Reflexive encoding of reciprocity: cross-linguistic and language-internal variation

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1. Introduction

The reflexive encoding of reciprocity is a genuine typological variable, insofar as both its presence in some languages and its absence in other languages can hardly be interpreted as accidental. On the one hand, there are multiple independent instances of this phenomenon across linguistic families and areas, which suggests that it must be motivated by universally relevant factors. On the other hand, the phenomenon is obviously not universal: in many languages, there is simply no formal overlap between reciprocal and reflexive encoding; some languages combine reflexive and non-reflexive strategies of reciprocal encoding in various ways. It seems plausible to assume that universal factors motivating language-specific choices of one encoding option over another in individual speech situations ultimately determine diachronic tendencies of reciprocal encoding, and thereby shape the overall cross-linguistic distribution of these options. It is therefore a theoretical challenge to account in a unified fashion for cross-linguistic and language-internal variation along the typological parameter.

This paper is organized as follows. Section 2 introduces a cross-linguistic classification of reciprocal constructions based on their formal similarity with reflexive constructions. The structural similarity between these construction types obviously goes deeper than the well-known and cross-linguistically recurrent use of formally identical overt markers: an overwhelming majority of reciprocal constructions exhibit the essentially reflexive-like property of decreasing the number of referentially independent nominal slots even if they do not actually contain a reflexive marker. The cross-linguistic predominance of this type of reciprocal constructions can hardly be directly motivated by the semantics of reciprocity, which, in contrast to reflexivity, does not involve any reduction in the number of participants. In Section 3, I argue that this phenomenon suggests that reciprocal constructions are unlikely to arise from grammaticalization of a reciprocal meaning, that is, from compositional strategies of encoding specific reciprocal

submeanings. Instead, the most likely diachronic root of grammaticalized linguistic reciprocity is reflexive encoding, more specifically, the reciprocal/reflexive duality inherent in multiple-participant reflexives. The lack of overt signs of this diachronic origin in many reciprocal constructions with reflexive-like syntactic structure does not contradict this hypothesis because this structure can be inherited by newly emerging reciprocal constructions from older reciprocal/reflexive constructions. By the same token, the multiple-participant reflexive construction can be thought of as a possible candidate for expressing at least some reciprocal submeanings even if it is not conventionalized in this function in a given language. This assumption justifies an OT-style approach to modeling the cross-linguistic and language-internal variation in the role of reflexive markers in reciprocal encoding (Section 4). The central hypothesis of this section is the existence of a universal constraint that requires to mark all clauses where two variables of a binary predicate are linked to a single referential index as reflexive, independently of the intended meaning. In a specific language, this constraint can be outweighed by more general and independently established universal constraints that penalize structural markedness and ambiguity, which are responsible both for the diachronic emergence and cross-linguistic recurrence of non-reflexive reciprocal constructions and for the language-internal context-dependent preferences for such constructions in languages where both reflexive and non-reflexive reciprocal constructions are available.

Emprically, this paper relies mainly on the database on the role of reflexive in reciprocal encoding compiled in cooperation with Vladimir Nedjalkov for the World Atlas of Language Structures (Maslova & Nedjalkov 2005); in particular, all statistical observations are based on the cross-linguistic data collected for this project. Theoretically, the paper is informed by numerous discussions with Joan Bresnan on the possibilities of closing the unfortunate gap between formal and functional approaches to typology opened by recent developments in Optimality Theory (OT) and the obvious conceptual similarities between OT-style conflincting constraints and competing motivations in functional typology.

2. Reflexive encoding of reciprocity: a cross-linguistic overview

2.1. Definitions

As a starting point, I adopt the traditional approach to the problem of cross-linguistic comparability, based on the isolation of a relatively transparent and easily identifiable meaning and/or context as a criterion for identification of comparable constructions in different languages. For reflexive constructions, the obvious diagnostic meaning is the identity of two participants in the event frame, or, in another terminological framework, of two variables of a binary predicate: a construction counts as reflexive if it contains a slot for a binary predicate $P(x,y)$ and can be used under the condition $x=y$. Two aspects of this definition seem worth stressing. On the one hand, it does not exclude non-specialized pronominal expressions from the domain of reflexivity, i.e. it is not required that the construction be available only under the condition of referential identity of two participants; if the same expression can be used for reference to a distinct participant as well, it still counts as reflexive. On the other hand, the definition does not exclude so called "middle", or detransitive, constructions (Lyons 1968: 373-374; Kemmer 1993; Dixon & Aikhenvald 2000: 11-12)). In particular, if an expression can be used to encode not only referential identity of two distinct variables, but also certain valence-decreasing modifications (anticausative, autocausative, etc.), it is still considered reflexive. This entails that a language-specific reflexive marking can amount to using a unary (e.g. intransitive) argument-structure construction in combination with a binary predicate.

There are three major reasons for these extensions with respect to more classical and restrictive definitions of reflexive, as adopted, for example, by Faltz (1985). First, they ensure that every language has at least one reflexive construction; accordingly, the question whether a reflexive construction can be used to encode reciprocity can be asked of every specific language. Secondly, these extensions effectively dispense with multiple blurred borderline cases, which tend to obstruct any cross-linguistic investigation, without going into details about whether the recurrence of such cases is due to insufficient analysis of specific languages or to dubious theoretical distinctions; these questions are irrelevant in the context of this paper. Last but not least, the broad definition

ensures that all expressions that can be used to encode both reflexivity and reciprocity are taken into consideration. On the one hand, it is well known that reflexive/reciprocal expressions often have a variety of other valence-decreasing meanings and thus can be classified as "middle" (Nedjalkov 1975; Kemmer 1993). Similarly, such expressions need not be specialized as coreference markers. For instance, the following To'aba'ita sentence contains two identical pronouns, which can but need not be intended as coreferential; in the former case, the intended meaning can be both reciprocal (as in this example) and reflexive (Lichtenberk forthcoming)

(1)   To'aba'ita (Oceanic; Lichtenberk forthcoming)

    Keero'a   *keko*   *thathami*   ***keero'a*** *'a-fa*   *bongi*   *'eri*
    3DU   3DU.SEQ like   3DU   at-CLF   day   that
     'The two of them liked each other on that day'.

For reciprocal constructions, the traditional diagnostic meaning is the conjunction of two instances of the same binary predicate with inverse distributions of variables or, in other terms, a combination of two tokens of the same event type with cross-coreferential participants. This meaning will be denoted as **RECP$^\&$** and can be represented in the following simplified form:

(2) **RECP$^\&$**$(P(x,y)) \equiv P(x,y)\&P(y,x)$

Exactly as in the previous case, this definition excludes neither "middle" reciprocal constructions, nor constructions that might be available under other conditions on the referential identity of participants. However, the study is limited to so-called subject-oriented reciprocal constructions, that is, the first variable of $P(x,y)$ is supposed to correspond to the primary syntactic slot in the basic (non-reciprocal) argument structure. In the context of this paper, it will be convenient to begin with a classification of reciprocal constructions into two major types, which can be referred to as unary and binary constructions. A reciprocal construction counts as **unary** if all reciprocants must be referred to within a single morphosyntactic slot (Section 2.2); a reciprocal construction is **binary** if it retains two referentially independent morphosyntactic slots of the

underlying non-reciprocal argument structure (Section 2.3).[1]

2.2. Unary reciprocal constructions

The class of unary reciprocal constructions can be further subdivided into two formal subtypes. The first subtype comprises constructions that retain all morphosyntactic slots of the non-reciprocal argument structure, but one of these slots is instantiated by a fixed simple or bipartite reciprocal expression; the Bamana sentence in (3) exemplifies a simple reciprocal expression, and its English translation, a bipartite expression.

(3) Bamana (Mande, Vydrine forthcoming)
    *Nànga   ní   à   mùsó`   bìla-lá   **å¢g¡n**   ná*
    Nzanga and   his   wife.ART   lean-PUNC RECP   upon
      'Nzanga and his wife insulted each other'.

The second subtype comprises valence-decreasing constructions, whereby one of the nominal slots of the corresponding non-reciprocal argument structure is absent, and two semantic roles of the main predicate are linked to a single morphosyntactic slot. The reciprocal meaning is expressed by a free or bound verbal modifier, as in (4) and (5), or, in some cases, just by the unary valence frame (6).

(4) Nivkh (Otaina & Nedjalkov, forthcoming)
    *0m0k-xe   0t0k-xe   **orχ orχ**   t'axta-d'-γu*
    mother-COM.DU   father-COM.DU RECP   get.angry-FIN-PL
    'Mother and Father got angry with each other'.

(5) Kuuk Thaayorre (Pama-Nyungan; Gaby 2004)
    *ngal   nhaanhath-**rr***
    1DU.INCL   REDUP:watch-RECP
    'We two are looking at each other.'

(6) West Greenlandic (Fortescue 1964: 166)
    *kunip-**put***
    embrace-3PL(INTR)
    'they embraced'

This sub-classification is not intended to be categorical; there are some intermediate cases (most of them probably corresponding to halfway steps of the grammaticalization path

from the first subtype to the second one), as well as combinations of these two strategies.[2] Essential in the present context are similarities between all unary reciprocal constructions; more specifically, all constructions of this type invoke (i) a binary predicate P(x,y) – either directly or, if the reciprocal expression is derivational, indirectly, (ii) a reference to a set providing the intended values for both variables x and y, which formally corresponds to the first argument of P, and (iii) a reciprocal expression, which can but need not formally instantiate the second argument of P. The fundamental property of these constructions is the decrease in the number of morphosyntactic slots suitable for independent nominal reference with respect to the number of distinct semantic roles, and, accordingly, with respect to the valence frame of P(x,y).

2.3. Binary reciprocal constructions

Binary reciprocal constructions are constructions that retain the valence frame associated with the basic predicate P(x,y), with the values of two variables specified in distinct morphosyntactic slots. The most common subtype of binary reciprocal constructions comprises structures containing a non-reciprocal clause and an additional component expressing reciprocity; it can be another clause, a fixed expression, or a combination of these.

(7)   Cantonese (Matthews and Yip 1994: 87)
          Ngóh   béi-min   kéuih kéuih béi-min   ngóh
          I   give-face   him   he   give-face me
          'He and I respect each other.'

(8)   *Her friends do not like me **and vice versa***.

It seems that the reciprocal expression of a binary construction can also be a clause-internal verbal modifier (e.g. an affix), but such constructions are extremely infrequent cross-linguistically and their status can be somewhat controversial; for instance, the following sentence instantiates the transitive argument structure, yet the cross-reference prefix on the verb indicates plurality of the subject:

(9) Tonga (Bantu; Collins 1962: 74)
    *Joni   ba-la-yand-**ana**   amukaintu   wakwe*
    J.   3PL-PRES-love-RECP   wife   his
    'John and his wife love each other.' (lit. 'John mutually loves his wife.')

While some sort of binary encoding of reciprocity must apparently be available in any language (one can hardly imagine a grammatical constraint against biclausal sequences like the one in (7) under any reference-related conditions on participating NPs), unary structures are overwhelmingly predominant cross-linguistically as reciprocal constructions, i.e. as conventionalized means of expressing reciprocity[3] (Maslova & Nedjalkov 2005). Moreover, if binary reciprocal structures are grammaticalized, they tend to evolve into unary constructions, with a single slot dedicated for reference to the set of reciprocants and "frozen" (and, possibly, subsequently reduced) original distinct slots. An example of this development is the reciprocal construction in Amele, illustrated in (10). A certain degree of grammaticalization of this construction is manifested by the "frozen" 3SG cross-reference suffixes on both forms of the lexical verb, which are used independently of the actual relation between reciprocants and interlocutors.

(10)   Amele (Trans-New Guinea; Roberts 1987: 307)
        *Ele   ew-udo-**co-b**   ew-udo-**co-b**   ow-a*
        1DU   despise-IO.3SG-DS-3SG   despise-IO.3SG-DS-3SG   1DU.SUBJ-PST
        'We (two) despise each other'

2.4. Reciprocal/reflexive polysemy

Obviously, the phenomenon of reciprocal/reflexive polysemy is limited to the domain of unary reciprocal constructions; to put it the other way round, if a reflexive construction can be used to express reciprocity, the result is a unary reciprocal construction. From this point of view, unary reciprocal constructions fall into three major subtypes. The first subtype subsumes genuinely ambiguous reflexive/reciprocal constructions, as exemplified in (11)-(12).

(11) West Greenlandic (Eskimo-Aleut; Fortescue 1984: 166)[4]
    ***Immin-**nut   *tuqup-pu-t*
    RFL-ALL   kill-IND-3PL

'They killed themselves' or 'They killed each other'

(12) Wari (Chapacura-Wanham; Everett & Kern 1997: 191)
*para   mana' **xujuhu'** ?*
therefore angry RFL:2PL
'Why are you angry with each other?' or 'Why are you angry with yourselves?'

In what follows, such constructions are referred to as **reflexive reciprocals**.

Secondly, there are reciprocal constructions that can be thought of as containing a reflexive marker and an additional disambiguating expression, which enforces reciprocal interpretation. Such constructions will be referred to as **reflexive-based reciprocals**. The disambiguating expression can but need not be capable of functioning as an autonomous reciprocal marker: in (13), the disambiguating expression is an iterative suffix, in (14), a reciprocal suffix.

(13) West Greenlandic (Eskimo-Aleut; Fortescue 1984: 166)
Immin-*nut*   *tuqu*-**rar**-*pu-t*
RFL.PL-ALL   kill-**ITER**-IND-3PL
'They killed each other.'

(14) Evenki (Nedjalkov & Nedjalkov forthcoming)
a. *Nuŋart0n* **merwer** *awžara*
   They   RFL   wash.3PL
   'They wash themselves.' or 'They wash each other.'
b. *Nuŋart0n* **merwer** *aw**maat**čara*
   They   RFL   [RECP]wash.3PL
   'They wash each other'.

More frequently, the disambiguating component of a reflexive-based construction is a free expression, e.g.

(15) Djaru (Tsunoda forthcoming)

a. *mawun-tu   nga=**lu**=**nyunu**   pung-an*
   man-ERG   C=3PL.SB=RFL   hit-PRES
   'The men are fighting' or 'The men are hitting themselves (in mourning).'

b. *nga=rnalu=**nyunu**   pirrirrki yaan-inyurra   **wayininy mirni**-**mirni**=lu*
   C=1PL.EXC.SB-REFL shoot-PAST.NARR   in.return
   'We shot one another in return'.

(16) To'aba'ita (Oceanic; Lichtenberk forthcoming)

*Roo   wane   kera   ngata-fi   keero'a   **kwailiu***
two   man   3PL.FACT   berate-TR 3DU   RECP
'The two men berated each other' (cf. (1)).

Finally, there are unary reciprocal constructions that exhibit no formal overlap with their reflexive counterparts (the English construction with *each other* is a case in point); they will be referred to as **non-reflexive unary reciprocals**. The reciprocal expressions of non-reflexive reciprocal constructions can but need not be compatible with reflexive markers, i.e. they can but need not serve as disambiguating expressions of reflexive-based construction. For example, Russian *drug druga* and German *einander* do not occur in reflexive-based constructions, whereas Bulgarian *edin drug* and French *l'un l'autre* do.

3. Reflexive roots of linguistic reciprocity

3.1. Reciprocity, reflexivity and unarity

As mentioned in Section 2, an overwhelming majority of reciprocal constructions are unary. In fact, unary reciprocals are so familiar and pervasive that it generally remains unnoticed in the literature that this structural property conflicts with the semantic structure of reciprocity. This conflict becomes obvious if we compare reflexive and reciprocal constructions: for reflexives, the unary structure is directly and transparently motivated by the very essence of reflexive meaning, which entails the reduction of the number of participants in the event frame. In contrast to this, reciprocity does not reduce the number of participants, as shown by its semantic representation (see (2)), as well as by the very existence of binary reciprocal constructions in some languages (see Section 2.3). If we take **RECP&** not as a convenient heuristic intended solely for establishing cross-linguistic comparability, but also as a genuine semantic "core" (or prototype) of linguistic reciprocity (Lichtenberk 1985: 21; Kemmer 1993: 96-97) binary structures (in particular, various biclausal sequences) would appear to be the most transparent and presumably universally available strategy of reciprocal encoding. The question is, then, why are reciprocal constructions predominantly unary? The answer I am going to argue for in this section is, informally, that the roots of linguistic reciprocity are reflexive; to be more accurate, I suggest that the multiple-participant reflexive constructions constitute

the most likely diachronic source of conventionalized reciprocal constructions.

Although the very possibility of a reflexive-to-reciprocal diachronic path is established beyond reasonable doubt (see (Heine and Miyashita, this volume) for a detailed discussion and references), it is usually reconstructed only for reflexive and reflexive-based reciprocal constructions. It seems, however, that unary **non-reflexive** reciprocal constructions can also be traced back to a reflexive source. The first step of such a development involves conventionalization of a reflexive-based reciprocal construction, whereby an additional expression is introduced into a reflexive reciprocal construction for disambiguation purposes (see Section 2.4). At the next stage, the reflexive marker can be dropped, and the disambiguating expression begins to function as an autonomous reciprocal marker. A clear example of such a development is provided by the history of German, where the reciprocal expression ***einander*** appeared as a disambiguating component of ***sich***-based reciprocal construction in the twelfth century (Lockwood 1968: 69f.) and was used in this function till the seventeenth century (Vernaleken 1861: 93; Behaghel 1923: 306). In such a situation, the inherited unarity of the resulting reciprocal construction would be the only visible trace of its reflexive source. This indicates that the likelihood of reflexive-to-reciprocal development can be significantly higher than suggested by the synchronic frequency of reflexive and reflexive-based constructions[5] and can account for cross-linguistic predominance of unary reciprocal constructions in general.

Before I present my arguments for this hypothesis, a note is in order. The notion of conflict between the semantics of reciprocity and its predominant structural manifestation, as outlined above, is based on the assumption of the central role of **RECP**[&] in the network of reciprocal meanings. This assumption, albeit common in the functional typology, is far from being self-evident. Most importantly in the present context, the reciprocal semantics can also be construed as being inherently unary; the details of such construal would, of course, depend on the theoretical framework adopted, but the general idea is that the reciprocal meaning combines a **set** of entities and a binary predicate with both variables ranging over this set, as in the following representation from (Dalrymple et al. 1998: 83):

(17) RECP({a, b, c....}, λ*xy*.P(*x*, *y*))

A set-based representation of reciprocal semantics does not single out **RECP**[&] (as opposed to multiple-participant reciprocity) and provides a more adequate semantic description of unary reciprocity. Indeed, there seem to be no languages which would have a productive unary reciprocal construction and at the same time limit the potential number of reciprocants: multiple-participant reciprocity can always be expressed (Maslova 1999: 169-171). This suggests that if a language has a unary reciprocal construction, then it has a set-based reciprocal semantic structure like in (17) (rather than just a conjunction-based structure like in (2)). However, this cannot account for the cross-linguistic predominance of unary reciprocal constructions unless we assume that the unary reciprocity is a universal linguistic feature, present in a language independently of whether or not it has a unary reciprocal construction, or indeed any productive reciprocal construction. Since the set-based semantic representation of reciprocity (like in (17)) seems to be motivated exactly by the structure and semantics of unary reciprocal constructions, such an assumption would create a conspicuous degree of circularity in the cross-linguistic analysis of reciprocity.

The approach adopted here is based on the idea that the speakers of a language without a conventionalized reciprocal construction would occasionally need to describe reciprocated events or relations, and would therefore resort to available means of doing so. However, the meanings of such sentences obviously cannot be equated with the meaning of a unary reciprocal construction: on each particular occasion, the intended meaning would be considerably more specific, and the choice of an appropriate encoding strategy would, as a rule, strongly depend both on the meaning itself and on its context (this state of affairs is described in some detail for a still reciprocal-less state of Germanic by Plank (this volume)). The rise of a conventionalized reciprocal construction can be thought of as an outcome of competition between such strategies, which depends, among other things, on two interrelated factors, namely, the semantic potential of each strategy (i.e. the range of reciprocal meanings it can express) and its overall discourse frequency.[6] The latter would depend, in its turn, on the discourse frequency of specific meanings

within its semantic domain and of the range of contexts in which it is likely to be chosen. On the other hand, the structural unarity of the resulting construction can be either inherited from the original strategy or acquired along the path of grammaticalization. My arguments for multiple-participant reflexivity being the most likely source of reciprocal constructions are therefore two-fold. On the one hand, it belongs to the universal set of exploratory strategies for expressing reciprocity and is likely to achieve a higher discourse frequency than the competing strategies; on the other, it is the only strategy from which the structural unarity of the resulting construction can be inherited, and its inherent unarity endows it with certain functional advantages over competing strategies.

3.2. Compositional strategies of reciprocal encoding

There are two classes of reciprocal meanings for which compositional strategies appear to be universally available. To begin with the most obvious case, **RECP$^{\&}$** can be easily encoded in the absence of a conventionalized reciprocal construction: it can be safely assumed that every language has what can be referred to as **biclausal reciprocal strategy**, available independently of whether or not a unary reciprocal construction is available as well, e.g.

(18)   Russian
    a.   *Maša i   Vanja zameti-l-i   **drug drug**-a*
          M.   and V.   notice-PST-3PL RCP RCP-ACC
          'Masha and Vanya noticed each other.'
    b.   *Maša zameti-l-a   Van-ju, a   on   eje*
          M.   notice-PST.3SG.F V-ACC and   he   her
          'Masha noticed Vanya, and he (noticed) her.'
    c.   *Maša zameti-l-a   Van-ju, a   on   eje   net*
          M.   notice-PST.3SG.F V-ACC and   he   her   NEG
          'Masha noticed Vanya, but he didn't (notice) her.'

The first sentence exemplifies a unary reciprocal construction, while the second renders the same meaning by means of a biclausal sentence with the predicate of the second clause omitted because of its identity with the first one and the proper names replaced with personal pronouns; the third sentence demonstrates that this simplified biclausal sequence is not a reciprocal construction, since the second proposition can be negated.

However, sentences (18a) and (18b) are virtually equivalent semantically.

As witnessed by the binary reciprocal constructions attested in some languages, a biclausal strategy can be conventionalized as a reciprocal construction, and even eventually evolve into a unary construction (see Section 2.3). Such a development must apparently involve a combination of reciprocal encoding strategy with some sort of topicalization strategy, with both reciprocants referred to by means of a single topic expression. Obviously, this is a necessary but not sufficient condition for semantic extension into the domain of multiple-participant reciprocity: any binary strategy, whether or not it is conventionalized, limits the number of reciprocants to two; even if this structural constraint is circumvented (for example, by topicalization of the set of reciprocants), the original (and highly iconic) "two-events" semantics of a biclausal strategy may decrease the likelihood of its being used for descriptions of multiple-participant reciprocal situations and thus hinder its conventionalization in this function. The same property of biclausal strategies can also prevent them from being recruited for encoding of "single-event" reciprocal situations (see Section 3.4).

Multiple-participant reciprocal meanings can be encoded compositionally insofar as they can be reduced to a combination of two quantifiers, which are independently present in the lexicon. The canonical case of such a meaning is the so-called "strong reciprocity", which can be, in a simplified form, represented as follows:

(19) **RECP$^\forall$(P(x,y))** $\equiv \forall x \forall y{\neq}x$ P(x,y)

The essential property of any specific reciprocal meaning of this sort is that it contains a separate quantifier for each argument (as shown in (19) for strong reciprocity). This structure can be iconically rendered in a natural language. Example (20a) demonstrates the possibility to express the strong reciprocal meaning compositionally, without resorting to a conventionalized unary construction; similar alternative expression, with other quantifiers, could easily be given for weaker reciprocal meanings as well (an example is given in (20b)):

(20)   Russian
         a.   ***Každyj*** *učastnik   horošo   zna-l*   ***vse-h***   ***ostal'n****-yh*

Each   participant well   know-PST.3SG.M   all-ACC other-PL.ACC
'Each participant knew all the others well.'

b. ***Každyj**   učastnik   horošo   zna-l*   **nekotor**-*yh*
Each   participant well   know-PST.3SG.M   some-PL.ACC
***drug**-ih*
other-PL.ACC
'Each of them knew some of the others well.'

I will refer to this class of strategies of reciprocal encoding as **distributed**. Note that distributed strategies can also be used to express reciprocity in languages having unary reciprocal constructions, in those contexts where these constructions are not available due to syntactic constraints, e.g.

(21)   Russian

a. ***Každyj**   učenik   duma-l,*   *čto   učiteljnica   hvalit*
each   student   think-PST.3SG   that   teacher   praise-PRES.3SG
***drug**-ogo*
other-ACC

b. **Oni*   duma-l-i*   *čto   učiteljnica   hvalit*   **drug drug**-*a*
They   think-PST-3PL   that   teacher   praise-PRES.3SG RCP RCP-ACC
'Each thought that the teacher was praising the other.'

Distributed strategies of this sort are not conventionized reciprocal constructions, insofar as the participating quantifiers need not quantify the same set, although without overt references to different sets the reciprocal interpretation is most likely in most contexts, cf. (20a) and (22):

(22)   Russian
***Každyj**   učastnik   horošo   zna-l*   ***vse**-h   **ostal'n**-yh*
Each   participant   well   know-PST.3SG.M   all-ACC   other-PL.ACC
dokladčik-ov
presenter-PL.ACC
'Each participant knew all the other presenters well.'

Even though bipartite reciprocal expressions reminiscent of distributed strategies (such as *each other*) occur as reciprocal markers of unary constructions, these strategies themselves are not unary in the same sense. Conversely, there seem to be no

conventionalized unary reciprocal constructions with the component quantifiers located in their respective morphosyntactic slots. Instead, bipartite markers of unary reciprocal constructions invariably occur in the secondary morphosyntactic slot of unary reciprocal constructions, exactly like reflexive expressions do, and their quantifier-like components cannot be linked to distinct sets. In other words, the composite structures of the distributed type illustrated in (20) are apparently never grammaticalized in their genuinely iconic distributed form. Yet if a grammaticalization path starting with a distributed strategy and leading to a unary reciprocal construction had been at all common, at least some intermediate stages with the first quantifier still in its original position would have shown up in cross-linguistic surveys. As it is, the available typological data gives a distinct impression of discontinuity, with no visible "bridge" between compositional distributed strategies and fully conventionalized unary reciprocal markers built from similar lexical material, which indicates that such a development is not very probable.[7]

Since bipartite markers of the same sort also occur cross-linguistically as disambiguating expressions of reflexive-based constructions, it seems reasonable to hypothesize that the lexical material of a distributed strategy can be recruited for disambiguation of reflexive reciprocal construction, and only then gradually conventionalized as autonomous reciprocal markers of unary constructions (see Section 3.1 for a documented example of such a development). In this case, the unary structure is inherited from the reflexive source, whereas the lexical material comes from a compositional distributed strategy. This hypothesis would explain the apparent discontinuity between distributed strategies and unary constructions. Another plausible explanation of the same phenomenon is grammatical borrowing: since bipartite reciprocal markers are fairly semantically transparent, they can be easily recreated in a borrowing language from its own lexical material; in this case, the ultimate source of the unary reciprocal construction belongs to the donor language.

Note that the availability of compositional reciprocal strategies along with reciprocal constructions demonstrates that the reciprocal meanings are never obligatory in the sense fully grammaticalized meanings are; that is, reciprocity is apparently never

grammaticalized to the point where the grammar requires every reciprocated event to be marked by means of a reciprocal construction. In contrast to this, the reflexive meaning tends to be strongly grammaticalized in this sense: if the language has a specialized reflexive expression, its use in descriptions of reflexive events is usually mandatory. This cross-linguistic difference between reflexivity and reciprocity appears to be semantically motivated: whereas a reflexive event differs from a same-type event directed towards another participant, a reciprocal event consists of its sub-events. Consequently, the lack of obligatory reflexive marking would lead to recurrent ambiguity between two quite different interpretations, whereas the lack of obligatory reciprocal marking just licenses as it were incomplete descriptions of complex situations (which are inevitable in any language anyway). An obvious result of this difference is a consistently higher degree of grammaticalization of the reflexive meaning; in particular, reflexive constructions are likely to be structurally simpler and occur more frequently than the corresponding non-reflexive reciprocal constructions (if any) and compositional expressions. As will be shown in Section 4, this difference may play a significant role in the choice of reflexive encoding of reciprocity over non-reflexive options.

3.3. Multiple-participant reflexivity as an exploratory reciprocal-encoding strategy

Apart from the compositional strategies, another grammatical construction can be used as an "exploratory expression" (Harris and Campbell 1995: 54, 56) of reciprocity. The reflexive construction combined with a reference to a set of participants seems to be universally available at least in this exploratory function, since reciprocity is an inherent aspect of its semantics. More specifically, such a combination can have two distinct submeanings: it can describe a set of reflexive events with different participants, or a single reflexive event with the whole set of participants playing both roles. Examples in (23) seem to provide contextual information sufficient to distinguish between these meanings:[8]

(23) a. *People who choose citizenship in a different nation can take credit and justifiably* ***feel proud of themselves*** *for making that choice and for enduring the hardships it may have entailed (learning a new language, adopting new styles of dress and new standards of morality).*

　　b. *But with increasing affluence and equality, most black people followed the path of Martin Luther King toward full integration, and began* ***calling themselves***

*African-Americans in the same way as Americans of Irish ancestry **call themselves** Irish-Americans.*

The second, collective, meaning (**RFL**^{COLL}) corresponds to a complex set of events in which two distinct roles are played by members of the same set and thus differs from reciprocity proper only insofar as reflexive individual events are not explicitly excluded. To put it the other way round, this meaning encompasses unary reciprocity, since two participant roles are linked to the same set of referents and individual sub-events are not necessarily reflexive, i.e. they can involve different members of the set.

RFL^{COLL} as a submeaning of reflexive construction differs from the semantics of a reflexive reciprocal construction in that reflexivity and reciprocity constitute two aspects of a single meaning, rather than two alternative meanings, one of which has to be recovered from contextual clues for proper interpretation. However, reflexive and reciprocal aspects of multiple-participant reflexivity can also become more or less salient depending on the context. For instance, although the reflexive form of the verb *pari-tj* 'to clean by steam' in Russian would usually express strictly reflexive meaning, it can be used to describe a **RECP**-like situation in a context like in (24a), since the traditional Russian *banya*-style bathing includes washing one another (the use of conventionalized reciprocal construction in the same context would exclude the events of self-washing from the complex situation being described). Sentence (24b) is an announcement in St. Petersburg Underground, which sounds slightly strange, but nonetheless carries an understandable message, i.e. a request to increase the distance from one another (rather than to distribute oneself evenly along the platform, as the literal interpretation would imply). Formally, a set of passengers is requested to perform a single reflexive (self-directed) action, yet individual passengers are asked to perform a set of reciprocal actions.

(24) Russian

    a.   *Oni   parili-**sj**   v   ban-e*
          They   steam.PST.PL-RFL   in   banya-OBL
          'They steamed in the banya.'

    b.   *Ravnomerno   raspredeljajte-**sj**   po   vsej   dline   platform-y*
          Uniformly   distribute.IMP.PL-RFL on whole   length platform-GEN
          'Distribute yourselves evenly along the whole length of the platform.'

These observations suggest that there is no clear-cut boundary between multiple-participant reciprocity and reflexive reciprocal constructions; this distinction is rather a matter of degree to which two inherent aspects of multiple-participant reflexivity are differentiated. Accordingly, a combination of reflexive encoding with a set-referring expression in the primary slot can be thought of as a universally available strategy of reciprocal encoding, whether it has been conventionalized in this function or just can be occasionally used as an exploratory strategy. Insofar as a multiple-participant reflexive encoding strategy is employed in the contexts where the reflexive aspect of its meaning is excluded or downplayed, reciprocity can be gradually differentiated from reflexivity as a separate meaning, first as a context-dependent submeaning, and then, possibly, by means of disambigutating expressions in other contexts. The first step leads to the rise of reflexive reciprocal constructions, and the second, to reflexive-based constructions, which can eventually evolve into non-reflexive unary constructions; for a detailed discussion of this diachronic path, see Heine & Miyashita, this volume.

It should be noted that some unary reciprocal constructions exhibit formal similarity or identity with other (i.e. non-reflexive) constructions, in particular, with collective constructions or various expressions of verbal plurality, e.g. iterative constructions (Kemmer 1993: 99-1000; Kemmer 1997; Lichtenberk 1985, 1999; Maslova 1999). In this paper, I will not discuss such possibilities, because I am primarily interested in the diachronic source of structural unarity, understood as linking two distinct roles of a binary predicate to a single referring expression, and neither collective nor iterative constructions are unary in this sense. It seems important to mention, however, that iterative markers can also function as reciprocal disambiguating expressions in reflexive-based constructions (see (13)) and thus can acquire their reciprocal meanings from such contexts (see Bybee et al. 1994: 285-289 on this mechanism of semantic change).

3.4. Compositionally ineffable reciprocal meanings

There are two overlapping classes of meanings which are commonly encoded by unary reciprocal constructions and are ineffable compositionally. The first class (denoted as **RECP**$^{\approx}$ below) encompasses loose, underspecified descriptions of sets of similar events where participants playing different roles are construed as a single set, but no fully

specified reciprocal submeaning (which could be expressed by means of a distributed strategy) is intended. For instance, a sentence like (25) can loosely describe a set of simultaneous conversations between various groups of conference participants, which would be appropriate independently of whether all of them are actually talking. Any compositional near-equivalent of this sentence would make the meaning considerably stronger and more specific than intended.

(25) Russian
*Učastniki   konferenci-i   razgovariva-jut   **drug**   s   **drug**-om.*
Participants conference-GEN   talk-3PL   RCP   with   RCP-INST
'The conference participants are talking with one another.'

The ability of conventionalized reciprocal constructions to express the **RECP**≈ meaning is related to the fact that they neutralize the semantic distinctions between distributed compositional strategies. For example, the sentence in (26) constitutes a feasible alternative to both sentences in (20):

(26) Russian
*Učastnik-i   horošo   zna-l-i   **drug**   **drug**-a*
participant-PL well   know-PST-PL   RCP   RCP-ACC
 'The participants knew each other well.'

In other words, the **RECP**≈ meaning appears to emerge as a result of grammaticalization, which inevitably neutralizes some semantic distinctions and thus opens the possibility of underspecified descriptions of reciprocal-like combinations of events. On the other hand, the distinctions between specific reciprocal meanings are also neutralized by the multiple-participant reflexive strategy of reciprocal encoding, that is, in contrast to compositional strategies, it can be used for **RECP**≈-descriptions. This is illustrated by examples (24) above, where the reciprocal meaning remains underspecified.

The second class of compositionally ineffable meanings corresponds to what can be referred to as single-event reciprocity (denoted as **RECP**s below), whereby a reciprocal event can be construed as saliently different from a set of asymmetrical events. To the extent that this class of event types can be described in a language-independent fashion, it subsumes culturally and/or biologically salient interactions between participants with essentially identical roles (Kemmer 1993: 102-119). The most obvious

and widely cited example of a salient distinction between **RECP^S** and **RECP[&]** is probably *kissing*: a sentence like *They kissed* can and usually does refer to a single event quite different from two simultaneous reciprocal kisses. Another set of recurrent examples is provided by verbs of speech, insofar as a dialogue cannot be equated with two simultaneous monologues.

In the following discussion, it will be convenient to distinguish between **RECP^S**-predicates and **RECP^S**-oriented predicates. The former concept reflects the fact that the **RECP^S**-meaning is usually to some extent integrated into the lexicon, so that such events are signified by symmetric predicates (as in *She married him*), sometimes derived from their asymmetrical counterparts by means of a non-productive derivation process (27a) or a lexicalized reciprocal derivation (27b) (see also (Siloni, this volume)).

(27) a. Luvale (Horton 1949:102)
    *-íw-**asana***
    -hear-RECP
    'consult, agree'
  b. Yakut (Pekarskij 1959: 312, 317)
    *et-**is**-*
    say-RECP-
    'speak with each other; quarrel, sqaubble'

Thus, the concept of lexical reciprocal is essentially language-specific. In contrast to this, **RECP^S**-oriented predicates signify events that are asymmetrical, yet conceptually similar to as it were "one-way" components of common symmetrical events (like *kiss* or *talk*). This concept can also be viewed as language-specific, and, even more so, culture-specific, but it is much more uniform cross-linguistically, since such types of human interactions as fighting, talking, and, broadly speaking, love, seem to be universally salient. The **RECP^S**-oriented predicates serve as a natural lexical pool for single-event reciprocal descriptions, but only if a language has an appropriate strategy of reciprocal encoding. The essential property of an appropriate strategy is a "single-event" construal of the situation, which gives an obvious advantage to the reflexive strategy over the compositional strategies. On the other hand, the context of a **RECP^S**-oriented predicate effectively counteracts the only functional disadvantage of this strategy, namely, the presence of the additional reflexive meaning: exactly because the corresponding symmetrical events are so common and salient, the **RECP^S**-interpretation of a multiple-participant reflexive encoding is likely to be triggered by the lexical context. The major

role of these contexts in the rise of reflexive reciprocal constructions is demonstrated by languages where this encoding is conventionalized only for **RECP**^{S}-oriented predicates (see also Kemmer 1993: 119-123; Heine and Miyashita, this volume).

The **RECP**^{S}-meaning seems to constitute the genuine core of linguistic reciprocity. Cross-linguistically, this is demonstrated by the fact that some languages have reciprocal constructions only for **RECP**^{S}-oriented verbs (it is difficult to estimate the frequency of such languages in a reliable way, since lexical constraints or lack thereof are often not mentioned in descriptive grammars). Preliminary estimates also show that this meaning occurs considerably more frequently in discourse than other reciprocal meanings.[9] Finally, it also appears to constitute the prototype of reciprocity, at least for authors of descriptive grammars, who sometimes provide examples of reciprocal constructions only for **RECP**^{S}-oriented verbs. Although this practice often leaves the reader ignorant of the actual productivity of reciprocal constructions, it can also be viewed as an indirect confirmation of the universally higher discourse frequency of this meaning. This suggests that an encoding strategy whose semantic range encompasses the **RECP**^{S}-meaning will generally achieve a considerably higher discourse frequency than a strategy that does not allow for a "single-event" construal.[10]

An important point here is that symmetry doesn't entail unarity, i.e. an appropriate strategy need not, strictly speaking, be unary. On the contrary, the very concept of symmetry is inherently linked to binary predicates, and can hardly be adequately applied to unary ones.[11] However, monoclausal binary reciprocal constructions of the type exemplified in (9), which would mirror the binary valence frame of symmetric predicates, are extremely rare cross-linguistically. Moreover, **RECP**^{S}-verbs commonly (if not invariably) have unary reciprocal valence frame, where participants referred to in the primary slot have to be interpreted as interacting with each other in the way signified by the verb (as in *They fought*). Moreover, the unary valence frame can signify reciprocity with some **RECP**^{S}-oriented verbs (as illustrated for the verb *kiss* above). An obvious functional advantage of the unary valence frame is its suitability for encoding single reciprocal-like multiple-participant events (e.g. brawls or discussions), that is, in effect, to express **RECP**^{S} and **RECP**$^≈$ simultaneously (as in (25)). Apart from this, it also allows for encoding of both participants of a symmetric event by a single NP, as opposed to two distinct references required by the binary frame.

The unary valence frame associated with **RECP**^{S}-predicates constitutes a possible

alternative to the reflexive origin of reciprocity as an explanation of the cross-linguistic predominance of unary reciprocal constructions. However, this class of constructions, i.e. unary (detransitivized) variants of binary predicates, is also characterized cross-linguistically by the reciprocal/reflexive ambiguity, which is usually resolved by the lexical context (cf. *They kissed* vs. *They shaved*). Accordingly, a lexical extension of this structure to subsume other predicates, if possible, must involve the rise of disambiguating reciprocal expressions, i.e. exactly the same process of "extracting" the reciprocal semantic structure from an ambiguous grammatical structure as outlined above for reflexive-based constructions. In other words, such a process can be viewed not as an alternative to the hypothesized reflexive-to-reciprocal development, but rather as a specific version of the same process, just as detransitivization without overt reflexive marking can be viewed as a kind of reflexive construction (see Section 2.1).

3.5. Summary

Assuming that the likelihood of a non-conventionalized encoding strategy being conventionalized depends on its discourse frequency, it can be hypothesized that the apparently rather low probability of compositional reciprocal strategies turning into grammaticalized reciprocal constructions is determined, possibly among other factors, simply by a relatively low discourse frequency of the corresponding specific reciprocal meanings. As it seems, reciprocity is expressed frequently only with a relatively narrow class of **RECP^S**-oriented predicates. To put it the other way round, the single-event reciprocity seems to be by far the most frequent and cross-linguistically significant reciprocal meaning. If so, then a reciprocal encoding strategy is likely to achieve a discourse frequency sufficient to trigger grammaticalization processes only if it is employed to encode the **RECP^S** reciprocity, possibly but not necessarily along with other reciprocal meanings. Yet exactly this class of meanings is scarcely compatible with compositional strategies, whereas the disadvantages of reflexive strategy are effectively neutralized by the lexical context of **RECP^S**-oriented predicates. Consequently, grammaticalized reciprocity is more likely to originate from multiple-participant reflexivity than from a compositional reciprocal strategy; once it is conventionalized as a reciprocal encoding strategy in some contexts and its reciprocal meaning is thus established, it can replace the compositional strategies in other contexts.[12]

Whereas the **RECP^{S}**-meaning is likely to function as the major "trigger" in the rise of conventionalized reciprocal constructions, the other compositionally ineffable meaning, **RECP$^{\approx}$**, seems to arise as an accidental side-effect of this process: once a language has conventionalized a single construction subsuming a range of different specific reciprocal meanings, this construction can be recruited for intentionally underspecified descriptions of reciprocal-like complexes of events. However elusive such a distinction may be, yet in some intuitively obvious sense **RECP^{S}** corresponds to culturally significant human interactions with equal participants (like *fighting* or *talking*), which exist language-independently and have to be described in one way or another, whereas **RECP$^{\approx}$** is rather a way to construe several events as a single complex situation, which slightly increases the semantic potential of a language, but is by no means indispensable (as witnessed by languages without conventionalized reciprocal constructions). If a reflexive construction is conventionalized as a reciprocal construction, the resulting strategy of reciprocal encoding comes with the distinctions between specific reciprocal meanings (e.g. between the "strong" and "weak" reciprocity) already neutralized, and thus with the new **RECP$^{\approx}$** type of descriptions readily available. To borrow from the evolutionary terminological framework, the neutralization of these distinctions is then not an adaptation triggered by a functional need for underspecified descriptions, but rather an exaptation of the reflexive structure. The emergence of the new type of reciprocal meaning can further increase the discourse frequency of reflexive encoding of reciprocity and, accordingly, the likelihood of grammaticalization.

To conclude, I have argued that multiple-participant reflexive construction is universally available either as a conventionalized way to express reciprocity or as an exploratory strategy of reciprocal encoding. In the latter case, it is a more likely candidate for grammaticalization than compositional strategies of reciprocal encoding, primarily because it is better suited to express the single-event reciprocity, but also because the reciprocal aspect of its meaning is less specific than that of any compositional strategy; both factors increase its discourse frequency and therefore the probability of its being grammaticalized. This hypothesis straightforwardly explains the predominant structural unarity of reciprocal constructions, especially if we take into account that the original reflexive marker can be dropped once a disambiguating reciprocal expression is introduced (see Section 3.1). This does not mean, however, that the reflexive origin is the

only source of structural unarity of reciprocal constructions: as mentioned in Section 3.2, biclausal reciprocal strategies can also evolve into unary reciprocal constructions, yet such a development seems to be very rare cross-linguistically. My explanation for cross-linguistic predominance of unary reciprocal constructions is based on a combination of functional and diachronic factors: on the one hand, a productive unary construction endows a language with certain functional advantages, which constitute, by the same token, the advantages of unary encoding strategies over compositional strategies and binary constructions (Section 3.4). On the other hand, these advantages can play a role in the process of conventionalization and grammaticalization of a reciprocal construction only insofar as a unary strategy is available for reciprocal encoding; in the absence of a unary reciprocal construction, the reflexive encoding strategy is the only candidate for this role. Although a unary reciprocal structure can also emerge in the process of grammaticalization of a compositional strategy (Section 3.2), the multiple-participant reflexive structure has an edge on the competition between available strategies for the role of conventionalized reciprocal construction, since it is unary from the very beginning, encompasses reciprocity as an inherent aspect of its meaning (Section 3.3), and is virtually unambiguous in most frequent lexical contexts (Section 3.4).

4. The Obligatory Reflexive Marking hypothesis

4.1. An Optimality-Theoretic approach to reciprocal encoding

This section attempts to describe a fragment of the cross-linguistic and language-internal variation in reciprocal encoding by means of an OT-style model of competition between alternative strategies (Prince and Smolensky 1993/2004). In contrast to most applications of Optimality Theory, the proposed model is far from being fully formalized; its purpose is rather to find the universal factors shaping both typological and language-internal variation in the domain under investigation, or, to put it in other words, both the global diachronic tendencies and the individual language-specific choices that ultimately determine these tendencies. In accordance with the OT approach, the model is based on the assumption of a universally available set of reciprocal encoding strategies, which

includes compositional strategies outlined in Section 3, multiple-participant reflexive constructions with and without disambiguating expressions, and non-reflexive unary reciprocal encoding. This assumption may seem to contradict both the available cross-linguistic evidence and the approach adopted in the previous section. This contradiction is resolved by the concept of "exploratory expression" (Harris and Campbell 1995: 54, 56), or exploratory strategy: e.g. if a language has no conventionalized non-reflexive reciprocal construction, a similar expression of reciprocity can be created spontaneously, for instance, by dropping the reflexive marker from a reflexive-based construction or by combining a topicalization construction with a compositional reciprocal strategy. Similarly, a reflexive construction can have been conventionalized for reciprocal encoding in one language and be present only as an exploratory strategy in another. In the OT framework, the degree of conventionalization of an encoding strategy can be construed of as one of the dimensions of "markedness" of the resulting expression, along with the more obvious structural factors.

The choice between the available options is determined by universal constraints on reciprocal encoding, which can differ in relative strength from language to language and thus shape the cross-linguistic variation in reciprocal encoding. While a certain constraint may be "invisible" in a specific language, its universal validity manifests itself in the fact that every violation of the constraint must be motivated by satisfaction of other constraints, which are thereby shown to be stronger in the given language. In what follows, I attempt to show that language-internal and cross-linguistic variation in the use of reflexive markers in reciprocal encoding can be described in terms of interplay of independently relevant universal constraints. Apart from two rather general universal metaconstraints, which penalize excessive **markedness** and **ambiguity** of the expression, the reciprocal encoding is sensitive to the Obligatory Reflexive Marking (ORM) constraint, i.e. a universal constraint that requires that any unary construction with a binary predicate be marked as reflexive and, accordingly, penalizes non-reflexive reciprocal constructions. This means, in other words, that any semantic structure linking two variables to a single referential index **is** in effect reflexive; combined with the fact that languages tend to have a unique and obligatory marker of reflexivity (Faltz 1985),

this entails the requirement that a unary reciprocal structure must contain this unique marker. The very existence of this cross-linguistic tendency can be viewed as another manifestation of the ORM constraint.

Although the relative strengths of universal constraints are supposed to be constant for each language, they can be relevant or irrelevant in a given speech situation, including the particular meaning intended and the disambiguating aspects of the context. Most importantly, a context-determined low likelihood of the reflexive interpretation can favour the reflexive encoding. Accordingly, a language can opt for different strategies of reciprocal encoding depending on the context, especially on the meaning of the main verb, and on the specific meaning to be expressed. For example, in Russian the reflexive encoding of reciprocity is usually described as being limited to a closed class of **RECP**s-oriented predicates, whereas other lexical contexts generally trigger non-reflexive encoding of reciprocity. If the verb belongs to this closed class, the choice between reflexive and non-reflexive option may reflect a difference between the intended meanings, cf. the following examples:

(28) Russian
      a. *Oni*   *vstreča-l-i-**sj***
         They   meet-PST-3PL-RFL
         'They used to meet each other.' or 'They used to date each other.'
      b. *Oni*   *vstreča-l-i*   ***drug drug**-a*
         They   meet-PST-3PL   RCP RCP-ACC
         'They used to meet each other.' or 'They used to pick each other up.'

The potential ambiguity of reflexive encoding can be thought of as a continuous, probability-like value that is evaluated by the speaker in the individual speech situation, but can strongly depend both on the "real-world" properties of events (insofar as they can increase the likelihood of one or another interpretation) and on the conventions established in the given speech community (in particular, on the relative frequencies of using the given lexical verb with reflexive marking in different meanings). In (28a), for instance, the probability of reflexive interpreation is close to zero in most contexts, so the ambiguity avoidance constraint would play no role in the choice of optimal encoding.

4.2. Markedness vs. ambiguity avoidance

The interplay between markedness and ambiguity avoidance constraints in the case of reciprocal encoding is most transparent in the competition between reflexive and reflexive-based constructions, since a reflexive-based construction is by definition both less ambiguous and more marked than its ambiguous reflexive counterpart. The cross-linguistic variation in the relative strength of these constraints can be best illustrated by languages where all unary reciprocal constructions require reflexive marking, i.e. the choice is in effect limited to reflexive and reflexive-based encoding. This language type was exemplified in Section 2.4 by West Greenlandic, Wari and Djaru (examples (11), (12), and (15)).

Within this type, languages vary from mandatory (or almost mandatory) use of disambiguating expressions to virtual absence of such expressions. The first endpoint of this scale can be exemplified by Bolivian Quechua, where the reflexive marker is *-ku-*, e.g. *riku-**ku**-* 'look at oneself', and the reciprocal marker is *-**na-ku**-*, e.g. *riku-**na-ku**-* 'look at each other' (Muysken 1981: 454, 464), which means that all its reciprocal constructions are reflexive-based.[13] In terms of the present model, this indicates that ambiguity avoidance considerations consistently outweigh markedness considerations, so that the more marked, but unambiguous construction is used independently of the context. A slightly less clear case is found in Telugu, where the reflexive construction can express reciprocity only with a narrow class of verbs of fighting (Krishnamurti & Gwynn 1985: 206-208), whereas the reflexive-based construction with a bipartite reciprocal expression serves as the major strategy of reciprocal encoding.

(29) Telugu (Dravidian; Subbarao & Lalitha 2000: 226)
     waaNNu   ***okaNNa-ni***   ***okaNNu***   *tiOOu-**kon**-naa-ru*
     They   RCP-ACC   RCP   scold-RFL-PST-3PL
     'They scolded each other.'

In other words, the reflexive construction is used only if the potential ambiguity is resolved by the lexical context and thus the ambiguity avoidance constraint can be satisfied without violating markedness constraints. This situation apparently results from what can be referred to as lexicalization of context-based ambiguity evaluations, whereby

the use of a potentially ambiguous construction is confined to a closed set of **RECP^S**-oriented verbs, which strongly support a reciprocal interpretation.

Another type of compromise between ambiguity avoidance and markedness constraints is achieved by languages where reciprocal vs. reflexive interpretation of reflexive construction is fully determined by the number of subject participants. This type of distribution is described by Aikhenvald (forthcoming) for North-Arawak languages spoken on the Upper Rio Negro (Warekena of Xie, Bare and Baniwa of Içana), e.g.:

(30) Baniwa of Içana (North Arawak; Aikhenvald forthcoming)
    *na-inua-**kawa***
    3PL-kill-REFL
    (they) fought
    *nu-takha-**kawa**-ka*
    1SG-cut-REFL-DECL
    'I cut myself'

The other endpoint of the scale defined by the relative strengths of markedness and ambiguity constraints is represented by languages where all (or almost all) reciprocal clauses are reflexive in spite of their potential ambiguity, i.e. markedness considerations consistently outweigh ambiguity avoidance considerations; this type is apparently represented by West Greenlandic and Wari. However, most languages that require reflexive marking of reciprocal constructions seem to be located somewhere between these two extremes, so that the choice between reflexive and reflexive-based encoding depends on the specific context of reciprocal utterance.

4.3. The effects of Obligatory Reflexive Marking constraint

The effects of the ORM constraint are most obvious in the languages where this constraint is never violated, i.e. all unary reciprocal constructions are either reflexive or reflexive-based (Section 4.2). Apart from this, the ORM hypothesis is also supported by languages that do have non-reflexive reciprocal constructions, but nonetheless require reflexive marking in all contexts where it has been conventionalized for reciprocal encoding. This type is represented, for instance, by Bulgarian and most Romance languages; the reflexive marking is mandatory even if the expression serving as an

autonomous reciprocal modifier in other contexts is added to form a reflexive-based construction, e.g.:

(31) Bulgarian
       a. *Te **se** gledat*
       b. *Te **se** gledat **edin drug*** 'They are looking at each other.'
       b. * *Te gledat **edin drug***

(32) French
       a. *Jean et Marie **s'**aiment*
       b. *Jean et Marie **s'**aiment **l'un l'autre*** 'John and Mary love each other.'
       b. **Jean et Marie aiment **l'un l'autre***

(33) Italian (Belletti 1982/1983:127)
       a. ***Si** amano* 'They love each other (themselves).'
       b. ***Si** amano **l'un l'altro*** 'They love each other.'
       c. **Amano **l'un l'altro***

These examples show the ORM constraint can outweigh markedness considerations, which would favour a simpler and equally unambiguous encoding option shown in (30c)-(32c).

      Of course, there are many languages without reflexive or reflexive-based reciprocal constructions, i.e. languages where the hypothesized ORM constraint is invisible. Within the OT-style framework, this simply means that the ORM constraint is outweighed both by the ambiguity avoidance constraint (so that the non-reflexive construction is evaluated as more optimal than the reflexive one) and by the markedness constraints. The latter property rules out the reflexive-based encoding, which necessarily involves a combination of two markers instead of one. It seems noteworthy, however, that the lack of reflexive encoding of reciprocals appears to imply, cross-linguistically, that reciprocal expressions do not exceed reflexive expressions in structural complexity. To put it the other way round, if a reflexive marker is not structurally simpler than a conventionalized reciprocal marker, and thus not favoured by a structural markedness constraint, it is unlikely to be used for reciprocal encoding.

      For instance, in Kolyma Yukaghir both reflexivity and reciprocity are encoded by verbal prefixes (e.g. ***met**-juo-* 'see oneself' vs. ***n'e**-juo-* 'see one another'); accordingly,

there can be no markedness constraints that would favour the reflexive encoding of reciprocity over the non-reflexive reciprocal construction, and the reflexive marker is not used in this function. Similarly, both reflexive and reciprocal markers in English are bipartite pronominal expressions, so the markedness constraints are also irrelevant. Conversely, if a language does have both reflexive and non-reflexive reciprocal constructions, the former one tends to be structurally simpler than the latter; Russian, German, French (and, for that matter, "Standard Average European" in general) are obvious examples. It seems, therefore, that the ORM constraint outweighs the ambiguity avoidance constraint only in cooperation with some sort of markedness constraint. To put it the other way round, the ambiguity avoidance constraint tends to be stronger than the ORM constraint and cannot be outweighed if markedness considerations play no role.

On the other hand, the non-reflexive reciprocal construction need not be unambiguous: in some languages, the reflexive encoding of reciprocity competes with a construction from another polysemy class. For instance, Imbabura Quechua has two conventionalized reciprocal constructions, a reflexive reciprocal construction and a construction ambiguous between reciprocal and collective interpretations:

(34)   Imbabura Quechua (Cole 1982: 91, 92)
    a. *wambra-kuna*   *riku-**ri**-rka*
       child-PL   see-RFL-PST(3)
      'The children saw each other' or 'The children saw themselves'
    b. *ñukanchi maka-**naju**-nchi*
       we   hit-RECP/COLL-1PL
      'We hit jointly' or 'We hit each other'

In such cases as this, the ambiguity considerations can probably favour one or another option depending on the context.

To conclude, the cross-linguistic and language-internal variation in reflexive encoding of reciprocity can be accounted for as a result of interplay between several universal factors, which can both compete and cooperate with one another. The first factor is the inherent ambiguity of multiple-participant reflexives, which makes them suitable as "exploratory expressions" of reciprocity in languages where the currently existing reflexive constructions have not been conventionalized in this function, and

especially in languages without conventionalized reciprocal constructions. In Section 3, I argued that this factor plays the major role in the rise of reciprocal constructions, which would explain the overwhelming cross-linguistic predominance of unary reciprocal constructions. Secondly, languages tend to have an obligatory reflexive marker, which has to be employed whenever two variables of a binary predicate are linked to a single referential index, in particular, in unary reciprocal constructions. Finally, the rise of unary reciprocity as a grammatical meaning in its own right with its own unambiguous coding means must have been motivated by the combination of ambiguity avoidance considerations and markedness constraints: the former would favour using disambiguating expressions in addition to reflexive marking, the latter, their gradual evolution into autonomous reciprocal markers.

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1. This two-way classification in effect disregards so-called discontinuous reciprocal constructions, which have two slots for distinct reciprocal participants (as in binary constructions), but a fixed intransitive valence frame different from that associated with P(x,y). This is because such constructions, insofar as they are available in a language, appear to imply the existence of a unary construction with exactly the same reciprocal marker (but not vice versa) (Maslova 1999: 169). In the context of this paper they can be treated, therefore, as a secondary encoding strategy derived from the unary reciprocal structure.

2. In West Greenlandic, for instance, the mandatory detransitive form of the main verb (as in (5)) can be accompanied by a pronoun in the ablative case form (see (11)).

3. The cross-linguistic frequency of binary reciprocal constructions is hard to estimate, because descriptive grammars often do not contain sufficient information to distinguish conventionalized binary constructions from compositional biclausal strategies in languages without reciprocal constructions. Based on the data presented in (Maslova & Nedjalkov 2005), the frequency of binary constructions among the world's reciprocal constructions lies somewhere between 2% and 15%.

4. Throughout this paper, "RFL" is used as a gloss for polysemous reflexive/reciprocal expressions.

5. The synchronic frequency of this construction types significantly varies depending on the geographical macro-area: in Eurasia, they are present (mostly along with non-reflexive constructions) in about thirty percent of the languages; elsewhere, they constitute about half of the worlds' reciprocal constructions (Maslova & Nedjalkov 2005).

6. The implied model of language change is based on Croft's (2000: 9-41, 87-116) Theory of Utterance Selection and Harris and Campbell's (1995) ideas about the role of productive grammar and exploratory expressions in language change (Harris and Campbell 1995: 72-5).

7. Alternatively, we have to assume that a combination of this strategy with a quantifier floating construction is prerequisite for its conventionalization in the reciprocal function, see also Plank (this volume).

8. These examples are taken from: Kenneth R. Conklin. *Pride and Prejudice -- What It Means To Be Proud of a Person, Group, Nation, or Race; Racial Profiling, Racial Prejudice, and Racial Supremacy.* (http://www.angelfire.com/hi2/hawaiiansovereignty/prideandprejudice.html).

9. Since these frequencies are highly likely to vary depending on the topic being discussed and speech register, and can also differ from one language to another, no reliable figures can be given at this point.

10. This approach may seem to be in a irreconcilable contradiction with the notion of cross-

linguistically valid categorial distinction between "reciprocity proper" and "natural reciprocity" (see (Kemmer 1993: 94-123) for an elaborate argumentation in favour of this distinction). However, as Ecclesiastes would have probably put it, there is a time to draw distinctions and a time to acknowledge affinities, and this is true not only for linguists answering different questions, but also for languages at different periods of developing reciprocity as a linguistic category. I contend that the single-event reciprocity plays a pivotal role at the initial stages of this process; it also has a palpable cross-linguistic tendency to split from "reciprocity proper" by virtue of further processes of grammaticalization and lexicalization after this category has been established. There is no real contradiction between these statements.

11. Notably, it is the "discontinuous" counterparts of unary reciprocal constructions (see Note 1), i.e. the closest cross-linguistically recurrent near-equivalent of monoclausal binary reciprocal constructions, that is likely to be associated with the **RECP**[S] interpretation (Dmitriadis 2004).

12. It can be hypothesized, in fact, that the likelihood of a reflexive strategy being conventionalized in the reciprocal function in a given language can depend on the extent to which the **RECP**[S]-meaning is integrated into the lexicon: if a language has a rich set of **RECP**[S]-predicates, then the reflexive strategy of reciprocal encoding would compete with the use of a lexical reciprocal and its discourse frequency is bound to be lower. A possible way to explore this hypothesis, which of course remains absolutely speculative at the present time, is to study lexical reciprocals in languages with binary reciprocal constructions.

13. The suffix *na* without the reflexive marker occurs in so-called "causative reflexives" Rurik-*na-chi* 'make X look at each other'