

Chapter 13

Strengthening to reciprocity: The syntax and semantics of ONE+OTHER expressions

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I argue on the basis of data from Serbo-Croatian that reciprocity expressions combining the equivalents of the words *one* and *other* as two separate constituents bear a non-reciprocal compositional core meaning, as formulated by Vicente's (2010) and Zimmermann's (2014) work on Spanish, Russian and German data. The additional components of the two analyses postulated to capture reciprocity – cumulation and type shift, respectively – are not part of the expression's semantics. Rather, reciprocity emerges from pragmatics, in the competition of these expressions with closest competitors whose meanings do not even include reciprocal interpretations as special cases. Both a syntactic and a semantic analysis is provided.

1 Introduction

Certain languages, including Serbo-Croatian (SC) as exemplified in (1), but also German, Russian, and Spanish, display a strategy for marking reciprocity that involves the combination of the counterparts of the English words *one* and *other* as two separate constituents (ONE+OTHER expressions in further text).

- (1) Jarci su se sudarali jedan s drugim.
capricorn.PL AUX.PL REFL collided.PL one.NOM with other.INST
'The capricorns were colliding with each other.' (SC)



Vicente (2010) and Zimmermann (2014) provide compositional analyses of the meaning of expressions of this type, which hold in non-reciprocal as well as in reciprocal situations. In order to eliminate the non-reciprocal meanings, both postulate additional operations that enforce reciprocity. I argue in this paper that the non-reciprocal analyses correctly capture the narrow meaning of the expressions, and that reciprocal interpretation emerges from pragmatic strengthening.

I provide evidence from SC for the non-reciprocal interpretation of the ONE+OTHER expression, and for the emergence of the reciprocal interpretation through a competition with a range of alternatives in which the ONE+OTHER expression is substituted by a minimal pair sharing its surface pattern but with different lexical items. Based on the comparison of the SC ONE+OTHER expression with its minimal pairs, I further refine Vicente's and Zimmermann's analyses. In particular, I point out the role of the non-specific indefinite nature of the two components of this expression, and of their being referentially restricted by the same antecedent, in addition to their competition with their semantically similar alternatives. I also sketch a syntactic analysis, and discuss the roles of grammatical number and aspect in their interpretation.

The paper is organized as follows. Section 2 presents the expression under discussion and the two analyses I depart from, Section 3 argues for a weaker meaning of the ONE+OTHER expression and its pragmatic strengthening to various degrees of reciprocal strength, and Section 4 overviews its possible alternatives in SC and their relevant properties. Section 5 sketches a syntactic analysis. In Section 6, I discuss the central aspects of the semantic interaction of this expression with grammatical number and aspect, which are both richly morphologically marked in SC and reveal important aspects of the meaning of the expression. Section 7 concludes.

2 Vicente (2010) and Zimmermann (2014) on the reciprocity marker of the type ONE+OTHER

Reciprocity expressions, such as English *each other* or *one another* and their counterparts in other languages are characterized by a great semantic and syntactic variation in the range of available marking strategies such as reflexives or reciprocal adverbs (*mutually*, *reciprocally*), as well as in the interpretation between different degrees of strength (according to Dalrymple et al: strong, intermediate, one-way weak, intermediate alternative reciprocity, and the inclusive alternative ordering) and special reciprocal meanings (Dalrymple et al. 1994, Nedjalkov 2007). The dichotomy is thus not a simple one, i.e. between the situations

in which members of a particular plurality of football players scream (2a) and those in which each member of the plurality of football players screams at, and is screamed at by, each other member (2b).

- (2) a. The football players were screaming.
- b. The football players were screaming at each other.

A range of pragmatically salient in-between scenarios are available for (2b), such as each member participating at least once as the one who screams and at least once as the one who is screamed at.

I focus on the type of reciprocal construction which involves a reciprocity marker composed of two expressions: the first of which shares the semantics of the English word *one*, and the second of the English word *other* (henceforth the ONE+OTHER expression), available in a selection of Germanic, Romance, and Slavic languages, and previously analyzed by Vicente (2010) and Zimmermann (2014). This construction is exemplified in (3)–(5) (Zimmermann’s examples (1)–(3)), for German, Russian and Spanish, respectively. Zimmermann remarks that the German example is rather marked, due to the availability of a related construction with the reciprocity marker *einander* ‘one another’.

- (3) Die Nachbarn helfen *die einen den anderen*.
the neighbor.PL help.PL the.PL one.PL the.DAT.PL other.PL
‘The neighbors help each other.’ (German)
- (4) Sosedi pomagajut *odni drugim*.
neighbor.PL help.PL one.PL other.DAT.PL
‘The neighbors help each other.’ (Russian)
- (5) Los vecinos se ayudan *los unos a los otros*.
the neighbor.PL REFL help the.PL one.PL to the.PL other.PL
‘The neighbors help each other.’ (Spanish)

Vicente (2010) and Zimmermann (2014), in two closely related analyses, aim to identify the compositional semantics of these expressions.

While Beck (2001), in her discussion of the English reciprocal *each other*, argues that its components *each* and *other* are (relational) definites, Vicente treats the two components of the ONE+OTHER expression as indefinites, one of which (that expressed by a counterpart of *one*, henceforth the ONE-component) freely ranges over the plurality introduced by the antecedent, while the other (expressed by

the counterpart of *other*, henceforth the OTHER-component) is relational, i.e. additionally specified as non-overlapping with the ONE-component. As this derives a single non-reciprocal event interpretation whereby two mutually disjoint indefinites from the same plurality introduce the respective event participants, Vicente (2010) employs Sternefeld's (1998) and Beck's (2001) cumulative operator (coded as **** in (6) below) to achieve the reciprocal interpretation.¹

- (6) a. Los hombres conocen los unos a los otros
 The men know the one.PL to the others
 'The men know each other.' (Spanish)
- b. Let *S* be the set {the men}
 $**[\exists x, \exists y[\text{KNOW}([y \in B \subset S], [[x \in A \subset S] \wedge [A \cap B = \emptyset]])]$
 A cumulation of events in which a non-specific member of some given plurality *S* knows another non-specific member of the same plurality, with which it does not overlap.

The definition of the cumulation operation **** from Sternefeld (1998: 304) is provided in (7) (his (5)).

- (7) For any two-place relation *R*, let ***R* be the smallest relation such that
- a. $R \subseteq **R$, and
- b. if $\langle a, b \rangle \in **R$ and $\langle c, d \rangle \in **R$, then $\langle a \oplus c, b \oplus d \rangle \in **R$.

Crucially, the interpretation is assumed to take the maximal result of the cumulation operation, i.e. the maximal set of possible events (i.e. relations) satisfying the description. Due to the indefinite nature of the event participants in each event, the same entity ends up occurring both as the 'knower' and as the 'knowee' in some events, yielding the reciprocal semantics. I argue in this paper that the semantics achieved through the cumulation, and its maximality, are both possible, but not obligatory for the interpretation of this expression.

On Zimmermann's (2014) analysis, the ONE+OTHER expression is a DP projected by the OTHER-component, which takes another DP projected by the ONE-component as its specifier, as in (8).

- (8) [DP [DP die einen] [D' den anderen]]

¹The formula is slightly modified, without affecting the analysis.

Case is assigned to the big DP, as it occurs in the corresponding argument position – the indirect object in the examples in (3)–(5) – which is why in these examples it bears the dative case. The DP in its specifier is assigned case (nominative in all the examples discussed so far) through agreement with the antecedent.

As formally presented in (9) (the formula given is mildly modified compared to the original), the meaning of the bigger DP is composed from the two DPs, where the semantics of the *OTHER*-component, specifying distinctness, plays a crucial role. Similar to Beck's (2001) analysis, the *ONE*-component is taken to be a specific individual which is part of the plural introduced by the antecedent ('the neighbors' in (3)–(5)). The definite article (which is plausibly silent in Russian, i.e. only present in the form of a corresponding feature) marks uniqueness. In combination, the *ONE*-component denotes a unique individual from the plurality denoted by the related argument – in the present case a unique neighbor. The *OTHER*-component ranges over the difference between the restrictor plurality and the referent of the *ONE*-component, in the example used for illustration, all the neighbors except for the one referred to by the *ONE*-component.

- (9) a. the definite article: $\lambda P_2 \lambda P_1 \exists! x [P_1 x] \wedge [P_2 x]$
 b. the *ONE*-item: $\lambda x x \in Z$
 c. the *OTHER*-item: $\lambda y \exists x [x \neq y] \wedge x \in Z \wedge y \in Z$

Similar to Vicente's (2010) analysis, the resulting interpretation is non-reciprocal. One specific subplurality of the antecedent is associated with one thematic role, and another, different one with the other, i.e. one specific subgroup of the neighbors helps another, disjoint, specific subgroup. To secure a reciprocal interpretation, Zimmermann (2014) introduces a type-shift operation formalized as in (10), which directly assigns reciprocity.

- (10) Type-shift into the reciprocal interpretation: $\lambda x \lambda y \lambda R \text{REC} [R y x]$

On both views, the *ONE+OTHER* expression is closely related to the sentences with items *one* and *other* (i.e. their equivalents) realized within lexically headed NPs in the respective positions, as in (11)–(13), in which no reciprocal interpretation is available.

- (11) Die einen Nachbarn helfen den anderen (Nachbarn).
 the one.PL neighbor.PL help.PL the.DAT.PL other.PL neighbor.PL
 'One group of neighbors helps the other (group of neighbors).' (German)

- (12) Odni sosedi pomogajut drugim (sosedami).
one.PL neighbor.PL help.PL other.DAT.PL neighbor.DAT.PL
'One group of neighbors helps the other (group of neighbors).' (Russian)
- (13) Los unos vecinos ayudan a los otros (vecinos).
the one.PL neighbor.PL help to the.PL other.PL neighbor.PL
'One group of neighbors helps the other (group of neighbors).' (Spanish)

Both analyses rely on the disjoint reference of the components of the ONE+OTHER expression, which share a plural restriction introduced by the antecedent. Vicente (2010) includes in his analysis a plurality of events, each member of which independently selects a pair of participants for two fixed participant roles from a fixed restrictor set, while Zimmermann (2014) focuses on the description of a single (sub)event and introduces reciprocity via a type-shift. It is striking that both analyses compositionally derive interpretations which are not necessarily reciprocal, but include reciprocity as a special case, and both therefore need to restrict the derived interpretation to reciprocity by stipulating an additional operation (maximal cumulation for Vicente, type shift for Zimmermann), which either has a non-compositional origin, or somehow comes from the syntactic structure of the expression. As the expressions in (11)–(13) do not trigger reciprocal interpretations, in the latter case, this component must be tied to the structural derivation of the ONE+OTHER expression in (3)–(5) from those figuring in (11)–(13).

In the rest of the paper, I argue that Vicente's and Zimmermann's compositional analyses are correct, and that no additional operations should be postulated in the narrow semantics, as reciprocity is not compositionally contributed by the ONE+OTHER expression. Reciprocity is imposed in pragmatics, through a strengthening resulting from the competition of the sentences containing the ONE+OTHER expression with two relevant sets of alternatives. I further tackle the question whether the ONE+OTHER expression, i.e. its components, are specific or non-specific, opting, with Vicente, for the latter option. On this ground, I outline the syntactic structure underlying these expressions, as well as the pragmatic competition driving the reciprocal strengthening – which is the question that I tackle first.

3 Reciprocity as pragmatic strengthening

One of the striking properties of the ONE+OTHER expression that both Zimmermann (2014) and Vicente (2010) aim to account for is that, as they put it, it can be

quantified. As Vicente shows for Spanish, and Zimmermann additionally for Russian and German, the ONE+OTHER expression can occur with quantifiers which give it different reciprocal strengths. Vicente's data from Spanish are given in (14b)–(14c) (his (50) and (52)).

- (14) a. Los hombres conocen los unos a los otros
 The man.PL know the one.PL to the other.PL
 'The men know each other.'
- b. Los hombres conocen cada uno a todos los otros.
 The man.PL know each one to all the other.PL
 'Each of the men knows each of the others.'
- c. Los hombres conocen cada uno a (alguno) otro.
 The man.PL know each one to some other
 'Each of the men knows some other man.' (Spanish)

I argue rather that the expression under discussion illustrated in (14a) (denoting reciprocity of any degree of strength, underspecified) stands in competition with those in (14b) (denoting strong reciprocity) and (14c) (illustrating one-way weak reciprocity), as well as with the expressions of the type in (13), and that these two competitions crucially determine its overall interpretation. Let me first discuss the latter competition, the one which strengthens the meaning of the ONE+OTHER expression to reciprocity, and then return to the former, which works in the opposite direction.

The two competing types of expressions are given in (15), from Spanish.

- (15) a. Los unos vecinos ayudan a los otros.
 the one.PL neighbor.PL help to the.PL other.PL
 'One group of neighbors helps the other.'
- b. Los vecinos se ayudan los unos a los otros.
 the neighbor.PL REFL help the.PL one.PL to the.PL other.PL
 'The neighbors help each other.' (Spanish)

On Vicente's and Zimmermann's analysis, their compositional meanings differ only in one restriction. While in (15a) the two groups of neighbors are referentially independent of each other, in (15b) they are restricted to being parts of the plurality denoted by the antecedent, in this case the subject DP *los vecinos* 'the neighbors'. Taking Vicente's view, an additional difference is that the ONE+OTHER expression *los unos a los otros* 'ones to others' in (15b) is indefinite,

while the corresponding expressions *los unos vecinos* ‘the one group of neighbors’ and *los otros vecinos* ‘the other group of neighbors’ in (15a) are both definite. As a result, (15a) means that there were one or more events such that the one group of neighbors helped the other, and (15b) that there were one or more events such that one subgroup of the neighbors helped a disjoint one. Vicente further applies maximal cumulation to impose those pluralities of events which effectively imply reciprocity (e.g., if all the possible pairs of subgroups of the neighbors engage in helping events, strong reciprocity obtains).

I argue that the maximal cumulation is not part of the semantics of sentences involving the ONE+OTHER expression. Rather, the non-specific nature of the *one+other* expression and the shared restriction of its two components make this expression more marked, which pragmatically promotes its strongest interpretations – which are the reciprocal ones. Crucial factors are antipresupposition (Heim 1991, Percus 2006): the fact that the more marked expression is uttered, and the salience of the reciprocal interpretation: it is a prominent interpretation which fits a large number of frequently obtaining contexts. This leads to a pragmatic strengthening of the type of sentences in (15b) to reciprocity. In Section 4, Section 5, and Section 6, I discuss the roles of non-specificity, of the shared restriction, of grammatical number and of grammatical aspect in the susceptibility of the ONE+OTHER expression to strengthening to reciprocity.

First, I have to show that the ONE+OTHER expression indeed allows for non-reciprocal and non-plural interpretations, and that it is not referentially specific. To test this view, I designed a questionnaire in SC. Apart from the practical reasons, SC is selected because it displays a broad range of different alternatives for the ONE+OTHER expression (see Section 4), thus giving ample room to test the competition hypothesis.

The questionnaire consisted of two types of questions. One asked for the truth of a sentence involving the ONE+OTHER expression in a non-reciprocal, non-specific context, with a forced choice between the answers *true* and *false*, as illustrated in (16). The other asked for a numerical answer to a question involving the expression ONE+OTHER for a context that yields different answers for the reciprocal and for the more general interpretation, with a forced choice between three answers: the number of events of the kind described by the verb irrespective whether reciprocal or not, counting reciprocal events as one event, the number of events of the kind described by the verb irrespective whether reciprocal or not, counting each reciprocal event as two events, only the number of reciprocal events, and the cumulative number of reciprocal events (i.e. counting also any pair of independent events which are reciprocal with respect to each other; in

the example in (17), this is 2, as Matija stepped on Luka's foot twice, and Luka stepped on Matija's foot twice). After filling in the questionnaire the informants were asked if they had any comments.

- (16) *Context:* One monk has hit another monk once. Never before had a monk of that monastery hit another monk. The bishop says: 'I don't know, and I don't want to know which monk hit which other monk. I just want to stress one thing.'

Ovo je prvi put da monasi ovog manastira udare jedan
this is first time that monk.PL this.GEN monastery.GEN hit one
drugog.
other

'This is the first time that a monk of this monastery hits another one.'

For the given context, the last sentence the bishop uttered is

- false
- true

- (17) *Context:* Matija and Luka are playing a game where each player is supposed to step on the other player's foot and to avoid being stepped on. They played 5 rounds. In rounds 1, 2 and 5 Luka stepped on Matija's foot, in round 4 Matija stepped on Luka's foot, and in round 3 both Matija stepped on Luka's foot and Luka stepped on Matija's foot.

Koliko puta su dečaci zgazili jedan drugog?
how many times AUX boy.PL stepped on one other
'How many times did the boys step on each other's foot?'

- 6
- 5
- 1
- 2

The questionnaire was administered to 58 native speakers. The prediction of the present analysis for the first task was that a significant number of participants will judge the sentences as true, thus confirming that they can be used for non-reciprocal single instantiation events, and with non-specific reference. The prediction was confirmed: 81% of answers judged the sentences to be true in the

given context, while 19% judged them to be false. Some of the informants commented that they only receive the reciprocal interpretation (the other monk hit back), hence at least some rejections were because the speakers could only interpret the sentences reciprocally. This does not contradict the proposed analysis, as there is variation in the ability to impose or suppress the contribution of pragmatics (Noveck 2018, see also Mirić & Arsenijević 2013 for SC). The hypothesis is confirmed by answers which had the non-reciprocal single event interpretation (and which made up a significant majority).

The prediction for the second task was that a significant number of participants would choose the numbers that require the inclusion of non-reciprocal events (i.e. 5 or 6 for the example in (17)). Contra the report in Dimitriadis (2008), a vast majority of speakers accepted 6 as the answer (86% of the answers, this number was among the ones selected), i.e. its counterparts in other questions, and a few of them (also) accept (the type of answer represented by) the numerosity 5 (around 12% of answers). Both these answers count non-reciprocal events in. Only 5% of times the answers of the type specifying the number of narrowly reciprocal event instances were accepted (1 in the given example), and not a single time those corresponding to a cumulation of reciprocal events (2 in the given example).

Note that the prediction of the proposed view is not that no one will have a strict reciprocal interpretation, as it is a possible, and moreover strong and salient interpretation. The distinctive prediction was that a significant number of speakers will accept the non-reciprocal interpretation. This is clearly confirmed.

In language use, non-reciprocal interpretations are relatively rare, but not unusual for this type of expressions. In a Google search, among the first 100 hits for the SC *jedni drugima* ‘ones to others’, 4 were of the type in (18), where again it is possible that only a small number of the fishermen ever have excess catch, and that none of those ever happen to receive excess catch from other fishermen, for the sentence to be true – hence a non-reciprocal scenario.

- (18) Ribari višak ulova daju jedni drugima, lovci ga ostave
fisherman.PL excess catch give.PL one.PL other.DAT.PL hunters it leave
u šumi.
in wood
‘Fishermen give their excess catch to other fishermen, hunters leave it in
the wood.’

In summary, the ONE+OTHER expression in SC does not necessarily impose a reciprocal interpretation, or even a plural event interpretation. Moreover, the first task confirmed that the ONE+OTHER expression is neither definite nor specific.

If reciprocity emerges through competition, the availability of non-reciprocal interpretations is expected to be higher in languages that have stronger minimal alternatives for expressing reciprocity, i.e. where there are productive competitors with the ONE+OTHER expression along the other dimension, introduced at the beginning of this section. This is the topic of the next section.

4 Alternatives

In this section, I examine the possible (quantified) alternatives for the ONE+OTHER expression, sharing exactly the same syntactic structure and position, but contributing different semantics. Vicente (2010) and Zimmermann (2014) report two such alternatives, which derive the strong and the weak reciprocal interpretation, respectively. In combination with the fact that in Spanish the universal quantifier is added on top of the components ONE and OTHER, this suggests that this position is universally filled with ONE+OTHER as a reciprocal marker, and that this marker can be strengthened by quantification to narrow the reciprocal interpretation to a particular degree of strength. Serbo-Croatian is similar to Russian and Spanish in allowing quantifiers to occur in place of the ONE+OTHER construction (see Miličević 2014, 2016 for a detailed discussion). However, when it does, it does not preserve the ONE- and OTHER-component.

The view advocated in this paper takes reciprocity to be pragmatically derived, from the less restricted narrow semantics of the expression. While on the view on which ONE+OTHER expressions have reciprocal semantics, it is expected that this expression takes only those combinations of quantifiers that yield the salient degrees of strength of reciprocity (weak and strong reciprocity in particular), the present view makes no such prediction. In SC, a much broader range of combinations are available than those two which derive the weak and strong reciprocity, discussed by Vicente (2010) and Zimmermann (2014) and illustrated in (14b)–(14c). Consider (19), which does not nearly exhaust the possible combinations.

- (19) a. Šahisti su igrali jedan protiv drugog.
 chess_player.PL AUX played one against other
 ‘The chess players played against each other.’ /
 ‘The chess players who played – played against other chess players.’
 b. Šahisti su igrali svaki protiv svakog.
 chess_player.PL AUX played each against each
 ‘The chess players played against each other.’ (necessarily strongly
 reciprocal)

- c. Šahisti su igrali svaki protiv drugog.
chess_player.PL AUX played each against other
'The chess players played each against a different one.'
- d. Šahisti su igrali jedan protiv svih.
chess_player.PL AUX played one against all
'The chess players played so that one always played against all the others.'
- e. Šahisti su igrali svaki protiv ponekog.
chess_player.PL AUX played each against some.DISTR
'The chess players played so that each played against some (one or more).'
- f. Šahisti su igrali jedan protiv dvojice.
chess_player.PL AUX played one against two
'The chess players played so that one always played against two others.'
- g. Šahisti su igrali dvoje protiv dvoje.
chess_player.PL AUX played two against two
'The chess players played so that it was always two playing against two.'

The availability of so many alternatives, some of which can only have the reciprocal meaning, like (19b), should weaken the reciprocal interpretation of the ONE+OTHER expression. How come antipresupposition does not deprive the *one+other* expression of its reciprocal interpretation, i.e. why does it nevertheless figure as the standard expression of reciprocity to the extent that in some languages other alternatives are not available? The answer is that the ONE+OTHER expression is the only one among the alternatives which restricts its two components to refer within the same plurality – the one denoted by the antecedent. For all other combinations, this is possible as an accidental scenario, but other scenarios are possible too, and can be explicitly expressed, as shown in (20).

- (20) a. *Šahisti su igrali jedan protiv drugog posetioca.
chess_player.PL AUX played one against other visitor
Intended: 'The chess players played such that a chess player played against a visitor.'
- b. Šahisti su igrali svaki protiv svakog posetioca.
chess_player.PL AUX played each against each visitor
'The chess players played such that each played against each visitor.'

- c. Šahisti su igrali svaki protiv drugog posetioca.
chess_player.PL AUX played each against other visitor
'The chess players played each against a different visitor.'
- d. Šahisti su igrali jedan protiv svih posetilaca.
chess_players.PL AUX played one against all visitor.PL
'The chess players played so that one always played against all the visitors.'
- e. Šahisti su igrali svaki protiv ponekog posetioca.
chess_player.PL AUX played each against some.DISTR visitor
'The chess players played so that each played against some visitors.'
- f. Šahisti su igrali jedan protiv dvojice posetilaca.
chess_player.PL AUX played one against two visitor.PL
'The chess players played so that one always played against two visitors.'
- g. Šahisti su igrali dvoje protiv dvoje posetilaca.
chess_player.PL AUX played two against two visitor.PL
'The chess players played against visitors two against two.'

With predicates which are not inherently reciprocal, the meaning emerging with different restrictions is non-reciprocal too.

- (21)
- a. Lekari su operisali jedan drugog (*pacijenta).
doctor.PL AUX operated one other patient
'The doctors operated on each other.'
 - b. Lekari su operisali svaki svakog pacijenta.
doctor.PL AUX operated every every patient
'The doctors operated so that each operated on each patient.'
 - c. Lekari su operisali svaki drugog pacijenta.
doctor.PL AUX operated each other patient
'The doctors each operated on a different patient.'

The contrast between (21a) and (21c) confirms that while the dependent semantics of the component *OTHER* prominent in both Zimmermann's (2014) and Vicente's (2010) account probably plays an important role in introducing a bias for reciprocity, it is the non-specific indefinite semantics of the component *ONE* that eliminates other readings. The only way for the latter to distribute over a plurality is if the distinctness interpretation of the *OTHER*-component takes the

ONE-component rather than an independent discourse referent as its other argument. And this requires that the two components of the ONE+OTHER expression share a common restriction.

It is hence the requirement for a shared restriction that promotes the reciprocal interpretation: on a plural event interpretation, the two participant roles freely selecting referents from the same plurality are more likely to result in a reciprocal scenario than if they receive referents from two independent restrictions. A pragmatic strengthening of the former (a maximized plurality of events) matches the reciprocal interpretation, while an analogous strengthening of the latter may include reciprocal segments only if the two restrictions have a non-empty intersection (in the example in (21) that requires a context in which some doctors are also patients). Hence, the competition of the ONE+OTHER expression with its quantified alternatives goes in both directions: it weakens (when they denote particular degrees of strength of reciprocity), but also strengthens its reciprocal interpretation (since only in the ONE+OTHER expression the two components are bound to share their restriction). I get back to the issue of shared and different restrictions in Section 5, regarding the syntax of the construction.

There is one more type of expression in SC that can shed additional light on the construction under discussion. In SC, not only functional items – quantifiers, numbers and proforms – are allowed to occur in the place of ONE and OTHER, but also full nouns. Consider (22), where as long as the verb is reciprocal, nouns can be used to restrict the reference of each of the two participants in a plurality of events.

- (22) a. Klizači su se sudarali devojka sa dečakom, starac sa
skater.PL AUX REFL collided girl with boy old_man with
mladićem, profesionalac sa početnikom.
young_man pro with beginner
'The skaters collided so that a girl would collide with a boy, an old
man with a young man, a pro with a beginner.'
- b. Potkazivali su otac sina, sestra brata, učitelj
snatched AUX father son.ACC sister brother.ACC teacher
učenika.
student.ACC
'Fathers snatched on sons, sisters on brothers, teachers on students.'
- c. Figure su poredane manja ispred veće.
figure.PL are arranged smaller in_front bigger.GEN
'The figures are arranged so that in each pair, the smaller one stands
in front of the bigger one.'

- d. Izbeglice su prodavale frizer makaze, šnajder igle, kuvar
 refugee.PL AUX sold hair-dresser scissors tailor needles cook
 šerpe.

pots

‘The refugees were selling stuff so that the hairdresser was selling his scissors, the tailor his needles, the cook his pots.’

Just like in the ONE+OTHER expression, the girl and the boy, the old man and the young man, the pro and the beginner are all recruited from the same plurality of skaters in (22a), denoted by the clausal subject. However, at least (22b), (22d), the two sentences with non-reciprocal verbal predicates, do not match any type or strength of reciprocity – they are genuinely non-reciprocal. (22b) does not imply in any way that sons snitched on fathers, nor does (22d) that scissors were selling hairdressers. Also note that even though it does not have an independent plural subject, (22b) can be shown to involve a plural *pro* subject, and hence is the same type of construction as sentences with the ONE+OTHER expression. The verb shows plural agreement although the nominative nouns are all singular, and the sentence cannot be paraphrased as (23a). Moreover, an explicit subject can be added to the sentence from which the participants in each of the plurality of events are recruited, as in (23b).

- (23) a. Otac, sestra i učitelj su potkazivali sina, brata i
 father sister and teacher AUX snitched.PL son.ACC brother.ACC and
 učenika.
 student.ACC

‘The father, the sister and the teacher snitched on the son, the brother and the student.’

- b. Građani su potkazivali otac sina, sestra brata, učitelj
 citizen.PL AUX snitched.PL father son.ACC sister brother.ACC teacher
 učenika.
 student.ACC

‘The citizens snitched on each other so that fathers snitched on sons, sisters on brothers, teachers on students.’

Observe further that both verbs *potkazivati* ‘snitch on someone’ and *prodavati* ‘sell’ in principle allow for a reciprocal relation, although the latter with serious pragmatic obstacles. Hence the non-reciprocity of the interpretation must be coming from the asymmetric relations expressed by the pairs of nouns used (*father-son*, *sister-brother*, etc.). Indeed, were one of the pairs symmetric, e.g. if

(23b) included the pair *brother-brother*, this would introduce a reciprocal sub-meaning to the aggregate semantics.

Sentences with a *noun+noun* expression in place of the expression ONE+OTHER show the requirement that there cannot be only one pair of nouns. Two is a minimum, and three or more yield the best stylistic results. The reason is again plausibly in the economy: the meaning expressed by only one pair of nouns is equivalent to the meaning of a simpler sentence in which the two nouns are realized in the respective argument positions, as in (24) (but see the next section for an additional argument from the syntactic mechanism behind the shared restriction).

- (24) Očevi su potkazivali sinove.
father.PL AUX snitched son.PL.ACC
'Fathers snitched on sons.'

We may conclude that Vicente's (2010) and Zimmermann's (2014) semantic analyses can be simplified: the component that imposes reciprocity (in Zimmermann's analysis the type-shift operation, in Vicente's the maximality of cumulation of events) should be relegated to pragmatics.

5 Syntax

Zimmermann (2014) postulates an underlying structure for the ONE+OTHER reciprocals where both its components are base-generated with a noun, as in (25a), and then a series of syntactic operations derive the surface form with a noun only in the antecedent, i.e. the subject in (25b).

- (25) a. Slikari su kritikovali [jedan slikar drugog slikara]
painter.PL AUX criticized one painter other.ACC painter.ACC
'The painters were criticizing one another.'
b. Slikari su kritikovali jedan drugog.
painter.PL AUX criticized one other.ACC
'The painters were criticizing one another.'

As her focus is on the semantics, the syntactic analysis is only partly laid out, and not each step in the derivation is fully specified. I propose the following syntactic analysis, much in the spirit of Zimmermann's view, but with some further technical elaboration, crucially aimed to represent the sharing of the same restriction by the two components of the ONE+OTHER expression as discussed in Section 4.

Building on Arsenijević (2006) in assuming that PartP is one of the universal projections of the nominal structure, which may result in a partitive marking in the presence of numerals and certain quantifiers, but is otherwise left without it, I argue that the surface subject starts out as a PartP of the higher nominal (corresponding to the ONE-component), as illustrated in Figure 1.

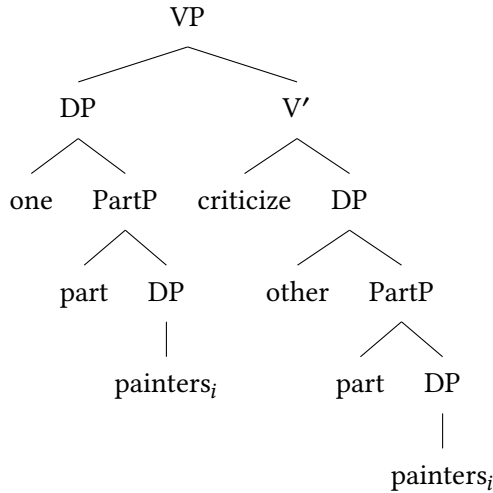


Figure 1: The base-generated VP ‘criticizes (one of the painters, other of the painters)’

As argued above, semantic well-formedness conditioned the two expressions from which the ONE+OTHER expression derives to share the same restriction. Syntactically, this means that they need to have identical PartPs. The further syntactic derivation goes as follows. The PartP from the OTHER-expression elides, as in Figure 2.

The remaining overt PartP then moves higher up in the structure to its argument position or to the position of the topic. In the given example, this is the subject position, as in Figure 3.

The ONE-component, or in the alternative expression another quantifier or even a noun, remains in the lower position, which plausibly matches the position of a floating quantifier.

It is the functional load of this configuration that makes it frequently generated, and gives it a somewhat idiomatic status. The degree of idiomatization is expected to vary across languages, and to correspond to a lower productivity of the configuration, i.e. with a fewer number of combinations of expressions that

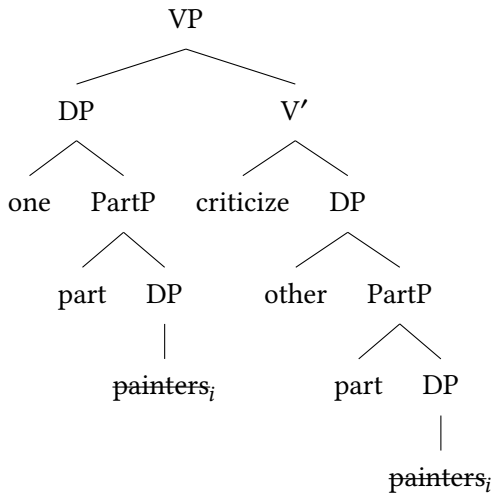


Figure 2: After ellipsis

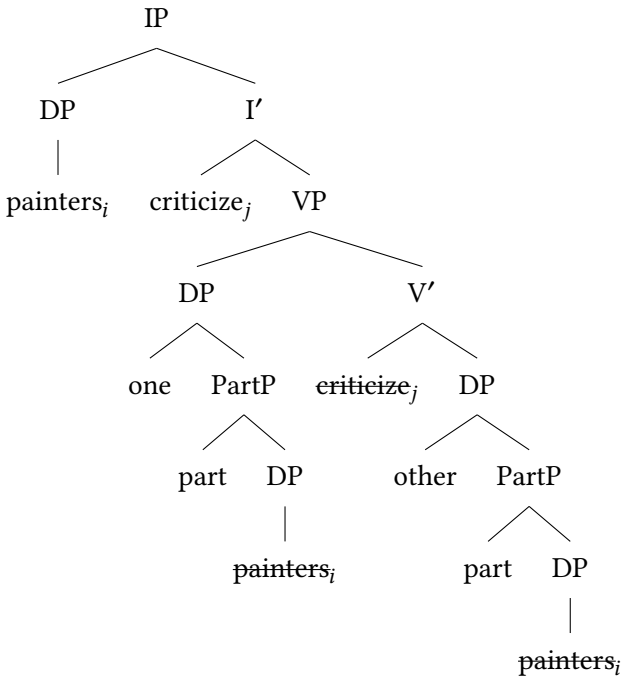


Figure 3: After the movement of the DP from the partitive complement to the specifier of IP

can occur in it. This further increases the pragmatic strengthening, making the reciprocal interpretation more likely or even the only option. Full idiomatization leads to reciprocity markers like *one another* or *each other* in English.

Moreover, while it is not a condition for the derivation of the ONE+OTHER expression, or for the reciprocal interpretation (see the discussion in Section 4), the type of interpretation involving a plurality of events (whether for a single VP, or for a reduced conjunction of more than one) fits a greater number of naturally occurring contexts, and hence is more prominent than the single event reading.

The two relevant DPs, corresponding to the ONE- and OTHER-components, can involve quantifiers or nouns, thus deriving examples as in (19) and in (22), and the partitive complement can also be pronominal, as in (22b), where it is a *pro*, or in (26), where it is an overt pronoun.

- (26) a. Oni su potkazivali jedan drugog.
 they AUX snitched.PL one other.ACC
 ‘They snitched on each other.’
 b. Oni su potkazivali otac sina, sestra brata, učitelj
 they AUX snitched.PL father son.ACC sister brother.ACC teacher
 učenika.
 student.ACC
 ‘Fathers snitched on sons, sisters on brothers, teachers on students.’

It is a conjunction of VPs in combination with ellipsis that leads to the structures as in (26b), which explains their strict requirement of a plural VP. This operation is not reserved for expressions with lexical nouns, as illustrated in (27).

- (27) Šahisti su igrali svaki protiv svakog, jedan protiv svih
 chess_player.PL AUX played each against each.GEN one against all.GEN
 i jedan protiv dvojice.
 and one against two.GEN
 ‘The chess players played each against each, one against all and one against two.’

The interpretation is that there was a plurality of events in which a group of chess-players played, and which included all the combinations of one playing one and some or all combinations of one playing all, i.e. of one playing two other players.

The availability of the reciprocal interpretation is conditioned by the identity of the two partitive complements. The proposed analysis predicts that they may

as well be different, but in that case a reciprocal interpretation does not obtain, as the participants in the plurality of events are not recruited from the same set. This is confirmed in SC:

- (28) Vojnici su nosili svaki (po) 6 bombi.
soldier.PL AUX carried each DISTR 6 bomb.GEN.PL
'The soldiers were carrying 6 bombs each.'

As discussed above, the combination of the nonspecific indefinite nature of the expression ONE+OTHER and the type of relational meaning of the OTHER-component make it underivable by the structure in (28).

While Vicente (2010) and Zimmermann (2014) explain the plural requirement for the antecedent of the ONE+OTHER expression by the reciprocal interpretation, the present view cannot resort to this explanation because it derives reciprocity in pragmatics. The requirement is explained by the count partitive relation (*one of DP, other of DP*), which can only be established with a plurality (cf. **one of the boy, *each of the girl, *two of the book*). The role of number is not exhausted by this restriction – it also matters what number is marked on the ONE- and OTHER-components for the interpretation of the expression and availability and type of available reciprocity. This issue is discussed in Section 6.

6 The role of number and grammatical aspect

In SC, each component of the ONE+OTHER expression may bear plural as well as singular number. Out of the four possible combinations of number on its two components, only one is not acceptable: that where the ONE-component is plural and the OTHER-component is singular, as illustrated in (29).

- (29) a. Susedi pomažu *jedni drugima*.
neighbor.PL help.PL one.PL other.DAT.PL
'Groups of neighbors help each other.' /
'The groups of neighbors that help – help other groups of neighbors.'
- b. Susedi pomažu *jedan* textitdrugom.
neighbor.PL help.PL one.SG other.SG.DAT
'The neighbors help each other.' /
'The neighbors are taking part in events of helping other neighbors.'
- c. Susedi pomažu *jedan drugima*.
neighbor.PL help.PL one.SG other.DAT.PL
'The neighbors help each other so that one neighbor helps the others.'

- d. ??/#Susedi pomažu *jedni drugom*.
 neighbor.PL help.PL one.PL other.SG.DAT
 Intended: ‘The neighbors help each other.’

The source of degradation in (29d) probably has to do with the markedness relation between the plural and the singular: *jedni* ‘one.PL’ presupposes a division of the set into pluralities, but the singularity of *drugom* ‘other.SG.DAT’ requires that each division is into one plurality and one singular member. Not only are such contexts unrealistic. There also is degradation coming from the fact that the first argument imposes a division into pluralities (the partitive complement is a set of pluralities), which makes it unlikely that the rest of the divisioned set is a singularity (as opposed to vice versa: when it is divided into singularities, the rest after taking one is likely to be a plurality itself). The availability of more appropriate alternatives such as *svi jednom* ‘all to one’ or one where the remaining single member receives a description (*svi onome kome je potrebno* ‘all to the one who needs it’) further contributes to the degradation.

This shows clearly that the number morphology on the ONE+OTHER expression and its alternatives has a semantic effect. With the plural, as in (29a), groups of neighbors are helping other groups of neighbors. With the singular, as in (29b), only situations where a single neighbor is helping a single other neighbor are allowed. In the latter case, the numerosity of the antecedent does not have to be two – greater plurals are possible too, as long as each (sub)event is assigned a pair of its members.

However, when the antecedent is a plurality consisting of two units of counting, as in (30), the two-membered plurality disallows the formation of nonidentical subpluralities, and hence in each situation, both the agent and the benefactor are restricted to being singulars. In examples of this type, as expected, plural marking on the ONE+OTHER expression is impossible.

- (30) Jovan i Petar pomažu {jedan drugom / *jedni drugima /
 J and P help.PL one.SG other.SG.DAT one.PL other.DAT.PL
 *jedan drugima}.
 one.SG other.DAT.PL
 ‘Jovan and Petar help each other.’

The proposed analysis follows Zimmermann (2014) in allowing the expression ONE+OTHER to be used with single events, and goes even further in allowing it for single non-reciprocal events. Section 3 shows empirically that this is correct

in SC. In the SC verbal domain, the role of the nominal grammatical number is played by the grammatical aspect.

SC verbs are marked for grammatical aspect – a verb can be perfective, imperfective, or biaspectual. Imperfective interpretations come in two main flavors: one in which the reference time falls inside the described eventuality, and another in which the reference time falls inside a plurality of consecutive iterations of the eventuality, as in (31) (e.g. Arsenijević 2006, Jabłonska 2007). Perfective verbs describe single instances of the described event within a reference time, as in (31b), and may derive plural interpretations only by distributing over plural reference times (Arsenijević 2006). Such distribution takes place in (31c), where the source of the plurality of events is the plurality of reference times, and each reference time contains only one instantiation of the event.

- (31) a. Jovan je kupovao lampe.
J AUX bought.IPFV lamp.PL
'Jovan was buying lamps.'
(one event of buying a plurality of lamps or a plurality of events of buying one or more lamps, both with a viewpoint within)
- b. Jovan je kupio lampe.
J AUX bought.PFV lamp.PL
'Jovan bought lamps.'
(one event of buying a plurality of lamps seen from after its temporal trace)
- c. Jovan je kupio lampe mnogo puta.
J AUX bought.PFV lamp.PL many times
'Jovan bought lamps many times.'
(a series of reference times, each with one instance of the event of buying a plurality of lamps seen from after its temporal trace)

Since reciprocity necessarily involves a plurality of (sub)events, for a single reference time, a telic VP with a perfective verb and a singular ONE+OTHER expression may refer to a single non-reciprocal event, or to a single reciprocal event. Hence the sentence in (32a) can in principle mean that one of the friends forgave the other, or, more prominently due to antipresupposition (see Section 3), that they forgave each other. The one in (32b) refers to an ongoing event of a friend forgiving the other friend or each other, viewed from within the temporal interval of the event, or to a plurality of such events, viewed from within the plurality. In both cases, the prominence of the reciprocal interpretations is even higher than in the perfective example.

- (32) a. Drugovi su *oprostili* jedan drugome.
 friend.PL AUX forgiven.PFV.PL one.PL other.DAT.PL
 ‘The friends forgave one to the other / each other.’
- b. Drugovi su *opraštili* jedan drugome.
 friend.PL AUX forgiven.IPFV.PL one.PL other.DAT.PL
 ‘The neighbors were forgiving one to the other / each other.’

It now becomes clear why in questions of the first type in the questionnaire from Section 3, the sentences with the ONE+OTHER expression all had an all-singular ONE+OTHER expression and a perfective verb.

The role of aspect too becomes more obvious in examples with conjoined or numeral antecedents. The imperfective aspect of the verb enables example (33a) to receive a partitioned reciprocity interpretation (a plurality of subevents, characterized by involving each a subset of the artists as the agent and a subset of the scientists as the theme or vice versa). With a perfective verb, as in (33b), this reading is difficult to get, because it only allows for one event of praising per reference time – and the partitioned reciprocity is based on a plurality of events. The most prominent interpretation is that the entire group of artists praised the entire group of scientists and vice versa, in one praising event.

- (33) a. Umetnici i naučnici su hvalili jedni druge.
 artist.PL and scientists AUX praised.IPFV.PL one.PL other.ACC.PL
 ‘The artists and the scientists were praising each other.’
- b. Umetnici i naučnici su pohvalili jedni druge.
 artist.PL and scientists AUX praised.PFV.PL one.PL other.ACC.PL
 ‘The artists and the scientists praised each other.’

Similarly, the noun+noun variant of the expression is degraded with perfective verbs, and derives an unlikely interpretation, where in (34) there is a single colliding event such that a girl collides with a boy, an old man with a young man, and a pro with a beginner, one snitching event where a father snitches on his son, a sister on her brother and a teacher on his student and one selling event where a hairdresser sells scissors, a tailor needles and a cook his pots.

- (34) a. ?Klizači su se sudarili devojka sa dečakom, starac
 skater.PL AUX REFL collided.PFV.PL girl with boy old_man
 sa mladićem, profesionalac sa početnikom.
 with young_man pro with beginner
 ‘The skaters collided so that a girl would collide with a boy, an old

- man with a young man, a pro with a beginner.'
- b. Potkazali su otac sina, sestra brata, učitelj
snitched.PFV.PL AUX father son.ACC sister brother.ACC teacher
učenika.
student.ACC
'Fathers snitched on sons, sisters on brothers, teachers on students.'
- c. ?Izbeglice su prodale frizer makaze, šnajder igle,
refugee.PL AUX sold.PFV.PL hair-dresser scissor.PL tailor needle.PL
kuvar šerpe.
cook pot.PL
'The refugees were selling stuff so that the hair-dresser was selling
his scissors, the tailor his needles, the cook his pots.'

Aspect and number show interaction which is clearest when the antecedent is a numeral-noun expression or a conjunction of singular nominals. The *one+ other* expression with both plural components in (35a) gets degraded with a perfective verb (unless there is a presupposed division of the psychics in two groups, e.g. that it is presupposed that two of the psychics are good guys and three are bad guys), but is well-formed with an imperfective in (35b) (the interpretation is that attacking events took place between different divisions of the five psychics). The reason is again that the imperfective verb introduces a plurality of events, and hence also a plurality of divisions of the antecedent, while for a small plural, whose members are well individuated in the context, the perfective verb implies only one division, and requires that it be disambiguated.

- (35) a. Pet vidovnjaka su napali {jedan drugog / ??jedni
five psychic.PL AUX attacked.PFV.PL one.SG other.ACC.SG one.PL
druge / *jedan druge}.
other.ACC.PL one.SG other.ACC.PL
'Five psychics attacked each other.'
- b. Pet vidovnjaka su napadali {jedan drugog / jedni
five psychic.PL AUX attacked.IPFV.PL one.SG other.ACC.SG one.PL
druge / *jedan druge}.
other.ACC.PL one.SG other.ACC.PL
'Five psychics were attacking each other.'

I leave the precise modeling of these interactions for future research.

7 Conclusion

The paper builds on the work of Vicente (2010) and Zimmermann (2014), who offer compositional analyses for the type of reciprocity expressions combining near semantic equivalents of the English words *one* and *other* in German, Russian, Spanish and a number of other languages. Both their analyses crucially involve a pair of non-overlapping participants, both contained within a plurality denoted by the antecedent of the expression. Vicente's analysis treats them as indefinites and additionally postulates a cumulation operation, yielding a plurality of events satisfying the derived restriction. Zimmermann's analysis takes them to be specific, and specifies the meaning with a single event. Both accounts compositionally derive meanings which are not reciprocal, i.e. where reciprocity is merely a special case, and in order to restrict the meaning to this special case, both postulate additional operations – maximal cumulation in Vicente, and type shift in Zimmermann. I argued that this additional operation (the maximal cumulation or the type shift operation) is not part of the narrow semantics of the expression. Rather, the narrow semantics of the respective expressions is approximately the one they derive without it, and the reciprocal interpretation is then reached through pragmatic strengthening induced by a set of competing alternatives.

Empirical support for this view is provided from SC, where the expression can have a non-reciprocal, as well as a single event interpretation. It is further argued that the reciprocal interpretation emerges from the non-specific indefinite semantics of both components of the expression in combination with the relational meaning of the component *OTHER*, which forces the two components to range over pairs within a single restriction. This is reflected in the proposed syntactic analysis, where these two components start out with identical partitive complements, with the one in the *OTHER*-component getting elided, and the one in the *ONE*-component raising to the position of the respective argument (in all the examples in this paper – the subject, although this is not necessarily the target position), thus yielding the surface order. The fact that the *ONE+OTHER* expression is only interpretable when the two expressions share their partitive base, as opposed to the pragmatic competitors of this expression, which also allow different partitive complements, provides it with the status of the default marker of reciprocity, even compared with expressions that, when reciprocally interpreted, force stronger reciprocal meanings. Evidence from SC, including sentences with different restrictions for the two components of the construction, support this analysis. The view that the expression is not necessarily plural, but a plurality of

events is pragmatically a more prominent interpretation, is further supported by the roles grammatical number and grammatical aspect play in its interpretation in SC.

Abbreviations

ACC	accusative	GEN	genitive	PL	plural
AUX	auxiliary	INST	instrumental	PFV	perfective
DAT	dative	IPFV	imperfective	REFL	reflexive
DISTR	distributive	NOM	nominative	SG	singular

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