Compromising transitivity: the problem of reciprocals

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Abstract

Reciprocals are characterized by a crossover of thematic roles within a single clause. So, in *John and Mary wash each other*, each of John and Mary is both washer and washed, both agent and patient. This often plays havoc with the process of mapping to argument structure, which in regular clauses assumes a unique thematic role for each argument. The competing pressures to distinguish and merge the reciprocating argument(s) are resolved by different languages in very illuminating ways that, at the same time, often create special argument configurations not found in other clause types. While some languages either treat reciprocals as clearly transitive (like Warlpiri or English), or clearly intransitive (like Gumbaynggir or Yimas), other languages adopt a mixed or ambivalent solution. In this paper we examine a range of transitivity mismatches in reciprocal constructions including: (a) monovalent clauses with a single ergative NP; (b) mismatches between case marking and the number of arguments on auxiliaries or pronominal affixes to the verb; and (c) the use of ergative marking on secondary predicates and instrumentals with a nominative subject. Such mismatches pose some interesting problems for theories of both transitivity and argument structure.

1. Introduction[1]

In reflexive and reciprocal constructions, such as 'John and Mary saw themselves in the mirror' or 'John and Mary saw each other in the mirror', the coreference between argument positions makes the argument structure anomalous relative to canonical constructions. In reflexives, there is straightforward coreference between the reflexive expression 'themselves' and its antecedent subject 'John and Mary'. In reciprocals, the coreference relation is more complex: standard logical treatments treat the 'each other' expression as setting up a situation with a 'polyadic quantifier that binds two variables in its scope, both variables ranging over one set, the restricted domain of the quantification' (Dalrymple et al 1998:183).[2] Effectively, this distributes the predicate

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[2] The syntactic consequences of these two types of coreference have been amply explored in the generative literature under the general rubric of 'bound anaphors' and 'big Pro' (see Everaert 1999, Langendoen & Magloire 2003 and references therein). Lebeaux (1983) considers in some detail the subtle syntactic differences between reflexives and reciprocals in English, including the following:
 (a) infinitive clauses introduced by 'for', with the anaphor in subject position:
   (i) John and Mary brought some friends for each other to meet.

over each possible pairing between members of the reference set, i.e. (John, Mary) in 'John saw Mary' and (Mary, John) in 'Mary saw John'.[3]

Though it is clear that semantically there are two participant roles (e.g. a seer and a seen, or an agent and patient), it is less clear how many syntactic arguments there are (see Mohanan & Mohanan (1998) for detailed discussion of this question), and in fact some languages treat reciprocal constructions as straightforwardly transitive while others treat them as straightforwardly intransitive. In this article we show, however, that there are also many languages where the various tests for transitivity contradict one another just in the case of reciprocal constructions: the grammars appear to give a mixed verdict on whether reciprocal clauses are syntactically intransitive or transitive, posing a variety of problems for how argument structure should be represented in such clauses. Reciprocal constructions, we argue, provide us with a rare opportunity to tease apart the effects of semantic valency, thematic roles and syntactic argument structure on the suite of morphosyntactic phenomena conventionally taken as diagnostics of transitivity.

Although the phenomena we discuss are of general significance, and we draw on data from a wide range of languages, our core sample focuses on around a dozen Australian languages. Australian languages prove a particularly well-suited laboratory for examining this problem for a number of reasons. Firstly, since they constitute a large set of ultimately-related but typologically varied languages, they furnish a range of finely calibrated responses to the problem. Secondly, they possess certain typological features which provide a range of independent lines of evidence for determining transitivity. These include the conjunction of rich case-marking with widespread ergativity that provides a ready litmus of transitivity, and case-linking constructions (secondary predication, linked body parts, case agreement of nominalized clauses with their antecedents).

The structure of this paper is as follows. In §2 we consider previous work on transitivity in reflexive and reciprocal constructions, both in the functional and formal

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(ii) ?? John would like some books for himself to read.
(b) tensed subordinate clauses that are complements of cognitive verbs; for some, the reciprocal is marginal while for others it is fine, but in every case the reflexive is unacceptable.
   (iii) ?? John and Mary think that each other will win.
   (iv) * John thinks that himself will win.
   (v) John and Mary didn't know what each other had done.
   (vi) * John didn't know what himself had done.
(c) possessive modifiers in the Saxon genitive, what Lebeaux calls 'subject position of NPs':
   (vii) John and Mary like each other's parents.
   (viii) *John likes himself's parents.
In each case, the anaphor is not in a position of proper government, leading Lebeaux to the conclusion that while both reciprocals and reflexives are subject to the binding theory, only reflexives must be properly governed.

[3] The distributive nature of the relation is most clear in languages like English, where 'each other' is effectively a fusion of the two elements making up the distributive expression '*each* member of {X,Y..} acts upon the *other* member(s) of {X, Y...}'. Indeed, some logical treatments of reciprocity derive the semantics rather directly from the semantic and combinatorial properties of the English terms *each* and *other* (see Heim, Lasnik and May 1991). The relation is much less iconic, however, in languages where the predicate is intransitivized (see §3.2 below), and also in languages where the relevant arguments are simply represented by pronouns (free, reduced or bound) referring to the whole set. An example is Sa (Oceanic, Vanuatu; Evans fieldnotes), where 'they shot each other' is *ir-ben-ir* [they.two - shoot - they.two] (also interpretable as 'they two shot the other two' and 'they two shot themselves'). This phenomenon is common in the languages of Vanuatu and New Caledonia: see Osumi (1995:207-8) on Tinrin, Moyse-Faurie (1995) on Xaracuu, and Bril (2003) on several other languages of New Caledonia.

literature. In §3 we show that many Australian languages exemplify 'clean' solutions to reciprocal constructions: in some, reciprocals are treated as straightforward transitive clauses, while in others, they are treated as straightforward intransitives. Alongside these, however, are languages in which different components of the grammar reflect different construals, one clausal subsystem treating reciprocals as if they were intransitive, while another treats them as if they were transitive. We analyse these languages in §4 and §5 focussing on divalent and trivalent clauses respectively. Finally, in §6, we return to the broader implications for the typology of argument projection that our overview has raised.

2. Previous work on transitivity in reciprocals and reflexives

In their classic treatment of transitivity as a gradient phenomenon, Hopper & Thompson (1980) take distinguishability of subject and object as one parameter contributing to full transitivity. Their influential survey includes a brief remark on reflexives (1980:277-8) which

> 'in many languages have properties which can be explained by appealing to their intermediate status between one-argument and two-argument clauses: compared with one-argument clauses, they may be more Transitive [e.g. in having reflexive object clitics in Spanish – EGN]; compared with two-argument clauses, they typically display features associated with lower Transitivity.'

However, apart from a brief mention of the Indonesian prefix *ber-*, associated generally with intransitive constructions and also with some reciprocals and reflexives, they do not consider reciprocal data at all.

A few years later Faltz (1985:14-15), in the first monograph-length typological survey of reflexives, gave the following account of why, in many languages, reflexive constructions are realized as intransitives:

> [T]here is a clear connection between reflexivization and intransitivity. Namely, by coreferentially tying together the agent and patient of a transitive predicate, the reflexive renders that predicate a function of one argument only, hence equivalent to an intransitive. Diagrammatically, we may say that, when the transitive predicate P(x,y) is used reflexively, it becomes ...
>
> $P(x,x) = P_R(x)$. ....
>
> The two sides of the equals sign ... suggest two ways a grammar can mark a reflexive. On the one hand, the subject-object coreference can be shown in the subject and/or object noun phrases themselves. On the other hand, the verb can be modified as a signal that it is being used reflexively, the modified verb (or "reflexive verb") now participating in an intransitive clause structure.[4]

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[4] Faltz does not ignore, however, the fact that verb-coded reflexives may exhibit subtle evidence for the presence of object NPs at some level of representation – see particularly the Kinyarwanda and Lakhota

Though Faltz's monograph only mentions reciprocals in passing, similar claims have recently been made for reciprocals by König and Kokutani (to appear), who assert:

> "The assumption that the reciprocal affixes […] reduce the valency (or -arity) of a transitive predicate and result in the derivation of intransitive predicates with specific restrictions on their subjects is hardly controversial"

Kemmer (1993) takes up Hopper & Thompson's point about the low distinguishability of subject and object in reflexives, and examines in more general terms the phenomenon of 'middle' constructions, under which she subsumes reflexives, self-benefactives, 'naturally reciprocal events' and a range of other eventity types[5], accounting for the variable transitivity of such constructions cross-linguistically in terms of alternate event construals. In basic transitives, which we illustrate here diagramatically with Figure 1, subject and object are clearly distinct arguments.

(1)   John loves Mary.

Figure 1: basic transitive construal:
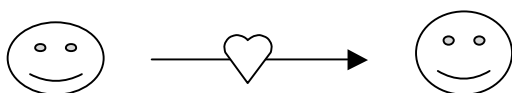
With reciprocals, on the other hand, there are two alternate construals available to speakers and the grammars they forge. The first, illustrated in (2), is effectively an overlay of two transitive construals, one upon the other, i.e. 'John loves Mary' and 'Mary loves John'; in each of the two relations, the two participants are clearly distinct. Note that in this construction, in contradistinction to standard constructions in which a unique mapping of thematic roles onto argument positions is assumed, each reciprocating argument is simultaneously linked to two thematic roles: the conjoined NP 'John and Mary' and the reciprocal expression 'each other' must each be linked to the dual roles of lover and lovee, or agent and patient, etc. (depending on the inventory of thematic roles being used).

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examples he discusses on pp. 188-198, in which certain syntactic processes can only be understood in terms of an overt object expression. To this extent his book, too, supplies some evidence for mixed-transitivity behaviour in verb-coded reflexives. In the other direction – i.e. noting the reduced-transitivity status of reflexives using nominal strategies – Edmonson (1978:647) presents 'some evidence that despite encoding traits of a transitive verb, sentences containing reflexives treat such sentences syntactically as if they were intransitive', citing the fact that in Jacaltec, where relativization is achieved by the NP-like argument *s-ba* 'his/her self', relative clauses with deleted subjects fail to add the suffix *-n(i)* to verbs, which is otherwise added to the verbs of relativized transitive clauses from which subjects have been coreferentially deleted. The original Jacaltec data is taken from Craig (1976).

[5] See Kemmer (1993:16-20); the other types she includes are verbs of 'translational motion' like 'climb up', 'emotion middle' verbs like 'be angry', 'cognition middle' verbs like 'be cogitating', verbs denoting spontaneous events like 'grow' or 'rot', 'logophoric middles' where the subject of the reported speech is the same as the sujbect of the speech verb, and a number of verbs with other derived thematic structures, such as passives, impersonals and facilitatives.

(2)   John and Mary love each other.

Figure 2: Overlaid transitive construal:
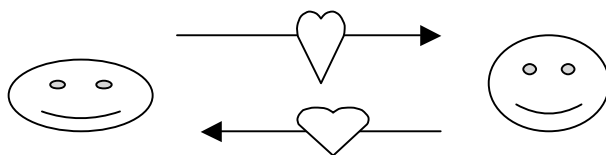
An alternative construal – which, following Kemmer, we may call the 'middle conceptualization'– unites the participant set in a single actant, and then sees the relevant predication being made, in both directions as it were, across this conjoint participant set. This is illustrated in Figure 3, and corresponds to Faltz's 'intransitive clause structure':

Figure 3: Middle conceptualization of reciprocal:
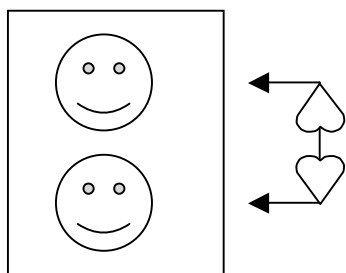
An interest in the puzzles of transitivity in reciprocals has not been confined to the functional and cognitive literatures. A number of formally-oriented researchers have wrestled with the question of whether reciprocal (and reflexive) constructions with base transitive verbs have one or two arguments, proposing a range of formal treatments which essentially posit two arguments at one level of structure, but only one at another.

Within the relational grammar literature, for example, Rosen (1981) and a number of subsequent scholars have tried to reconcile the use of the 'be' auxiliary in French and Italian reflexive/reciprocals, normally associated with intransitive constructions, with the appearance of overt subject and object slots (see §3). The essence of their solution has been to posit a derivational history in which the 'final subject' has a '2' (= object) role at some point in the derivation, before ending up in the '1' role, and to select auxiliaries according to whether the final subject has a 2 (object) role at some point in the derivation.

Burzio's (1986) Government-and-Binding theory analysis is similar conceptually, if not in the detail. For Burzio, the use of the 'be' auxiliary is conditioned by the existence of a (particular type of) binding relation between the subject and a 'nominal contiguous to the verb' (namely, a clitic associated with the verb or a object NP) (p. 56). Unaccusative intransitive verbs require the 'be' auxiliary since their subject is base-generated in the direct object position and subsequently raised to subject,

creating a binding relation between the NP in surface subject position and the trace remaining in object position. Reflexive/reciprocal constructions also require the 'be' auxiliary since a (different type of) binding relation exists between the antecedent subject and the reflexive/reciprocal object clitic (p. 57).

Within the LFG tradition there have been several types of solution. Mchombo (1991), in his account of Chichewa reciprocals, which mark reciprocity by verbal affix and reduce the valence of base transitive verbs to one, proposes that there are two arguments (corresponding to agent and patient) present in a-structure (i.e. argument structure, an intermediate stage in the mapping between thematic roles and syntactic functions) but that these correspond to only a single subject argument at f-structure. Alsina (1996:116-126), also working within LFG but returning to the problem of auxiliary selection in Italian, uses the notion of 'a-structure binding' for situations where 'two co-linked arguments map onto the same grammatical function ... and therefore correspond to a single semantic participant'.[6] A further LFG-based treatment is Hurst's (2003) analysis of reciprocals in Malagasy, where he posits that both subjects and objects are present in the f-structure, but not in the c-structure.

Although such formal approaches address the many-to-one correspondence that can arise in reciprocal constructions between semantic participants on the one hand and syntactic arguments on the other, they all assume that reciprocal clauses are, in 'surface' syntactic terms, either transitive (having two syntactic arguments) or intransitive (having a single syntactic argument). In this paper, however, we present data from a number of Australian languages that challenges this view. We show that languages can frequently show mixed transitivity effects just in reciprocal constructions, making it difficult to determine even on syntactic grounds whether a reciprocal construction is syntactically transitive or intransitive. While such mixed transitivity effects are clearly attributable to the competing motivations in reciprocal constructions of the low distinguishability of subject and object on the one hand, and the clear presence of multiple semantic participants on the other, they raise some important challenges for formal syntactic analyses that generally treat transitivity as a clausal property. If clauses are either transitive or intransitive, what are we to do with constructions which show properties of both?

The goal of this paper is not to develop or test particular formal analyses of mixed transitivity phenomena in reciprocals. Rather, our goals are: firstly to describe the range of variation languages exhibit in their resolution of these competing motivations as they map reciprocal semantics onto clausal structures; secondly to expand our typology of the grammatical domains and constructions in which these conflicts are played out; and thirdly, to stimulate more research into the syntactic behaviours of reciprocal constructions cross-linguistically.

3. Clean strategies

Previous work on transitivity in reciprocal constructions in Australian languages has had very little to say about the mixed transitivity effects that we focus on in this paper, treating reciprocal constructions in different languages as either straightforwardly transitive or intransitive. The influential survey of Australian

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[6] In fact, semantically this works better for reflexives than reciprocals, since whereas reflexives involve an argument acting upon itself, reciprocals involve members of a set (the argument) acting on other members of the set. Along with Alsina and others, we ignore this problem here.

languages in Dixon (1980) focussed on intransitivizing strategies: 'Reflexive and reciprocal verbs occur only in intransitive constructions – the single core NP is in S function and involves a noun in absolute and/or a pronoun in nominative case' (Dixon 1980:433). Another survey of Australian languages (Yallop 1982:120) briefly mentions the intransitivizing effects of reflexive/reciprocal derivations in Alyawarr. Blake (1987:57), a detailed typological survey of morphosyntax in Australian languages, mentions both the intransitivizing and transitive construction types, but his only reference to problems of mixed transitivity is to point out that in Yalarnnga, instrument phrases continue to use the instrumental/ergative case even when the subject NP receives the nominative (S) case in reflexive/reciprocal constructions; we return to this point in §4.1.5.

The expanded and updated survey in Dixon (2002:320) gives a more nuanced characterization, pointing out that Australian languages use intransitive constructions when a verbal derivational affix is involved, but if the language uses a special reflexive/reciprocal pronominal element, the construction may remain transitive. He also notes (2002:320) that, where a reflexive/reciprocal pronoun is involved, '[i]n some languages the reflexive/reciprocal construction remains transitive but in others it becomes intransitive', citing Nyiyaparli, Wambaya and Yanyuwa as examples (ibid:323-4) and pointing out the need for further study on the topic.

However, we are not the first to note the presence of mixed transitivity effects in reflexive/reciprocal constructions in Australia. Dench (1997) surveys some problems of mixed transitivity in reflexive constructions in languages of the Pilbara region. Among other findings, he notes that in Nyiyaparli, which is morphologically ergative and marks reflexives by an anaphor bound to the verb, 'despite the fact that subjects occur in the nominative (S) case, inalienable instruments, part predicates on the subject, appear with an ergative case suffix' (p. 7), and Gaby (2001) also refers to a number of the phenomena that we bring together here.

In this section, before passing to the various 'transitivity-compromise' strategies that form the main subject of this paper, we illustrate the existence of languages in which reciprocals are treated as straightforward transitives (§3.1) on the one hand, and as straightforward intransitives on the other (§3.2).[7] In this and the ensuing discussion, we will use 'transitive behaviour/properties' as a shorthand for any grammatical phenomena associated prototypically (in the language in question) with bivalent clauses, and 'intransitive behaviour/properties' for those typically associated with monovalent clauses. Transitive properties, for example, might include having two overt arguments; having ergative case on the subject; having verbal morphology associated with two-actant constructions (e.g. transitive pronominal affix series, other transitivity markers on the verb), and so forth. Our claim is not that such phenomena are *only* found in transitive clauses – in fact, our goal is to use reciprocal clauses to debunk this view – but rather to have a single dimension (transitive vs intransitive) in terms of which a number of distinct grammatical traits can be sensibly characterized.

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[7] Some languages appear to have a more and a less transitive strategy available, though it would be going beyond the data we have to say that either constituted a 'clean' strategy. Balinese (Arka in prep.) is a clear Austronesian example, and Marrithiyel (Green 1989: 120) is a less clear Australian one. Interestingly, in both languages the intransitive strategy is associated with 'simultaneous reciprocity' while the transitive strategy is associated with 'sequential reciprocity'. In Balinese the intransitive strategy uses the prefix *ma-* as a middle-voice construction, along with the use of just one overt actant, while the transitive strategy uses undergoer-voice on the verb and a free reciprocal marker *saling*. In Marrithiyel the sequential reciprocal fills the object (or 'goal') slot of the auxiliary with a person/number-specific object marker coreferential with the subject, while the simultaneous reciprocal uses a fixed marker in the same slot.

3.1 Transitivity conserving strategies[8]

Languages employing these strategies normally replace one of the arguments[9] with some sort of reciprocal marker without changing the clause's argument structure in any way. We exemplify initially from English, using non-reciprocal / reciprocal pairs in which 'each other' replaces the non-subject argument, and the participants are encoded in a conjoined subject NP (3-5):[10]

(3a)   Mary chased **the elf** around the park.
(3b)   Mary and the elf chased **each other** around the park.
(4a)   Mary called out **to the elf**.
(4b)   Mary and the elf called out **to each other**.
(5a)   Mary threw stones **at the elf**.
(5b)   Mary and the elf threw stones **at each other**.

A comparable treatment from a language using case can be illustrated with Russian, in which the second word of the binomial expression *drug drug*-CASE bears the case appropriate to the reciprocated argument (the first element is invariant, remaining in the nominative); should the verb govern a preposition, this is placed between the two elements of the binomial expression.

(6a)   *On*   *vide-l*   *ego.*
Rus   3sgNOM   see-PST   3sg.masc-ACC
         'He saw him.'[11]

(6b)   *Oni*   *vide-l-i*   *drug drug-a.*
Rus   3plNOM   see-PST-PL   other other-ACC
         'They saw each other.'

(7a)   *On*   *nadeetsja*   *na*   *nej.*
Rus   3sgNOM   rely.on.3sg   on   her-ACC

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[8] We use the terms 'transitivity-conserving' and 'transitivity-reducing' in a general sense to refer to the situation in which original transitivity type is maintained (whether it be intransitive, transitive, ditransitive), and the situation in which the original transitivity type is reduced, respectively. In this section we focus particularly on reciprocal constructions formed from transitive clauses. We hold off the discussion of reciprocal constructions and ditransitive clauses until §5.

[9] In standard transitives it appears to be universal that it is the object that is replaced by the reciprocal marker, never the subject; the commonest explanation given for this within the generative literature derives this from the need for the antecedent to c-command the anaphor, though there are alternative explanations in terms of thematic hierarchies. In some languages it is also possible for the reciprocating arguments to be two non-subjects, e.g. 'I introduced John and Mary to one another'; in which case the reciprocal expression always replaces the oblique argument. It is generally the case that the possibility of both arguments being non-subjects is limited to languages that do not encode the reciprocal relation on the verb, but use free expressions.

[10] English *each other* is odd, for a NP, in lacking any noun within it. Nonetheless, standard grammars of English typically refer to it as a 'reciprocal pronoun' (Huddleston & Pullum 2002:1499; Quirk & Greenbaum 1973:105), though Jespersen (1933:112) implies some (undiscussed) doubt through his formulation 'so-called reciprocal pronoun'.

[11] The Russian reciprocal examples are from Nedjalkov (1991); the non-reciprocal examples have been constructed by us to illustrate the base structures.

'They rely on each other.'   [verb subcategorizes for preposition *na* plus accusative]

(7b) *Oni   nadejutsja   drug na   druga.*
Rus 3plNOM   rely.on.3pl   other on   other-ACC
      'They rely on each other.' (Nedjalkov 1991) [verb subcategorizes for prep.]

(8a) *On   pomoga-l   emu.*
Rus 3sgNOM   help-PST-3sgMasc him-DAT
      'He helped him.'   [verb subcategorizes for DAT]

(8b) *Oni   pomoga-l-i   drug   drug-u.*
Rus 3plNOM   help-PST-3pl other   other-DAT
      'They helped each other.'   [verb subcategorizes for DAT]

There are also languages using reflexive/reciprocal clitic pronouns, which still maintain distinct case forms of the clitic. Bulgarian (9) is one example, employing the form *se* when the reciprocated argument is the object of a transitive verb, but the dative form *si* if the verb is semi-transitive.[12]

(9a) *Zabravix-me   se.*
Bul forgot-1.pl   RR.ACC
      'We forgot each other.'

(9b) *Bratja-ta   si   govorjat.*
Bul brothers-ART   RR.DAT   speak
      'The brothers are talking to each other.'

Languages differ, of course, in how noun-like or NP-like the reciprocal marker is. In Russian the second element resembles a standard noun (and indeed is largely parallel in its morphological behaviour to its etymological doublet *drug* 'friend', except that it lacks any plural form). In other languages, the noun-like nature of the reciprocal marker is clear from other tests – in Welsh (King 1993:103), for example, where it derives from the word *gilydd* 'fellow', it exactly parallels nouns in having mutating possessed forms, with the result that there are different forms for first, second and third person (and singular and plural) reciprocal nouns, as illustrated in (10). The reciprocal form *jūnā* in Hausa, etymologically 'body', displays similar properties in having specific possessed forms ranging across all person/number possibilities (Newman 2000:530).

(10) *Naethon   nhw gerdded yn syth heibio i'w   gilydd.*
Wel aux.3pl.pst 3pl   walk   in straight past to 3pl   fellow
      'They walked straight past each other.'

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[12] Czech is another example (Geniusiene 1987:255). For further details on Czech see Atsarkina (1963:90) and Leonovicheva (1962:158-9), and on Bulgarian see Fiedler (1972), Georgiev (1979:372) and Norman (1972:80-83).

Regardless of the exact nature of the nominal reciprocal expression in the examples we have considered – special binomial expression in English, Russian and Spanish, clitic pronoun in Bulgarian and Czech, or noun in Welsh and Hausa – in each case the construction of a reciprocal clause leaves argument structure completely unaffected, with the reciprocal expression simply filling the lower argument slot on the thematic hierarchy.

A number of Australian languages are comparable to the situations just described. Indeed, the employment of ergative case, an exquisite instrument for measuring transitivity, often provides extra evidence that the argument structure is undisturbed by reciprocal formation. We consider two examples here: Warluwarra, where the reciprocal marker is a free pronoun, and Warlpiri, where it is a clitic occupying the object slot.

In Warluwarra (Breen forthcoming:918-919) there is a set of special reflexive/reciprocal pronouns derived by adding *-wa ~ -aa* in the singular, and *-ba* in the dual and plural, to the base.[13] (Unfortunately the grammar does not discuss the question of what case value these have, though the analysis seems to implicitly regard them as accusatives.) In reciprocal constructions this can replace the reciprocated argument slot, as illustrated in (11); importantly, the subject argument remains in the ergative, evidence that the clause as a whole remains transitive.

(11) *Warrawurla-wiya-gu wulaba   danmarna.*[14]
WLW dog-DU-ERG   3duRR   bite:PST
      'The two dogs bit one another.' (Breen forthcoming:919)

For Warluwarra, as for so many other Australian languages, we only have one description, based on last-ditch salvage work with now-dead speakers, and we cannot explore multiple lines of argumentation to see whether reciprocal clauses are, in fact, transitive using every possible test. In order to assemble a more thorough case, therefore, we now pass to Warlpiri, by far the best-described Australian language. As we shall see, Warlpiri furnishes us with many distinct lines of evidence, all clearly demonstrating the transitive status of reciprocal clauses.

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[13] Many of the languages we draw on in this paper use a single 'reflexive/reciprocal' form, and much of the discussion of this topic uses 'reflexive' as a shorthand to cover 'reflexive/reciprocal', and glosses that reflect this. We avoid this use and consistently gloss such forms as RR. For each of these languages the question arises whether reflexives and reciprocals are treated the same by the grammar in all ways. Many of our sources assume they behave identically, without giving careful justification, and in any case we will generally bracket out examples of reflexives so as to maintain our focus on reciprocals. We will only comment on the behaviour of reflexives where the source, or subsequent information obtained from the grammarian, gives evidence of relevant morphosyntactic differences between the constructions.

[14] Our sources on Australian languages use a variety of orthographies, with older sources often using specific phonetic symbols, but more recent sources using practical orthographies that employ digraphs for certain points of articulation. In general we have modified orthographies in the sources towards the current conventions used in practical orthographies, except that we have left untouched the (generally arbitrary) selection of voiceless vs voiced graphemes, since in most Australian languages there is no phonemic voicing distinction. The graphemes that are relevant to this paper are: r [ɹ], rr [r], rt ~ rd [ʈ], rn [ɳ], th ~ dh [t̪]), nh [n̪], ng [ŋ], ny or nj (Dalabon only) [ɲ], h [ʔ]. Along with the variant orthographies employed in transcription, there are often alternate spellings of Australian language names. Where practicable, we have selected the spelling preferred by the relevant speech community and used it consistently throughout the paper.

The method of expressing reciprocals in Warlpiri is to use a reflexive/reciprocal pronominal clitic *-nyanu* that occupies the object position:[15]

> 'where one of these arguments [of a transitive verb – EGN] anaphorically binds the other, the binder is the ergative argument, and the anaphor is the absolutive argument (represented only by the anaphoric clitic *-nyanu* 'reflexive/reciprocal'...) occupying non-subject[16] position within the auxiliary' (Hale, Laughren & Simpson 1995:1436-1437)

A comparison of the straightforward transitive clause in (12a) and its reciprocal counterpart in (12b) indicate that, not only do reciprocal clauses have an overt exponent of the object (*-nyanu* in the regular object position), but the subject of reciprocals continues to take ergative marking, just as in Warluwarra:

(12a) *Ngarrka-jarra-rlu   ka-pala-jana   maliki-patu   paka-rni.*
WLP man-DU-ERG   IMPF-3duSUBJ-3plNonSUBJ   dog-PAUC   strike-NPST
    'The (two) men are striking (killing) the dogs.'

(12b) *Ngarrka-jarra-rlu   ka-pala-nyanu   paka-rni.*
WLP man-DU-ERG   IMPF-3duSUBJ-RR   strike-NPST
    'The (two) men are striking themselves / each other.' (Hale, Laughren & Simpson 1995:1437)

There are five pieces of additional evidence that the transitive argument structure of the clause is maintained in Warlpiri reciprocal constructions.

Firstly, secondary predicates in Warlpiri are linked, through case agreement, to the arguments they modify: they take the ergative if they modify a transitive subject argument, and the absolutive (morphologically zero) if they modify an intransitive subject or object argument (Laughren 1992).[17] Reciprocal clauses in Warlpiri may have secondary predicates or complements linked to either subject or object; (13a) illustrates a secondary predicate linked to the transitive subject (*ngati-nyanu-jinta* 'of the same mother') and taking the ergative, while (13b) illustrates a complement NP linked to the object, and taking the absolutive. (13b) further shows that, even though there can be no overt NP exponent of the object position in reciprocals (other than the clitic *-nyanu*), there is nonetheless an object position to which secondary predicates can be linked. Finally, the manner expression *kulu* 'in anger' in (13a), though not strictly speaking predicated over the subject, since it has scope over the whole clause, nonetheless provides further evidence for the transitive status of the clause by taking an ergative suffix.

(13a) *Kurdu-jarra-rlu   kuja-ka-pala-nyanu paka-rni   **kulu-ngku***
WLP child-DU-ERG   REL-PR-3duSu-RR hit-NPST   in.anger-ERG

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[15] Except where the subject is first person singular, or the clause is imperative with a second person subject, in which case the regular first or second person object forms are used, respectively.

[16] Hale et al (1995) use the term 'non-subject' to cover object, indirect object and some other benefactive-like functions of this slot.

[17] For similar examples of ergative-marked secondary predicates linked to the subject in two dialects of the Western Desert language, spoken to the west and south of Warlpiri, see Marsh (1992:81) on Martu Wangka and Goddard (1983:127) on Yankunytjatjara.

> **ngati-nyanu-jinta-rlu** …
> mother-POSS-one-ERG
>
> 'When two children of the same mother have a fight and hit each
> other …' [Laughren et. al. (forthcoming)]

(13b) *Pintipuyu-rlu ka-lu-nyanu   ngarri-rni **kunmarnu**.*
WLP Pintupi-ERG PR-3plSu-RR call-PR   [term](ABS)
       'Pintupis call each other Kunmarnu.'

Secondly – really a subtype of the secondary predicate test – expressions of accompaniment or instrument, formed by adding an adnominal proprietive case to the instrument NP, are linked to the subject by an ergative case in transitive clauses, but not in intransitives. In reciprocal clauses, such expressions take an outer ergative, just like in standard transitive clauses:

(14) *Kulu, ngulaji yangka kuja=ka-pala-nyanu yapa-jarra-rlu*
WLP fight DEM   DEM   REL=PR-3duSu-RR person-DU-ERG

    *paka-rni **watiya-kurlu-rlu**   manu **karli-jarra-rlu**   luwa-rni*
    hit-PR   stick-PROP-ERG   and   boomerang-DU[18]-ERG hit-PR

    jarnku   manu yangka kuja=ka-pala-nyanu   yapa-jarra-rlu
    separately and   DEM   REL=PR-3duS-RR   person-DU-ERG

    panti-rni   rdaka-jarra-rlu …
    punch-PR   hand-DU-ERG

    'Kulu is like when two people hit each other with sticks or hurl boomerangs at each other or when two people punch each other …'
    [Laughren et. al. (forthcoming)]

Thirdly, there are strict constraints on the use of the ergative case with instruments in Warlpiri: unlike in other Australian languages (see §4.2 below), in Warlpiri, the instrumental use of the ergative[19] is only possible in transitive clauses (cf Hale 1968:4, Nash 1986:35, 227, Simpson 1991:247). There is clear attestation of this use in reciprocal (and the structurally identical reflexive) clauses, further evidence that they are transitive:

 (15)   *Karntawarra-rlu=rlupa-nyanu mapa-ni.*

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[18] The suffix *-jarra* in Warlpiri is normally a dual marker, but in other languages nearby (notably Pitjantjatjara, where it appears in the language name in a different orthographic guise) it has developed a proprietive meaning, and according to Jane Simpson (email, 16/2/2004) it appears to be used in this example with a proprietive meaning on this word.

[19] Within the Australianist tradition there is some terminological variation in what to call cases that span ergative and instrumental functions, and even on whether to regard them as a single case (as is done in the Warlpirist tradition) or as two distinct cases (as Dixon 1972 does for Dyirbal). Our preference would be to label the case 'instrumental' in all cases (then noting an ergative use in Warlpiri, Dyirbal etc.) but here we adhere to the Warlpirist terminology.

WLP ochre-ERG=1incSu-RR paint-PR
    'Let's paint each other / ourselves with yellow ochre.'
    (Hale, 1959 field notes)

  Fourthly, there is also case linkage in Warlpiri between body parts and their wholes, such that the term for the part agrees in case with the (overt or covert) exponent of the whole. Body parts in reciprocals can either take the ergative case, agreeing with the transitive subject (*rdakajarrarlu* 'hands' in (14) is an example), or the absolutive case, agreeing with the object (such as *wanarrijarra* 'thighs' in (16)): the choice depends on whether the whole is functioning as agent or patient in the focussed-on subevent of the reciprocal act, i.e. '(subject | agent) strike (with) the hand' vs 'spear (object | patient) (in) the thigh'.

(16) … *manu yangka kuja=ka-pala-nyanu*
WLP … and DEM REL=PR-3duSu-RR

  *yapa-jarra-rlu jarnku panti-rni **wanarri-jarra***
  person-DU-ERG separately spear-PR thigh-DU(ABS)

  mirnimirni kurlarda-kurlu-rlu – kulu-ngku-ju.
  equally   spear-PROP-ERG fight-ERG-EUPH

  '… and when two people spear each other in the thigh in a fight.' [Laughren et. al. (forthcoming)]

  Fifthly, complement clauses in Warlpiri signal whether they have a subject or an object antecedent by taking different verbal suffixes: *-kurra* if the antecedent is an object; and *-karra* plus ergative case if the antecedent is a reflexive subject (i.e. if the antecedent, being in a reflexive or reciprocal clause, is the subject that is coreferential with the clausal object).[20] Complement clauses of reciprocal perception verbs can take either object-controlled forms (17a) or subject-controlled forms (17b), according to their interpretation, clearly establishing the presence of both subject and object arguments in the reciprocal clause.

(17a) *Kurdu-jarra-rlu ka-pala-nyanu nya-nyi, karri-nja-**kurra**.*
WLP child-DU-ERG IMPF-3duSub-RR see-NPST stand-INF-OBJ.COMP
  'The two children see each other (who are) standing.'

(17b) *Kurdu-jarra-rlu ka-pala-nyanu   nya-nyi,*
WLP child-DU-ERG IMPF-3duSub-RR see-NPST

  *karri-nja-karra-**rlu**.*
  stand-INF-REFL.SUBJ.COMP

  'The two children see each other (as they are) standing.'[21]

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[20] See Simpson & Bresnan (1983) for a detailed description of the system.
[21] We thank Mary Laughren for supplying these sentences, which are the reciprocal versions of the following reflexive counterpart, published in Hale (1982:295) and Simpson (1991:165):
(i) *Kurdu-ngku ka-ø-nyanu   nya-nyi, karri-nja-kurra.*
WLP child-ERG   IMPF-3sgSub-RR see-NPST stand-INF-OBJ.COMP

(Hale 1982:295, also cited in Simpson 1991:165)

The Warlpiri and Warluwarra examples, then, clearly illustrate the possibility that languages will encode reciprocal constructions with exactly the same argument structure as their corresponding non-reciprocal clauses. We now turn to Australian examples representing the opposite pole, where languages effect an unambiguous reduction in valence in reciprocal clauses.

3.2. Transitivity reducing strategies.

As indicated by the quote from Faltz (1985) in section §2, many languages respond to the 'equation' of subject and object arguments by fusing antecedent and reciprocator into a single argument position, reducing the clause's valency by one. Applied to a basic transitive verb, this yields an intransitive verb in the reciprocal (18). In this section we will only consider the situation with base transitive verbs, holding off the discussion of what happens with base ditransitives until §5.

(18) V_t (A, B) > V_i-RECIP (A&B)

We illustrate this phenomenon with the Papuan language Yimas (Foley 1991), which has distinct bound pronominal subject forms for transitive and intransitive subjects; (19a) illustrates the 1st person plural A (transitive subject) form *kay-*. Reciprocals of transitive verbs not only use just a single argument position to represent the conjoined subject, but make the intransitive status of the clause clear through the use of the S (intransitive subject) form, *ipa* in (19b):

(19a) *Na-kay-cay.*
Yim 3sgO-1plA-see
    'We saw him.'

(19b) *Ipa-tɨ-tpul.*
Yim 1plS-RECIP-hit
    'We hit each other.' (Foley 1991:285)

Unambiguous reduction of valency in reciprocals is claimed for the majority of Australian languages, typically accompanied by verbal affixation.[22] Two tests for valency reduction are usually employed:
(a) the overt appearance of only one nominal argument
(b) the employment of a case frame associated with intransitive rather than transitive constructions, i.e. instead of the nominative:accusative, ergative:absolutive or ergative:accusative case frames found in the transitive construction, there is a single NP bearing the nominative (if the language is nominative:accusative or tripartite) or absolutive (if the language has an ergative:absolutive case system).[23]

'The child sees himself standing.'
[22] Dixon (2002: 520) gives a figure of about one hundred and five Australian languages, out of 140 surveyed, in which reciprocal constructions are encoded by verbal affix (which may or may not be the same as the reflexive) with accompanying reduction in valency, although it is possible that some of the languages in this figure may in fact exhibit mixed transitivity behaviour.
[23] In tripartite systems there are distinct cases (generally glossed ergative, nominative and accusative) for A, S and O roles. There has been considerable debate in the Australianist literature about the proper analysis of so-called 'split' systems, where some nominals (prototypically inanimate nouns) split forms

Thus in Ngiyambaa (20), where subjects of transitive clauses take the ergative case (20a), the subjects of the corresponding reciprocals (encoded by verbal affix) take the nominative (20b); Dyirbal (21) displays a comparable pattern.

(20a)   *Mirri-gu   yugi   gadha-ra.*
Ngi   dog-ERG   dingo:^ACC   bite-PRES
          'The dogs are biting the dingos.' (Donaldson 1980:168)

(20b)   *Mirri-bula: gadha-la-nha.*
Ngi   dog-DU:^NOM   bite-RECIP-PRES
          'The two dogs are biting one another.' (Donaldson 1980:168)

(21a)   *Bayi   yara   ba-nggu-n   jugumbi-ru   bara-n.*
Dyi   DEM:ACC:I   man(^ACC)   DEM-ERG-II woman-ERG   punch-NF
          'The woman punched the man.' (Dixon 1972:93)

(21b)   *Bayi   yara-garra   bala-n*
Dyi   DEM:NOM:I   man-one.of.pair(^NOM)   DEM:NOM-II

          jugumbil-garra   baralbaral-nbarri-nyu.
          woman-one.of.pair(^NOM)   punch:REDUP-RECIP-NF

          'The man and the woman punched one another.' (Dixon 1972:93)

In both of these languages, the reciprocal is marked by verbal coding. However, there are also languages that use other coding methods for reciprocals, but nonetheless show a reduction in valence. In Gumbaynggir (Eades 1979:315), reciprocals are encoded simply by a change in case frame, from ergative:accusative (22a) to nominative (22b), plus the use of the reciprocal particle *galagala*.

(22a) *Ngiya:la   bu:rwaw   ngi:na.*
Gum 1pl.inc.ERG   paint:FUT   2sg.ACC
        'We will paint you.'

---

on an ergative:absolute basis, while others (prototypically first and second person pronouns) split them on a nominative:accusative basis. Goddard (1982) and Mel'cuk (1979) have argued – correctly, in our view – that applying the traditional criteria used in analysing cases in European languages, a distinct case is recognized right through the nominal word class even where some stems show neutralizations (just as we say there is a nominative:accusative distinction in all German or Russian nominals, even though some forms (Russian neuter nouns; German neuter articles) fail to show the distinction formally). On this position far more Australian languages have tripartite systems than on a more surface-based analysis. Our glossing in this paper reflects this tripartite analysis, so that some of our case glosses don't correspond to those in the original (see Evans 1995: Appendix B for an explicit comparison of the two analyses for Yukulta); we mark such reglossed cases with a carrot ^. In some languages however (e.g. Warlpiri) the fact that all members of the nominal class (including pronouns) split on an ergative:absolute basis allows us to retain the ergative:absolute glossing system. Note that the term 'nominative' will have a different meaning in tripartite systems (where it is confined to intransitive clauses) to what it has in nominative:accusative systems (where it can mark the subject of either intransitive or transitive clauses). A further analytic problem that arises in tripartite languages is that of determining whether zero-marked nominals are in nominative or accusative case; this is relevant to the question of whether there are nominative:accusative (i.e. S:O) case frames in the reciprocals of some languages (see §4.1.3 below).

(22b) *Ngiya: galagala   bu:rwaw.*
Gum 1pl.inc.NOM PART   paint:FUT
      'We will paint each other.'

Karrwa (Garawa) (Furby & Furby 1977:62) uses a single free-reciprocal/reflexive pronoun without other constructional coding (23a). It has a special form, distinct from standard pronouns, but it is difficult to say what its case is since it does not participate in a case paradigm. However, evidence from other nominals that may be apposed to it in the same clause suggest it takes the nominative rather than the ergative/instrumental: Mushin (2000) gives example (23b) in which the apposed nominal *kurrukurru* 'big mob' lacks ergative/instrumental marking (in this example the subject is grammatically singular but semantically plural).

(23a)   *jala   daba   yalu-ngk=i.*
Kar   then   hit   3pl-RR=PST
         'then they hit each other.'

(23b)   *Daba nangk=i   nanaba   kurrukurru.*
Kar   fight 3sgRR=PST   there   big.mob(NOM)
         'Big mobs of people fought each other there.'

The encoding of reflexive/reciprocal constructions with a single pronoun or pronominal affix is also found in two languages that neighbour Karrwa: the closely-related Wanyi (Laughren 2001),[24] which likewise uses a single free-reciprocal/reflexive pronoun without other constructional coding, and Yanyuwa, just to the north of Karrwa, which is related to Warluwarra (see example (11) above), but which has developed bound pronominal prefixes, probably under areal pressure from the head-marking, prefixing languages to its immediate north. In Yanyuwa, reflexive/reciprocal clauses formed from transitive verbs have a single pronominal prefix, with a special reflexive/reciprocal form, typically derived by adding *-mba*[25] or *-inyamba* to the regular intransitive form, with a few irregularities (cf 1sg intransitive subject *arna-*, 1sg RR *arna-mba*; 3 feminine intransitive subject *i-* (~ *ilha-*), 3 fem sg RR *inyamba* – see Kirton & Charlie 1996:91 for the full set of forms). Free NP expressions in reflexive/reciprocal clauses in Yanyuwa take the nominative rather than the ergative case (Kirton & Charlie 1996:123), although there are some complications with a couple of three-place verbs which we return to in §5.4.
    A similar construction to that in Karrwa and Wanyi is found in the South Australian language Yaraldi (Cerin 1994): here again the verb is left in its normal

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[24] As in Karrwa, the determination of case on the reflexive/reciprocal pronoun in Wanyi is tricky, and depends on finding examples with apposed nominals, but made trickier by the fact that for nouns the ergative is signalled by vowel-length, which is rather difficult to hear in Wanyi. Laughren (2001) claimed that subject nouns in reflexive/reciprocal constructions lacked the vowel lengthening characteristic of ergative marking in regular transitive clauses, and that therefore reflexive/reciprocal constructions involved case reassignment to their subjects, from ergative to nominative. However, she has since rechecked her transcriptions of this data, as well as obtaining examples with demonstratives where the ergative suffix (*-ni*) is clearer, and her current position (email to NE, 5/5/2004) is that subjects of reflexive/reciprocals retain the ergative marking found in straight transitives.
[25] This form is probably cognate with the suffix *-ba* ~ *-a* found on free reflexive/reciprocal pronouns in Warluwarra; cf Dixon (2002:324).

(transitive) form, while reflexive/reciprocal pronouns are based on the nominative (intransitive subject) pronoun form:

(24)   *wony=angk-inang   ngaiyu-wol?-el*
Yar   then=3duNOM-RECIP be.angry.at-INCH-TAM
       'then the two (women) become angry at each other...'
       (Cerin 1994:80)

In a non-reciprocal construction with the same verb the form of the subject pronoun would be *anggul* (3duERG) (Cerin 1994:53).

   Most descriptions of reciprocals with valency reduction unfortunately give no further criteria, so that we cannot eliminate the possibility that other more sensitive measures might detect transitive behaviour, of the type we will exemplify in §4. However we can use Yukulta (Keen 1983) as an example of a language where a wider range of criteria all point to intransitive behaviour in reciprocal clauses:

(a) the reduction in the number of overt arguments from two to one,
(b) the use of distinct transitive and intransitive forms of the auxiliary (the transitive form *kanta* in (25a) vs the intransitive form *lingka* in (25b)),
(c) the shift in subject case-marking from ergative in base transitives (25a) to nominative in reciprocals (not evident in this example but clear from other examples in Keen's grammar),
(d) instrumental adjuncts in the comitative, which take a further ergative in transitive constructions in agreement with the subject (25a), but do not have this in reciprocals (25b).

(25a)   *Rtangka-ya=kanta   ngawu   palatha, thungal-urlu-ya.*
Yuk   man-ERG-3sgA+PAST   dog   hit+IND stick-COM-ERG
       'The man hit the dog with a stick.' (Keen 1983:248, ex. 229)

(25b)   *Purlti-nyju-tha=lingka   wangal-kurlu*
Yuk   hit-RECIP-IND-3plS+PAST   boomerang+COM

       *rla:-nthu-tha=**lingka**   miyarl-urlu.*
       spear-RECIP-IND=3plS+PAST   spear+COM
       'They speared one another (with spears) and hit one another with
       boomerangs.' (Keen 1983:234, ex. 145)

In each of these examples, all the grammatical indicators have pointed the same way: the case marking on the arguments themselves, the form of pronominal affixes or clitics, and case marking on other NP elements agreeing with subject NPs, all signal that the reciprocal clause is intransitive. We now turn to cases where the evidence is mixed, with some grammatical indicators showing transitive behaviour, and others being associated with intransitives.

4. Compromise strategies

Having exemplified the many Australian languages with 'clean' strategies in reciprocal constructions, in this section we turn to the main focus of this paper: those

languages exhibiting 'mixed' transitivity properties, where the tests for transitivity contradict each other just in this construction type. As argued in §2, these languages pose a variety of interesting problems since they highlight the somewhat ambivalent nature of reciprocity with respect to argument structure.

A familiar example of such compromise strategies is found in the reflexive/reciprocal constructions of the Romance languages, as in the French example (26). This construction has the transitive property of containing an object clitic (*se*), but requires the 'be' auxiliary, which is otherwise only found with intransitive verbs.[26]

(26) *Ils*   *se*   *sont*   *tués*.
Fr   3plMasc   3.RR   be.3pl   killed.Masc.Pl.
      'They killed themselves / each other.'

In Australian languages we find such compromise strategies exhibited in a great variety of ways, as we shall now see.

4.1 Case marking and core argument structure
In languages with productive ergative:absolutive case marking, there is normally a strong correlation between the case marking of the subject and the transitivity of the verb. Transitive verbs generally have ergative subjects, and intransitive verbs generally require nominative or absolutive subjects. In a number of languages, however, reciprocal (and sometimes also reflexive) constructions are counterexamples to this generalisation: there may be only a single argument in the ergative case or, conversely, two arguments in the absolutive/nominative case.

4.1.1 SINGLE ARGUMENT, IN ERGATIVE.
In some Australian languages with ergative-absolutive case marking, the reciprocal construction may be unique in allowing an ergative-marked subject in an otherwise intransitive clause (i.e. these languages do not otherwise allow single ergative arguments). This situation is found in Badjala (Bell 2003:131) in which reciprocal constructions have just a single syntactic argument, yet the subject may be inflected with either the (regular) nominative case (27a) or the ergative case (27b). Example (27a) has the structure of a regular intransitive clause. In example (27b), on the other hand, the reciprocal construction has the intransitive property of having only a single syntactic argument, but the transitive property of having a subject in the ergative/instrumental case.

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[26] This problem has received considerable attention within the relational grammar literature. As summarized in Loporcaro (MS, p. 7, fn 11), the selection of 'be' auxiliaries in French, Italian etc. reflexive/reciprocal constructions 'follows [from] the theory of reflexives outlined in Rosen (1981[1988], 1982). Romance reflexives are defined by the fact that their final subject also bears the 2 relation at some stratum. This multi-attachment is then resolved (1,2 -> 1) before the final stratum, a process that correlates with the occurrence of the clitic *si*.' (See also La Fauci 1988:83; Loporcaro 1998:48).

As discussed in §2, Burzio (1986) provides a conceptually similar account within the Government-and-Binding framework, as does Alsina (1996:124-5) within the framework of LFG (although, of course, the details of these various accounts differ substantially).

Of course there are other Romance languages, such as Spanish and Portuguese, which have generalized the 'have' auxiliary to all verbs, so that there is no longer any association between this auxiliary and transitivity, removing the anomaly; according to Huber (1933:21) the elimination of the 'be' auxiliary had already happened by the time of Old Portuguese.

(27a) *Bula   bana nhaa-dhula-nj   barangga.*
BDJ   3duNOM   later see-REC-INTENT   morning
      'Those two will see each other in the morning.'

(26b) *Bula-ru   bayi-lda-y.*
BDJ   3du-ERG/INSTR hit-RECIP-IMP
      'Those two hit each other.'

Bunuba (Rumsey 2000:118) and Kuuk Thaayorre (Gaby in prep.) both allow similar variation between ergative and nominative case on the single argument subjects of reciprocal clauses, as shown in (28)-(29)[27]. Interestingly, in Bunuba, where the same verbal form is used for both reflexives and reciprocals, there is a strong correlation between the employment of ergative marking and reciprocal interpretations: 'when the subject is non-singular, there is some tendency for ergative marking to be associated with reciprocals meanings (action upon one another) rather than reflexive (action by each upon him/herself), but the correlation is not perfect.' (Rumsey 200:119). In fact, among the examples he gives in the grammar, reciprocals allow either, but reflexives all take the nominative, so it may be possible to formulate a general rule that only reciprocal interpretations allow the use of the ergative case; further data would be needed to test this.

(28a) *Jirali   gurama ganba'wurrayningarri.*
Bun   before   man   chase.3nsg.RA2(aux):RR:PST:CTV
      'Olden-days people used to chase each other.'

 (28b) *Biyirri-ingga nyaga'wurriyni.*
Bun   they-ERG   spear.3nsg.WU2(aux):RR:PST
      'They speared each other.'

(29a) *Parr_r   peln   ii   waarin-rr.*
KTh   kid(NOM) 3pl(NOM) there chase-RECIP
      'All the kids are chasing each other.'

(29b) *Parr-an   peln   ii   waarin-rr.*
KTh   kid-ERG   3pl(ERG) there chase-RECIP
      'All the kids are chasing each other.' [Gaby, field notes]

In Gooniyandi, relatively closely related to Bunuba, reflexive/reciprocal clauses are anomalous in being the only clause with a single overt argument in which the ergative is employed. According to the formulation in McGregor (1990:319), the same typologically anomalous situation obtains with both reflexives and reciprocals, rather than allowing the variable realization (and tendency to associate ergative marking with reciprocals rather than reflexives) that is found in Bunuba.[28] Finally, recall that

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[27] In an elicitation context, many Kuuk Thaayorre speakers strongly prefer an ergative-marked reciprocal subject NP. In natural speech, however, reciprocal subjects are often unmarked for case.

[28] These reciprocal constructions with ergative-marked subjects are similar in some respects to coupled reciprocity locatives in Bangla: in certain archaic proverbs, there is a single NP in which the two

in Wanyi (footnote 24), nominals apposed to the 'reflexive/reciprocal subject pronouns' take the ergative case.

Otherwise, constructions with a single, ergative argument are virtually unknown in Australian languages overall, and certainly in the languages we have discussed above (with the exception of Gooniyandi, where the rules for using the ergative are more complex – see McGregor 1992b) these are the only constructions that permit ergative marking on a sole core argument. Outside reciprocal and reflexive constructions, the only significant use of ergative-marking on single actants is in Bandjalang, where this is found with a small number of cognate-object verbs (Crowley 1978:107-8).

4.1.2 SINGLE ARGUMENT, IN ACCUSATIVE (UNATTESTED)

The logical converse of the single ergative argument would be to have a single accusative argument, but we do not know of any such examples with reciprocal use. There are, however, examples with 'accidental reflexive' meaning reported for Guugu Yimidhirr (Haviland 1979:123-4), which have a single argument in the accusative (plus an instrument NP in the instrumental, but Haviland argues that this cannot be the subject), which may either be just the whole-denoting pronoun (30a) or additionally have a linked nominal denoting the part (30b):

(30a) *Nganhi   wagi-idhi   naaybu-unh.*
GYi 1sg:ACC   cut-RR:PST   knife-INST
    'I got cut on the knife.'

(30b) *Nganhi   dhamal   daam-adhi   galga-anh.*
GYi 1sg:ACC   foot:ACC[29] spear-RR:PST spear-INST
    'I got speared in the foot, accidentally, with a spear (e.g.
    it fell out of a tree and got me on the foot).'

It would be interesting to discover whether similar constructions could be found with 'accidental reciprocals' such as 'we bumped into one another'.

4.1.3 TWO ARGUMENTS, NEITHER ERGATIVE

Another logically possible mixed strategy in an ergative:absolutive language is for a reciprocal construction to have a transitive argument structure *without* an ergative subject. Such a construction would therefore have an overt object NP (e.g. a reciprocal marker) and a nominative or absolutive subject. We know of no ergative:absolutive language with this construction in regular 'transitive' reciprocal constructions (though see Austin (1982) who mentions a few languages that have similar phenomena with a restricted class of 'cognate object' verbs), but this situation arises in reciprocals formed from ditransitive verbs in Wambaya (31). The reciprocal

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participants are conjoined and marked with the locative (which also has the ergative function of marking transitive subjects):
(i)   *bhaie   bhaie   jhOgRa kOre*
BGL brother:ERG/LOC   brother:ERG/LOC   quarrel   do
    'Brother fights with brother'   (Dasgupta 2002)
(ii)   *rajae   rajae   juddho hOe*
BGL king:ERG/LOC   king:ERG/LOC   war   is
    'King fights with king'   (Dasgupta 2002)
[29] Haviland, who uses a split-case approach, glosses this as 'foot+ABS'; the form is consistent with it being either nominative or accusative (in tripartite terms) but we assume it is accusative through general principles of part-whole case agreement.

marker (here encoding the source relation) requires the subject to take nominative, rather than ergative case (even though the subject marker on the auxiliary takes the A form – see below), while the theme argument remains in the accusative case.[30]

(31)   *Ngarringga   wurlu-ngg-a alaji   gambada   wardangarri.*
WMB   take.from   3duA-RR-NF child:ACC sun:NOM   moon:NOM
            'The sun and the moon took each other's child.' [lit. The sun and the moon took a/the child from each other.] (Nordlinger 1998:239)

This reciprocal construction is the only Wambaya construction with a regular, overt direct object NP and a nominative subject.[31]

4.2 Use of instrumental case
In discussing Warlpiri reciprocals in §3.1, we mentioned that the marking of instruments with the (ergative)/instrumental case in Warlpiri is limited to transitive clauses, and that its occurrence in reciprocal constructions can be regarded as further evidence for their transitive status.

Whether instrumental case is restricted to transitive clauses varies considerably from language to language in Australia. At the one extreme are languages like Warlpiri where all clauses with instrumentals, even reflexives and reciprocals, are clearly transitive. At the other extreme are languages which permit the instrumental with base intransitive verbs: examples are Yir-Yoront (Alpher 1973:179), Bularnu (Breen 1976a) and Wagaya (Breen 1976b) and Kalkatungu (Blake 1979), which permits the instrumental with intransitive verbs of speaking (cf Blake 1977:47), and Mparntwe Arrernte (Wilkins 1989:172-3) which permits the instrumental with a wide range of intransitive verbs. Obviously, in these languages, the presence of instrumental case in reciprocals cannot be used as a diagnostic of transitivity.

In some languages, however, there is a general restriction of the instrumental to base transitive clauses but, exceptionally, instrumentals are permitted in reciprocal and reflexive constructions. Such a language is Alyawarr (Yallop 1977:72), where instrumentals are normally confined to transitive clauses, but just in the case of reflexives and reciprocals, both formally intransitive by the diagnostic of there being a single overt actant in the nominative, instrumental case may be used. Though Yallop himself doesn't give any examples with instrumentals in reciprocals, (32) from the Alyawarr dictionary (Green 1992) provides an illustration. Note also that ergative/instrumental marking on secondary predicates is also possible in reciprocals, as illustrated by (33).

(32) *Ampa   akely-rnem   atw-err-eyel   arwerle-l.*
Aly child(NOM)   little-PL(NOM) hit-RECIP-PR.CONT stick-INSTR

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[30] Though there is no given word class that makes a three-way distinction, the fact that pronominals cut the A / S / O space one way (A&S vs O) while nominals cut it the other way (A vs S&O) allows the establishment of a tripartite system for Wambaya, with ergative/locative, nominative and accusative cases distinguished (Nordlinger 1998). In this example and others like it, it so happens that both the S and the O argument have the same zero form, but replacing them with prominals would allow us to see that with the right exponents the two cases can be distinguished.

[31] There is one other restricted construction with two non-ergative NPs in Wambaya. This involves the verb *ngarlwi* 'talk' which takes a nominative subject and can also take a cognate object in the accusative case referring to the language spoken (Nordlinger 1998:184). This is clearly lexically specific, however, whereas the reflexive/reciprocal construction described above is possible with all ditransitive verbs.

'The kids are hitting each other with sticks.' (Green 1992:116)

(33) *Intem-antey-ang ratherr   arwelth-el   atw-err-eyel?*
Aly   always-still-Q   two:NOM jealous-INSTR   fight-RECIP-PR.CONT
       'Are those two always having jealous fights?' (Green 1992:136)

The Alyawarr data can be seen as part of a more general pattern whereby, in some languages, instrumental case is licensed by the case frame of the basic clause from which a range of valency rearrangements can be derived, since similar patterns are found in reflexives and antipassives:

> In all languages an instrumental argument can be included in a transitive clause with certain classes of verbs. In some it may also be used in an underived intransitive clause... However, derived intransitives always permit an instrumental NP if this could occur in the corresponding transitive. That is, if a passive, antipassive, reflexive or reciprocal derivation acts to detransitivise a clause, the instrument NP is unaffected.' (Dixon 2002:136)[32]

In §6.3 we return to the question of how the conditions of use of the instrumental case can best be characterized in such languages.

4.3 Object suppressed, but body part continues to behave as if apposed to object

We have already encountered, with Warlpiri (§3), the widespread pattern in Australian languages of linking body parts syntactically to NPs denoting their 'wholes'. In Warlpiri this is manifested by case linkage between part and whole, with the whole being generally regarded as the argument proper, and the part as linked to it by a sort of apposition (Hale 1981). (Though this is sometimes regarded as 'possessor raising', we do not adopt this analysis since there is generally no evidence for any agnate construction in which the 'whole' is expressed as a possessor). In this section we describe two sorts of reciprocal construction which are a sort of converse of the 'phantom limb': the part is overt, and is treated morphosyntactically as if it were linked to a (phantom) object denoting the whole. In this section we describe two quite distinct manifestations of this phenomenon: in Dalabon (§4.3.1) it plays out as the incorporability of part nouns in a way that looks like they are linked to objects denoting their wholes, even though other aspects of the reciprocal construction pattern like intransitives with no overt object; while in Kayardild (§4.3.2) it plays out through a special sort of case linkage (in the form of 'modal case') to objects that have been apparently suppressed in the reciprocal construction.

4.3.1 BODY PART INCORPORATION AND DALABON RECIPROCALS.

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[32] In illustration, Dixon cites this reflexive example from Murrinh-patha (Walsh 1976:407):
(i)   *M-e-m-njeytj   nandji-marimari-re.*
MuP   1sg-REFL-PAST-cut CLASSIFIER:THING-knife-INST
        'I cut myself with a knife.'
The Guugu Yimidhirr sentences in (30) furnish further examples with reflexives, and both Dyirbal (Dixon 1972) and Yidiny (Dixon 1976:320) furnish clear examples with antipassives, where the instrumental case is used despite the reassignment of case frame from ERG:ACC to NOM:DAT or NOM:LOC.

On the surface, Dalabon[33] reciprocals appear to be of the transitivity-reducing type discussed in §3.2. Dalabon verbs have two sets of pronominal prefixes: a monovalent set, used with intransitives (e.g. 34a), and a divalent set, used with transitives and ditransitives[34] (e.g. 34b). For non-singular objects, an overt object clitic is generally present, as with *bunu* in (34b), and there is also a change in vowel quality in the subject prefix, as long as it is disyllabic, with the vowel *a* associated with intransitives and the vowels *i*, *û* or *u* associated with transitives.[35]

(34a) *Wawurd-ko   barra-h-bo-n.*
Dal   elder.brother-DYAD   3duS-Ass-go-PR
  'The two brothers are going along.'

(34b) *Bunu burra-h-na-n.*
Dal   3duO 3duA-Ass-see-PR
  'They two$_i$ are looking at them two$_j$.'

Reciprocal constructions are marked by a suffix *-rr-* to the verb stem, which also indicates reflexives (Evans & Merlan 2003); transitive verbs taking this suffix then take the monovalent prefix set. Compare the transitive form, with its divalent prefix *bûla-* in (35a) with the reciprocal form in (35b), which takes the monovalent prefix set:

(35a) **Bûla**-*h-na-ng.* (35b) **Bala**-*h-na-rr-un.*
Dal   3plA/3O-Ass-see-PR 3plS-Ass-see-RR-PR
  'They see him/her.'   'They see each other.'

However, another grammatical test is harder to reconcile with viewing these clauses as simply intransitive. Verbs in Dalabon can incorporate a nominal root referring to a body part of one of the actants: with intransitives this is a body part belonging to the intransitive subject, with interpretation as locus or means of action depending on the verb; with transitives this is a body part belonging to the object, and construed as being involved in a patient role, as the locus at which the action is directed. (36a) contains examples of each type; in the first clause the root *ngarrinj-* 'hand' is incorporated, denoting the body part of the patient / object, while in the second clause the same root, again incorporated, is now construed as the body part of the intransitive subject. Incorporated body-parts with intransitive verbs may also have an instrument-

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[33] Dalabon examples are either from Evans, Merlan and Tukumba (forthcoming) or from Evans (field notes).

[34] In ditransitives the 'object' slot agrees with the indirect object. There are also derived three place verbs built up from verbs of lower valency by the addition of one or more applicatives; the situation there is complex, but basically the object slot shows agreement with whichever argument is prototypically higher in animacy: see Evans (1997, 2003) for descriptions of the very similar system in Bininj Gun-wok (Mayali).

[35] There is also an optional ergative/instrumental marker *-yi(h)*, though the variability and complexity of its use makes it a less straightforward test to apply: it is commonest in the case of inanimates acting upon humans, but can apply right up the Silverstein scale, including on first person pronouns. It is also used with subjects of the normally intransitive verb 'say' when a quotation is present as a sort of clausal object, e.g. *nahda ngey ngalng-bon, nahda njing djalng-bon, kah-yininu* **walwalngurru-yih** 'Me, I'll go this way, and you go this way' said **the lizard.'** (Evans et al forthcoming: 364). So far there are no examples of it being used with reflexive/reciprocal clauses, however, providing a further piece of intransitive behaviour in reflexive/reciprocals, though we shall see in §5.2 that it is sometimes used with the reciprocals of **di**transitive verbs.

like interpretation with certain verbs, such as 'enter' in (36b), i.e. 'enter with its nose, enter as far as the nose is concerned, put nose in'. The possibility of incorporating body parts with an instrument-like function is never possible with transitive subjects, however, which must be encoded as instrumental-marked external nominals (36c; while incorporated nominals do not take suffixes marking their possessors, external nominals are always suffixed for possessor); when the semantics of the predicate makes it plausible to construe the body part with either subject or object, incorporated body parts must always be construed with the object (36d).

(36a) *Kodjdjan   bûka-h-yûlûng-**ngarrinj**-dulubong wakbah-yih*
Dal [name]   3A/3hO-Ass-then-hand-spike:PP   catfish-INSTR

    *ka-h-yûlûng-**ngarrinj**-kurlbabo-ng.*
    3S-Ass-then-hand-bleed-PP

    'Then a catfish spiked Kodjdjan on the hand, and her hand bled.'
    (and she bled, in her hand)

(36b) *Yalang   ka-h-ngu-n   ngarrarla kubud-kah, ka-h-**dje**-birdika.*
Dal ant   3A/3loO-Ass-eat-PR   echidna   anthill-LOC 3S-Ass-nose-enterPR
    'Echidnas eat ants, they put their noses (their noses enter) into anthills.'

(36c) *Bûla-h-dalhmû   ngarrinj-bulng-yih.*
Dal 3plA/3O-Ass-punchPR hand-3plPOSS-INSTR
    'They (the footballers) punch the ball with their hands.'[36]
    (*bûla-h-ngarrinj-dalhmû*)

(36d) *Ka-h-ngarrinj-yidjnja-n.*
Dal 3/1-Ass-hand-touch/hold-PR
    'S/he is holding my hand.'
    * 'S/he is touching me with her hand.'

Now body part incorporation can occur with reflexive/reciprocal verbs as well, and the body part must always be construed as a patient, never as an agent: (37a) means 'they looked into each other's eyes' not 'they looked at each other with their eyes' (e.g. looking at each other's faces, in a general way, without meeting their eyes), and (37b) means 'they shook hands, they grasped each other's hands', not 'they touched each other with their hands'.[37] This suggests that, even though the object is not present as an overt actant within the pronominal prefix, it must be present at some level of structure in order to licence the linking of the body part to the appropriate semantic role.

(37a) *Barra-h-mim-na-rr-ûn.*
Dal 3duS-Ass-eye-see/look-RR-PR
    'They are looking into each other's eyes (they are lovers).'

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[36] In 'Aussie Rules' football, the code which this sentence was describing, players pass the ball to each other by punching it with their fists.
[37] Though of course, in practice, the commonest situation described by such predicates involves one where the body parts are involved in both capacities, e.g. in the second case where their hands are touching.

(37b) *Ke-h-langû-yidjnja-rr-inj.*
Dal 3du.disharmS-Ass-hand-hold-RR-PP
   'The two of them shook hands.'

4.3.2 MODAL CASE ON OBJECT BODY PARTS IN KAYARDILD

Another more complex example of an apparent mismatch between core argument
structure and case marking in reciprocal constructions, as revealed by the treatment of
body parts, comes from Kayardild (Evans 1995). In regular transitive clauses in
Kayardild, as in Warlpiri (§3.1), apposed body part NPs modifying the object are
inflected with the same case as the object NP they modify; however, instead of a more
familiar object-marking case like accusative or absolutive, they take a 'modal case' –
a case varying with the tense, mood or aspect of the clause – which goes directly onto
the stem of all words in the object NP, as well as onto some other non-subject NPs,
after other clause-level case marking (e.g. with instruments it follows the instrumental
case).

(38) NP$_{<subj:nom>}$ V NP$_{<obj:modal case>}$ (NP $_{<obj:modal case>}$ [body.part])

In (39) the case of the object NP is the 'modal proprietive' (the case assigned to
objects when the clause has 'potential' mood), and this is found on the apposed body
part NP *bardaka* 'belly' also.[38]

(39) *Darri-n-kuru*   *dangka-a*
Kay tread.on-NMZR-PROP person-NOM

   mirra-yala-thu   *darri-ju*   *maku-walath-u*   ***bardaka-wu***.
   massage-POT   tread.on-POT woman-many-MPROP belly-MPROP

   'The person in charge of delivering the baby massages and treads on the
   women's bellies.'

In reciprocal constructions the object NP is suppressed and the clause appears
intransitive. However, despite the fact that there is no possible object NP in the
clause, apposed body parts on the (suppressed) object still appear in the relevant
modal case (40):

(40) *Dan-da*   *maku-wala*   *mirrayala-thu-th,*
Kay this-NOM   woman-many.NOM massage-RECIP-ACT

   darri-nju-thu   *bardaka-wu.*
   tread.on-RECIP-POT   belly-MPROP

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[38] The case marking system of Kayardild is extremely complex and unusual, and it would take us too
far afield to describe it in any detail here. The reader is referred to Evans (1995:Ch. 4) for detailed
discussion.

'These women, they massage each other, they tread on each other's bellies (to induce labour).'

4.4 Mismatch with overt transitivity markers

Other examples of the ambiguous nature of reciprocal constructions with respect to transitivity parameters arise when the core arguments suggest a transitivity value for the clause which is contradicted by other aspects of morphosyntax. Reflexive/reciprocal constructions in Yawuru, for example (Hosokawa 1991:173), take the suffix *-ndyi-* after the verb stem, and appear to be regularly intransitive in their argument structure and case marking: there is a single subject argument which appears in the nominative, and a single-subject pronominal prefix. However, while reflexive constructions are consistent in also employing the intransitive verbal prefix *-ma-* (41a), reciprocal constructions normally[39] employ the transitive prefix *-a-* instead (41b).[40]

(41a) *Ingarr-ma-bura-ndyi-n*   *kamba-rri.*
Yaw 3augS-INTR-see-RR-IMP   that-DU
     'They (two) see themselves, respectively.'

(41b) *Ingarr-a-bura-ndyi-n*   *kamba-rri.*
Yaw 3augS-TR-see-RR-IMP   that-DU
     'They (two) see each other.'

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[39] Hosokawa (1991:174) notes that verbs with first person inclusive subjects are an exception: the reciprocal forms of these verbs take intransitive prefixes, like reflexives.

[40] The diachrony of reflexive/reciprocal marking in the Nyulnyulan languages presents a fascinating story. The suffix *-n(y)dyi-*, which marks both reflexives and reciprocals, is cognate with dedicated reciprocal markers in a number of other Australian languages (cf the Kayardild reciprocal marker *-n(y)ju-* ~ *-nthu-* exemplified in (40)); for a table showing cognates see Alpher, Evans & Harvey (2003). It appears that in proto-Nyulnyulan or pre-proto-Nyulnyulan, this suffix had already extended its function to take in reflexives as well, since in every Nyulnyulan language it can mark both.

    The next step appears to have been to introduce *ma-* ~ *-mi*, of unknown origin, but associated with overt intransitive marking. The descriptions of Bardi (Metcalfe 1975:95, and Aklif 1999:172) and Nyulnyul (McGregor 1996:45) suggest that *ma-* is optional with both reflexives and reciprocals. It is significant, though, that all their examples with *ma-* are reflexive, so it is possible that *ma-* is more strongly associated with reflexive constructions, as suggested (though without clear data) for Bardi (Nicolas 1999:116: 'le suffixe utilisé seul a une valeur réciproque'). This is confirmed by Bowern (email to NE, 7/4/04), in whose own work, all of the (rather few) examples of reflexive/reciprocal forms without the *ma*-prefix are reciprocals. McGregor (1999:92) points out that in every Nyulnyulan language with the possible exception of Warrwa, the *ma-* ~ *mi-* prefix is optional, and though there may be a statistical preference to associate lack of *ma-* more with reciprocal interpretations, this is not a categorical rule.

    Yawuru, however, appears to have formalized the correlation between *ma-* ~ *mi-* and reflexive readings, and uses it to disambiguate reflexives from reciprocals by contrasting *ma-V-nydyi* (reflexive) with *(na)-V-nydyi* (reciprocal).

    Revealingly, another Nyulnyulan language, Nyigina, has almost completely generalized the co-use of *ma-V-nydyi* for both reflexives and reciprocals (Stokes 1982:287, who calls *ma-...-nydyi* a 'discontinuous affix'), but there is just one reciprocal verb 'spear each other' which has only the suffix, disallowing the *ma*-prefix; this may be a relict of the stage represented by Yawuru, with other languages recapitulating, through the generalization of *ma-* to both reflexives and reciprocals, the same neutralization that saw *-nydyi-* extended from reciprocals to reflexives, though this time with the direction of extension running in the other direction, from reflexives to reciprocals.

4.5 *Mismatch between argument-marking on auxiliary, and case frame on free NPs*

In Wambaya (Nordlinger 1998:193) the reflexive reciprocal bound pronoun fills the regular object slot in the auxiliary, as if the clause were a canonical transitive clause like (42a), but subject NPs in reflexive/reciprocals must take the nominative (S) rather than the ergative/locative (A) case, as already mentioned in §4.1.3. This is exemplified in examples (42b) and (43). Note, however, that while the ergative/instrumental case is not possible on the subject NP in these constructions, it is possible in its other role marking instrument as shown in (44), though since this is also possible with some base intransitive verbs like 'speak (in a language: INSTR)' we do not consider this a case of transitivity mismatch in Wambaya (cf §4.2).

(42a)   *Daguma*   *irri-ng-a*   *alangmiminyi-ni.*
WMB   hit   3plA-1O-NF   children.I-ERG/LOC
       'The children hit me.'

(42b)   *Daguma*   *irri-ngg-a*   *alangmiminji(*-ni).*
WMB   hit   3plA-RR-NF   children.I(NOM) (*-ERG/LOC)
       'The children hit themselves / each other.'

(43)   *Alag-bulu*   *wurlu-ngg-a*   *nyurrunyurru.*
WMB   child-DU(NOM) 3.DU.A-RR-NF   chase
       'The two children are chasing each other.' (p. 142)

(44)   *Alangmiminji*   *irri-ngg-a*   *daguma darrangu-nu.*
WMB   children.I(NOM) 3plA-RR-NF   hit   stick.IV-ERG/LOC
       'The children are hitting each other with sticks.'

Furthermore, complements of reciprocalised perception verbs show subject-control (marked with ERG/LOC) (45b), as if the reciprocal verb were intransitive, rather than the expected object-control (marked with INF) that would be found in the non-reciprocalised equivalent (45a).

(45a)   *Manku*   *ngu-ny-u*   *ngarl-warda ngarlana.*
WMB   hear   1.SG.A-2O-FUT   talk-INF   language.IV(ACC)
       'I'll hear you talking language.'

(45b)   *Gajigajirra*   *gani*   *gannga*   *ngaba*   *ngurru*
WMB   quickly   3.SG.S(PR)   return   THEN   1.PL.INC.A(PR)

       janganja. *Yardi*   *nguy-u*   *ngurra*   *ngaba*
       ask   put   3.SG.NM.A-FUT   1.PL.INC.OBL   THEN

       ngurru-ngg-u   *manku*   **ngarli-ni**   *ngarlana.*
       1.PL.INC.A-RR-FUT   hear   talk-ERG/LOC   language.IV(ACC)

> 'She'll come back soon and then we'll ask (her to play the tape). She'll put (the tape) on for us and then we'll hear ourselves/each other talking language.' (p. 208)

Thus Wambaya, though superficially like Warlpiri in having a second-position auxiliary indicating subject and object positions; in replacing the free object marker with a fixed reflexive/reciprocal morpheme invariant for person; and in having distinct complementized verb forms according to whether the antecedent is subject or object, differs from it in failing to align all diagnostics of transitivity in reflexive/reciprocal constructions. [41]

5. Further complications: the situation with ditransitives

Until now our discussion has focused primarily on the basic distinction between transitive (bivalent) and intransitive (monovalent) construction types. The situation becomes more complicated, however, when reciprocalised ditransitive verbs are considered, since this allows us to check whether valency in reciprocals is being reduced *by one*, or *to one*: if the former, reciprocals of ditransitives should behave like two-place verbs; if the latter, they should behave like one-place verbs. Unfortunately, very few grammatical descriptions are explicit about this distinction, or furnish sufficient examples that the question can be decided, or inconsistencies detected in a language's treatment; as a result, this section of our typological survey is shorter and less comprehensive than we would wish.

In a language with regular valence-reducing reciprocal constructions, such as Yimas (cf §3.2), a reciprocalised transitive verb yields a canonical intransitive construction with the S form pronominal prefix (19a,b). Now if a reciprocal affix reduces the valence *by* one rather than *to* one, a reciprocalised ditransitive construction in such a language should yield a transitive clause with two arguments. This is in fact what we find in Yimas[42], since the subject of a reciprocalized ditransitive takes the *A* (transitive subject) form of the pronominal prefix:[43]

(46) *Pia-kay-cˆ-i-kia-k.*
Yim talkTHEME-1plA-RECIP-tell-NIGHT-IRR
     'We tell each other.'

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[41] Despite being geographically close (though not adjacent), and despite sharing many areal characteristics of the north-central Australian area, Warlpiri and Wambaya are only extremely distantly related genetically: Warlpiri is a Pama-Nyungan language (of the Ngumpin subgroup), while Wambaya is a non-Pama-Nyungan language of the so-called Mirndi family. Most of the convergences reflect historical changes in Wambaya, such as the loss of prefixing, shift to an almost exclusively suffixing typology, and development of a second-position auxiliary from a series of old inflecting verbs – see Green (1995), Nordlinger (1998), Green and Nordlinger (2004) and for discussion. Had Wambaya not become effectively extinct, it would have been fascinating to see whether the trajectory of its convergence with Warlpiri and other Ngumpin languages would have resulted in a tighter alignment of the various indicators of transitivity in reciprocal constructions.

[42] For another, apparently comparable, example, this time from Ainu, see Tamura (2000). See also Bril (2002:154) for some examples of reciprocals of ditransitives in Nêlêmwa, a language that reduces valency in reciprocals. The presence of the ergative preposition *a* in reciprocalized ditransitive derivations shows that they have a valence of two.

[43] Here *pia* 'talk' is a verbal prefix filling the third (theme) argument slot – see Foley (1991:212-213). (Cf *pia-mpu-i-c-akn* [talk-3plA-tell-PERF-=3sgD] 'they told him').

Before proceeding, we note a generalization that appears to be widespread if not universal in languages that form reciprocals by valence-changing verbal affix: in reciprocals from ditransitive verbs, coreference is established between the subject and the indirect object (or, in languages where it may be more accurate to talk about two objects than about a direct and an indirect object, between that object which encodes human recipients or beneficiaries)[44]. In Bininj Gun-wok, for example (Evans 2003), which has a single reflexive/reciprocal suffix *-rre-*, when this is applied to the three-place verb *wo-* 'give', the subject must be interpreted as coreferential with the indirect object when a reciprocal reading is intended.

(47)   *Barri-wo-rre-ni.*
BGW   3plSUBJ-give-RR-PI
          'They used to give it to each other.'
          *'They used to give each other to him.'

We now pass to four Australian languages where, in contrast to Yimas, the valence of reciprocals formed from ditransitives is less clear, with some grammatical features suggesting the valence is two, and others suggesting the valence is one. We have not been able to find any Australian examples comparable to Yimas, in which reciprocals of ditransitives exhibit all relevant features of base transitive verbs.

5.1 Ndjébbana: intransitive prefix series but external object
Ndjébbana is a non-Pama-Nyungan language belonging to the so-called Maningrida family (Green 2003), though it had earlier been classified as having isolate status. Verbs have two pronominal slots: one for subject and one for object or - in the case of ditransitives - for indirect object (McKay 2000:208). Except where the object is third person singular, the forms are distinct: cf *barra-* '3 augmented[45] subject' and *banbirri-* 'third person augmented subject acting on third person augmented object'.

   Reflexive and reciprocal clauses are derived by suffixing *-yi-* to the verb stem and reducing the valence. McKay's (2000) grammar of Ndjébbana states clearly that reflexive/reciprocal clauses are 'like any other intransitive clause' (p. 290) and that '[a] verb derived using the *-yi-* prefix [sic] is intransitive and therefore takes an intransitive pronominal prefix marking the S or the sentence. It may not take a transitive prefix form, unlike the transitive *or ditransitive* verb it may be derived from' (p. 263; italic ours). The difference between transitive (in underived) and intransitive (in derived) prefix sets with a base transitive verb is clearly shown, with a reflexive example, in (48):

(48a) *Banda-mérba-ra.*
Ndj   3minA/3augO-hide-CTP

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[44] Cf Aissen (1987:110) on Tzotzil ditransitives, which use the same structure (a special free pronoun form) for reflexives and reciprocals: 'In such clauses, most commonly associated with the semantics of reciprocals, the initial 1 and 3 are coreferential'; an example is:
(i) 7i-y-ak'-be   s-ba-ik   k'ok'
     completive-3A-give-APPLIC   3A-self-pl fire
     'They fired on each other.' (Lit. 'They gave fire to each other.')
[45] 'Augmented' is similar to plural, but counts from a minimum that varies with the composition of the group by person: from one for most, but from two for first person inclusive, whose logical minimum is 'you' plus 'me'.

'He is hiding them.'

(48b) *Barra-mérba-ya.*
Ndj   3augS-hid-REFL:CTP
          'They are hiding (themselves).'

(48c)   **banda-mérba-ya*
Ndj   3minA/3augO[46]-hide-REFL:CTP

Despite the use of intransitive pronominal prefixes, there is other evidence that the result of adding *-yi-* to a three-place verb is a two-place rather than an intransitive verb. McKay (2000:264) cites a reciprocal use with the 'base verb ... *djébba* 'deprive someone of something, take something away from someone'[47], a ditransitive verb with which the transitive prefix would mark the A and the IO. In the derived reciprocal form the S prefix marks the three players as functioning both as A and as IO towards one another in the struggle for the ball, giving the following example:

(49)   *... barra-ddjébba-ya   budborl.*
Ndj   3augS-deprive.of-RR:CTP   football
          ' …they are trying to get the ball [=are trying to deprive each other of the ball]'

Although McKay does not discuss the status of *budborl* 'football',[48] it appears to function exactly as it would if it were the direct object of a ditransitive verb: as a free nominal, unmarked for case, directly next to the verb. It therefore appears plausible that the reciprocal verb *(d)djébbaya* behaves like a one-place verb in terms of its selection of pronominal prefixes, but like a two-place verb in terms of its possession of a second argument able to be expressed by a directly adjacent unmarked NP.

5.2   Dalabon: 'intransitive' prefix series but incorporated object
A more complex example is Dalabon, where the syntactically-regulated nature of noun incorporation allows us to formulate tighter tests for object status than is possible in Ndjébbana. Apart from the special case of incorporated body parts (§4.3.1 above), nominals in Dalabon – like in the closely related Bininj Gun-wok (Evans 1997, 2003), and like in many other languages around the world – incorporate on an absolutive basis: transitive verbs can incorporate their objects (50a) and intransitive verbs incorporate their subjects (50b). In both of these cases this can result in double exponence, since the absolutive is representable by both incorporated noun and pronominal affix (though in effect visible double exponence is reduced by the fact that only around forty nominals can incorporate, mostly referring to inanimates). With

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[46] Presumably the form with the 3augA/3augO prefix, namely *banbirri-mérbaya*, is unacceptable.

[47] Many Australian languages have a ditransitive verb for 'remove, divest, take away, deprive of, withhold' whose syntax parallels that of 'give', mirroring the symmetry of transfer situations: examples are Kayardild *marndija* 'remove, deprive' which mirrors *wuuja* 'give' in marking the transferred object with the proprietive case, and Bininj Gun-wok *kaybun* and Dalabon *drahmû* 'withhold, not give', which are like 'give' in incorporating the theme (the thing given or not given) and representing the recipient or non-recipient by the object pronominal slot. See §5.2 for Dalabon examples.

[48] This is McKay's example, and he glosses the *barra-* prefix as intransitive. In email correspondence with NE (6/4/04) he confirms the direct object status of *budborl* in this example and notes, that, given the existence of homophonous transitive forms with third person minimal objects this data needs further checking to confirm whether the pronominal prefix is transitive or intransitive.

ditransitives, indirect objects get represented by the object pronominal slot, while direct objects incorporate (50c); the same pattern is found with derived trivalent verbs formed by adding the benefactive applicative *marnû-* to a transitive base, as in (50d), where the benefactive applicative is used to promote the possessor of the object to indirect object status.[49]

(50a) *Boyenj-boyenj ka-h-lam-yu.*
Dal   big-big   3sgS-Ass-mineral.nodule-liePR
        'There are lots of mineral nodules there.'
        [Lit. 'lots of mineral nodules lie there']

(50b) *Bula-h-bad-yunginj.*
Dal   3plA/3sgO-Ass-rock-put.downPP
        'They put the rocks (rock?) down (there).'

(50c) *Ka-h-kanj-drahm-inj.*
Dal   3sgA$_i$/1sgO$_k$ -R-meat$_j$-not.give-PP
        'He wouldn't give me the meat, he refused me the meat.'

(50d) *Bûka-h-marnû-yaw-nanhna-n.*
Dal   3sgA$_i$/3sghiO$_k$-R-BEN-child$_j$-look.after-PR
        'She looks after his child.'

Now in reciprocal constructions formed from three-place verbs, the 'monovalent' or intransitive prefix set is used, whether with base ditransitives like *drahmû* 'withhold, not give' (51a) or with base transitives to which a third argument has been added by the benefactive applicative, like *marnû-nahnan* 'look after X for Y; look after Y's X' (51b). But though the verb takes a monovalent prefix, as an intransitive verb would, the incorporated argument is not coferential with the (sole) pronominal prefix, as would be the case in a true intransitive; rather it is the theme, as one would expect from the object of a transitive. As an alternative to incorporation, the second actant may be represented by an external NP next to the verb (51c); this is also a possibility with normal transitive verbs.

(51a) *Barra-h-kanj-drahm-irr-inj,*   *kardû*   *barra-h-ngurrngdu-rr-un.*
Dal   3duS$_{i=k}$-Ass-meat$_j$-not.give-RR-PP maybe   3du-R-hate-RR-PR
        'They two$_i$ wouldn't give each other$_k$ meat, maybe they hate each other.'

(51b) *Barra-h-marnû-yaw-nanhna-rr-ûn.*
Dal   3duS$_{i=k}$-Ass-BEN-child$_j$-look.after-RR-PR
        'They$_i$ look after each other$_k$'s children.'

(51c) *Barra-h-drahm-irr-inj,*   *kanj-no.*
Dal   3duS$_{i=k}$-Ass-not.give-RR-PP meat$_j$-3sgPOSSD
        'They two$_i$ wouldn't give each other$_k$ the meat.'

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[49] The situation with the other applicatives – the comitative, instrumental, and (incipient) locative – is more complicated, and will not be discussed here.

A further piece of evidence that reciprocalized ditransitives still have two arguments comes from the fact that the ergative use of the instrumental, optionally found on the subjects of transitive clauses as in (52), sometimes appears with reciprocals of ditransitive verbs; this contrasts with reciprocals of transitives, with which it is so far unattested.

(52) *Wurdurd-yih*   *yabbunh*   *barra-h-ngabbu-rr-inj,*
Dal   child-INSTR   two   3duS-Ass-give-RR-PP

     barra-h-yurrmirr-inj.
     3duS-Ass-swap-PP

     'The two kids give each other (food), they swap (food).'

The evidence regarding transitivity of reciprocals formed from three-place verbs in Dalabon, then, is equivocal: the pronominal prefixes are those found with intransitive verbs, while the behaviour of incorporated nominals, and the availability of instrumental/ergative marking on subjects, are those found with transitive clauses.

5.3 Nominative: accusative (S:O) case frames in Wambaya reciprocals of ditransitives

As we saw in §4.1.3, Wambaya exhibits another type of mismatch in reciprocalised ditransitive constructions. In this case, the subject appears in nominative, rather than ergative case, despite the presence of an overt object NP, as in (53) (repeated from (31) above). This is the only time in Wambaya that an accusative object co-occurs with a subject in the nominative rather than the ergative case: based on the case assigned to the object, the clause looks transitive, while based on the case assigned to the subject, it looks intransitive.

(53) *Ngarringga*   *wurlu-ngg-a* *alaji*   *gambada*   *wardangarri.*
WMB   take.from   3duA-RR-NF   child(ACC)   sun(NOM)   moon(NOM)
     'The sun and the moon took each other's child.' [lit. The sun and the moon took a/the child from each other.] (Nordlinger 1998:239)

5.4 Double absolute (S:O) case frame in Yanyuwa reflexive/reciprocal ditransitives

Yanyuwa, as mentioned in §3.2, employs an interesting type of transitivity-reducing strategy in reflexive/reciprocals, in which the two pronominal prefix positions found in standard transitives give way to a single prefix position in reflexive/reciprocals, occupied by a special reflexive/reciprocal prefix form, derived from the intransitive subject form; concurrently, any external subject NP receives the absolutive[50] case, instead of the ergative-allative it would receive in an underived clause.

    With a few verbs, however, 'an object or object complement may also occur' (Kirton & Charlie 1996:124) in reflexive/reciprocal constructions. Many of their examples involve body part complements in reflexives and need not concern us here, but there is also one example of the ditransitive verb 'give', which would normally take an ergative: absolutive : dative case array, in which 'both Subject and Object (or

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[50] In Kirton & Charlie's (1996:123) description the term 'nominative' is used for this case, but since it covers S and O functions we will use the term 'absolutive' instead.

Object Complement) are marked for nominative case'; this is illustrated in (54). We interpret this to involve a situation similar to that found in Wambaya (which incidentally is not distant geographically from Yanyuwa): in reciprocals of ditransitive verbs, the subject is reassigned the absolutive (S / O) case instead of the ergative (A) case it would receive in regular ditransitive clauses, but the theme-object retains the absolutive (O) case it has in the basic clause type.

(54) *Kurdukurdu   /   jal-inyamba-ngunda-yi.*
Yan   very.much(ABS) they-RR-give-PRES
    'They are giving large quantities (of dugong meat) to one another.'
    (Kirton & Charlie 1996:125)

5.5   *Objects and ditransitive reciprocals: summary*

What is common to all four of the Australian languages for which we have (at least some) data on reciprocals in ditransitives is that the choice of either an intransitive pronominal-prefix form (Dalabon, Ndjébbana), or nominative/absolutive rather than ergative case for the subject (Wambaya), or both (Yanyuwa), is made in spite of the presence of an object. Coreference is established between the subject and the indirect object, and there is no overt nominal exponent of the indirect object actant; this removal of an indirect object actant is then signalled by the change to prefixal form or case marking. However, the third, theme actant remains in the clause, and can be present as an external NP (Ndjébbana, Wambaya, Yanyuwa) or an incorporated object argument (Dalabon); either the case marking it receives (absolutive or accusative, according to the language) or its incorporation properties (Dalabon) mark it as a normal direct object. The fact that the subject argument is encoded by an intransitive prefix (Dalabon, Ndjébbana, Yanyuwa) or in nominative or absolutive case (Wambaya, Yanyuwa) does not signal, as it would in a normal clause, that there is no object at all; rather, it signals that there is no overt indirect object. In all these cases, then, the grammatical treatment of reciprocals of ditransitives suggests that we have a different sort of mixed transitivity: the form of the pronominal prefix, or the case assigned to the subject, suggests that the valence has been reduced *to* one, while the presence of a remaining direct object shows that it has in fact simply been reduced *by* one.[51]

    This set of mixed transitivity behaviours is, of course, different in nature to that found with reciprocals of transitives: it results from the undisturbed retention of a third argument, rather than from clues that the coreferential second argument is still present in some subtle guise, as is the case with reciprocals of transitives.

    The attentive reader will have noticed that we do not touch on a whole host of other questions one could ask about reciprocals of ditransitives, that would result from applying to ditransitives the sorts of tests for the implicit presence of the coreferential indirect object argument that we applied in §3 and §4 to transitives – what happens with secondary predications, complement clauses and so forth? These would be fascinating questions to pursue, but unfortunately we have yet to find a skerrick of

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[51] The only other area of the grammars of Australian languages in which S:O (nominative:accusative), as opposed to A:O (ergative:accusative) case frames sometimes occurs is in 'cognate object' constructions like 'speak (a language)', 'play (a game)' etc: Austin (1982) cites examples from Diyari, Djaru, Bayungu, Guugu Yimidhirr and Yidiny with a handful of verbs which take a subject in the nominative (S) case and optionally an accusative object. Interestingly cognate object constructions in another language, Banjalang, have a sole argument in the ergative, another aberrant core case pattern we have mentioned in this paper (see §4.1.1).

relevant data in the descriptions we have, so further research on this will have to wait until more detailed grammatical data on reciprocals of ditransitives becomes available.

6. Further issues.

6.1. Overview of ways in which reciprocals can mix transitivity

Our first goal in this paper was to show how many different guises 'mixed transitivity' phenomena can take in reciprocals, beyond such phenomena as auxiliary selection that are already familiar from the general linguistics literature. The Australian languages we have examined show a wide range of manifestations of transitivity mixing, each posing a problem for any formal treatment that would see reciprocals having a fixed arity at all levels of representation.

With regard to base transitive clauses, these can take the form of anomalous case choice, most importantly the use of ergative case marking on single core arguments (Badjala, Bunuba, Gooniyandi, Kuuk Thaayorre) but also, in some languages, the use of ergative/instrumental case on instruments where this use is normally confined to transitive clauses (Alyawarr, Yalarnnga). A variety of NPs linked through case choice to the subject or object NP may also behave as if the clause is transitive, despite the lack of an overt object, and take case-marking (ergative or accusative) normally restricted to transitive constructions: this is found with both secondary predicates and body part predicates in Alyawarr. The apparent suppression of object actants in reciprocals may fail to impact on the treatment of body-parts treated, in normal transitive clauses, as syntactically apposed to the object, resulting variously (according to the language) in agreement with the object in case (e.g. modal case in Kayardild) or in the possibility of incorporation (Dalabon). Overt markers of transitivity on the verb may be found in reciprocals despite the presence of a single pronominal argument prefix, as in Yawuru, or there may be a mismatch between the filling of an object slot in the auxiliary by a reciprocal marker, and the choice of nominative rather than ergative case on subject NPs (Wambaya). And complements of reciprocalised perception verbs may show subject-control, as if the clause were intransitive, again despite the presence of a reciprocal marker in the object-slot of the auxiliary (Wambaya).

Ditransitive clauses present a different set of challenges in a number of languages. Though here the indirect object, coreferential with the subject, is suppressed, with concomitant substitution of the ergative case with the nominative on the subject, or of a divalent pronominal prefix set with a monovalent one, the direct object remains overt in the reciprocal clause, as an external or incorporated nominal, typically creating an S:O as opposed to an A:O case frame.

6.2. Does clausal transitivity correlate with encoding strategy?

Early in this paper (§2) we cited Faltz' (1985:14-15) influential suggestion that method of encoding had an impact on transitivity, which suggested that NP coding (his 'NP-reflexives') would correlate with transitive features of reflexives, and verb coding (his 'V-reflexives') would correlate with intransitive features. We will refer to this as the 'coding strategy hypothesis'. For the Australian languages that we have discussed in this paper, we can translate this into two broad strategies for encoding reciprocity – pronominal coding (by means of a bound or free reciprocal pronoun, or clitic), and verb-coding (typically by means of a verbal affix that does not itself

directly represent an argument).[52] Note that this does not exhaust the possible means of encoding reciprocity – some languages use particles, or adverbials like 'mutually' or 'in return', or juxtapose two clauses – but these are rarer and lie outside the scope of this paper. See also König & Kokutani (to appear) for a more extended typology.

The coding strategy hypothesis, suitably adapted to reciprocals, has underlain a number of treatments of the phenomenon, and is certainly a broad tendency, but the data considered in this paper suggest the situation is much less simple.

One way it needs to be modified, of course, is to recognize that there is no single value for 'transitivity' in reciprocal constructions that predicts the behaviour of all relevant grammatical phenomena; throughout the paper we have seen that within particular languages, different tests jump different ways. Table 1 presents a summary of the various indicators of intransitivity versus transitivity[53] found in the reciprocal constructions of eighteen Australian languages.

[Table 1 about here]

It might still be possible to adapt the coding-strategy hypothesis to this more complex data: for example, it may be possible to claim that languages with pronominal reciprocal strategies exhibit purely transitive behaviour on all fronts (English or Warlpiri style), while mixed transitivity behaviour is only found on languages with verbal-coding strategies.[54] It is this revised version of the coding-strategy hypothesis that we now examine.

An overall impression of the data considered in this paper can be gained by looking at the italicized entries in Table 1, which indicate a mismatch between the transitivity-behaviour of a particular construction and that which we would expect from the coding strategy. This occurs where a construction exhibits intransitive characteristics, but is associated with a pronominal encoding strategy, or conversely if the construction exhibits transitive characteristics, but is associated with a verb-coding strategy. Let us call such cases 'non-congruent constructions'.

On the original form of the coding-strategy hypothesis, we should expect no italicized entries; on the revised form, we should only expect italicized entries for languages with a verb-coding strategy. In fact, however, non-congruent constructions are found in both verb-coding and pronominal-coding languages. Importantly, though, we have not located any Australian language with verb coding but both arguments represented overtly: this would be a language where you say something

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[52] This contrast is similar to Dixon's (2002:320) distinction between a 'verbal derivational affix' strategy and that using 'a special reflexive/reciprocal pronominal element'.

[53] It should be noted that many of these indicators are language-specific; for instance, marking an instrument with ergative case is indicative of a transitive clause in, e.g., Alyawarr, but not in, e.g., Yir-Yoront. The case-marking of instruments is therefore listed as an indicator of transitivity only for languages such as the former.

[54] A diachronic version of this hypothesis would suggest that if a reciprocal marker gets reanalysed from being on the pronoun, to being a valence-changer on the verb, there would be an accompanying change from leaving the valence intact, to reducing valence. This seems to be implicit in Dixon's (2002:324) remarks about the Warluwarric family, in which he discusses the development of reflexive/reciprocal pronouns from an original free status, attested in Warluwarra, to bound prefixes, and the apparently correlated fact that reciprocals are transitive in Warluwarra but intransitive in Yanyuwa. Though this scenario remains interesting, it must be pointed out that other possible explanations exist, such as areal convergence between Yanyuwa and its southerly neighbours Karrwa and Wanyi, in which reciprocals are also intransitive even though the reflexive/reciprocal pronouns are clitics rather than verbal affixes; in any case, on our typology, the Yanyuwa prefixes are a pronominal coding strategy even though they are part of the verbal word.

like 'they fought-each-other them'. Because the number of overt arguments is usually the first piece of information that a grammar gives in its section on reciprocal marking, and because of the large number of languages that employ this strategy in Australia, this is a significant finding.

However, consideration of other non-Australian languages suggests one can find examples, albeit rare. In the New Caledonian language Nêlêmwa (Bril 2002, Bril to appear) there are two basic reciprocal constructions: an intransitive one (55b) where a confix *pe-...-i* combines with a single actant[55] (though it may be double represented, once by a preposed subject pronoun and once by a postverbal full NP), and a transitive one (55c) where the prefix *pe-* (i.e. the first part of the confix *pe-...-i*) combines with two actants:

(55a) *Hli   yage-i-hli   a   hliili   meewu.*
Nel   3duSub help-TR-3du.O   ERG these2anaph   brother
     'These two brothers help them.'

(55b) *Hli   pe-thiwalaxa-i   âlô   mahliili.*
Nel   3duSub REC-tickle-REC child these2DEIC
     'These two children tickle each other.'

(55c) *Hli   pe-tuâ-i-hli.*
Nel   3DUSub   REC-deceive-TR-3duObj
     'They deceived each other.'

Table 1 presents several examples of incongruence in languages with pronominal encoding. There are a number of languages which employ just a single reflexive/reciprocal form for transitive clauses, combining it with an underived transitive verb: this may be a clitic (Karrwa, Wanyi, Yaraldi) or a pronominal prefix to the verb (Yanyuwa). There are also languages which employ a special reflexive/reciprocal pronominal form in the object slot of the auxiliary, but which use a case frame appropriate to intransitives (Wambaya), and where the syntactic behaviour of subordinate clauses suggests that there is just one actant in the main clause (Wambaya again).

Overall, then, even in its revised form, the coding-strategy hypothesis cannot be maintained, except as a tendency. This is an area, however, which warrants revisiting once we have comparable data across a much broader sample of languages than data is currently available for.

6.3 *Motivating mixed-transitivity behaviour*
As discussed in §2, reciprocal constructions lend themselves naturally to such mismatch effects precisely because they constitute an unusual combination of multiple semantic participants on the one hand, and identification of argument roles on the other. Semantically, they are typically transitive (or ditransitive), but through the identification of arguments, they have low distinguishability of subject and object and are thus low on the transitivity scale syntactically. Such mixed-transitivity

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[55] Note, though, that Bril (2002:153) points out that in this construction 'Les verbes ont généralement une flexion transitive (ou une forme apparantée), mais la construction est monovalente, comme la forme réfléchie. C'est encore la preuve que flexion transitive et valence ne sont pas automatiquement liées.'

behaviour can be seen then as the grammar's way of resolving these competing motivations.

Far from being a special case, reciprocals can be seen as creating the highly specific conditions necessary to tease apart the different aspects of the linguistic system that grammatical phenomena are sensitive to. In a prototypical (non-reciprocal) transitive clause many, if not all, of the various grammatical phenomena we have addressed above fall together: subjects may be marked with ergative case, instruments with the instrumental case, the clause may have two overt arguments, verbs may have divalent pronominal prefixes, and so forth. Basing one's analysis on such prototypical transitive clauses, it is natural to attribute all of these grammatical phenomena to the syntactic transitivity of the clause as a whole.

Reciprocal constructions with mixed transitivity effects, however, provide insight into more complex and intricate conditioning factors for these phenomena. For example, the possibility of instrumental case in otherwise intransitive reciprocal constructions in languages like Warlpiri or Alyawarr (that otherwise restrict its occurrence to transitive clauses) suggests that instrumental case in these languages is not sensitive to the transitivity of the clause per se, but to the presence of both agent and patient roles in the semantic structure. Reciprocal constructions provide one of the few opportunities to disassociate such bivalency at a semantic level from syntactic transitivity, thus explaining why it is only in these constructions that such apparent 'mismatches' are revealed.[56]

Similarly, the appearance of the ergative case on the single argument of reciprocal constructions in languages like Badjala and Kuuk Thaayorre suggests that the function of the ergative case in these languages is not to mark a clause as transitive at the syntactic level, but rather to indicate the presence of an agent-patient array in the thematic structure.

Furthermore, the presence of 'object' case agreement on body parts in otherwise intransitive reciprocal constructions in Kayardild suggests that the phenomenon of case agreement is not, in fact, solely a syntactic phenomenon as generally assumed, but rather a more complex interaction of syntactic and semantic argument structure: case morphology in these examples is not simply 'agreeing' with a syntactic argument, but rather signalling the presence of a particular thematic role in the semantics. The 'mixed transitivity' behaviour of reciprocal constructions then, may not in fact signal 'mixed' transitivity at the syntactic level at all.

As we have shown here, reciprocal clauses provide a particularly complex and sensitive laboratory for teasing apart the relative contributions of semantics and syntax to argument structure. Many complexities emerge once sufficiently rich data on reciprocals becomes available. We hope that investigators will see the value in pushing for more detailed field data on reciprocals than has been the norm to date, and have no doubt that as this emerges we will be provided with greater insight into the intriguing nature of argument structure in this intricate clause type.

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[56] Another opportunity arises in anti-passive (and passive) constructions, in which the clause becomes syntactically intransitive, but retains the same array of thematic roles in the semantic argument structure. Interestingly, Australian languages with antipassive constructions frequently allow the use of the instrumental case in these constructions types also; see Dixon (2002:136) and §4.2.

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Abbreviations:
1 First person (singular if not followed by other indication of number marking)
2 Second person
3 Third person

12   First person inclusive (speaker plus hearer)
/   Acting upon, e.g. 3/1 '1st singular subject acting upon third singular object'

A	Transitive subject
ACC	Accusative
BEN	Benefactive
COM	Comitative
CTV	Continuative
DAT	Dative
DO	do (denominal verbalizer)
DU	Dual
eB	elder brother
ERG	Ergative
FUT	future
hi	higher animate (~ basically human)
IMPF	Imperfective
inc	inclusive
I	noun class (~ basically masculine)
IND	Indicative
INF	Infinitive
INSTR	instrumental
INTENT	intentive
Masc	Masculine
MPROP	Modal proprietive (marks objects and other non-subject actants in future and desiderative clauses)
N	nominalizer
NM	non-masculine
NOM	Nominative
NPST	Non-past
O	Object
OBJ.COMP	Object complement
OBL	Oblique
PART	particle
PAUC	Paucal
PL	Plural
POT	Potential
PP	Past perfective
PR	Present
PST	Past
R	Realis
RA2	Form-based name of particular auxiliary
RECIP	Reciprocal
RR	Reflexive/reciprocal
S	Intransitive subject
SUB(J)	subject
TAM	tense/aspect/mood indicator
TR	transitive
WU2	form-based name of particular auxiliary

Table 1.
Constructional manifestations of transitivity and reciprocal strategy

V = Verb-coded reciprocal (by affix)
P = Reciprocal pronoun (free, bound or clitic)

Material in italics represents exceptions to the null hypothesis that clauses with verb-coded reciprocals will behave as pure intransitives, and clauses with pronoun-coded reciprocals will behave as pure transitives

Language	**Coding**	**Indicators of intransitivity**	**Indicators of transitivity**
Alyawarr	V	one overt argument	*ergative case on instruments; ergative marking on secondary predicates*
Badjala	V	one overt argument; subject may take nominative case	*subject may take ergative case*
Bunuba	V	one overt argument; subject may take nominative case	*subject may take ergative case*
Dalabon	V	one overt argument; subject in nominative case	*part nouns incorporated as though linked to an object; two arguments present in reciprocals formed from ditransitive verbs; subjects of reciprocals formed from ditransitive verbs may take instrumental case*
Dyirbal	V	one overt argument; subject in nominative case	
Gooniyandi	V	one overt argument	*subject marked ergative*
Kayardild	V	one overt argument	*case of part nouns linked to (suppressed) object*
Kuuk Thaayorre	V	one overt argument; subject may take nominative case	*subject may take ergative case*
Ndjébbana	V	one overt argument; intransitive pronominal prefixes representing subject	
Ngiyambaa	V	one overt argument; subject in nominative case	
Yawuru	V	one overt argument	*transitive prefix on verb*
Yukulta	V	one overt argument; intransitive form of auxiliary; subject in nominative case; instrumental adjuncts in comitative case	
Karrwa	P	*one overt argument; subject in nominative case*	
Wambaya	P	*subject in nominative case; complements of perception verbs*	reciprocal marker appears in object position in auxiliary

		show subject-control	
Wanyi	P	*one overt argument*	subject takes ergative
Warlpiri	P		subject marked ergative; ergative case on instruments; secondary predicates linked to subject take ergative case; secondary predicates can be linked to object position; ergative outer case agreement on instruments marked with proprietive; body parts may agree
Warluwarra	P	*one overt argument*	subject marked ergative
Yanyuwa	P[57]	*one overt argument; reciprocal pronominal prefixes typically derived from intransitive form; subject in nominative case*	
Yaraldi	P	*reciprocal pronouns based on intransitive form;*	

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[57] The form of Yanyuwa reciprocal marking does not fit neatly into either the verbal or pronominal category. See discussion in text for a fuller characterisation.