible to form classes of determiners on the basis of the compatibility with such predicates: **Each guest/*every guest/all the guests met.*

The fact the (7) has a cumulative reading makes it analogous (in the relevant aspects) to (6) and therefore consitutes a problem for the analysis in Kratzer (2000) since *ogni cittadino di Watertown* arguably is the Agent argument. Depending on how rigidly the asymmetric Neo-Davidsonian account with respect to the the Agent argument being the only one which is severed from the verb is interpreted, the following case could also be problematic for a generalization of Kratzer (2000)'s analysis to *ogni*, because the verb here has arguably no Agent Θ-Role to assign and nevertheless there is a cumulative reading involving a DP headed by *ogni*:

(8) SCENARIO: David is a very bad violinist who likes to give solo gigs. He wants his friends to come, therefore Kim and Jane decided to attend the gigs so that at least one of them is present at each of them. Of course, both Kim and Jane still tried to miss as many gigs as they could.
Kim e   Jane hanno subito   ogni   performance di David quest'anno.
Kim and Jane have   endured every performance of David this year

Kim and Jane have endured every performance by David this year.

Cases like (8) could still be accommodated in an analysis in the spirit of Kratzer (2000), but this would require additional assumptions that do not seem to be well motivated otherwise: one such assumption could be that, when the verb has no Agent Role to assign, another Role is separated form the verb in the semantic representation — in the case of (8), this would likely be the Experiencer. However, examples like (7) would still be a problem and this suggests that notions like Thematic Roles are not suitable for capturing the distribution of the cumulative reading of *ogni*.

2.1.2 Against the superficial c-command generalization

Furthermore, there is evidence that *ogni NP* can cumulate with arguments in its c-command domain, and this makes the generalization in Champollion (2010, 2017) not valid for *ogni*. Assuming a binary branching analysis of ditransitive constructions where one object asymmetrically c-commands the other one in the spirit of Larson (1988) (whose considerations apply to the Italian case in the relevant aspects), the following sentence is the counterexample to the c-command generalization we are looking for, since it has a reading where *ogni problema* cumulates with the indirect object *Kim, David e Jane*:

(9) *Nina ha   assegnato ogni   problema a Kim, David e   Jane.*
Nina has assigned   every problem to Kim David and Jane

Nina assigned every problem to Kim, David and Jane.

For the sake of brevity, consider just this pair of sentences that supports the structural analysis assumed for (9), namely the binding of a pronoun by a quantifier:

(10) a. *Nina ha   assegnato ogni studente$_i$ al   suo$_i$ TA.*
          Nina has assigned   every student   to the his   TA

          Nina assigned every student to his TA.

      b. * *Nina ha   assegnato il   suo$_i$ TA a ogni   studente$_i$.*
          Nina has assigned   the his   TA to every student

In table 1 an overview is provided of the relevant data and the way previous proposals capture it. Some constructions in table 1 will be discussed in the next section.

	A cum. B	Kratzer	Champollion
$[_{A,\text{subj}}$ ogni$]$ V $[_B$ pl$]$	no	✓	✓
$[_{B,\text{subj}}$ pl$]$ V $[_A$ ogni$]$	yes	✓	✓
$[_{\text{subj}}]$ V $[_B$ pl$]$ $[_A$ ogni$]$	yes	✓	✓
$[_{\text{subj}}]$ V $[_A$ ogni$]$ $[_B$ pl$]$	yes	✓	✗
$[_{A,\text{subj}}$ ogni$]$ V$_{\text{pass}}$ $[_{B,\text{agent}}$ pl$]$	yes	✓	✗
$[_{B,\text{subj}}$ pl$]$ V$_{\text{pass}}$ $[_{A,\text{agent}}$ ogni$]$	yes	✗	✓
$[_{B,\text{subj}}$ pl$]$ V$_{\neg\text{Ag}\Theta}$ $[_A$ ogni$]$	yes	✗	✓

Table 1: An overview of the syntactic configurations in which *ogni NP* can cumulate and whether existing analyses for *every* can successfully predict them.

2.2   The superficial subject condition

There is one construction in table 1 which appears to have no cumulative reading, and it is represented as:

(11) $[_{A,\text{subj}}$ ogni$]$ V $[_B$ pl$]$

If *ogni NP* is the superficial subject of an active sentence, it is impossible for it to enter in a cumulative relation with any other argument: the only available reading is the distributive one, regardless of the kind of information structural manipulation performed. "Superficial subject" is here used as a label that should encompass subject of raising and of unaccusative predicates.

2.3   Making the cumulative reading of *ogni* more prominent

In this section I argue that if a cumulative reading is available in the first place (i.e. unless it is totally implausible or the condition discussed in 2.2 is violated), topicality of the DP headed by *ogni* makes the cumulative reading more prominent.

Some constructions in table 1, such as those where *ogni NP* is the (in)direct object of a ditransitive verb, are not particularly interesting from a descriptive point of view, in the sense that, *ceteris paribus*, both their readings (i.e. the distributive and the cumulative one) are equally readily available. The construction in the first row, where *ogni NP* is the subject of a transitive verb,

is also very simple from an interpretive point of view: sentences that display this configuration have no cumulative reading (I will discuss those in the next section). Consider the following passive constructions:

(12) a. $[_{B},\text{subj}\ \text{pl}]\ \text{V}_{\text{pass}}\ [_{A},\text{agent}\ \text{ogni}]$

   b. $[_{A},\text{subj}\ \text{ogni}]\ \text{V}_{\text{pass}}\ [_{B},\text{agent}\ \text{pl}]$

Both these constructions have a cumulative reading (and I therefore proposed them as counterexamples to the Agent role and to the c-command generalizations presented in section 1.1): however, their cumulative reading is not always as readily available as the one of, for instance, a sentence where *ogni NP* is the object of a transitive verb. This fact sheds light on a correlation present in the intuition of many speakers[8], according to which the topicality of the restrictor of *ogni* makes the cumulative reading of the quantifier more prominent, if it is possible in the first place. This effect is more visible in constructions such as those in (12), but it is nevertheless present across the board.

It is not easy to formally identify all instances of what is intuitively associated with the notional category of Topic, however there exist cases where Topic is syntactically encoded with Clitic Left Dislocation as in (13) or more precisely identifiable from a semantic point of view, as in cases of Contrastive Topic like the ones in (17): these kinds of construction provide a solid basis to test the observation that Topicality of the DP headed by *ogni* correlates with a more prominent cumulative reading, provided this reading is available (and plausible) in the first place.

(13) a. *Tre   redattori   hanno trovato ogni   errore.*   Cum:✓
         three copy editors have   found   every mistake

         Three copy editors found every mistake.

   b. *Ogni errore, tre   redattori   l' hanno trovato.*   Cum:✓, *prominent*
         every mistake three copy editors it have   found

         Every mistake, three copy editors found it.

(14) *Ogni ladro   è stato visto da tre   testimoni.*   Cum:*??*✓
      every burglar is been seen by three witnesses

      Every burglar was seen by three witnesses.

(15) SCENARIO: One investigator talks to a colleague who is working on a burglary case which, according to the evidence, involves four burglars. "It is usually not easy to find ocular witnesses for each burglar in these cases, and if you don't, your case will be quite weakened". The colleague replies: "No, we are lucky with this one, since. . .
      Ogni ladro   è stato visto da tre   testimoni.   Cum:✓
      every burglar is been seen by three witnesses

      Every burglar was seen by three witnesses.

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[8]The consultants who consistently report these facts are all northerner speakers of Italian: I have not investigated potential diatopic variation with respect to this.

A contrast is perceived between (16) and (17): with the sentences in (17) the cumulative reading is (for some speakers significantly) more prominent, and the only difference is that in (17) the DP headed by *ogni* is a Contrastive Topic.

(16) *Giovanni ha mostrato ogni quadro nel soggiorno a Nina e*
      Giovanni has shown   every painting in the living room to Nina and
      Gennaro.
      Gennaro

      Giovanni showed every painting in the living room to Nina and Gennaro.
      ✓

(17) a. (Who showed the paintings to Nina and Gennaro? —)
          [Ogni quadro nel soggiorno]$_i$ l'$_i$ ha mostrato
          every painting in the living room him/her has shown

          [Giovanni]$_F$ a Nina e Gennaro.
          Giovanni   to Nina and Gennaro

          Giovanni showed every painting in the living room to Nina and Gennaro. ✓

      b. (To whom did Giovanni present the paintings? —)
          [Ogni quadro nel soggiorno]$_i$ Giovanni l'$_i$ ha mostrato
          every painting in the living room Giovanni him/her has shown

          a [Nina e Gennaro.]$_F$.
          to Nina and Gennaro

          Giovanni showed every painting in the living room to Nina and Gennaro. ✓

2.4 Modifying Champollion (2010) and the costs of doing it

The data presented here could be captured to a certain extent by modifying Champollion (2010) analysis as to the c-command condition. There, superficial asymmetric c-command is regarded as the condition that describes the distribution of cumulative *every*. Examples like (15), where the DP headed by *ogni* is the subject of a passive sentence and yet can cumulate with the Agent argument, make such an account based on superficial c-command inadequate. However, if we take the base generation position of the DP headed by *ogni* to be the position that must be in the syntactic scope of the other argument in order for the cumulative reading to be available, then the cumulative reading of (15) is predicted[9], if such a fairly traditional structural analysis of passive sentences is assumed:

(18) [$_{TP}$ *ogni*DP$_1$ [$_{T'}$ T^0 [$_{VP}$ [$_{VP}$ V^{0}t$_1$] [$_{PP}$ AgentDP]]]]

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[9]Note that, however, the fact that Information Structure can make the cumulative reading more prominent would not be predicted on this ground alone.

By reformulating the c-command generalization in this way the passive sentence data and the superficial subject condition are captured, but doing this by trying to keep consistency in the analysis could come only at the rather significant cost of assuming "flat VPs", i.e. a structure of ditransitives where the direct and the indirect object c-command each other — not doing this would leave cases like (9) uncaptured.

3   Concluding remarks

In this squib I showed that the Italian singular universal quantifier headed by *ogni* has a cumulative reading whose availability and prominence are influenced by syntactic and information structural properties, in the sense that its being in subject position of an active sentence blocks the cumulative reading and its being a Topic makes an available cumulative reading more prominent to various degrees. Implementing these two conditions in a compositional way is an unsolved issue which should be tackled in order to explain this asymmetric distribution found in Italian and possibly other languages.

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