Reciprocal constructions: Towards a structural typology

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No doubt he would have said he divided the world into two parts:
a public part,
usually involving people and the things they do with – or, rather to – each
other;
and another part,
in which the world was simply itself.
Cees Nooteboom, *All Souls' Day*, p. 170¹

1. Introduction²

Reciprocal constructions arguably denote the most complex event type to be expressed in most languages by regular grammatical means. A clause like *John and Mary love / chase each other* is generally said to represent at least two propositions – John loves Mary, and Mary loves John – and it is not unreasonable to argue that many reciprocal examples, at least, include a third one-place predicate with a conjoint subject, along the lines of *John and Mary do this together*. Even

1. I cite the English translation here rather than the Dutch original, because for whatever reason it makes a clearer equation of the public part with reciprocity. The Dutch original (Nooteboom 1998: 207) is 'Det hij de wereld scheidde in een openbare wereld, *die meestal met mensen te maken had en wat die deden, or beter gezegd, elkaar aandeden*, en een andere, waarin de wereld, zoals hij jet noemde, van zichzelf was'; a literal translation of the italicized part would be 'which mostly had to do with people and what they did, or rather, did to each other'. The German translation follows this formulation: 'Daß er die Welt in eine öffentliche Welt aufteilte, *die meist mit Menschen zu tun hatte und dem, was sie taten, oder, besser gesagt, was sie einander antaten*, und eine andere, in der die Welt, wie er es nannte, sich selbst gehört' (Nooteboom 1999: 195–196).
2. I would like to thank Ekkehart König and Volker Gast, as organisers of the workshop *Reciprocity and Reflexivity – Description, Typology and Theory*, for their kind invitation (and subsequent comments on drafts), and to the participants at that workshop for their discussion and comments. I am also grateful to the participants in the following

leaving aside this third proposition,³ the resultant meaning-to-form projection, along the lines of (1), involves a complex mapping between two overlaid thematic roles, all in a single clause. The thematic roles of the participants in these events are permuted, and as a result, there is a double linking of participants to thematic roles: each participant is linked to both thematic roles (John is both lover and beloved), and each thematic role is linked to both participants (the lover role is linked to both John and Mary).

Perhaps because of the engineering complexity involved in mapping such complex situations onto a single clause, languages have come up with a huge variety

workshops for discussion, ideas and data: the class Lexical Typology and Reciprocal Constructions (University of Melbourne), workshops on the typology of reciprocals held in Hermosillo, Mexico (November 2004) and at OKMA in Antigua, Guatemala (December 2004), and our regular project meetings of the Reciprocals Project Group at the University of Melbourne and the Max Planck Institute for Psycholinguistics, Nijmegen. I am particularly grateful to the following people for valuable discussions and/or data during the writing of this paper: Leila Behrens, Alice Gaby, Martin Haspelmath, Mary Laughren, Steve Levinson, Ilana Mushin, Rachel Nordlinger, Ruth Singer, Claudia Wegener, Roberto Zavala, and Ulrike Zeshan. Finally, I am deeply grateful to the Australian Research Council (Grant: Reciprocals Across Languages, Grant DP0343354), to the Alexander von Humboldt-Stiftung, and to the Max Planck Institute for Psycholinguistics, for the financial, technical and logistical support that made this research possible.

3. The presence of this third component is not usually assumed in semantic treatments of reciprocals, and certainly is not found with all possible predicate/argument combinations: particularly with inanimate actants there is no point in postulating it. However, with human actants and event types involving coordination or feedback, such as dancing, making love, or quarrelling, I believe it is important to include this extra element, and in texts these are the commonest and most prototypical uses. For further discussion of this point, which is not directly relevant to the present paper, see Evans (forthcoming).

of solutions to the encoding of mutual events by reciprocal constructions. These solutions are by no means equally common among the world's languages, and the four commonest construction types – quantificational, pronominal, affixal and “deverbal” – have recently been systematized in an important article by König and Kokutani (2006). However, there are in fact a range of other typological options not considered in that paper, creating the need for a more comprehensive survey. It is the goal of this chapter to develop a structural typology of reciprocal constructions that does justice to the full diversity found with reciprocal constructions cross-linguistically.⁴

In Section 2 I carry out some initial ground-clearing, in order to focus the inquiry more clearly. The main part of the paper is in Section 3 and Section 4, where I elaborate and exemplify the various types of reciprocal construction found across languages, discussing monoclausal strategies in Section 3 and multiclausal or multipredicate strategies in Section 4. In Section 5 I conclude by reviewing some widespread hypotheses regarding various typological correlations in the domain of reciprocals, and suggest future lines of investigation.

2. Some preliminaries

To qualify for inclusion in this survey, a construction must have a sense conventionalized for the expression of *mutual* situations. Following Haspelmath (2007: 2088) I define a mutual situation as one “with two or more participants (A, B, ...) in which for at least two of the participants A and B, the relation between A and B is the same as the relation between B and A.” The term “reciprocal”, then, refers to a type of construction, not a type of meaning.

The units for which the typology is being developed are *constructions* – conventionalized triplets linking a meaning with a signifier and a combinatorics. The signifier may be a *complex sign*, e.g. it may involve more than one clause, or the chaining of two or more verbs within a clause. All that matters is that it is *specialized for* and *conventionalized for* the expression of mutual situations.

The focus on “construction” rather than, for example, “morpheme”, makes particular sense here because reciprocal constructions in many languages are complex, involving, for example, an affix plus a change in valency, or the chaining together of more than one verb. However, insofar as constructions may involve several coordinated signs (e.g. valence change plus adverb, or predicate

4. I hasten to point out, however, that I have consulted fewer than 200 language descriptions for the material presented here, so it is almost certain that the other 6,000 or so languages of the world contain some surprises that will require further elaborations to this scheme.

affix plus valence change, or a combination of prefix plus suffix) there will be a huge number of composite sign types. The only way to reduce the number to manageable dimensions is therefore to look at the individual components and I do this below, except for a few unusual cases where the construction forms a complex gestalt not readily reducible to smaller elements.⁵ Because of the large number of individual components involved, we cannot, in this paper, systematically examine configurations of individual components to see what goes together and what doesn't – this is a task for future research – though we will make some remarks in passing about particularly common groupings, or about components that have been said to co-occur, but which the larger survey we conduct here reveals not to.

Finally, note my uses of the terms “specialized for” and “conventionalized for”. By “specialized for” I mean that at least one of the senses denotes mutual situations of the type discussed above. This does not exclude the possibility that the construction exhibits form sharing – polysemy or heterosemy⁶ – with one or another of the meanings that frequently participate in relations with reciprocal constructions: reflexive, comitative/sociative, iterative, distributive, random motion, brother/fellow terms, substitutive, etc. Normally one can find some combinatoric difference, more or less subtle, that correlates with the different senses: see Davies (2000), for example, for nice arguments that both reciprocal constructions in Madurese are heterosemous with another, semantically-related construction, namely the iterative and the distributive. In this chapter I will proceed on the assumption that it is irrelevant to our typology of reciprocal constructions what other senses the construction may exhibit. Verbal affixes, for example, may (among others) be monosemous reciprocals (Kayardild, Chicheŵa); or may participate in reciprocal/reflexive polysemies (Bininj Gun-wok), among many others. And reflexive/reciprocal polysemies, conversely, are not only found with verbal affixes but also occur with, among others, pronominal affixes (Romance

5. For example, in Olutec (Zavala forthcoming) reciprocals are formed by combining a reciprocal/reflexive and an inverse affix on the verb, together with a plural subject, and valency reduction. All the elements of this construction are familiar – verbal affixes, valency reduction, and the conjunction of reciprocants into a single plural subject. But as a complex sign it is, as far as I know, a unique configuration (though we need to see if it also occurs in other Mixe-Zoquean languages); it is also strange, language-internally, in being the only construction to employ the inverse marker with intransitives.

6. Following Lichtenberk (1991) and others, I employ “heterosemy” for the relations between signs which differ in their combinatorics as well as their meaning, reserving “polysemy” for the case where they differ just in meaning but have the same combinatorics.

se, si, etc. for example). The elaboration of a typology of polysemies in which reciprocal constructions participate is a distinct task to what we are engaged in here – see e.g. Kemmer (1993) and Knjazez (1998) on reflexive/reciprocal polysemies, and Maslova (1999) on reciprocal/sociative polysemy.

Intimately linked to the problem of polysemy is the possibility that the relevant construction, in a particular language, may not in fact be specialized for the expression of mutuality at all but may exhibit a type of monosemy that takes in mutual denotations among related others, with no evidence for a distinct sense applying just to mutual situations. For examples of arguments against postulating a specialized reciprocal category in a number of Oceanic languages, where reciprocal readings are claimed to derive from lexical and other context interacting with a monosemous “plurality of participants” reading, see Pawley (1973), Dixon (1988) and Lichtenberk (1999); see also Creissels and Nougier-Voisin (this volume) for a rather similar analysis of several African languages in terms of a more general concept of “co-participation”. In the other direction, it may also happen that constructions sometimes claimed as reciprocals, such as the construction exemplified by German *unter sich* [among themselves/each other], should in fact be regarded as expressing a more semantically specific meaning (roughly: relations bounded within the group) rather than mutuality proper; see Gast and Haas (this volume).

In fact it is a notoriously delicate task to decide whether a monosemist analysis along such lines should be given, or whether it is better to postulate several related senses and use the more general meaning to explain why they are all expressed by a single form (i.e. as a cover term for chained meanings, rather than a single semantic invariant). In carrying out a typological survey based on reference grammars, the sad truth is that most sources will not go into a level of detail, either in their examples or in their discussion, to decide the matter. And, again, the issue is orthogonal to the goal of this paper; its prime relevance here is that none of the cells in typological space that I will discuss are established just on the basis of semantically problematic cases.

By “conventionalized for” I mean that the reading of mutuality is derived from entailment, rather than implicature; put differently, it does not depend on context, and cannot be cancelled. In many languages, implicature is a regular source of reciprocal readings, particularly with certain types of predicate such as ‘be married’, ‘quarrel’, ‘make love’, etc. when used with plural (or, better, dual) subjects. That these are mere implicatures is shown by their cancellability, as in the following joke, widely known in many different languages:⁷

7. For discussion of this ambiguity see Behrens (1998: 390), who cites the fuller German version of the joke (from Kunschmann 1996: 95) in the following form: *Ein*

- (2) Receptionist at hotel, as couple checks in:

Are you married? Sind Sie verheiratet?

Man: Yes. Ja.

Woman: Me too. Ich auch.

The use of implicature to generate mutual readings is part of the overall semiotic ecology of most, perhaps all languages. In this case, a more overt strategy, involving entailment, is an acceptable if stylistically heavy and joke-destroying alternative in both languages: *Are you married to each other? Sind Sie miteinander verheiratet?* With other predicates, implicatures of mutuality are simply unavailable. *They saw* cannot, in Modern English, mean ‘they saw one another’, though *see* could be used in this way in Shakespeare’s time (Potter 1953: 252):

- (3) a. *Good morrow, and well met. How have ye done*

Since last we saw in France.

Henry VIII, I, i. 1–2

- b. *When shall we see again?*

Cymbeline, I, i. 124.

The exact partitioning of expressive load between conventionalized reciprocal constructions that entail mutuality, and constructions that merely implicate it, varies from language to language.

In many languages with verbal affixes for expressing mutuality, such as Biniñ Gun-wok (Evans 2003: 438–446), the joke in (2) is untranslatable because mutuality must always be made overt through the reciprocal/(reflexive) affix *-rr-*. Our receptionist would have to ask the question shown in (4), and an attempted rephrasing as (5), without the reciprocal/(reflexive), would then mean ‘you two have got married (to others)’. Implicature, then, plays a far less important role in generating mutual readings in Biniñ Gun-wok than it does in English. It is essentially confined to non-verbal predicates like *rohrok* ‘be alike’, which lack the possibility of affixation with the reciprocal/reflexive affix and which allow, when used with a non-singular subject, both mutual and non-mutual readings.

- (4) Biniñ Gun-wok (own field notes)

Nguni-ma-rr-inj?

2DU.SBJ-marry-RR-PST.PFV

‘Are you two married to each other?’

Liebespaar kommt in ein Hotel und möchte ein Zweibettzimmer für eine Nacht mieten. “Sind Sie verheiratet?” fragt der Portier streng. “Ja”, antwortet der Mann. “Ich auch”, fügt die Frau hinzu.

- (5) *Ngurrbanbani-me-y?*

2DU>3DU-marry-PST.PFV

‘Are you two married (to others)?’

On the other hand, there are a good number of languages which lack any specialized reciprocal construction and which allow mutual readings (among other interpretations) of ordinary pronouns, e.g. in object function. This is the case in a number of Oceanic languages of Vanuatu and New Caledonia, for example, such as Tinrin (Osuni 1995), Sa (cf. [6]) and Mwotlap (François 2005), where a clause with the structure ‘they saw them’ can include mutual interpretations in certain contexts (perhaps favoured by particular verb lexemes) alongside disjunct and reflexive interpretations. Old English appears to have been comparable; for a more subtle example see Cole et al. (this volume) on Peranakan Javanese.

- (6) Sa (own field notes)

ir-ben-ir

3PL.SBJ-shoot-3PL.OBJ

(a) ‘they shot them’

(b) ‘they shot themselves’

(c) ‘they shot each other’ (most likely interpretation in some contexts)

As in all domains of grammar and lexicon, implicature is a crucial part of understanding how particular meanings evolve, since implicatures often harden into entailments through time. However, for the purposes of this article I will only consider constructions where the mutual reading is entailed rather than implicated.

2.1. Assumptions about what to keep separate from a constructional typology

We have already mentioned two issues that this constructional typology will not address: cases where the mutual reading is implicated rather than entailed (and hence not part of the conventional meaning of the construction), and questions of what other meanings reciprocal constructions may express (which is a question for the typology of polysemy in this semantic domain). There are a number of other assumptions, however, that we need to make clear before developing our typology.

2.1.1. Semantic typology of reciprocal constructions

The prototypical reciprocal construction denotes a situation where two participants engage, simultaneously, in mutual action (John kisses Mary, and Mary

kisses John, at the same time). But reciprocal constructions in fact extend to a broader range of situations than this. Firstly, the number of actants may be more than two – for example in a family where all five members love one another. Moving down rather than up from two, in some languages, the number of specified participants may reduce to one, in a situation where only one participant is known or of interest, as in (7); though of course, logically there have to be two participants for the action to be mutual here.

- (7) Hungarian (Behrens 2007: 377)

Liz Hurley a repülön szeretkezett.
 Liz Hurley DEF on.plane love.MID.PST.3SG.SBJ
 'Liz Hurley made love on the plane.'

In terms of temporal organization, the sub-events may be simultaneous (John and Mary stared at each other) or sequential (John and Mary massaged each other). In terms of what one might call "reciprocity saturation", once the number of actants exceeds two there are a very large number of permutations in terms of the charting of the relations between all participants, which have been examined (mainly for English) in a number of publications, such as Langendoen (1978) and Dalrymple et al. (1998). It is rather rare, in fact, to have "strong reciprocals", where the mutual relations hold between all members of the set, and much commoner to relax the saturation of possible interrelations in various ways, as exemplified by *the starving dogs ate one another* ("melee", where not all mutual relations are instantiated), *the students followed one another onto the stage* (seriation) or *all the guests at the party were married to each other* (pair-wise grouping into mutual relationships). Finally, even when there are just two participants some asymmetry may be tolerated: in many languages (including English, for a good number of speakers including this author) sentences like *John and Mary chased each other down the road* or *The two crocodiles were lying on top of one another* can still be used even though the relation is not mutual, e.g. John is always behind Mary, or the first crocodile is always on top of the second.

These semantic variants need to be investigated systematically: it is certainly the case that some languages distinguish simultaneous from sequential reciprocals, and dual from plural reciprocals, but there is little evidence for languages distinguishing different types of "reciprocity saturation". Whatever the case, though, I will regard this as a different typological dimension to our enterprise here – i.e. it concerns the semantics of what we might see as different reciprocal subtypes – and not deal with them in this paper.

2.1.2. Assumptions about the word-class (part-of-speech) representing the mutual predicate

The literature on reciprocals has a long-standing bias towards focussing on verbal expressions of reciprocity. But any predicate of two or more places is in principle able to participate in reciprocal constructions: adjectives and deverbal nouns (cf. [8a,b]), nouns expressing kinship relationship, as in Kayardild (cf. [9]), employing what is usually known as a "dyad" suffix), and positionals, as in Koyukon Athapaskan (cf. [10]).

- (8) a. Italian (Levi 1985: vi)

quasi che lo scienziato e il letterato
 almost that the scientist and the literary.man
appartenessero a due sottospecie umane diverse,
 belong.SBJV.PL to two subspecies human different
reciprocamente alloglotte_{adj.}, *destinate a*
 reciprocally speaking.different.languages destined to
ignorare_{v.t.} = si e non interfeconde_{adj.}
 ignore=RR and not interfertile

- b. English translation of (8a) (Levi [transl. Rosenthal] 1989: 10)

as if the scientist and literary man belong to two different human subspecies, reciprocally incomprehensible, fated to ignore each other and not apt to engage in cross-fertilization

- (9) Kayardild (Evans 1995:191)

kularrin-ngarrba
 opposite.sex.sibling-DYAD

- 'pair of opposite sex siblings, pair who are each other's opposite sex siblings, i.e. brother and sister'

- (10) Koyukon Athapaskan (Jetté and Jones 2000: 457)

neeL-tleekk'e dodaaleslo
 RECP-on.top.of I.piled.them

'I piled them on top of each other.'

Our structural typology should not neglect such cases – they are, after all, constructions for expressing mutuality – which means that the definitions of structural types should ideally be made in a way that is independent of the word class of the predicate. We may wish to ask questions, for example, like "Are predicate-affixal strategies more common with verbal than with nominal predicates?" Yet

this is not possible if the strategy itself has been defined in a way that depends on the word class of the predicate.

As an example of a typology that does not detach word-class from strategy, König and Kokutani's (2006) categories "verbal strategies", "nominal strategies" and "deverbal" would be better phrased as "predicate strategies", "argument strategies" (or "actant strategies") and "depredicative strategies" to avoid biasing our typology towards just looking at those predicates that happen to be verbs. Although the typology employed in this chapter uses word-class neutral labels for the higher branches of the taxonomy, this gets more difficult once we get down to more specific sub-strategies where the specific means of linguistic encoding (e.g. clitic vs affix, noun vs pronoun) becomes important, so it has not been possible to follow this consistently; in this respect the current classification, too, is less than ideal.

Though the majority of examples cited in this article involve reciprocals whose predicate is a verb, I do where relevant mention comparable strategies with other word classes, but for reasons of space plus the less detailed descriptive materials available for non-verbal reciprocals, it has not been possible to extend the same depth of treatment to these.

2.1.3. Syntactico-logical position⁸ of NP representing reciprocants

Reciprocants may be in a range of syntactic positions, for example subject and object ([*John and Mary*] *kissed* [*each other*]), object and oblique (*My friend introduced* [*John and Mary*] [*to each other*]), subject and possessor ([*John and Mary*] *like* [*each other's*] *children*). And of course once the relevant predicate is not a verb, other syntactic positions, such as adnominal genitives, are also possible, as in *arguments over* [*each other's*] *shortcomings*.

8. I use the rather cumbersome term "syntactico-logical" positions because the variation we are exploring is partly a matter of logical form, and partly determined by language-specific syntax, independent of semantics and presumed ultimate logical form. For example, the difference in the treatment of direct objects and indirect objects may reflect language-specific projections from semantics into the syntactic ('seek' vs 'look for'), as may language-specific differences depending on whether the language has grammaticalized subjects, a system of ergative syntax, a Philippine-style focus system that separates topic properties from agent properties, and so forth. On the logical form side, because languages vary so much in their syntax – e.g. in how many clauses are used to express causatives, or indeed reciprocal relations – the only way we can hold our comparison at least partly constant is to characterise the elicitation sentences in terms of logical structure that is at least partly language-independent.

It is a general and well-founded assumption that the most basic and commonest combination of syntactic positions found in reciprocal constructions is subject and object of a verbal predicate. Nonetheless, the existence of other combinations means that the typology of reciprocal constructions should be based, as far as possible, on the full set of acceptable combinations. It is often the case that languages need to employ different strategies for different combinations – Kayardild uses an adverb for combinations other than subject + object or subject + indirect object, most Mayan languages can only employ the reflexive/reciprocal 'relational noun' for subject + object combinations, using alternative means such as adverbials for other combinations, and in the Papuan language Usan (cf. Reesink 1987) the reciprocal marker *qi-* is attached to the verb with subject + object combinations, but appears for other combinations as a separate element suffixed with a postpositional clitic. Examples of these will all be given below, but our present point is that *all* such constructions should be fed into our structural typology. This then makes it possible to treat construction type and syntactic position as independent variables in testing implicational hypotheses, such as the plausible (but so far untested) hypothesis that "if a language possesses both a predicate-affixation strategy and an adverbial strategy for forming reciprocals, then the predicate-affixation strategy will be preferred for subject + object combinations".⁹

While on the topic of syntactico-logical position, I note a terminological shorthand to be used here. If I say, of a clause like *John and Mary kissed each other*, that the reciprocants are in subject and object position, I mean that they occupy subject and object positions in the corresponding pair of non-reciprocal clauses (*John kissed Mary*; *Mary kissed John*). Though I could give a different formulation here for the English sentence – namely that the conjunct phrase *John and Mary* is in subject position, and the reciprocal anaphor *each other* is in object position – it is more problematic to apply this to languages whose reciprocal constructions involve affixation to the predicate, with accompanying valency reduction, as in the Bini Gun-wok translation *John dja Mary bani-bunjhme-rr-inj*, where the *-rr* affix marks mutuality, and the verb is intransitive. The formulation in terms of corresponding pairs of non-reciprocal clauses, on the other hand, remains applicable in Bini Gun-wok and other comparable languages.

9. Obviously the implicational statement would need to be made more precise in order to enable proper testing, but this version should suffice for illustrative purposes.

2.1.4. Separation of defining features

Logically independent elements should be categorized and defined separately. For example syntactic effects, such as changes to valence, should be typologized separately from type and location of exponent, e.g. verbal affix, rather than using a conjunctive category like “valence-changing verbal affix”. Otherwise one cannot see whether these features necessarily co-occur: we shall see in Section 3.2.1 that although the verbal affix is widely associated with valency reduction, there are a few languages where verbal affixes may be used to express reciprocity without any concomitant change in argument structure, and conversely we will encounter numerous other construction types that exhibit valency change.

2.1.5. Semiotic ecology

Most languages have more than one reciprocal construction, with the choice between them conditioned by a wide variety of factors such as the word-class of the reciprocal predicate (Section 2.1.2), the syntactico-logical position of the arguments (Section 2.1.3), and various other factors; see König and Kokutani (2006) for a clear discussion of these in German and Japanese. Also, as already seen, many reciprocal readings are obtained by implicature rather than the entailments associated with particular constructions. Ideally, for each language we need to establish the ecology of expressive alternatives, including those generated by pragmatics (which are particularly helpful in establishing grammaticalization pathways). Some typological correlates will apply between (a) constructions, e.g. arranged on some kind of hierarchy, and (b) the set of expressive alternatives within a language. In the current typology, however, we do not consider these questions: instead, as long as a particular construction is attested in a language as some conventionalized means of expressing mutuality, we include it here.

2.2. Reciprocal constructions: An overview

Before moving to a detailed exemplification and discussion of individual constructions, it is helpful to give a brief overview: see Figure 1.

Note that, in line with the remarks made in Section 2.1.2, we should not assume that the relevant predicate will necessarily be a verb (nor that the higher unit of which it forms a part will necessarily be a clause). The labelling for levels of the taxonomy is given here in two forms at the uppermost levels, e.g. NP-marking strategies and argument-marking strategies. However, at the lower levels of the taxonomy, where specific assumptions about word-class cannot be avoided, I use strategy labels that assume the mutual predicate is verbal.

Figure 1. Summary of types of reciprocal construction (for canonical reciprocal involving transitive verbal base predicate)

Note also two boundary delineation problems, which we will discuss in more detail below.

Firstly clause fusion can make it difficult to decide whether we are dealing with one predicate or two: should the Japanese construction *V-au* (literally ‘V-meet’) for ‘V each other’ be treated as a multiple predicate ‘V, meeting’, or as involving a predicate affix which happens to be of verbal origin (i.e. *-au* would now be analysed as a reciprocal suffix to the verb that happens to be etymologically related to the verb ‘meet’), or as some intermediate category (which is the way I have treated it here)?

Secondly, other sorts of diachronic change can also make the delineation of types difficult, for example as possessed nouns 'their-fellow' turn into reciprocal pronouns inflected for person ('3PL-REC'). Such cases will be discussed as we reach the constructions concerned.

We now pass to a consideration of each type, in turn. In Section 3 we focus on constructions at a level bounded by the clause, saving for Section 4 more complex constructions that involve two or more clauses, or which have evident origins in various types of multiclausal or multipredicate fusion.

3. Single clause (single predicate lexeme)

In these constructions, overwhelmingly the commonest and best known, there is just one predicate, in the sense of a single lexeme with one or more argument positions. In the commonest case this means that there is a single clause, whose predicate position is filled by a verb, but it may also be a noun, like *enemy* in *mutual enemies*, or an adjective, as with German *ähnlich* 'similar' in *zwei einander durchaus ähnliche Gesichter*¹⁰ [two one.another thoroughly similar faces] 'two faces thoroughly resembling each other'. Note that lexemes may comprise more than one grammatical word, as in the case of Australian languages whose verb lexemes comprise a classifying auxiliary plus an uninflecting verb.

3.1. NP strategies (argument strategies)

These strategies are united by locating the reciprocal coding in the syntactic position appropriate to actants: where the mutual predicate is expressed by a verb, the element identifying the construction as reciprocal will either occupy an overt NP position (bipartite NP, equivalent-token, free reciprocal pronoun), or a bound pronominal slot on the verb or an accompanying auxiliary. In the existing terminology, a number of these distinct strategies tend to get lumped together under the general term "reciprocal pronouns", but I believe it is useful to have a more differentiated terminology, as proposed here.

3.1.1. Bipartite NPs

This is the type exemplified by English *each other* and its (rough) equivalents, made up of an initial element meaning either 'each', 'one' or 'other', plus a second "alterity" or equivalence expression meaning 'other' or some such.¹¹

10. Spiegel Nr. 9/28.2.2005: 168.

11. Such as the conventionalized use of the expressions *ish el-akhiv* 'each ... his brother' and *ishah el-ekhotah* 'each ... his sister' in Biblical Hebrew, even when describing

This has equivalents in many other European languages, possibly as a result of widespread calquing into these languages from bible translations (cf. also Plank this volume): Russian *drug druga*, French *l'un l'autre*, Italian *l'uno l'altro*, Spanish *el uno [PREP] el otro*, Greek *o enas ton alon*, Finnish *toinen toise* and many others. Comparable constructions are also found in many other parts of the world, such as South Asia, e.g. Tamil *oruttar*-CASE ... *oruttar* (Asher 1982: 87, Annamalai 1999: 175). There are, however, many other parts of the world from which this type of construction is conspicuously absent, such as the entire continent of Australia.

We do not have the space here to thoroughly explore the many interesting dimensions on which such expressions may divide into further subtypes. These include the degree to which the first element can take case independently of the second,¹² the possibility of inflecting the component elements for gender and number in accordance with the make-up of the participant group,¹³ and the

entities like curtains or cherubim where the kinship meaning is not literally applicable; see, for example, Exodus 26.6 ("and you shall join (the curtains) to one other [*el-ekhotah*]"), and 37.9 ("they [the cherubim] faced one another [*el-akhiv*]"). I am grateful to Ian Tupper for bringing these examples to my attention.

12. Two clear examples where the two elements of bipartite quantifier reciprocals take case independently are

(a) Modern Greek, which allows examples like *enas ton allon* [one.NOM the.ACC other.ACC] if the bipartite quantifier occupies the object slot, but also *ti mja s tin ali* [the one.ACC to the other.ACC] in expressions like *introduced them to one other*. See Joseph and Philippaki-Warbuton (1987: 85–87), who explicitly discuss the paradox of expressions which pattern syntactically like a single NP being made up of constituents taking two distinct cases;

(b) Lezgian (Haspelmath 1993: 415–416) where the bipartite quantifiers *čebXčebY* and *sadXsadY*, though written as a single word, comprise two elements that can bear case independently (i.e. take the case suffixes X and Y), as appropriate to the two reciprocant roles. Case combinations in his examples include Ergative + Nominative, Nominative + Postessive, Nominative + Genitive, Ergative + Superessive, Dative + Postelative, Nominative + Superessive, and Nominative + Aessive.

13. For example, in such Romance languages as French, Spanish and Italian, there is a number contrast, as shown by the choice of article (e.g. Spanish *el uno el otro* vs *los unos los otros*) and a gender contrast shown by the gender of at least the first nominal expression, and possibly the article as well (depending on the language), e.g. Spanish *el uno el otro* (group of two men) or *los unos los otros* (group of three or more, all males, or mixed) vs. *la una la otra* (group of two women) or *las unas las otras* (group of three or more women). In general the two elements of the binomial quantifier must match in number and gender, so that heterogeneous groups (e.g. a man and a woman) or groups that do not cleave in a way to yield symmetric number partitions (e.g. an

degree to which the two elements are capable of independent positioning, or have begun to merge into a single invariant word (such as Dutch *elkaar*), which is then better considered as a reciprocal pronoun (Section 3.1.3). Positioning with regard to adpositions also varies greatly from language to language. In Russian (13c) and in Italian, for example, prepositions must be interposed between the two elements,¹⁴ whereas in English the preposition precedes the whole combination, even if it groups logically with the second (*with one another*) and in German the whole complex forms a single word (e.g. *miteinander*).

The terminology for words of this type is rather varied. In traditional grammar they are usually termed “reciprocal pronouns”, though here I use that term in a more narrow way for single-part expressions (Section 3.1.3), because a number of scholars have suggested that the distinction has far-reaching syntactic consequences, so that it will be easier to test these claims if the distinction is made in our typology.¹⁵ In the generative tradition they are usually considered complex anaphors.¹⁶ The typology in König and Kokutani (2006) terms this the “quantificational strategy”, one of the two types of “nominal strategies”, though they also include, in this category, simplex expressions resulting from fusion, such as Dutch *elkaar*.

Various tests make clear that expressions of this type pattern as NPs with respect to the syntactic rules of the language. In English, for example, these expressions can be conjoined with other NPs (11) and can take the possessive genitive (12), just like other NPs. And bipartite quantifiers are also capable of expressing case, for example in Russian *drug druga* the second element takes whatever case is appropriately assigned to the bipartite quantifier as a whole, by the verb or a governing preposition. Thus in (13a), it is assigned the accusative by the transitive verb *videt* ‘see’, while in (13b) it is assigned the dative by the

interacting group of two acting upon one and vice versa) will be coded by balancing the gender to the default and the number to the plural. For a good discussion of this problem in Spanish see Butt and Benjamin (2004).

14. A typical Italian example, taken at random from Calvino (1964: 9) is: *senza la varietà de Italie sconosciute l'una all'altra* ‘without the variety of Italys unknown to one another’, lit. ‘unknown the one to the other’.
15. See, for example, the formulation in Reuland and Koster (1991: 6), based on earlier work by Pica (1984, 1987) and Faltz (1985), regarding “systematic differences between simplex (monomorphemic) and complex anaphors. Anaphors of the former type may be non-local, those of the latter type are always local.”
16. See Manzini (1991) for a discussion of the ways in which the two parts of the Italian expression *l'uno l'altro* may become separated under certain conditions, with the first part (*l'uno*) able to float out of the NP that it shares with *l'altro*.

semi-transitive verb *pomogat* ‘help’, and in (13c) it is assigned the accusative by the preposition *na* ‘on’ of the verb *nadeet'sja na* ‘rely on’.

- (11) businesses competing to sell their wares *to each other and consumers* (Guardian Weekly, Sept 24–30 2004:8, Trade Justice Supplement)
- (12) A new report on the state of language teaching in France and Germany shows that the grasp of *each other's languages* is in decline. (Guardian Weekly, Feb 19–25 2004, TEFL Supplement, p. 1.)
- (13) Russian (Nedjalkov 1991:283)
 - a. *Oni vide-l-i drug drug-a.*
3PL.NOM see-PST-PL other other-ACC
‘They saw each other.’
 - b. *Oni pomoga-l-i drug drug-u.*
3PL.NOM help-PST-PL other other-DAT
‘They helped each other.’
 - c. *Oni nadej-ut-sja drug na drug-a.*
3PL.NOM rely.on-3PL-REFL other on other-ACC
‘They rely on each other.’

The majority of the vast literature on the semantics of reciprocals within the formal semantic and generative traditions draws on languages in which bipartite NPs are the relevant strategy, and there have been notable claims that the complex semantic properties of reciprocal constructions derive from the morphosyntactic properties of such expressions. The most thorough working-out of this claim is Heim, Lasnik and May (1991), who propose an analysis in which a clause like (14a) has a semantic structure like (14b).

- (14) a. *The cats tickled each other.*
- b. Semantic structure:

distributor	reciprocator	scope
$\forall x(x \in \text{cats}) \forall y(y \in \text{cats} \ \& \ y \neq x) \text{ tickled } (x, y)$		

The binomial expression *each other* itself breaks down into a part representing the “range” argument (*each* in English) and a part representing the “contrast argument” (*other*). In Logical Form, on this analysis, *each* is adjoined to the distributor, a position from which it moves, leaving a trace that accounts for restrictions on possible antecedents. Though it would lead us astray to go into the details here, the point that concerns our typology is that there is an implicitly

claimed correlation between a particular set of morphosyntactic properties (most importantly the bipartite nature of the reciprocal expression) and other properties of its syntax (its satisfaction of Binding Condition A) and semantics. Dalrymple, Mchombo and Peters (1994) argue against this claimed correlation, by showing that the same semantic properties are found in Chichewa despite its use of quite a different reciprocal construction, namely a verbal affix. However, there has yet to be a thorough testing of this claim against a wider range of languages.

3.1.2. Reciprocal nominals

In this type, one of the reciprocating argument positions is filled by an expression headed by a nominal (noun or adjective). This type is not recognized in existing typologies of reciprocal strategies, though individual descriptions sometimes overtly state that the relevant word is, morphologically, a “relational noun” (in the Mayanist literature; see e.g. England 1983: 186) or a “possessed noun” (as in Yatzachi Zapotec – see Butler 1976: 335).¹⁷

In contradistinction to the binomial quantifier strategy, there is now just one quantifying element, not two,¹⁸ and in contradistinction to reciprocal pronouns, reciprocal nominals do not have their own person/number features in the way personal pronouns do. Even though, in many languages, the reciprocal nominal is marked as possessed by an element agreeing in person, number etc. with the antecedent, the reciprocal nominal itself behaves, in terms of its person features, as an invariant third person form, as illustrated by the following examples from Awakateko.

(15) Awakateko (J. Mendoza, V. Rodriguez and P. Delgado, *handout*)¹⁹

- a. *Ja* *ø-chi-b'iy* *ky-iib'* *e' xna'n.*
 COMP ABS.3SG-ERG.3PL-hit ERG.3PL-RECP PL woman
 ‘The women fought.’

17. Though in her subsequent *Gramatica Zapoteca* she uses the term “pronombre reciproco”, i.e. reciprocal pronoun.

18. There may be difficult boundary cases here, resulting from fusion of two once-independent elements. Georgian is a good example (Hewitt 1995: 85): the reciprocal marker *ertmanet*+CASE originated as a bipartite expression ‘one-ERG second-CASE’, but is now fused into a single word suffixed for the case appropriate to the syntactic position occupied by the reciprocal marker, with the old ergative suffix still inside. Hewitt labels this a “reciprocal pronoun”, but it would be considered a “reciprocal nominal” on the definition given here.

19. “Recíprocos en Awakateko.” Paper presented at workshop “Tipología de recíprocos”, OKMA, Antigua, Guatemala, December 2004.

- b. *Ja* *ø-qa-b'iy* *q-iib'*.
 COMP ABS.3SG-ERG.1PL-hit ERG.1PL-RECP
 ‘We hit each other.’

The nominal root *-iib'*, which is widely used to express reciprocals and reflexives in Mayan languages,²⁰ here belongs to the class of nouns prefixed for possessor, and this class most prominently includes body part nouns. (Note that here I follow the Mayanist tradition in glossing the possessor prefix as “ergative” though when attached to nominal roots it has the possessive function exemplified here). Syntactically, it patterns like other nouns, for example occupying the object slot (in fact in most Mayan languages it is restricted to mutual relations in which one role can be linked to the object position). Object (absolutive) verb agreement is fixed at third singular whatever the person of the subject, suggesting that (at least historically) the object was the noun itself (whatever its meaning once was), with the person being marked in a possessor position.²¹

In other languages, such as Japanese ([*o*]*tagai*), there is no evidence for the reciprocal nominal being possessed, and the lack of agreement makes it impossible to determine its person, but its syntactic characteristics are those of a noun in other crucial respects. And in some languages, such as Basque, there is no evident possessive morphology, but the agreement patterning of the reciprocal nominal is clearly that of a third person singular noun. I discuss these examples below.

While in Mayan languages the relational noun *-iib'* or its equivalents can have both reflexive and reciprocal functions, Welsh (cf. [16]) gives an initial example of a possessed noun specialized for reciprocal function; the nominal *cilydd* (which also means ‘fellow’) is marked as possessed by the preposed pronominal *w* plus initial mutation of *c* to *g*. The construction can be understood as a development from an implicit distributive of the type ‘they [each] walked past their fellow’.²²

20. See e.g. Aissen (1987) for detailed discussion of this construction in Tzotzil (whose reflexive/reciprocal marker is the relational noun *-ba*).

21. Though this statement holds for the equivalent construction in almost all Mayan languages, there is an emerging variant of Awakateko (J. Mendoza, V. Rodriguez and P. Delgado, p.c.; cf. Note 19) in which the verb marks the person and number of the object position as well as the subject, so that (15b), for example, is rendered in the more innovative variant as *Ja qo'-qa-b'iy q'iib'*, using the first person absolutive prefix *qo'-* instead of the zero third singular prefix employed in the more conservative variant represented by (15b). The exact details of this emerging construction merit a more detailed investigation.

22. Tok Pisin is a language where such a structure appears to be incipient, with reciprocal readings available from ‘brother’ by implicature. The Tok Pisin translation of John

- (16) Welsh (King 1993: 103)

Naethon nhw gerdded yn syth heibio i'w gilydd.
 AUX.3PL.PST 3PL walk in straight past to 3PL.RECP

'They walked straight past each other.'

Constructions of this type draw on a range of etymological sources for the nominal root, all having to do with equivalence or permutation of other equivalents.²³ The San Pablo Güilá dialect of Zapotec (A. López Cruz, handout)²⁴ employs the root *sà* 'companion', whose original use is illustrated in (17a); when used as a normal noun it is preceded by the plural marker *rá* (cf. [17b]). When used as a reciprocal nominal, however, the plural marker is not employed (cf. [17c]). Note that in this dialect there are distinct forms of the possessor suffix according to whether the antecedent is a pronoun (cf. [17c]) or a full NP (cf. [17d]); this distinction is found equally among constructions with the original 'companion' meaning and those where it is used reciprocally. Alongside its "each other" type construction, Finnish has a reciprocal construction based on the root *tois-* 'other', marked with the plural, the relevant case, and a possessive suffix agreeing in person and number with the subject (cf. [18]).

13:14 "You, then, should wash each other's feet" (GN), or "Ye also ought to wash one another's feet" (KJ) is *Orait yupela tu i mas wasim lek bilong ol brata bilong yupela*. This still allows the back translation 'so you must also wash all your brothers' feet', in addition to the reciprocal reading (Sebastian Fedden, p.c., based on work with Chris Kia; "Reciprocals in Tok Pisin." Handout for course 'Reciprocals and Lexical Typology', Dept. of Linguistics and Applied Linguistics, University of Melbourne, 2003.). There is as yet no constructional distinction that allows us to differentiate the reciprocal from a metaphorical "brother" reading.

23. Comparable constructions in two African languages are found in Koromfe (Rennison 1997: 113) and Ful (Jungraithmayr and Abu-Manga 1989: 181), which respectively use the nouns *domba* 'comrades' and *bannd-* 'relative' as reciprocal markers. In Koromfe the reciprocal noun is plural but unpossessed, while in Ful it is singular and possessed by the third person singular suffix *-um*.

24. "Reciprocidad en Zapoteco de San Pablo Güilá." Paper presented at a workshop on "Tipología de recíprocos", OKMA, Antigua, Guatemala, December 2004.

- (17) Zapoteco de San Pablo Güilá (A. López Cruz 2004, handout)
- ²⁵

- a. *m-náa-bá sà'-bá*
 COMP-see-3SG.SBJ companion-3SG.POSS
 'He saw his companion.'
- b. *m-náa-bá rá sà'-bá*
 COMP-see-3SG.SBJ PL companion-3SG.POSS
 'He saw his companions.'
- c. *r-gíny-rábá sà'-rábá*
 HAB-hit-3PL.FML.SBJ RECP-3PL.FML
 'They hit each other.'
- d. *r-gíny rácontr sà'-nii'*
 HAB-hit PL enemies RECP-3SG.POSS(full NP)
 'The enemies hit each other.'

- (18) Finnish (Mikko Salminen, p.c.)

te tutustu-i-tte tois-i-i-nne
 2PL get.to.know-PST-2PL other-PL-ILL-2PL
 'You got to know one another.'

There are also many languages which have extended a possessed root meaning 'self', basically used in reflexives, to reciprocal constructions as well, e.g. the root *immin-* in Greenlandic Eskimo (Fortescue 1984: 155–167), which may be suffixed for person and/or case. Or the etymology for the reciprocal nominal in constructions of this type may simply be unclear, as in the case of the widespread Mayan "relational nominal" root *-iib* exemplified in (15) above for Awakateko.

Common to all the above examples is the presence of an overt possessor marker on the reciprocal nominal. It is an interesting question, deserving of further investigation, whether the antecedence requirements for this type of construction are any different from that for the floatable first element of binomial NPs – one might expect that they would parallel the antecedence requirements for (possessive) pronouns rather than lexical anaphors, but as far as I am aware no studies of individual languages have tested this possibility.

Finally, it should be noted that there are languages with reciprocal expressions that appear to behave like the other reciprocal nouns already discussed, insofar as they display noun-like morphology and trigger third person singular agreement on the verb, but which do not mark the reciprocal nominal for possession. An

25. Cf. Note 24.

example is the Papuan language Savosavo (Wegener forthcoming), where the reciprocal marker *mapamapa*, derived from the word *mapa* 'person', occupies an NP slot but without any overt mark of being possessed; this language shows object agreement on the verb, and reciprocal constructions always show third person singular masculine agreement regardless of the person and number of the reciprocants. Basque is a further and better-known example: the word *elkar* and its variants *alkharr*, *alkar* and *elgar* have been variously described as a "reciprocal pronoun" (Trask 1997: 97), "reciprocal element" (Saltarelli 1988: 120) or "adverb" (Löpelmann 1968: 40). It takes case appropriate to its semantic position in the clause (it can never stand in subject position), and when it occupies the object position the auxiliary agrees with it by taking a third person form appropriate to its syntactic role, such as absolutive in (19a) and dative in (19b).

(19) Basque (Saltarelli 1988: 121)

- a. *Arantxa-k eta Mikel-ek elkar agur-tu*
 Arantxa-ERG and Michael-ERG RECP greet-PRF
d-ø-ut-e *kale-an.*
 3ABS-PRS-AUX-3PL.ERG street-SG.LOC
 'Arantxa and Michael have greeted each other in the street.'
- b. *Arantxa-k eta Mikel-ek elkarr-i*
 Arantxa-ERG and Michael-ERG RECP-DAT
d-ø-io-te *maitasun-a.*
 3ABS-PRS-AUX-3SG.DAT-3PL.ERG love-SG.ABS
 'Arantxa and Michael have love for each other.' (Saltarelli 1988: 121)

According to Trask (1997: 197), citing Michelena (1977), this derives from **hark-har*, "a combination of the ergative and the absolutive of the distal demonstrative stem *har*". This would therefore be a case of an originally binomial anaphor that has fused into a single nominal root over time.

The Japanese reciprocal (*o*)*tagai* takes case-marking postpositions like regular nominals (cf. [20a]), and may be used as an adnominal genitive (cf. [20b]).

(20) Japanese (Nishigauchi 1992: 157; see also König and Kokutani 2006)

- a. *John to Mary ga otagai-o ai-shi-te iru.*
 John and Mary NOM RECP-ACC love-do-PTCP be
 'John and Mary love each other.'

- b. *Bokutachi-wa tagai-no ketten-o yoku shit-te iru.*
 IPL-TOP RECP-GEN fault-ACC well know-PTCP be

'We know each other's faults very well.'

The form (*o*)*tagai* has been argued to derive by nominalization from the verb *tagau/tagawa* 'to be contrary to, different from' (König and Kokutani 2006). This source may account for why *otagai* fails to obey certain syntactic constraints associated with bipartite quantifiers. It is possible to have intervening subjects in the complement clause, as in (21a), and for *otagai* to occupy the subject position of a finite embedded clause (see [21b]). Attempts to attribute these differences to such features as the fact that Japanese lacks AGR (Ueda ms.) appear rather forced, and it may be that its status as a reciprocal nominal rather than a bipartite quantifier is responsible for the different syntactic behaviour here.

(21) Japanese (Nishigauchi 1992: 160)

- a. *John to Mary ga [kono jiken ga otagai-o*
 John and Mary NOM this incident NOM RECP-ACC
kizu-tsuke-ta to] omot-ta (koto).
 wound-mark-PST that think-PST that
 'John and Mary thought this incident would hurt each other.'
- b. *John to Mary ga [otagai-ga Bill o*
 John and Mary NOM RECP-NOM Bill ACC
semeta to] omot-ta (koto).
 accused that think-PST that
 'John and Mary thought each other accused Bill.'

In all of the examples discussed so far, the antecedent position is filled by a normal NP, and the reciprocal nominal occupies the reciprocant position. However, there are languages with reciprocal nominals, such as Yatzachi Zapotec (Butler 1976, 1980), where the apparent valence is reduced by one, the two reciprocant positions being fused and represented by a single reciprocal nominal. As in the San Pablo Güilá variety discussed above, the reciprocal nominal literally means 'their companion', 'our companion', etc., but unlike that variety the Yatzachi construction uses just one argument position, with no independent representation of the antecedent argument, e.g. by a verbal suffix: "the reciprocal construction ... contains a portmanteau realization of the subject and the possessor of an item. In the reciprocal construction, the item is the possessed noun *IRwežR* 'fellow of'. As in the case of *kwiN* 'self of', the possessor of *IRwežR* may be indicated by a bound pronoun of Class I or by a following noun

phrase”²⁶ (Butler 1976: 335). A clear example is the following sentence, which has a regular transitive verb in its first clause and a reciprocal in its second:

- (22) Yatzachi Zapotec (Butler 1976: 335)

ǰ-geʔi-neʔ nadaʔ naʔ bito ǰ-n:ɛ
 CONT-hate-3RESP me and not CONT-speak
lRweʒR-toʔ
 RECP-1PL.EXCL.POSS
 ‘She hates me and we do not speak to one another.’

A rather similar case is Jarawara (Dixon 2004), where reciprocal clauses of transitive verbs are constructed by using a single argument of the form PRON + *abee~ibee* together with a transitive verb, as in (23).

- (23) Jarawara (Dixon 2004: 333)

mee abee tao ni-ne-ke
 3NSG RECP shoot AUX-CONT.F-DECL.F
 ‘They are shooting each other.’

Dixon (2004: 333) analyses the “reciprocal marker *abee* (or *ibee*) as a type of PN [= possessed noun – N.E.] within an NP ... that has a nsg pronoun as head.” However, he does not give any reasons for why it should be the pronoun that is the head, and the sequence is exactly what one would expect of a possessed-noun construction, as in *mee tabori* [3nsg village] ‘their village’ (p. 85, ex. 3.13). An alternative analysis would thus be to treat Jarawara as having a reciprocal nominal construction with a preceding possessive, of the Welsh type, but which reduces the valency of reciprocal clauses as in Yatzachi Zapotec.

Before concluding this section we should mention the possibility that the reciprocal noun can be incorporated into the verb, typically with a concomitant reduction in transitivity as is typical in incorporation constructions. The Papuan language Yéli Dnye (Levinson forthcoming) is a clear example. We leave aside many complexities that need not concern us here, but note that the verbal complex is made up of a proclitic, a verb and an enclitic, rather than a single word, so incorporation is within a sort of “verbal piece” rather than a single word. Compare (24a), which gives a normal transitive clause, and (24b), with the re-

ciprocal nominal *numo*, which incorporates between the proclitic elements and the verb.

- (24) Yéli Dnye (Levinson forthcoming)

a.	proclitic	verb	enclitic
	<i>nmî</i>	<i>vy:a</i>	<i>té</i>
	1PL.IMM.PST.PNCT	hit.PROX	MONFOC.SBJ.3PL.OBJ.IMM.PST
	‘We hit them today.’		
b.	proclitic	INC.NOM	verb enclitic
	<i>nmî</i>	<i>numo</i>	<i>vy: té</i>
	1PL.IMM.PST.PNCT	RECP	hit.PROX MONFOC.SBJ.3PL.OBJ.IMM.PST
	‘We hit each other today.’		

Note particularly that the object agreement on the verb is third person (though plural here rather than singular as in the other languages we have been considering), as shown by the forms of the enclitic. As an illustration of how thoroughgoing third person agreement is, the verb ‘give’, which suppletes for the person of the recipient, takes the third-person recipient form in reciprocals even where the subject is first person. Note also that this example does not show detransitivization effects, but these are found with certain other tense/aspect combinations.

To conclude this section: reciprocal nominals, though not a recognized category in existing typologies of reciprocals, are surprisingly common. Their hallmarks are that the head of the relevant phrase is a noun, although it may be possessed by a pronoun, and that grammatically they are clearly treated as third person arguments, something that follows from the usual etymology of these nouns as ‘fellow’, ‘friend’, etc. Diachronically, they may originate as possessed nouns, or they may arise through fusion of the two elements of a binomial reciprocal. And another step of reanalysis – by which there is a shift from treating the nominal component as head to the pronominal component – may turn them into reciprocal pronouns, a type to which we now turn.

3.1.3. Reciprocal free pronouns

Like bipartite quantifiers and reciprocal nouns, these are distributionally equivalent to free NPs, but in contrast to them they pattern like personal pronouns in showing person/number categories directly (and not via a possessive pronoun or affix, as with some reciprocal nouns). Unlike the case with bipartite quantifiers, or with reciprocal nominals not specified for the person and number of possessor, the fact that reciprocal free pronouns have their own person/number

26. This suggests a possible reanalysis route by which the Yatzachi Zapotec structure arose, as a pair of adjacent NPs in a sentence like *see [fellow]_O [those mules]_A* was reanalysed as a complex NP containing an adnominal possessive, of the type *see [fellow [those mules]]_{A=O}*.

features means there is no need to seek an antecedent before determining their reference. In other words, they are like a regular pronoun in specifying person and number values, but have the additional semantic information that the argument they mark is a participant in a mutual action. There is no morphological evidence for considering them to be nouns synchronically, though it is likely that the etymological source for many of them is as reciprocal nouns.

Two examples of reciprocal free pronouns are the Australian language Warluwarra (cf. [25]) and the Chadic language Hausa (cf. [26], [27]). In Warluwarra these pronouns may also have a reflexive function (not shown here), particularly in the singular, but in Hausa²⁷ they are specialized to reciprocal function.²⁸

- (25) Warluwarra (Breen forthcoming: 919)

Warrawurla-wiya-gu wulaba danmarna.
dog-DU-ERG 3DU.RR bite.PST

'The two dogs bit one another.'

- (26) Hausa (Newman 2000: 530)

mun tsallàkē jūnan-mù
IPL.AUX jumped RECP-IPL

'We jumped over one another.'

- (27) kù tàimàki jūnan-kù
2PL.AUX help RECP-2PL

'You (pl) should help one another.'

Reciprocal markers of the type exemplified by German *sich* are normally called "reflexive" and/or "reciprocal" pronouns (depending on the meaning in focus).

27. Etymologically, the Hausa reciprocal pronouns come from *jiki* 'body' plus a suffix *-nà* of unknown origin (Newman 2000: 529). Heine (1999; also Heine and Miyashita this volume) points out that shifts from 'body' to reflexive marker and on to reciprocal marker are common in African languages, generally resulting in a marker that has both reflexive and reciprocal functions, such as Yoruba *ara won* 'their bodies; themselves; each other' (cf. Awoyale 1986: 11). In the Hausa case, however, there is no evidence of a reflexive reading.

28. In addition to three regular persons, Hausa has an additional fourth person form, used for example with impersonals. This can also be used as a substitute for any of the other person-specific forms, and is the preferred option when the reciprocal is an adnominal modifier such as a possessive. However, it is still possible to use the person-specific reciprocal pronouns with adnominal possessives, e.g. *Bellò dà Tankò sun dàuki hótunàn jūnansù* 'Bello and Tanko took each other's photo (in turn)' (Newman 2000: 530).

As König and Kokutani (2006) demonstrate, they can be conjoined with full NPs (28).

- (28) *Die beiden Angeklagten beschuldigten sich gegenseitig*
the both defendants accused REFL/REC mutually
und ihre Nachbarn.
and their neighbours

'The two defendants accused each other as well as their neighbours.'

Do *sich*-type reciprocals fit the definition of reciprocal pronoun given here? In contrast to the other examples discussed in this section, they do not have distinct forms for all persons: as is well-known, non-third person forms simply use the normal object form (e.g. *uns* for 'us.OBJ' or 'each other' with a first person plural subject). In contrast to the Hausa reciprocal pronouns, they are limited in their syntactic positions. They are unable, for example, to function adnominally in contexts like 'each other's parents', where the binomial anaphor would be used instead (*die Eltern voneinander*). Nor can they appear in contexts where the antecedent is a non-subject, such as 'introduced them to one another' – see König and Kokutani (2006) for more discussion, and also Gast and Haas (this volume) for more discussion of syntactic restrictions on reciprocal *sich* in German. Reciprocal free pronouns thus appear to be a transitional case between canonical reciprocal pronouns, of the Hausa type, and bound pronominal clitics like French *se*, to be discussed in the next section.

3.1.4. Reciprocal bound pronouns

Here the reciprocal pronoun is bound, either as an affix or as a clitic. I deal with each in turn. It is generally the case that such bound pronouns exhibit reflexive/reciprocal polysemy, but not always: Koyukon Athapaskan (Jetté and Jones 2000) and a number of north-west Caucasian languages²⁹ have dedicated reciprocal bound pronouns.

3.1.4.1. Bound reciprocal pronominal affixes

These may either be affixed to the verb itself, as in Amanalco Nahuatl (cf. [29]), or to an auxiliary base, as in Warlpiri (cf. [30]). In Nahuatl there is a single bound marker used for all persons and numbers, while in Warlpiri and many other languages there may be distinct forms for certain person/number combinations, though these are often formally identical to the regular object

29. Including Abkhaz (see below), Adyghe (Rogava and Keresheva 1966) and Kabardian (Colarusso 1992).

forms.³⁰ What distinguishes these affixes from the verbal affixes to be discussed in Section 3.2 is that they occupy a pronominal slot, rather than a slot used for valency-changing and other derivational affixes.

- (29) Nahuatl (V. Peralta Ramirez, handout)³¹
Ø-mo-ma:-lan-ki:etkia-? in *sowa:-me*
 3SBJ-RR-hand-grasp-PL DET woman-PL
 'The women take each other's teeth / grasp their own hands.'³²

- (30) Warlpiri (Hale, Laughren and Simpson 1995: 1437)
Ngarrka-jarra-rlu ka-pala-nyanu paka-rni.
 man-DU-ERG IPFV-3DU.SBJ-RR strike-NPST
 'The (two) men are striking themselves / each other.'

In at least some cases it is clear that reciprocal pronominal affixes have evolved from regular pronominal affixes. In Khoekhoe, for example, the reciprocal suffix on the verb occupies the same slot as bound object pronouns, and may have evolved from the third plural object marker, with which it is homophonous (Rapold forthcoming). A particularly interesting case is the Australian language Nyangumarta (Sharp 2004), which has two invariant reflexive/reciprocal markers occupying the object/indirect object marking slot: *-rninyi/-rninya*, used when the unidirectional verb takes a direct object, and *-rnangu/-rnanga*, used when the unidirectional verb takes an indirect object. Each of these two reciprocal markers, though synchronically invariant for person, is etymologically

30. A further example is Tepehuano del Sur, where the first person singular and plural forms of the RR are identical to the object forms, but where there is a single form for all second and third person, singular and plural, RR objects; since this has been generalized from the 2SGO form, it is identical to the 2SGO form but distinct from the 2PL, 3SG and 3PLO forms (cf. presentation by Gabriela García Salido on "La extensión de pronombre de segunda persona objeto jum como marcador de voz media para la segunda y tercera persona en tepehuana del sur." Paper presented at the VIIIth Encuentro Internacional de Lingüística en el Noroeste, 17–19 November 2004, Hermosillo, Mexico.).

31. "Recíprocos en Amanalco Nahuatl." Paper presented at workshop "Tipología de recíprocos", OKMA, Antigua, Guatemala, December 2004.

32. Although the pronominal affix in Nahuatl itself allows both reciprocal and reflexive readings with plural subjects, reduplication of the verb root can be used to force a reciprocal reading (V. Peralta Ramirez, handout; cf. Note 31): *Ø-mo-hta-?* in *ičpoka-me* [3SBJ-RR-see-PL DET girl-PL] 'the girls see themselves / each other', but *Ø-mo-i:-ihita-?* in *ičpoka-me* [3SBJ-RR-RDP~see-PL DET girl-PL] 'the girls see each other'.

derived from fused subject and object pronominal affixes: *-rninyi/-rninyi* from '1SG.SUBJ>1SG.OBJ', and *-rnangu/-rnanga* from '1SG.SUBJ>2SG.DAT'.

- (31) Nyangumarta (Sharp 2004: 435)

Purlpi kulu-rnu pula-rninyi, wayarti-pa pupuka.
 long.time meet-NFUT 3DU.SBJ-RECP turtle-CONJ frog

'A long time ago those two met up with each other, the turtle and the frog.'

Interestingly, there are a number of languages with bound reciprocal affixes – all in the north-west Caucasian family³³ – which appear to violate the otherwise robust universal that the reciprocal marker will never be lower on a scale of grammatical relations than its antecedent. Abkhaz, for example (Hewitt 1979a,b), has two reciprocal prefixes: one, *ay-* in the "Column II" slot employed for indirect objects, and another, *ayba-* (*~eyba-*), in the "Column III" slot employed for transitive subjects. The transitive subject reciprocal form *ayba-* (here glossed "RECP.A") occurs in a number of syntactic contexts: it is "obligatory where the reciprocal relation holds between subject and object" (Hewitt 1979a: 87), as in (32a), and is also used where the relation is between the subject and indirect object (Recipient) of a ditransitive verb (cf. [32b]).³⁴ It appears, then, that the claimed unidirectionality of reciprocal binding only holds universally where the construction expressing the reciprocal involves free NP expressions, and does not hold for bound reciprocal pronominals.

33. In addition to Abkhaz, similar facts are found in Adyghe (Rogava and Kereševa 1966, especially pages 270–277); the situation in Kabardian is more complex and does not parallel the Abkhaz/Adyghe facts (Colarusso 1992).

34. See Hewitt (1979b) for a careful marshalling of the evidence that *ayba-* occupies the transitive subject slot. There he refutes an earlier analysis by Lomtadze (1960), who argued that the prefix *eyba-* reduced the transitivity of the verb and that the absolutive prefix is the subject of such constructions. Allen's paper also suggests, as an explanation for the Abkhaz facts, that they reflect a more general preference for the reciprocal actant marker to follow the person-specified pronoun, since the affix order in Abkhaz transitives (ABS-...-RECP-ROOT) conforms to this. To test this idea we need more information on the behaviour of reciprocals in languages that combine OS ordering and an actant-marking reciprocal strategy.

- (32) Abkhaz (Hewitt 1979a: 86)³⁵
- a. *š^o-eyba-bè-yt'*
2O-RECP.A-see-FIN
'You (plural) saw each other.'
- b. *a-y^oə (ə-)h-àyba-te-yt'*
the-wine (3SG.O-)IPL.R-RECP.A-give-FIN
'We gave the wine to each other.'

3.1.4.2. Reciprocal pronominal clitics

This pattern is familiar from the many Romance languages with reflexive/reciprocal clitics, such as French and Spanish *se*, Italian *si*, and so forth, which occupy the object clitic position and have similar distributional patterns to other clitic object pronouns, typically being preverbal in finite clauses and (in Italian and Spanish) encliticizing to the verb in nonfinite clauses and infinitives. In these languages, the normal pattern is for there to be a distinct third person marker that distinguishes disjunct from reflexive/reciprocal readings, as with Spanish *se* (vs 3rd singular masculine *lo*, 3rd singular feminine *la*, 3rd plural *los/las*), but in the other persons for there to be no distinction between disjunct and reflexive/reciprocal object forms, as with *nos* '1PL.O (disjunctive or RR)' in (33b).³⁶

- (33) Spanish (from Allende 2000: 25)
- a. *esa pareja no dej-ó de amar-se,*
this couple NEG stop-3SG.PST of love-INF-RR.OBJ
a pesar de la fuerza ciclónica de sus peleas
despite the force cyclonic of their arguments
'... this couple didn't stop loving each other, despite the cyclonic force of their arguments.'

35. In this and the following example the prefixes I have glossed "O" are in fact absolutive, with the same form also used for intransitive.

36. Of course there are also languages which simply have NO special pronominal forms for reciprocals, so that object pronouns allow disjunct, reflexive or reciprocal readings according to context, as in the cases of Tinrin, Mwotlap and Sa discussed in Section 2. A possible analytic move here is to say that there are two underlying series (one of pronouns, one of anaphors) that could perhaps be teased apart by some subtle syntactic evidence, but my own analytic preference is to avoid postulating two distinct series without at least one person value being distinct (as in the Romance case), and to accept that some languages exist (especially in New Caledonia and Vanuatu) where it is analytically impossible to maintain the distinction between pronouns (free in

- (33b) Spanish (Allende 1986)
- b. *Durante el tiempo que camin-amos juntos la*
during the time that walk-IPL.PST together the
mujer y yo nos ama-mos tanto que
woman and I IPL.OBJ love-IPL.PST so.much that
ya no deseábamos separar-nos.
already NEG desire.IPL.PST.IMPF separate-INF-IPL.OBJ
'During the time that we travelled together the woman and I loved each other so much that we no longer wanted to separate from each other.'

In other languages, however, there are distinct person-sensitive forms for reciprocal pronominal clitics. An example is Wanyi, an Australian language closely related to Garawa (cf. [27] above), which has a full set of reflexive/reciprocal clitics differentiated for person and number, attaching to a variety of clausal elements, such as the verb in (34b). Compare (34a), a normal transitive, with (34b), a reciprocal:

- (34) Wanyi (Laughren 2001: 5 & p.c.)
- a. *Daba=bula=ngaa(n) kirriya-wiya-a.*
hit=3DU.NOM=ISG.ACC woman-pair-ERG
'The two women hit me.'
- b. *Daba=bulangka kirriya-wiya-a muwa.ji-ni.*
hit=3DU.RR woman-pair-ERG/LOC jealous-ERG/LOC
'Two women are hitting each other (i.e. fighting) being jealous.'

A number of typological generalizations have been made about languages employing clitic or affix strategies.

Firstly it is generally the case that this strategy is limited as to role, namely to relations holding between a subject and another core argument. This appears to be largely true, but basically an epiphenomenon of the roles available to bound clitic or affix positions anyway, since languages with triple agreement (e.g. Abkhaz) permit the reciprocal relation to hold between object and indirect object. Note also that in Koyukon Athabaskan, where the same form-set of pronominal affixes is used on verbs for objects, and on nouns to mark possessors, the reciprocal marker, just like any other marker in the series, can be used to mark possession, e.g. 'each other's houses'.

their governing category) and anaphors (bound in their governing category). See Brill (2005) for some further examples drawn from New Caledonian languages.

Secondly, Siloni (2001) has argued for a cluster of properties that go with the use of pronominal strategies; her sample employs languages which happen to use bound reciprocal pronouns, since she does not recognize free reciprocal pronouns or reciprocal nouns as types. To evaluate these would take us too far afield, but see König and Kokutani (2006) for discussion.

3.1.5. Reciprocal role marking on NP

One can conceive of a language in which special case or adpositional marking is used to mark each of the two reciprocants – attaching individually to each reciprocant NP – with a meaning like ‘as one of two reciprocating agents/patients’. *John and Mary love each other* would then be rendered as *John-RECP loves Mary-RECP*. It would also be possible to combine this with valency change and merger of the two reciprocants into a single NP, then giving [*John and Mary*]-RECP *love*. So far I have not found any clear case of a language using either of these strategies as a productive and sole exponent of reciprocal constructions. However, there are some suggestive examples that come close.

With regard to the first sub-strategy, Bangla (Dasgupta 2004) possesses a (rather limited and archaic) construction in which each argument appears in the ergative/locative, as exemplified by (35a,b).

- (35) Bangla (Dasgupta 2004: 136)
- a. *bhaie bhaie jhōgRa kōre*
 brother.ERG/LOC brother.ERG/LOC quarrel do
 ‘Brother fights with brother.’
- b. *rajae rajae juddho hōe*
 king.ERG/LOC king.ERG/LOC war is
 ‘King fights with king.’

This is the only time two distinct NPs can each take this case with a transitive verb. The canonical formulation of this strategy given above assumes that the case or adposition is dedicated to reciprocal situations. This is certainly not the case in Bangla, but since other types of reciprocal construction also often share forms with other constructions (e.g. reciprocal and reflexive) this is not a fatal problem. More seriously, the construction is heavily restricted: stylistically, it only occurs in rather archaic fixed expressions, and there is also a structural restriction that the two NPs be identical (brother & brother, king & king, etc.). For these reasons the Bangla construction is at best a marginal example of our “reciprocal role marking” cell.

With regard to the second sub-strategy, Kuuk Thaayorre (cf. also Gaby this volume) has a special nominal clitic *-nharr* that may attach to the subjects of reciprocal clauses. However, its function is not yet well understood: it appears at best to be a supplementary marker (with a verbal affix carrying out the primary signalling), and is optional rather than a core strategy.

A final unattested strategy in this cluster would involve a variant of the strategy that marks each of two NPs, leaving them in the argument position that they would occupy in a unidirectional clause, but marking them with a special article (let us call it a “reciprocal article”) instead of a case marker, employing a structure like *the<reciprocal> boy saw the<reciprocal> girl* to express ‘the boy and the girl saw each other’.³⁷

3.1.6. Double role marking on NP

Since the reciprocants play a double role in the clause, we could also imagine a language in which the actant NPs in a reciprocal construction take two case markers, one per role. We have already seen, in our discussion of binominal quantifiers, that in some languages (e.g. Modern Greek, Lezgian) each part of the binomial expression takes case independently – reflecting the two case roles associated with the reciprocants – even though on other grounds the binomial reciprocal functions as a single NP. But are there other types of construction in which double role marking is found?

A possible example is another Kuuk Thaayorre construction (cf. Gaby this volume), schematizable as (36), and used in a variety of mutual situations including with overt reciprocal verbs but also with mutual predicates like ‘be next to’ and implicitly cooperative events like ‘talk (together / to each other)’.

- (36) ([N_i]_{erg/nom}) [N_j]_{dat} Pron_{i+j}_{erg/nom} V-RECP / Mutual predicate

In this construction there is a syntagm made up of up to three elements:

- an optional first element marking one reciprocant (and marked with the ergative or nominative according to whether the corresponding unidirectional predicate is transitive or intransitive),
- a second element marking the other reciprocant, bearing the dative case,
- a third element in the form of a summative pronoun denoting the whole conjoint set, which also takes the ergative or nominative as determined by the case frame of the corresponding unidirectional predicate.

37. On definiteness in reciprocal expressions, see Beck (2001).

Though it is tempting to regard the whole unit as a single NP, and the three elements often follow each other as a unit, it is also possible for the individual elements to be separated, making the question of how each element links to the verb's argument structure an involved one.

The crucial point, though, is that the first noun in the syntagm takes the ergative (with a reciprocalized transitive verb) or the nominative (with an intransitive or semitransitive unidirectional verb), while the second noun takes the dative. The following pronoun then takes a case appropriate to the role of the whole NP in the clause. In some cases, such as (37a), the dative case on the second conjunct is what would be assigned to the corresponding argument in a unidirectional clause (cf. [37b]), though this is not always the case, since a dative is also used in (37c) even though the verb 'kick' is transitive and would take an ergative:accusative case array in its unidirectional use: in this example, in other words, the ergative on the first noun is what we would expect from the unidirectional use but the dative cannot be directly accounted for.

- (37) Kuuk Thaayorre (Gaby 2006: 322; cf. also Gaby 2005)
- a. [pam ith pul paanth-ak] nhiinat pul
man DEM 3DU.NOM woman-DAT sit.PST 3DU.NOM
'The man and the woman sat down next to each other.'
- b. [yuk thongkn] [church-ak] thanan
tree tree.NOM church-DAT stand.PRS
'The tree is next to the church.'
- c. [Jimmy-nthurr Johnny-n pul] ngarnghan
Jimmy-ERG Johnny-DAT 3DU.ERG yesterday
thanp-rr-r pul
kick-RECP-PST 3DU.ERG
'Jimmy and Johnny kicked each other yesterday.'

We can thus only partially derive the choice of cases from those used in the corresponding unidirectional predicates. Nonetheless, what is relevant here is that the nouns denoting individual reciprocants (which in turn form part of the conjunct set denoted by a subject pronoun) get two distinct cases, one realized on each of the conjuncts.

Work on the typology of multiple case indicates that it is perfectly possible for embedded NPs to receive more than one case as a result of case-stacking (cf. Dench and Evans 1988). It is also worth raising the question of whether they can receive more than one case as a result of the double-assignment of roles that occurs in reciprocals. This may be manifested as different cases assigned to

different sub-constituents of the NP, as with binomial quantifiers in Lezgian or Greek, or with the Kuuk Thaayorre examples just discussed. Or alternatively – and I am unaware of an example yet of a language that does this – it might be possible for both cases to be stacked on a single NP,³⁸ so that both appear on eligible sub-constituents. Whether such constructions actually occur is a question to be answered by future research.

3.2. Verb-marking (Predicate-marking) strategies

Here I group a number of phenomena that mark the predicate directly to derive the meaning 'mutually PRED' or 'share in PRED-ing' from a basic unidirectional meaning. The commonest method is to use a verbal affix of the type that effects valency changes (Section 3.2.1), and usually reciprocals have their valency reduced by one, but this need not always be the case. It is also possible for verbs to be marked by other sorts of derivational means, including affixes, reduplication,³⁹ etc.; typically these originate from meanings like 'all over the place', 'back and forth', or 'again and again'. It is also possible, in languages that construct predicate lexemes from two parts – an auxiliary or light verb plus a coverb or lexical verb – for reciprocals to be formed by using a special auxiliary (Section 3.2.2).

Although I concentrate below on verbs, it is also possible to have non-verbal two-place predicates of various types, and many languages extend the same constructional mechanisms to these that they employ for verbal predicates. This is particularly common with two-place relational nouns (e.g. kin terms), in the so-called "dyad construction". For example, in the Taiwanese Austronesian language Puyuma⁴⁰ the reciprocal prefix *mar-* can be used with two-place verbs like *sagar* 'love' to derive *mar-ka-sagar* 'love each other', but also with two-place relational nouns like *ali* 'friend' to derive *mar-ali* '(mutual) friends' or with *kartaguin* 'spouse' to derive *mar-kartaguin* 'husband and wife, couple, pair who are each other's spouses'. (The additional *ka-* prefix in *mar-ka-sagar* is selected by the dynamicity of the predicate.)

Likewise there are many languages that use affixes to verbal nouns to obtain "reciprocal verbal nouns", such as Malagasy, which simply feeds reciprocal

38. The possible parallels with 'standard' case stacking were suggested to me by Rachel Nordlinger (p.c.).

39. In Godié, for example (Marchese 1986: 231) reduplication is used to mark reciprocity, e.g. *wa wà-wà* [they love-love] 'they love each other'.

40. Data from Elisabeth Zeitoun (handout), "Reciprocals in the Formosan languages: a preliminary study." Paper presented at the Ninth International Conference on Austronesian languages (9-ICAL), Canberra, 8–11 January 2002.

verbs into the process of nominalization (cf. [38]), or Japanese, which can form reciprocal nouns with the Sino-Japanese prefix *soogo-*, as in (39).

- (38) Malagasy (Keenan and Razifamamonjy 2004: 199)

- a. *mpifanome*
give.RECP.NMLZ
'givers to each other of money'
- b. *mpifampilaza ho mpangalatra*
say.as.RECP.NMLZ.ACTV as steal.NMLZ.ACTV
'those who said each other to be thieves'

- (39) Japanese (König and Kokutani 2006: 292)
fujo 'help' > *soogo-fujo* 'reciprocal help'
shien 'support' > *soogo-shien* 'mutual support'

It is in order to accommodate examples like these in our constructional typology that we need to characterize this type as "predicate marking strategies" rather than "verb-marking strategies". However, a thorough investigation of the means used to form reciprocal constructions from nominalizations and relational nouns is beyond the scope of this paper: see Evans (2006) for details.

3.2.1. Affixation and other morphological modification of the predicate

Affixation to the predicate is one of the commonest methods of forming reciprocal constructions: among the many languages from every continent that employ such means are Chicheŵa (Mchombo 1991), Turkish (Lewis 1967), Kolyma Yukaghir (Maslova 1999), Imbabura Quechua (Cole 1985), Hixkaryana (Derbyshire 1979) and Biniŋ Gun-wok (Evans 2003). Though in many languages the same form is used for reciprocals and reflexives (e.g. Hixkaryana, or the Quechua verbal suffix *-ri*) or for reciprocals and comitatives or sociatives, there are also many that employ dedicated reciprocal affixes, such as Kayardild (Evans 1995; cf. [40]) and Mundari (Evans and Osada forthcoming; cf. [41]).

- (40) Kayardild (own field notes)

Bil-da miila-thu-th.
3PL-NOM delouse-RECP-ACTL
'They delouse each other.'

- (41) Mundari

siku-ko=ko da<pa>Ra-ta-n-a
louse-PL=3PL.SBJ search<RECP>-PROG.ORT-INTR-IND
'They are delousing one another.'

It is commonly said that languages with such verbal derivations produce intransitive reciprocal clauses, by Faltz's intransitivization rule⁴¹ (Faltz 1985: 14–15):

- (42) $P(x, x) = P_R(x)$

This accounts for the fact that Kayardild and Mundari have an apparent valence reduction, by one, in reciprocals; the unidirectional equivalent of (40), for example, would be (42), with an underived verb and an object.

- (42) Kayardild (own field notes)

Bil-da miila-tha bilwan-ji.
3PL-NOM delouse-ACTL 3PL-OBJ
'They delouse them.'

However, such languages often give rather mixed signals about transitivity once their syntax is examined in detail (see Evans, Gaby and Nordlinger 2007), showing conflicting evidence about whether the object is present or not. For example, they might have only one argument, but in the ergative, as in Kuuk Thaayorre, which elsewhere only uses the ergative in transitive clauses.

- (43) Kuuk Thaayorre (Evans, Gaby & Nordlinger 2007: 571)

parr-n peln ii waarin-rr
kid-ERG 3PL.ERG there chase-RECP
'All the kids are chasing each other.'

More seriously, though most languages that mark reciprocal on verbs manifest argument reduction, this is not always the case. Two New Caledonian examples are Nêlêmwa and Xaragure:

- (44) Nelemwa (Bril 2002: 153)

Hli pe-tuâ-i-hli.
3DU.SBJ RECP-deceive-TR-3DU.OBJ
'They deceived each other.'

41. Faltz's formulation was aimed primarily at reflexives, but given the many languages that use the same forms (and effectively have the same syntax) for both reflexives and reciprocals – many represented in his important book – it can be taken to apply to reciprocals as well.

- (45) Xaragure (C. Moyse-Faurie, handout;⁴² cf. also Moyse-Faurie this volume: 121)

nyärä pu-kêgai nyärä
 3PL RECP⁴³-pinch 3PL
 'They are pinching each other.'

- (46) *nyärä kêgai nyärä*
 3PL pinch 3PL
 'They pinch them.'

In both these cases, verbs with reciprocal-marking morphology still take two surface arguments that need linking to thematic roles. It is therefore important to define this construction type in a way that does not take change in valence as criterial. (We have in any case already seen that there are languages with actant-coded reciprocal strategies that also alter valency.)

Before leaving this section, there are two boundary problems worth special mention.

One concerns the Japanese *V-au* construction, to be discussed in Section 4.3.1, where reciprocal verbs are formed by compounding the main verb with a verb meaning 'meet'. These are treated here as a special type of clause union, but it would not require too many changes to the language for it to be reanalysed as verb affixation, where the suffix happens to be homophonous with a free verb meaning 'meet'. The Japanese construction thus suggests one diachronic source for verbal affixes encoding reciprocity.

The second concerns the Mandarin 'V-come-V-go' construction, to be discussed in Section 4.3.2. Again this clearly originates as a type of nuclear-level verb serialization, but it is also possible to analyse the resultant word as a four-part verbal compound (or a composite of reduplication and compounding) which, for syntactic purposes, is a single lexical item. Here, again, this could then be treated as a predicate-marking strategy.

3.2.2. Reciprocal-coding auxiliaries

In a number of languages in which a significant number of verb lexemes are two-part, with a coverb + auxiliary/light verb structure, switches in auxiliary are used to mark mutual action. These include several languages of the Nyul-

42. "Reciprocals in some Kanak and Polynesian languages." Paper presented to Reciprocals Working Group, University of Melbourne, 2004.

43. This is Moyse-Faurie's gloss; given the functional range, 'middle' might be accurate.

nyulan family in Australia (see Hosokawa 1991: 175; McGregor 1999) and the Papuan language Skou. Consider first the following example from the Nyulnyulan language Warrwa, where the unidirectional construction in (47a) employs the coverb *ngul* 'spear', the auxiliary *ma* 'put' plus a transitivity-marking conjugational prefix *a-*, while the reciprocal construction in (47b) employs the reciprocal-marking auxiliary *wanji* 'exchange'.

- (47) Warrwa (W. McGregor, p.c.)

- a. *kinya ngul ngirr-a-ma-ny*
 this spear 3AUG.SBJ-TR-put-PRF
 'They speared it.'
- b. *ngul ngirr-wanji-na*
 spear 3AUG.SBJ.PST-exchange-PST
 'They speared one another.'

The original structure here is likely to have been something like 'they exchanged kisses', 'they exchanged blows', etc., but the auxiliary *banji/wanji* now has a much wider range of uses, including reflexive, e.g. for 'the girl grooms her hair'.⁴⁴ More generally, in the Nyulnyulan languages, the auxiliary *-barnj-* 'exchange' is used for "reflexive/reciprocal activities; activity directed and constrained within delimited set of actants" (McGregor 2002: 111). It occurs in the following combinations with uninflecting verbs (McGregor 2002: 110–114): *kur* 'embrace', *wirrwirr* 'scratch', *barbar* 'flagellate', *bard* 'catch hold of'. Further reciprocal and reflexive examples from McGregor (2002: 113–114) include *daarr ... -barnj* 'meet together' (*daarr* 'arrive'), *durr -barnj* 'push one another' (*durr* 'push, bump'), *jarrbard ... barnj* 'lift oneself up'. See also McGregor (1999) for more sentence examples.

Skou (Sko family, PNG) exhibits a rather similar system, using a combination of nominal plus light verb. Unidirectional 'shoot' is encoded by combining *ping* 'bow' with the auxiliary *ú* 'release' plus the requisite subject and object prefixes, while 'shoot each other' combines the same nominal with the verb *ti* 'do', with just subject marking on the auxiliary:

44. Note also that the auxiliary *banji* descends etymologically from an original free verb, which actually includes a reciprocal suffix *-nji* cognate with the Kayardild suffix *-(n)thu-* in example (40) – see Alpher, Evans and Harvey (2003).

- (48) Skou (Sko family, PNG) (Mark Donohue, email to N.E.)
- a. *Te=Máwo te Te=Téme ping te=r-ú*
 3PL=Skou.Mabo 3PL 3PL=Nafri bow 3PL=3PL-release.PL
 'The Skou Mabos shot the Nafri.'
- b. *Te=Téme Te=Máwo ping te=ti*
 3PL=Nafri 3PL=Skou.Mabo bow 3PL=do.PL
 'The Nafri and the Mabos shot each other.'

Reciprocal auxiliaries are also found in some sign languages. In Indo-Pakistani Sign Language, for example (Zeshan and Panda forthcoming), some kinds of mutual action are encoded by first making a lexical sign indicating the action type (e.g. 'embrace') and then following it with an auxiliary indicating reciprocal.

It is easy for auxiliaries to turn into verbal affixes via univerbation. In Gooniyandi (McGregor 1990), spoken not far to the east of the Nyulnyulan languages, verbs have a two part lexical structure of the type STEM-PRON.PREF-[etc.]-V.CLASSIFIER-TAM. The "verbal classifiers" are, etymologically, old auxiliaries that have become fused phonologically with the other part of the verb containing more detailed lexical specification. Contrasts in classifier can be used, among other things, to encode the differences between unidirectional and reciprocal predicates, as in (49a,b): the glosses "VCL(A)" and "VCL(ARNI)" refer to different 'classifier' elements within the verb. What is relevant for our purposes here is that an original auxiliary strategy has developed, in Gooniyandi, into what we would consider a verbal affix strategy.

- (49) Gooniyandi (W. McGregor, p.c.)
- a. *mila-wirr-a*
 see-3PL.SBJ>3PL.OBJ-VCL(A).AUX
 'They saw him.'
- b. *mila-wirr-arni*
 see-3PL.SBJ-VCL(ARNI).AUX
 'They saw one another.'

3.2.3. Lexical strategy

Most languages have at least some verbs whose meaning already encompasses mutual activity, and which (unlike e.g. 'kiss') cannot be used unidirectionally. English examples are *exchange* (= 'give each other [things considered equivalent]'), *swap*, and *quarrel* (= 'argue with each other'). In some languages this is the only constructional means of expressing reciprocity, for a limited set of

possible relations: an example is Kilivila (Senft forthcoming) which has the verb *katumapu* 'exchange', but which for describing other types of mutual activity either employs completely compositional biclausal descriptions, or uses implicatures from plural subjects. It remains to be seen whether there are languages that make use of a large set of mutual verbs as their primary strategy for expressing reciprocity.

3.3. Conjunct strategy

Here the set of reciprocants are conjoined into a single argument which represents just one of the two argument positions, so that there is a reduction of valency by one. Diagrammatically:

- (50) a. Unidirectional
 $V < x, y >$
- b. Reciprocal
 $V < x + y >$

This strategy can be exemplified by the well-studied English construction available for a large set of mutual verbs (Lakoff and Peters 1969).⁴⁵

- (51) a. John kissed Mary and Mary kissed John.
 b. John and Mary kissed.

45. Among the many discussions of the semantics of such predicates see Haiman (1983) on the iconicity of the construction and its restriction to stereotypical versions of the action denoted, Kemmer (1993) for substantial cross-linguistic data and Levin (1993) for the most exhaustive list yet available of which verbs belong to this class in English.

Two terminological observations are in order here, to justify why I don't use the terms "light reciprocal" or "naturally reciprocal event", sometimes applied to this construction. First, "light reciprocal" is a relative term only, and is thus not accurate as an absolute label in a typology. Thus while the English light vs. heavy reciprocal opposition does indeed use bare conjunct reciprocals for its light version (i.e. *they kissed* vs. *they kissed each other*), in other languages the light reciprocal is a reciprocal pronominal clitic (French *se*, German *sich*, etc.) as opposed to the heavy binomial quantifier (*l'un l'autre*, *einander*, etc.). This means that light reciprocals do not use the bare conjunct strategy in all languages. Secondly, even though it is true that there is a strong correlation between the use of the English bare conjunct strategy and the semantics of the predicates it is used for denoting, namely what Kemmer calls "naturally reciprocal events", again the semantic label and the constructional

It would be logically possible for a language to have this as its only strategy for forming reciprocals. It is certainly mentioned as the basic reciprocal strategy for at least one language, Gumbaynggir (Eades 1979: 318),⁴⁶ though it is said to be “usually” accompanied by the “reciprocal particle” *galagala*.⁴⁷ Reciprocals in Gumbaynggir keep an unaltered verb form, but replace the ERG.ACC argument array with a single NOM argument representing the merged participant set:

- (52) Gumbaynggir (Eades 1979: 318)
- a. *ngiya:la bu:rwaw ngi:na*
1PL.INCL.ERG paint.FUT 2SG.ACC
‘We will paint you.’
- b. *ngiya: galagala bu:rwaw*
1PL.INCL.NOM PTC paint.FUT
‘We will paint each other.’

More commonly, the conjunct strategy is restricted to a delimited set of verbs. Typically these break down further into some that entail, and others that merely implicate, mutual activity. Thus some lexical predicates must have a reciprocal interpretation, e.g. ‘swap’, ‘exchange’, though note that the mutual predicate then denotes a sub-event rather than the whole event: *John and Mary swapped shirts* does not mean “John swapped shirts with Mary and Mary swapped shirts with John” so much as “John gave his shirt to Mary and Mary gave her shirt to John”. It is these verbs that tend to be the grammaticalization source for auxiliaries or light verbs forming reciprocal constructions. A larger class of verbs allows a subset of predicates to have reciprocal interpretations when used with plural subjects and no object. These are discussed extensively in Kemmer (1993) and elsewhere; cross-linguistically, they usually refer to “naturally reciprocal events”. Typically, in a given language, some predicates will entail reciprocal interpretations with conjoined subjects, such as *kiss* in English (cf. [53a]), while

category should be kept distinct, since (a) the set of event types associated with the construction type may vary from language to language, or at different stages of the same language, and (b) in principle one should separate constructional definitions from semantic categories, so as to investigate them as two in-principle independent variables.

46. For just one verb in Gumbaynggir, namely ‘hit’, there is a special reciprocal form derived by suffixation: *bum* ‘hit, kill’ (base form), *bumiri* ‘hit-RECP’. Eades suggests the affixal strategy would once have been more widespread. The reciprocal form fits into a detransitivized construction like other reciprocals.
47. And in fact Eades’ grammar does not include any examples where reciprocals are coded just by valency reduction, without *galagala*.

others, such as *disagree* in English (cf. [53b–d]) merely implicate a reciprocal interpretation without entailing it, and others (in fact the majority) are simply unavailable to the construction (cf. [53e]).

- (53) a. John and Mary kissed. → John kissed Mary and Mary kissed John.
b. John and Mary disagreed.
c. John and Mary disagreed with each other.
d. John and Mary both disagreed with Bob.
e. *John and Mary saw/hit.

Three typological issues involving this construction type deserve further mention:

(a) In many languages with predicate-affixation for reciprocity, such lexical reciprocals are simply non-existent, or else are limited to a subclass of predicates that cannot host reciprocal affixes. For example, in the Gunwinyguan languages Bini Gun-wok and Dalabon ‘meet’, ‘kiss’, etc. must all take overt reciprocal affixes (see [54a,b]), but predicate adjectives like ‘resemble/be alike’ (see [54c]), which are morphologically ineligible to take the reciprocal suffix, can be used with a conjoint subject and no overt marking to give a reciprocal reading:

- (54) Dalabon (own field notes)
- a. *Barra-h-dalû-djornghmi-rr-inj.*
3DU.SBJ-ASS-mouth-kiss-RR-PST.PRF
‘They kissed each other.’
- b. **Barra-h-dalû-djornghmi-inj.*
3DU.SBJ-ASS-mouth-kiss-PST.PRF
‘They kissed.’
- c. *Barra-h-kornam-rokrok.*
3DU.SBJ-ASS-height-similar
‘They are the same size, same height.’

(b) As we have seen with many other construction types, the scope of the phenomenon is two-place predicates, rather than verbs. Kinship terms, for example, often yield comparable interpretations with conjoint subjects, as in (55a), or the nice contrast in Don Quixote between the non-reciprocal interpretation of *dos primas (mías)* ‘two cousins (of mine)’ (cf. [55b]), where the cousin relationship of each is calculated with respect to a third point (the speaker), and *dos hermanas (que no eran mías)* ‘two sisters (who weren’t mine)’, where the sister relationship is calculated reciprocally, i.e. they were each other’s sisters.

- (55) a. *Myfanwy and Olwen are sisters.*
 b. *Yo voy aquí porque me burlé demasiado con dos primas mías y con dos hermanas que no eran mías; finalmente, tanto me burlé con todas, que resultó de la burla crecer la parentela tan intrínsecamente, que no hay diablo que la declare. (Don Quixote, Parte Primera: Capítulo XXII)*
'I'm here because I played around with two cousins of mine and with two sisters who weren't mine; in the end I mucked around so much with them, and such an intricate genealogy grew out of it, that not even the devil could work it out.' [translation and italics mine]

(c) Both of the defining features of this construction type – the conjoining of both reciprocants into a single actant, and the reduction of the predicate's valence – are found in many other construction types as well. Valence-reduction is particularly common with the other predicate strategies, such as predicate marking and the use of reciprocal auxiliaries, but is also sometimes found with some types of actant strategy, such as reciprocal pronouns and reciprocal clitics. The formation of a conjoined actant containing all reciprocants is found with every monoclausal strategy, but there are some biclausal or sesquiclausal strategies that do not employ conjoined actants (see especially the Iwaidja/Mawng 'in turn' construction discussed in Section 4.4). If we were to fully factorize our typology into components, which are then grouped together, in various combinations, into constructions, then the bare conjoint strategy would simply be the conjunction of valency reduction and reciprocant conjunction without any further element, such as explicit marking on the predicate.

3.4. Modifier strategies

In this type, mutuality is encoded by a modifier with proposition-level scope. Unlike with actant strategies, the exponent of reciprocity in modifier strategies does not distribute like an NP or actant affix, and unlike predicate-marking strategies it does not show any morphological or syntactic link to the predicate. Where the predicate is a verb, the modifier will in most languages be realized as an adverb (*reciprocally* / *reciprocamente* in [8] above) or a clause-level particle. Where the predicate is a nominal, it will in most languages be realized as an adjective (*reciprocal* in [56]). The messy state of cross-linguistic and language-internal definitions of the "adverb" category, however, results in there being even less terminological parity across languages here than for most other types. In the rest of this section I concentrate on adverbial modifiers where the reciprocal predicate is a verb.

- (56) *I find it difficult ... to conceive that complex spoken language ... evolved more as a form of reciprocal grooming and gossip than as a means to extend our cooperation productively and to teach our offspring by transmitting practical information. (Oppenheimer 2003: 25)*

In European languages, adverbial reciprocals are predominantly found either where the predicate is non-verbal (e.g. *mutually advantageous/incomprehensible*), or as a disambiguating strategy with polysemous constructions such as the reflexive/reciprocal *se* in Spanish (57).

- (57) Spanish (from Allende 2000: 67)

Dejaron de explorar las doscientas veintidós
 stop.3PL.PST of explore.INF the two.hundred twenty.two
maneras de hacer el amor porque con tres o
 ways of make.INF the love because with three or
cuatro tenían suficiente y ya no
 four have.3PL.PST.IMP enough and already NEG
era necesario sorprender-se mutuamente.
 be.3PL.PST.IMP necessary surprise.INF-3RR mutually

'They stopped exploring the two hundred and twenty two ways of making love, because with three or four they already had enough, and it was no longer necessary to surprise one another.' [translation mine]

The same is true for many languages from other parts of the world, which use reciprocal adverbs as a secondary strategy when verbal-affix or bipartite strategies are not available. For example in Kayardild, where the primary strategy is a reciprocal suffix on the verb (cf. [44] above), the adverb *junkuyunku* is used either where the reciprocants are not in an appropriate pair of grammatical relations for verbal coding (cf. [58]), or where the predicate is not a verb and therefore not eligible to bear the reciprocal suffix (cf. [59]):

- (58) Kayardild (Evans 1995: 228)

maarra junkuyunku munirr-wu-j
 all reciprocally breast-give-CTL

'(In the old days) all (the women) suckled each other's children.'

- (59) Kayardild (own field notes)
Karndi-ya dun-da jungarrba bayi junkuyunku maarra
 wife-NOM husband-NOM big angry mutually only
miburl-da kurri-nju-n-d.
 eye-NOM see-RECP-NMLZ-NOM
 'The husband and wife are very angry with one another, they are just staring at each other.'

In other languages, however, such as Mandarin (cf. [60])⁴⁸ and Tetun (cf. [61]), reciprocal adverbs are the primary strategy:

- (60) Mandarin (Liu 1999: 124)
Tamen huxiang gongji.
 they RECP attack
 'They attacked each other.'
- (61) Tetun Dili (Williams-van Klinken, Hajek and Nordlinger 2002: 60–61)
João ho Maria istori malu.
 John and/with Maria quarrel RECP
 'John and Maria quarrelled.'

Some descriptions, though analysing the reciprocal marker as adverbial, indicate a nominal source etymologically, as in Kobon, where it derives from a noun meaning 'debt, reciprocation, compensation' (Davies 1989: 90–91). In the other direction, it is likely that many predicate-marking strategies (such as verbal affixes with etymologies meaning 'all around, back and forth', etc.) arise through univerbation with what once were adverbs. Less expectedly, there are also cases where reciprocal pronouns have arisen through fusing object pronouns with a phasal adverbial, such as in Tawala (Ezard 1984, cited by König and Moyse-Faurie, *handout*),⁴⁹ where the third person plural reciprocal marker *me-hi* 'RECP-3PL.OBJ' has arisen by prefixing a reduced form of *meme* 'again' to the pronominal object marker.

48. See Lien (1994) on the complex history of the original reciprocal adverb *xiang* in Chinese, including its compounding with various elements in many modern Sinitic languages, but also its absorption into the verb itself in others.

49. "Renewing connection with the data: reciprocal constructions in Oceanic Languages." Paper presented at the *Sixth Biennial Meeting of the Association for Linguistic Typology*, Padang, July 2005.

4. Strategies involving more than one clause

Given that the meaning they represent involves at least two predicates – e.g. LOVE (j,m) and LOVE (m,j) – it is not surprising that many languages employ more than one clause to express mutual situations. In Cantonese, for example (cf. [62]), this is the primary strategy for expressing mutuality, as it is in the Papuan language Golin (cf. [63]). As Maslova and Nedjalkov (2005:430) point out, such constructions are "iconic, since the complex structure of the reciprocal situation is straightforwardly reflected in the structure of the grammatical construction."

- (62) Cantonese (Matthews and Yip 1994: 87)
Ngóh bái-min kéuih kéuih bái-min ngóh.
 I give-face him he give-face me
 'He and I respect each other.'
- (63) Golin (Chimbu; Papuan) (own field notes)⁵⁰
Abal su i yal paunan aato-n-g-w-e i
 woman two DEM man jaw touch-3-DECL-3-PROX DEM
yal su abal su paunan aato-n-g-w-e.
 man two woman two jaw touch-3-DECL-3-PROX
 'Two girls touch the two men on the jaws, and the two men touch the two girls' jaws [i.e. the girls and the men are touching each other's jaws].'

Simple biclausal descriptions of this type are probably available in all languages. For example, in the following sample of several Bible translations of John 14,11, every language employs this method (presumably following the Greek original) rather than a monoclausal reciprocal like 'the Father and I are in each other'. Note, though, that in Luther's translation the construction is partly compacted in the sense that it is conjoined under a single copula, with third person singular agreement. (It is ironic that a single lexeme exists in Christian theological vocabulary to describe this situation, despite the reluctance of every Bible translation I have investigated to represent it within a single clause. The lexeme is *circumincession* or its variant *circuminsession* – which the OED defines as "the reciprocal existence of the persons of the Trinity in one another.")

- (63) a. English: Believe me that *I am in the Father, and the Father is in me.*
 b. German: Glaubet mir, daß *ich im Vater und der Vater in mir ist.*

50. Data thanks to Chris Kia (p.c.).

- c. French: Croyez-moi, *je suis dans le Père, et Père est en moi*.
 d. Dutch: Gelooft Mij, dat *Ik in de Vader ben en de Vader in Mij is*.
 e. Spanish: ... *que el Padre está en mi, y que yo estoy en el Padre*
 f. Australian Kriol:
Wal yumob garra bilib weya mi dal-im yumob mi
 well 2PL must believe REL 1SG tell-TR 2PL 1SG
jidan garram main dedi en main dedi jidan
 sit with my father and my father sit
garram mi.
 with 1SG
 g. Kunwinjku:
Kandi-woybukwo kore nga-h-yime ngudberre
 2PL>IPL-believe.IMP LOC 1SG-IMM-tell.NPST 2PL.OBJ
bu ngaye ngahni kore ku-kange
 REL 1SG 1SG.SUBJ-IMM-sit.NPST LOC LOC-inside
Ngabbard nuye, dja Ngabbard nungka ka-h-ni
 father his and father 3SG 3SG-IMM-sit.NPST
kore ku-kange ngardduk.
 LOC LOC-inside my

Most investigators have, justly, not considered these to be *reciprocal constructions*, since there is nothing non-compositional about them – rather, they exploit the recursive and concatenative possibilities of natural language to construct biclausal depictions that mirror the mutual, two-predicate semantic representation. But merely being biclausal should not automatically disqualify a form of expression from being considered a reciprocal construction, since the key criterion is whether there is *conventionalization* or *constructional specialization*. We now pass to constructions that clearly make use of more than one clause, but in ways that betray a conventionalization not found in (61)–(63).

4.1. Conventionalized biclausal descriptions

It is easy to envisage a language that is like Cantonese or Golin, in requiring a mutual biclausal construction, but which has conventionalized it to the point of requiring a particle marking reciprocity in one or both clauses. Yidiny (Dixon 1977: 379–380) comes close to this. The normal way of expressing mutual situations in Yidiny is rather similar to the Cantonese and Golin examples given above, but with a crucial difference: at least one, and sometimes both, of the linked clauses contain one of the two “redressive” particles *ḡaybaṛ* or *ḡaymbi*, each meaning something like ‘in return’. An example is (64).

(64) Yidiny (Dixon 1977: 380)

bama:-l ṇaṇaṇ bun ḡa:-ṇ / ṇayu bama ḡaybaṛ
 person-ERG 1SG.ACC hit-PST 1SG.ERG man.ACC in.return
bun ḡa:-ṇ
 hit-PST

‘The person hit me and I hit him in return.’ (= ‘The person and I hit each other.’)

Conventionalization here is shown by two facts:

- the choice between these particles depends on the person of the actor of the “redress clause”: *ḡaybaṛ* when the actor is the speaker, *ḡaymbi* elsewhere;
- there is an option of including the appropriate redress particle in *both* clauses when describing situations in which neither actor is the speaker.

Were the Yidiny construction specialized for expressing mutuality, I would include it as a conventionalized biclausal description. Certainly, many of the examples cited could be rephrased with English reciprocals without change of meaning: ‘the person hit me and I hit him (*ḡaybaṛ*) in return’, i.e. ‘the person and I hit each other’, or ‘I told (this person) a story, and then he, in turn, told me one’, i.e. ‘we told each other stories’. However it is clear from other examples that the meaning is actually a bit broader, taking in other kinds of reciprocation, so that the event need not be completely mutual as long as it counts as “fair exchange”, e.g. “you give me some meat and then I’ll give you some vegetables in exchange”, or “You show me where mountain yams (grow) and by-and-by I’ll show you (some) wallabies, in exchange.” For this reason I would not wish to identify the Yidiny construction as a reciprocal construction proper (nor does Dixon in his description), but it shows how a language with a conventionalized biclausal description could function.

4.2. Zigzag summative constructions

An unusual type of multiclausal construction is found in the Papuan language Amele (Roberts 1987). In Amele reciprocal constructions formed from transitive verbs (cf. [64]), the verb is repeated, suffixed by the different-subject marker and a third singular suffix; the construction is closed with a final “matrix verb” which “cross-references the reciprocant group, which can be dual or plural in number” (Roberts 1987: 306). Roberts emphasizes the unusual behaviour of the switch-reference “different subject” marker in this construction: “both coordinate verbs are marked for third person singular subject and for different

subject (DS) following. Therefore they cross reference each other even though they are in linear sequence.”⁵¹ Normally the different subject-marker is only anticipatory, rather than being non-linear as it is in the reciprocal construction. This construction is illustrated in (65).⁵²

(65) Amele (Roberts 1987: 132)

Age *qet-u-do-co-b* *qet-u-do-co-b* *eig-a*.
 3PL cut-PRED-3SG-DS-3SG cut-PRED-3SG-DS-3SG 3PL-TPST
 ‘They cut each other.’

How many verbs, and how many clauses, should the unified zig-zag construction be analysed as having? On initial inspection, we would conclude from the presence of inflections normally placed on verbs, that (65) has three verbs and three clauses (e.g. *qetudocob*, *qetudocob* and *eiga* in [66]). Against this, though, is some evidence that the first two verbs are not independent units. This comes from the conventionalization of their person-marking: whatever the person of the overall subject, that of the “zig-zag” verbs is frozen at third person, as in (66).

(66) Amele (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.SBJ-PST
 ‘We despise each other.’

Here, then, we have a single construction, but comprising three inflected verbs. These verbs have been integrated to the point where they show less indepen-

51. Cf. an earlier remark on this issue in Haiman’s (1980: 435) discussion of a similar phenomenon in Hua: “Rather than a conjunction of medial and final clauses what we encounter ... is a conjunction of medial clauses, each of which, with its final desinence, loops back and thus ‘anticipates’ the other.”

52. In the case where the reciprocating roles are agent and beneficiary, a somewhat different construction is used: in addition to a single occurrence of the lexical verb (‘cut’ in this example, the “object marker and subject suffixation is duplicated” (Roberts 1987: 132).

Age *jacas* *qet-i* *do-co-b* *do-co-b* *eig-a*.
 3PL tobacco cut-pred. 3SG-DS-3SG 3SG-DS-3SG 3PL-TPST
 ‘They cut tobacco for each other.’

This is Roberts’ analysis. But it may be possible to reanalyse this as reduplication of serialized ‘give’, then giving the analysis *do-ø-co-b* [3SG-give-DS-3SG], since ‘give’ is a zero-root verb – see his ex. 634, p. 132. This would make this example, literally, ‘they tobacco cut he.gives.him he.gives.him they are’.

dence than is normal in typical Amele verb-chaining constructions – there, medial verbs, though they do not show tense independently, are free to select whichever person and number values are appropriate for their subject and object. Incidentally, Amele shows particularly clearly that, in addition to representing the individual one-way events normally given in semantic representations of reciprocals, we may wish to add an additional semantic component representing joint action if we take the clues offered by the language seriously.

4.3. Fused multiple predicates

The examples in Section 4.1 show how languages may make use of multiple predicate lexemes to represent mutual situations, mirroring the complex structure of the events they represent. The Amele example in Section 4.2 also shows how the resultant conventionalization may limit the inflectional independence of some of these predicate lexemes, even though in Amele we are still dealing with three distinct predicate words per construction.

Languages may also, however, carry the process of conventionalization and reduction further, to the point where there is clause fusion. Several distinct types of reciprocal construction may result from this process. Firstly, an intransitive verb depicting the overall “cooperative event” may fuse with a lexical verb (typically transitive) one token of the unidirectional sub-events: this is the case with the Japanese V-*au* construction, where the *-au* element is a compounded form of the mutual intransitive verb ‘meet’ (Section 4.3.1). Secondly, successive tokens of a unidirectional verb may be compounded together, along with other indicators that the directionality of the action is reversed: this is the case of the Mandarin ‘V-come-V-go’ construction (cf. Section 4.3.2). A variant on this latter strategy that is made possible by the special semiotic characteristics of signed languages is for the two “opposing” events to be shown simultaneously rather than sequentially, with symmetrical convergent signs by the two hands; this is exemplified by a number of signs for mutual actions in such sign languages as Indo-Pakistani Sign Language (Section 4.3.3). Finally, a redressive or “in turn” clause, originally part of a two-clausal construction of the type ‘A V-es B and B-in-turn V-es A’, may be reduced by truncating all but the contrastive pronoun, which gets reanalysed as part of a single clause; this is the case with the Mawng and Iwaidja reciprocal construction to be described in Section 4.3.4.

4.3.1. Verb compounding with mutual predicate

In Japanese the verb *au* basically means 'meet', with a range of other meanings such as 'fit' (cf. König and Kokutani 2006). As a main verb, it may either be used non-mutually (see [67a]) with the nominative and dative postpositions, or it can be used mutually with a number of possible combinations of the nominative plus the comitative, such as (67b) and (67c).

(67) Japanese (Kuno 1973: 102, 104)

- a. *John ga Mary ni at-ta.*
 John NOM Mary DAT meet-PST
 'John met Mary.' (John moving towards Mary)
- b. *John ga Mary to at-ta.*
 John NOM Mary COM meet-PST
 'John and Mary met.' (each moving towards the other)
- c. *John to Mary ga at-ta.*
 John COM Mary NOM meet-PST
 'John and Mary met.' (each moving towards the other)

In addition to its basic 'meet' use, this verb may be compounded with a unidirectional verb stem with meaning 'V' to give a mutual predicate with the meaning 'V each other'. From *ai-suru* 'love', for example, it can derive the reciprocal expression *ai-shi-au-te* 'love each other', as in (68).

(68) Japanese (Nishigauchi 1992: 157)

- John to Mary ga ai-shi-au-te iru.*
 John COM Mary NOM love-do-meet/RECP-PTCP be
 'John and Mary love each other.'

Semantically, the second 'meet' verb in the compound can be taken to represent that part of the (prototypical) representation that deals with joint action, while the first verb, here *ai-suru* 'love', supplies the lexical specification of what the action is. Note that the case frame for the clause, which is intransitive, comes from the 'meet' verb, not from the lexical verb.

The standard analysis of this construction in Japanese is as a compound verb (V+V), along the lines indicated. But it is not hard to see how *au-* could be reanalysed as a verbal affix which derives reciprocal verbs, changing the valence of the verb from transitive to intransitive (see Section 3.2.1), at which point the presence of two lexical predicates in the construction would become less clear.

4.3.2. Verb compounding reduplicating unidirectional predicate 'come' and 'go'

Whereas Japanese combines a first predicate denoting a unidirectional action with a second predicate depicting the coordinative/interaction element (*au* 'meet'), an alternative strategy is to repeat the one-way predicate twice, but combined with some indication of direction reversal. We already saw one way of doing this in Amele, where the language's switch-reference mechanism is harnessed to encode the alternate directions of the action. But there the successive one-way verbs are phonologically distinct and each bears the inflectional suffixes associated with a distinct (albeit dependent) clause. Mandarin (Liu 1999) appears to be in the process of grammaticalizing another type of strategy, in which the one-way verb is repeated in the frame 'V-come-V-go'. An example is:

(69) Mandarin (Liu 1999: 124)

- Tamen da-lai-da-qu.*
 they hit-come-hit-go
 'They hit each other.'

Though this construction likely has its diachronic source in verb serialization, it now patterns as a compound, and hence represents the fusion of more than one lexical predicate into a single clause.

As Liu points out, the construction is still in the process of being grammaticalized, and it can be argued that the reciprocal interpretations here are contextual readings of a more general meaning that includes 'repeated motion in opposite directions' (e.g. 'walk-come-walk-go', meaning 'walk back and forth') and other types of repetition more generally, e.g. 'think-come-think-go' for 'think and think (for quite a while)' and 'eat-come-eat-go' for 'eat and eat (at different locations)'. Reciprocal readings are only obtained when the subject is plural and refers to multiple equal-animacy participants, and V is a transitive verb reporting a non-reversible activity.

4.3.3. Symmetric signing

While spoken language needs to chain a sequence of predicates together, as in the Mandarin and Amele examples discussed above, sign languages can show multiple non-mutual actions simultaneously, through signs in which each hand moves toward the other while using a comparable handshape, location and move-

ment.⁵³ This technique is employed for a number of reciprocal predicates in Indo-Pakistani Sign Language (Zeshan 2000: 77), German Sign Language (Pfau and Steinbach 2003: 16ff.) and American Sign Language: in ASL some verbs “can be made reciprocal by adding another [...] hand moving in the opposite direction” (Fischer and Gough 1980: 176). To give an example from Indo-Pakistani Sign Language, the sign for ‘fight (each other)’ is (70a), with two arms, each with clenched fist, moved towards each other; this is a symmetric two-handed version of the one-handed sign for ‘hit-with-fist’ (see [70b]).

(70) Indo-Pakistani Sign Language (U. Zeshan p.c.)

Other examples of signs in Indo-Pakistani Sign Language that employ symmetric signing in reciprocal constructions are the signs for ‘collide/accident’, ‘talk’, ‘compete/competition’, ‘wage war/war’ and ‘discuss’. (These signs are versatile and can be used with either predicate or argument meaning, as the glosses given here indicate).

4.4. The fused contrastive subject construction

The clause fusions we have discussed so far involve multiple predicates being fused into a single clause. We now consider a rather different case, found in the Australian languages Iwaidja and Mawng, that originates in a biclausal construction of the type ‘*x* V-es *y*, and *y.in.turn* V-es *x*’. What appears to have happened, historically, is that the second clause was truncated by omitting the ‘V-es *x*’ part, leaving just ‘*x* V-es *y*, and *y.in.turn*’. Then, in a further step, the

53. Cf. Haiman (1980: 433):

“What is needed, but acoustically impossible, is a structure something like

S₁

S₂

Within the constraints imposed on human speech, which can put things together only ‘horizontally’, the ideal of representing simultaneity iconically can be approached in two ways ...”

‘and *y.in.turn*’ was reanalyzed from part of an elliptical second clause, to part of a monoclausal reciprocal construction: this is shown by the fact that it can appear inside other material from the first clause. The result is a clause that is strangely overcrowded in terms of its NPs, though it only has a single verb: an English rendition that best captures the structure is something like ‘John gave Mary and SHE a book’ for ‘John and Mary gave each other a book’.

To illustrate how this works, first consider the basic use of the “contrastive” pronoun series in Iwaidja, which have also been termed the “sequence of participants” pronoun series (Pym and Larrimore 1979: 45–46). The basic function of this series is to indicate a strongly contrasting change in subject between clauses or turns. An example is (71).

(71) Iwaidja (Pym and Larrimore 1979: 46)

ngabi j-ara-n ajbud lda jamin yaw-urraka
 ISG ISG.AWAY-go-PST beach and 3SG.CTR 3SG.AWAY-go.home
 ‘I went to the beach and he went home.’

In the reciprocal construction, the sequence ‘*lda* + Contrastive pronoun’ is used after a straightforward transitive verb, but without any overt redressive verb (cf. [72a]). An obvious objection to treating this as a distinct construction would be to say that is simply an elliptical form of (72b), with the second verb omitted as predictable.

(72) Iwaidja (own field notes)

- a. *kawun lda jamin*
k-nga-wu-n lda jamin
 3SG.O-3SG.F.A-hit-NPST CONJ 3SG.CTR
 ‘They (he and she)⁵⁴ hit each other.’
- b. *kawun lda jamin riwun*
k-nga-wu-n lda jamin ri-wu-n
 3SG.O-3SG.F.A-hit-NPST CONJ 3SG.CTR 3SG.M>3SG-hit-NPST
 ‘She hit him and then he hit her.’

However, while this is the likely diachronic origin of the construction, it is no longer a valid synchronic analysis. If the ellipsis analysis were correct, the

54. Strictly speaking, the subject has to be female (*nga*:- 3SG.F.A), while the object can be either male or female, since gender is only shown for the transitive subject, not the object.

contrastive pronoun should always follow all material in the first clause, since Iwaidja is not a language that allows scrambling across clause boundaries. However, a number of clausal elements may follow the contrastive pronoun, such as the theme arguments of three-place verbs like 'give' in (73). Similarly, in the closely related language Mawng, goal arguments may follow the contrastive pronoun (74).

(73) Iwaidja (own field notes)

anb-uku-n *lda* *wamin* *a-ngurnaj*
3PL>3PL-give-NPST and 3PL.CTR 3PL-name
'They used to give each other their (clan) names.'

(74) Mawng (Evans, Singer & Birch forthcoming)

ngani-yiwakang-ung *la* *ngapimung* *mata*
3M.SG>1SG-snatch-PST.CONT and 1SG.CTR ART(VE)
magarnpa *mata* *wakij* *ja* *Nawangari*
fishing.line ART(VE) fishing.line ART.M [name]
'Nawangari and I were struggling against each other for the fishing line.'

The fused contrastive subject poses problems for normal assumptions about linking rules between thematic roles and syntactic argument positions, since in a clause like (71), one of the arguments ('he') appears twice in a clause: as object, indexed by the pronominal prefix on the verb, and as subject, indexed by the use of a contrastive subject pronoun. This anomalous double linkage can be motivated by appealing to the double role that 'he' plays in the semantic representation, functioning as both hitter and hittee, but cross-linguistically it is not normally a permissible option in the syntactic projection rules onto one clause.

Another typological peculiarity of this construction merits comment: it is the only construction type, in all those that we have surveyed, where (a) there is no conjunction of mutuants into a single NP, and (b) there is just a single one-way predicate.⁵⁵ Both these peculiarities can be understood in terms of its origin as a truncated biclausal construction, as outlined above.

55. In the final stages of revising this article I became aware that a possible counter-example is Seri (Marlett 2005). The highly unusual reciprocal construction in this language combines a "reciprocal adverb" *pti* with a transitive verb in its multiple action form, but without conjunction of the participants into a single NP: 'they tattooed each other' is thus expressed as *pti iyóozitim*, something like 'reciprocally s/he-tattooed-multiple.action-him/her'. This is tantalizingly exemplified by a single

5. Conclusion

To conclude, I would like to locate the constructional typology developed in this article within the broader concerns of typology: to chart the total possibilities of human language (Section 5.1); to test claimed absolute universals (Section 5.2); to detect typological correlations and test implicational claims (Section 5.3), and to understand possible diachronic pathways (Section 5.4).

5.1. Mapping the possibility space

To the fundamental question of what is a possible human language, a typology of constructions contributes by mapping out the etic grid, or possibility space, of ways that languages can solve particular disambiguation problems (e.g. ordering the major clausal constituents S, V and O) or encode particular types of meaning (here, mutuality). This aspect of typology involves a cycle of induction and deduction: induction suggests dimensions of organization, whose possible recombinations can then be worked out deductively. The six thousand or so languages of the world have suggested possibilities that we may not have imagined – particularly important when, as in the case of reciprocals, it is difficult to delimit the possibility space by purely deductive means – and also provide a set of actual structures that can be compared against our etic grid to see whether all possible types in fact occur.

The most striking overall result of the survey undertaken here is the finding that there is way more diversity than previously reported in the ways that languages can encode mutuality – probably more than is the case for reflexive constructions, whose typology has been well-mapped by Faltz (1985). The expanded typology proposed here makes it harder to formulate typological correlations because of the greater number of cells involved (see Section 5.3), but is necessary if one is to give a full account of the data, formulate universal claims accurately, and show the evolutionary relationships between construction types.

Listing as many construction types as I have done here runs the risk of suggesting that anything is possible, which some would take to render the typology trivial.⁵⁶ However, it is important that some of the cells in the possibility space

example in Marlett's paper, so that more data is necessary before we can really understand what is going on here.

56. I thank José Ramón Álvarez González for raising this objection, in discussion of an earlier oral presentation of this paper. I do not personally share the view that covering all possible structures renders a typology trivial, however: consider classical word order typology, which draws its power from the fact that it considers all possible permutations. The resultant interest of word order typology stems from (a) its ability to

I have mapped are – as far as our present knowledge goes – either empty or populated by rather marginal examples. The clearest example of an unrealized possibility is the set of variations on encoding reciprocity by using special marking on two NPs, each remaining ‘in place’ in the argument positions they would occupy in a unidirectional clause (Section 3.1.5). One significant enlargement of the possibility space, as described here, has been to include a number of strategies involving more than one clause. This move, which follows from taking the construction as the relevant unit for our typology and the recognition that constructions may be units of various sizes, is necessary both to give a more complete empirical coverage, and to show the diachronic sources of some of the monoclausal types.

5.2. The issue of universals

Strong universal claims have been made within the generative tradition about the syntactic properties of “anaphors”, as opposed to pronouns. These are absolute, rather than implicational universals, and should hence be true of all languages. The behaviour of reciprocal expressions, along with reflexives, has been widely explored within a range of generative approaches. The two most important claims within this tradition are

- (a) “Principle A” of the Binding Theory, stating that “an NP with the feature [+ Anaphor] must be bound in its governing category”.⁵⁷ Among other predictions, this means that no language should allow structures of the type ‘Each other saw the children’, or ‘John and Mary thought this incident would hurt each other’.

We have seen that there are certainly reciprocal constructions that do allow such structures – Abkhaz allows the equivalent of the first (Section 3.1.4) and Japanese *otagai* allows the equivalent of the second (Section 3.1.2).

- (b) that a typology of NP types can be developed, based on binary features, such that there is a clear distinction between reciprocals and reflexives (+Anaphor, - Pronominal) and Pronouns (-Anaphor, + Pronominal).

We have likewise seen problems with this binary typology. Most importantly, languages like Tinrin and Mwotlap that allow reciprocal and reflexive interpretations of regular pronouns pose one type of problem, and languages like

detect typological correlations and (b) the empirical observation that certain logically possible structures are rare (or – as once believed – nonexistent).

57. See e.g. Haegeman (1994) for discussion, and Chomsky (1986) for the influential original formulation.

Hausa that have special reciprocal expressions but with all the person features of pronominals pose another type of problem.

To deal with these examples, we have a range of analytic options:

- (i) revise or clarify the definition of “Anaphor” to save the universal by removing apparently exceptional cases, e.g. by arguing that the Abkhaz prefixes do not count as anaphors because they are bound affixes, or that Japanese *otagai* is not a true anaphor;
- (ii) set up finer-grained categories, such as the difference between complex and simple anaphors along the lines proposed by Reuland and Koster (1991), and reformulate the universal claims so as to apply to only one subset. A variant of this approach is to propose a covert split between pronouns in a language like Mwotlap or Tinrin, such that formally identical pronoun forms are analysed as belonging to different classes when they function as reciprocal or reflexive anaphors;
- (iii) abandon the claims to universality at the highest level of generalization, and particularize claims to certain constructional types. At the same time, the original phenomena, as described by Binding Condition A, may be seen as an epiphenomenon of how certain types of reciprocal expression (in particular binominal quantifiers) evolve diachronically – see Plank (this volume) on a plausible scenario.

It would be inappropriate to argue through these positions here, but it should be clear that the typology elaborated in this paper is of direct relevance to the debate, since it shows where counterexamples are to be found, and assists in clarifying the relation between reciprocal expressions and their exact grammatical status.

5.3. The issue of typological correlations

A further important role for typology is detecting correlations between different features of language systems. Ultimately, for reciprocal constructions, there are many types of correlations we will wish to test, between values on various of the dimensions elaborated above. Here are a few examples, pointing back where relevant to data discussed in this paper.

- (a) Correlations between particular patterns of polysemy and particular constructions. For example it may be hypothesized that reflexive/reciprocal polysemy is found with verbal affixes, reciprocal nouns and reciprocal pronouns, but comitative/reciprocal polysemy is only found with verbal affixes and modifier strategies, never with actant marking strategies. Likewise it may be hypothesized

that binomial quantifiers never exhibit reflexive/reciprocal polysemy. These proposals escape falsification by the languages surveyed for this paper, but need to be tested against a broader sample.

(b) Correlations between particular constructions and syntactic features of the predicate or clause. For example, it might be proposed that if a language has several construction types, we can predict which will be chosen on the basis of the word-class expressing the predicate, or the syntactic relations holding between the reciprocants.⁵⁸

(c) Correlations between constructions and semantic subtypes of reciprocals. For example one might find that, if a language distinguishes simultaneous from sequential reciprocals, or dual from plural reciprocals, then certain constructional alternatives will correlate with one semantic type. Everaert (2000: 78) voices the provocative claim that “it is evident that the semantics of reciprocals is quite diverse and complicated ... but, surprisingly, it appears as if these semantic differences never have consequences for the distributional properties of reciprocals.”

A counter-example to this claim is the lack of extension of reciprocal constructions to “seriative” situations (‘the students followed one another onto the stage’) in at least some sign languages, such as Indo-Pakistani Sign Language (Zeshan and Panda forthcoming), which thanks to their greater ability to spatialize the semiotic medium possess a distinct construction for seriatives without apparent parallels (so far) in spoken languages.

(d) Correlations between constructions and semantic subclasses of lexeme. Kemmer (1993), for example, has proposed that “naturally reciprocal verbs” will allow encoding with “light” constructions, essentially defined by relative position on a hierarchy of constructional options. For details see Kemmer (1993).

(e) Correlations between distinct grammatical features of the construction, e.g. between type of exponent (verbal affix vs. bipartite quantifier) and effects on valence. We have already seen that a predicate-encoding strategy, sometimes asserted to induce a reduction in valence, does not always do so. A near-converse formulation, however, appears to hold on the data so far: binominal NP reciprocals never produce a change in valence. It likewise appears to be the case that no language combines a binominal NP strategy and a predicate-marking strategy in one construction. A next step in the typology of reciprocal constructions is to survey which strategies co-occur and which don’t.

58. For some proposals of this type see König and Kokutani (2006).

(f) Implications of the presence of one strategy in a given language for the presence or absence of others. For example, König and Kokutani (2006) suggest that, even though many languages make use of more than one strategy, no language has both an “affixal” and a “deverbal” strategy.

To formulate and test any of these hypotheses, we first need to have a clearly formulated typology of each of the two dimensions we are looking at. This then creates a bi- or multi-dimensional matrix whose cells are predicted to be populated, or empty, according to the type of correlation we are interested in, as applied to our sample of languages. Some types of hypothesis (e.g. a, e) can be tested by cross-linguistic comparison of attested constructions without regard to the alternatives that exist in a single language. Others require us to look within the semiotic ecology of individual languages as well as making a cross-linguistic comparison (e.g. b, c, d, f).

5.4. Diachronic transitions and intermediate categories

A separate task for typology is to formulate a set of claims about possible transitions between states, both to explain how each possible synchronic state can arise, and to account for intermediate constructions that appear to be in transition between the canonical construction types. Through the course of this article I have mentioned a number of attested transitions:

(a) from bipartite quantifier NP to reciprocal nominal, through fusion of the two elements, as in Basque *elkar* (Section 3.1.2);

(b) from possessed reciprocal nominal to free reciprocal pronoun, as expressions of the type ‘their bodies’ are reanalysed as reciprocal pronouns ‘they.each.other’, e.g. in Hausa; in other words, the head of the word shifts from the possessed noun to the pronominal affix;

(c) to verb-marking strategy via a number of routes: univerbation of verb + reciprocal auxiliary (Section 3.2.2), or main verb compounded with a mutual predicate like ‘meet’ (Section 4.3.1), or verb compounding with repeated one-way predicates, as in Mandarin (Section 4.3.2), or possibly also from the reanalysis of a bound reciprocal pronoun as a modifier of the verb’s diathesis; presumably reciprocal adverbs may also turn into verbal affixes, though no examples were considered in this paper.

The examples we have considered suggest that the diachronic pathways by which one reciprocal construction changes into another are rather constrained. There appear to be a number of unidirectional pathways of change, with verb-marking strategies being a “sink” fed by several pathways of development, and with

adverbial strategies feeding each of the other monoclausal strategies. A fuller consideration of diachronic pathways would also need to consider the way strategies for expressing related semantic notions, such as reflexives or comitatives, jump into the pathways linking reciprocal construction types, e.g. as reflexive clitics take on reciprocal functions as well. As yet, though, we lack the diachronic studies changes undergone by reciprocal constructions that are necessary before we can postulate well-founded diachronic universals limiting the types of transition found between one reciprocal construction and another (though see Plank this volume on the diachrony of bipartite quantifiers).

5.5. Envoi

The goal of this paper has been to illustrate the full range of constructions we know to be used for encoding mutuality in the world's languages. A comprehensive constructional typology is a precondition for a number of other enterprises in typology: the testing of universal claims, the formulation of correlational and implicational hypotheses, and the formulation of constraints on diachronic change between construction types. Though the typology developed here recognizes a much wider variety of constructional types than has been mentioned in the earlier literature, it is still likely to be incomplete, and one challenge this article creates is to find other constructional types that have not yet been discovered.

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