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The path from cliticised to prefixed person marking in proto-Australian

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Introduction

Givón (1971) famously said (paraphrasing Hodge 1970): 'If today's bound morphemes are yesterday's lexical words, then today's morphology is yesterday's syntax'. While the years since have given us no reason to doubt the truth of this observation, the fact remains that explaining how one is derived from the other is not always straightforward. Jane Simpson once observed, possibly in a personal communication (neither of us can remember!), that no language has a system of independent pronouns that combines subjects and objects into portmanteaux. But portmanteaux – morphemes combining two or more functions within a form that cannot be easily divided into the individual functions – are common in pronominal indexing systems, particularly in combinations of 1st and 2nd person (Speech Act Participant: SAP) arguments (Heath 1991, 1998). One of the outstanding questions in linguistics is how they arise. I argue here that, even though a conclusive answer remains to be provided, we can identify some paths and some motivations for their development. In particular, I hope to provoke some thinks that one might think (to paraphrase Dr Seuss 1975), in order to work through this conundrum, one which Dixon (2002, 437) describes as 'one of the most difficult topics in Australian linguistics'.

The particular problem which faces us here is the pronominal agreement or indexing systems of Australian languages, which can be broadly but rather meaningfully divided into two types: prefixing and cliticising. Dixon (2002, 337) estimates that 'slightly more than half' of Australian languages have agreement systems indexing at least the two direct arguments of transitive clauses. While Non-Pama-Nyungan (NPN) languages typically have prefixal person indexing systems, with or without additional marking via clitics, as in (1), many Pama-Nyungan (PN) languages have a clitic system, often in second position in the clause, attached to an initial constituent (but see Legate 2002 for important qualifications).

(1) *ŋuruŋ-pu-woʔwo*
1PL.O-3NONSG-give.PSTPUNC
'They gave [it] to us' (Ngalakgan: Baker 2008, 140)[1]

Harvey and Mailhammer (2024, following Osgarby 2018, and earlier work such as Capell 1956, 10) propose that the NPN prefixing systems developed from an earlier clitic system of the kind found in Warlpiri (2), where a string of person markers, tense and mood markers are loosely attached to a preceding prosodic head. In this example, the clitic string is necessarily attached prosodically to the preceding word *jalangujalangu-rlu+ju*, since the first element in the clitic string (*ka*) is monomoraic.

(2)

kala	*jalangujalangu-rlu+ju*[2]	***ka-rlipa-jana***	*maliki+ji*	*punku*
but	NOW-ERG	PRES-1PL.INCL-3PL	dog.ABS+EUPH	bad.ABS

marda-rni *kuyu-pungu-wangu*
have-NPST meat-killer-PRIV
'But nowadays we have bad dogs who don't kill meat' (Warlpiri: Simpson 1983, 91)

1 Glosses use Leipzig Glossing Rules with the following exceptions: EUPH: euphonic element, NEUT: neuter class, PRIV: privative, PSTPUNC: past punctual, VEG: vegetable class. X/Y and X → Y both indicate the interpretation of a subject with features X acting on an object with features Y, i.e. regardless of whether this interpretation matches the order of morphs in the string.

2 Jane doesn't gloss the *+ju* marker in this example, but I'm assuming it's another 'Euphony' element as with *maliki* that follows.

One of the honorée's most highly cited papers – (Simpson and Withgott 1986) – is a notable contribution to our understanding of these systems. Simpson and Withgott (1986) make the intriguing suggestion that some of the differences between clitics and affixes may be due to differences in how they are processed. While we are not yet at the stage where we can examine this question for Australian languages, I believe that this suggestion is on the money, and I will make some observations about the processing of the local configuration in particular.

Harvey and Mailhammer (2024) argue that their proposal – that proto-Australian (pA) had a clitic agreement system – explains many of the current features of NPN prefixing systems, such as differences between languages in the order of the major constituents, and the presence and placement of mood and tense markers; see Osgarby (2018) for further discussion and a detailed reconstruction of the history of clitic and prefixed agreement in Mirndi languages. Nevertheless, there are a number of significant differences between synchronic clitic systems and prefixal agreement systems, summarised in Table 13.1, which make a simple progression from a clitic system of the kind observed currently to the extant prefixal systems problematic.

Table 13.1: Features of clitic vs prefixal agreement systems in Australia.

	Clitics	**Prefixes**
Portmanteaux	Almost absent	Typical
Dative/oblique pronouns	Typical	No
More than 2 arguments	Typical	No
Syncretism of person categories	No	Often
Applicatives	No	Yes

For instance, the existence of *portmanteau* prefix forms – forms with complex morphological meaning, but lacking a clear analysis on the basis of recurrent partials within the paradigm – is standard in NPN, while these are almost completely absent from the clitic systems we find in PN. In languages with prefixed pronominal agreement, some parts of the transitive prefix paradigm, at least, are transparently relatable to the intransitive prefixes and commonly also to independent pronouns. However, transitive prefixes where both arguments are either 1st or 2nd person (Speech Act Participants: SAP) characteristically lack this kind of transparency, as discussed in Heath (1991, 1998); cf. Table 13.2, showing a portion of the paradigm of Ngalakgan. The transitive combinations involving 3SG Objects are generally

similar or identical to the intransitive agreement prefixes in all NPN languages. In Ngalakgan, the intransitive agreement prefix for 1SG.S is *ŋu-* while that for 2PL.SUBJ is *ŋuru-*, similar or identical to the transitive versions with these subjects taking a 3SG Object in the fourth column. Similarly, the forms involving a 3SG.S taking an SAP Object (as in the bottom row) characteristically are formed with a combination of the SAP prefix followed by /*n*/ in many NPN languages, acting as an Accusative or Inverse marker; this is discussed below. In Ngalakgan, the Accusative *n* has a conditioned alternate *ŋ* when the preceding syllable has an onset in /r/, as with *ŋun-* 3SG.S/1SG.O (*ŋu-* 1SG.S), cf. *jiriŋ-* 3SG.S/1PL.EXCL.O (*jiri-* 1PL.EXCL.S).

Table 13.2: Ngalakgan 2nd person subject/1st person object prefixes, compared to combinations with 3rd person or zero.

	Transitive prefix combinations			Intransitive prefix
	1SG.O	1PL.EXCL.O	3SG.O	
2SG.S	–	–	*cu-*	*ŋiɲ-*
2PL.S	–	–	*ŋur-*	*ŋuru-*
1SG.S	–	–	*ŋu-*	*ŋu-*
3SG.S	*ŋun-*	*jiriŋ-*	*Ø-*	*Ø-*

Source: Merlan (1983).

While two sets of forms – those involving 3SG.S or 3SG.O – involve transparent combinations of recurrent partials from the paradigm, those involving combinations of two SAP arguments are largely opaque; that is, they typically do not conform to our predictions (Table 13.3). For example, the Ngalakgan form indexing 2SG.S/1SG.O *cun-* cannot be derived in any regular fashion from the 2SG.S/3SG.O form *cu-* plus the 3SG.S/1SG.O form *ŋun-*.[3] Similarly, the form *jini-*, which syncretises over all other combinations of 2nd person subject and 1st person object involving a non-singular argument, has no regular derivation. We can observe that it involves a syllable /ji/ which is similar to both the 1DU.INCL forms, such as *ji-* 1DU.INCL.S, and also the 1PL.EXCL forms, such as 1PL.EXCL.O *jiriŋ-*. I discuss the portmanteau form *jini-* further below, where I suggest a derivation from the 1PL.EXCL.O prefix *jiriŋ-* followed by 2PL *ŋu(r)-*. The forms indexing

3 Unusually, Ngalakgan has a prefix for 2SG.S which is specific to the transitive paradigm: *cu-*, quite distinct from the intransitive subject prefix *ŋiɲ-*; no other person/number categories show this kind of suppletion in the transitive and intransitive forms. Closely related Rembarrnga shows the same pattern, with cognate prefixes *ta-* and *ŋiɲ-*.

1st person Subject/2nd person Object are equally opaque, based on the forms we find elsewhere in the paradigm, such as those found with 3SG arguments (given in the row and column labels).

Table 13.3: SAP/SAP prefixes in Ngalakgan.

	1SG.O	**1PL.EXCL.O**
	Ngkn ŋun-	*Ngkn jiriŋ-*
2SG.S *cu-*	*cun-*	*jini-*
2PL.S *nur-*	*jini-*	*jini-*
	2SG.O	2PL.O
	Ngkn ŋun-	*Ngkn ŋuŋ-*
1SG.S *ŋu-*	*ŋiŋ-*	*ŋuku-*
1EXCL.PL.S *jir-*	*jiri-*	*ŋuku-*

Source: Merlan (1983).

Portmanteaux like these are found in a majority of prefixing NPN languages where agreement affixes are contiguous (i.e. they are not found in languages where subject and object agreement are associated with morphology on different sides of the verb, as in Daly languages such as Murrinhpatha or Nyulnyulan languages such as Bardi), especially in combinations of 1st and 2nd person; see the Appendix for a selection of these forms in comparison with the forms found in intransitive verbs. If NPN prefixal systems developed from clitic systems of the kind we find in Warlpiri, then we must reconstruct a number of early changes in the agreement system, including the development of portmanteaux, since these are so widely observed among NPN languages, or else otherwise explain a recurrent pattern among NPN languages, independently developed. Some portmanteaux, in particular the Ngalakgan prefix, *cun-* (2SG/1SG), might be reconstructible to pA, given its discontinuous distribution; I discuss this form later in the chapter.[4] Both portmanteaux and inverse marking are found, exceptionally, in the clitic system of the PN language Warumungu, which provides evidence that portmanteaux can develop in clitic systems, not just in affixing systems. As far as I have been able to determine, besides Warumungu, just a few

4 Or, alternatively, it's a chance resemblance based on similar processes applying to inherited morphology separately, given that this would require us to reconstruct portmanteaux to proto-Australian (thanks to an anonymous reviewer for raising this point). I discuss this issue later, where I discuss the Ngalakgan and Rembarrnga prefixes in detail.

other languages outside the prefixing NPN area also have portmanteaux, although other clitic systems display features of argument suppression and person syncretism, two other characteristics found in prefixing systems.

I suggest that the special morphological features of the 'local' configuration – combinations of two SAP arguments – follow from a number of factors; evidence for these factors is discussed in what follows. Local configurations:

1. are infrequent in discourse
2. involve inherent conflict between referentiality and argument role
3. involve competition for a single topic slot
4. frequently occur in contexts that are not standard declarative transitive events, i.e. involving non-assertive speech acts or moods and/or dative non-subject arguments.

I argue that in fact, the local configuration constitutes two separate sets (1 → 2 and 2 → 1), which occur in somewhat different sets of discourse contexts, and that understanding these contexts can help to explain certain aspects of the unusual morphology that we find in prefixing languages in this part of the paradigm.

In what follows, I first discuss the nature of the prefixing systems we find among NPN languages: hierarchically ordered, limited to two arguments, and generally lacking in case marking apart from an Accusative/Inverse marker. Then, I discuss the difference between number and person syncretism: the former is found in both clitic and prefixing systems, but the latter appears to be largely limited to prefixing systems (though see Bowern, this volume). I then argue that local configurations involve a conflict between typical associations between the Referential Hierarchy (Silverstein 1976) and argument function, in that they associate an SAP with Object, and that there is some evidence for processing difficulties with similar kinds of conflicts. In the following section, I discuss the frequencies and contexts in which local configurations typically occur, with reference to corpora of both English and two Indigenous languages, Wubuy and Bininj Gun-wok, showing that they are rare in natural discourse (including conversation) and found in somewhat unusual contexts involving deviations from the usual modality and argument structure. Following this, I briefly survey the PN bound pronominal systems, showing that these overwhelmingly lack this kind of pronominal disguise, raising the question of where and when in the development of prefixing systems portmanteaux arose. I then discuss the bound pronominal systems of some PN languages, as well as one NPN

language (Yukulta), demonstrating that they have some important features in common with NPN prefixing systems: portmanteaux, inverse marking and argument suppression. Following this, I discuss the development of local prefixes in a group of related languages in eastern Arnhem Land – Ngalakgan, Rembarrnga, Ngandi and Wubuy – showing that they appear to have diverged more than other parts of the pronominal paradigm, indicating in some cases a more rapid turnover, and in other cases a difference in the analogical forces within different parts of the paradigm, and suggest some paths of development. Indeed, most of the apparently portmanteaux prefixes in the Rembarrnga-Ngalakgan group can be given a probable derivation, though forms in neighbouring languages prove a much harder nut to crack.

Hierarchical organisation in prefixing systems of NPN languages

The prefixing systems of NPN languages, while diverse in some respects, share many common features. Among these are:

i. Restriction to a maximum of two arguments: subject and object
ii. Apparent lack of case marking, apart from object marking
iii. Syncretism of both person and number in parts of the paradigm
iv. Use of inverse marking
v. Presence of portmanteaux in some parts of the system[5]
vi. Presence of applicatives in some groups.

I will be ignoring factor (vi) in what follows; it deserves a separate treatment and, since it is not universal among NPN languages, even among those with agreement morphology on the same side of the verb (the 'double prefixing' languages), is probably not directly connected with the issue at stake here.

5 Dixon notes that most NPN languages have opaque realisations of SAP/SAP combinations (2002, 437). He cites Wardaman (Merlan 1994) as an exception, and Marley and Evans (to appear) similarly cite Kunbarlang (Kapitonov 2021). A check of (Merlan 1994, 128) suggests that things are not actually so straightforward in the case of Wardaman; in particular, the 1SG → 2SG form *ŋaŋ-* has no obvious derivation within the system, likewise Kunbarlang has 1 → 2 forms such as *ŋunun-* and *ŋuttun-* that Kapitonov (2021, 185) describes as involving irregular allomorphs, but which he admits could equally well be described as portmanteaux. Indeed, I know of no double-prefixing NPN languages in which local configuration prefixes have a straightforward analysis within the prefixing system.

In order to describe the hierarchical agreement patterns in Ngandi, Wubuy and other NPN languages, Heath invokes the American Structuralist tradition, in particular the notion of 'direct', 'inverse' and 'equipollent' combinations of arguments. The classic direct/inverse system as found in Algonquian languages however distinguishes four kinds of argument combinations (see e.g. Klaiman 1992 for discussion of the Algonquian context; also Maldonado 1994, 35; Gildea 1994): Direct, Inverse, Local and 3:3, where Local and 3:3 are both subtypes of Equipollent, as shown in Table 13.4.

Table 13.4: Direct/inverse configurations and labels.

		Subject	Object
Direct		SAP	3
Inverse		3	SAP
Equipollent	Local	SAP	SAP
	3:3	3	3

Source: Based on Heath (1984); Maldonado (1994).

I will argue in what follows that the 'local' configuration should in fact be separated into 1 → 2 and 2 → 1 configurations, because these occur in different kinds of contexts. In particular, 2 → 1 configurations are typically non-assertive. I present evidence below that in Australian languages, the two combinations comprising the Local configuration are in fact distinguished by different realisations in the prefixing systems. I explore the reasons for this different treatment and discuss how it relates to the development of portmanteaux. It is also likely that the singular combinations in the local configuration are older than the combinations involving plural participants, as argued for PN bound pronominals by Laughren (this volume).

Note that 'object' here (and throughout) refers to whatever argument controls the prefixal agreement morphology. In many cases that corresponds to the sole object of a bivalent verb, but for trivalent verbs, whether a base trivalent like 'give' or 'show', or derived via applicative morphology, the 'object' is controlled by the Goal, Recipient, or Benefactive/Malefactive argument, as in (1).

In Ngalakgan, the Direct and Inverse configurations are largely formally equivalent, except for the presence of the *-n ~ -ŋ* marker on the SAP morph in the case of the Inverse set. I have indicated the 'presence' of the 3SG (animate) argument as a zero morph in Table 13.5, simply to make the

point that it lacks formal realisation in the prefixing system of Ngalakgan. Inanimate arguments from the VEG and NEUT classes can optionally be realised by a second position prefix (see Table 13.6 for examples with 3PL subject).

Table 13.5: Direct and inverse prefixes in Ngalakgan with 3SG subject or object.

	Direct (SAP → 3SG)	Inverse (3SG → SAP)
1SG	*ŋu-Ø-*	*ŋun-Ø-*
1DU.INCL	*ji-Ø-*	*jin-Ø-*
1PL.INCL	*ŋur-Ø-*	*ŋuruŋ-Ø-*
1NONSG.EXCL[6]	*jir-Ø-*	*jiriŋ-Ø-*
2SG	*cu-Ø-*	*ŋun-Ø-*
2PL	*ŋur-Ø-*	*ŋuruŋ-Ø-*

It is unclear whether this is better labelled as a 'Direct/Inverse' system (as Heath does) or a 'Nominative/Accusative' system, however (and on this point, cf. Dixon 2002, 443). Evidence that it is better regarded as a Nominative/Accusative system is (a) the Accusative marker is always attached to the Object argument, and (b) in most languages, the Accusative marker has a distribution limited to certain person/number categories, typically those which index human entities (as in Ngalakgan), or SAPs; in Burarra for example, it is limited to 3 → 1SG combinations (Green 1987, 41). In some Inverse systems outside of Australia, by contrast, the Inverse marker typically appears in one position (rather than next to a particular argument), and is typically not limited to specific combinations, e.g. Plains Cree (Dahlstrom 1986, 25). Blake (1987, 106) points out that the restriction of the marker to inverse configurations is what makes it look like a marker of Inverse, rather than Accusative. Though in Ngalakgan, Mangarrayi and other languages, the marker can also be used in some equipollent combinations as well, e.g. the 3PL → 3PL combination (Ngalakgan *puruŋpu- ~ punpu-*, Mangarrayi *wujanpa-*), which conversely somewhat weakens the case for it being an inverse marker.

6 I follow Merlan (1983) in distinguishing 1PL.INCL but 1NSG.EXCL, since the latter incorporates dual as well as greater numbers of participants, but the former is distinguished from a separate 1st inclusive dual category. Likewise, 3NONSG incorporates dual.

In Ngalakgan, if both SAP and 3rd person arguments are overtly realised in the prefix string, then SAP always precedes 3rd person. This is clearer in the paradigm involving 3rd person non-singular forms, which have an overt realisation, unlike 3SG. Note that the Inverse/Accusative marker directly follows the Object prefix and precedes the Subject, as mentioned.

Table 13.6: Direct and inverse prefixes in Ngalakgan with 3NONSG subject or object.

	Direct (SAP → 3NONSG)	Inverse (3NONSG → SAP)
1SG	*ŋupu-*	*ŋunpu-*
1DU.INCL	*jipi-*	*jinpi-*
1PL.INCL	*ŋurpu-*	*ŋuruŋpu-*
1NONSG.EXCL	*jirpi-*	*jiriŋpi-*
2SG	*cupu-*	*ŋunpu-*
2PL	*ŋupu-*	*ŋuŋpu-*

Thus, Ngalakgan, like most NPN languages with prefixal agreement for two arguments, illustrates a 'hierarchical' system of morphological agreement: the relative positions of two arguments on a referential hierarchy determine the ordering relationships between them and not their grammatical functions. In general, SAPs outrank 3rd person agreement morphs in such a system, but in languages which have multiple noun classes, more specific 'mini-hierarchies' among arguments emerge. For example, Heath (1984, 362) proposes a ranking of pronominal prefix categories as shown in Table 13.7 for Wubuy. Notably, the non-human noun classes (COLL, MASC, FEM, NEUT, VEG) are not all found in one position on the hierarchy, rather, they are distributed over three positions. In each case, the non-human classes are found in the same position as the formally (i.e. morphologically) cognate human gender/number classes (3PL, 3SG.MASC, 3SG.FEM), suggesting that the hierarchy developed on the basis of the formal associations of the human genders before some of these genders became associated with non-human entities.

Table 13.7: The person/animacy hierarchy in Wubuy.

Human	SAP >	3PL >	3SG.MASC, 3SG.FEM >	–
Non-Human	–	COLL	MASC, FEM	NEUT, VEG

Source: After Heath (1984).

It is this ranking which determines whether a transitive pronominal configuration is 'direct', 'inverse', or 'equipollent', depending on whether the subject is higher, lower or equal on this hierarchy relative to the object. Heath's 'equipollent' thus ranges over the 'local' and '3:3' configurations (Table 13.7). In some cases, we see some equivalence between these two configurations, but the differences are greater than the similarities, overall. In particular, portmanteaux are never observed in the equipollent 3:3 combinations, although in some cases there are category syncretisms, as in Ngandi, where the prefix *aku-* syncretises over all combinations of a NEUT class object (prefix *ku-*) with any non-human subject of the ANIM, NEUT or VEG classes (prefixes *(ɻ)a-, ku-, ma-*), (Heath 1978, 69).[7]

Person and number syncretism

Portmanteaux are not the only kind of morphological deviance observed in local configurations. Many NPN prefixing systems evince patterns of person and number syncretism in this area of the paradigm as well. By 'syncretism' I mean that some form neutralises distinctions in person/number/gender which are otherwise formally distinguished elsewhere in the paradigm, as exemplified by the form *jini-* in Table 13.3 and the discussion following. Another example can be found in the Ngandi paradigm in Table 13.8, for example, where there is one form (*ɲunu-*) used for combinations of 2nd person subject and 1st person object, just in the case where both subject and object are singular, but a single form (*ɲana-*) syncretises over all other combinations of 2 → 1 arguments where at least one is non-singular. This is number syncretism.

Table 13.8: Ngandi 2nd person subject/1st person object prefixes.

	1SG.O	**1PL.EXCL.O**
2SG.S	*ɲunu-*	*ɲana-*
2PL.S	*ɲana-*	*ɲana-*

Source: Heath (1978).

The 2 → 1 combinations shown here are also largely opaque, as discussed in the last section before the conclusion.

7 In Wubuy, combinations of arguments from the inanimate classes VEG, NEUT or ANIM (and, optionally, COLL) are realised as Ø. Heath (1984, 365) also regards these as portmanteau forms, motivated by slot competition.

Another kind of syncretism – person syncretism – can be observed in Mangarrayi (Table 13.9), Rembarrnga (discussed below) and many other NPN languages, e.g. Bininj Gun-wok, Warndarrang, Marra, Ndjébbana, Yukulta (which is a clitic system), Ngarinyin and Ngalakgan. In Mangarrayi, the form taken by prefixes indexing an SAP/SAP combination is simply one used for the relevant SAP object when the subject is 3SG. Since 3SG is represented by zero, the effect is that only the object is represented in the prefix, and there is syncretism between 3SG and whatever is the person of the subject, in the case of these combinations.

Table 13.9: Mangarrayi SAP/SAP prefixes.

	1SG.OBJ	2SG.OBJ
1SG.SUBJ	–	*ɲan-*
2SG.SUBJ	*ŋan-*	–
3SG.SUBJ	*ŋan-*	*ɲan-*

Source: Merlan (1982).

In all the languages exemplified so far, and indeed in other NPN languages discussed here, *apart from* the local configurations, both number and gender categories are rigorously distinguished in formal realisations in the paradigm. The person syncretism illustrated here is an example of what Heath (1991, 1998) refers to with his term 'pronominal disguise': the obscuring of features which normally serve to distinguish between potential referents in discourse.

Of course, syncretism of both number and person features is not unknown outside Australian person marking systems. Cysouw (2009) exhaustively catalogues pronominal agreement systems of the world, identifying systems of possible syncretism. Even in English, there is a well-known syncretism of number in the 2nd person forms (*you, your, yours*) which were formerly distinct from the singular forms (*thou, thee, thine*), and in the 1st person forms in particular dialects, registers and contexts. For instance, in some Northern English (Beal 2008) as well as some Australian dialects of English (Pawley 2008, 388), the 1st person plural object form *us* is syncretic over singular and plural referents under particular conditions. In Australian English, it is particularly common in imperatives, with ditransitive verbs (as in Yorkshire English):

(3) *Give us a job!* = 'Give me/us a job'.

What this particular variety demonstrates is that syncretism can develop first in particular constructions (e.g. ditransitive imperatives), and once the usage is established, it has the potential to spread into other contexts, as it has in some Northern English dialects (Beal 2008). I argue that this is also important in understanding the Australian examples. But in order to do that, we need to have a better understanding of what kinds of contexts the local configuration occurs in. This is the topic of the next section.

The problem with the local configuration

In this section, I first discuss 'prototypicality' effects on grammar: expectations that speakers have about associations between person and animacy categories and grammatical functions, including discourse functions. I suggest that these expectations are relevant to understanding the processing load involved in local configurations, particularly those of the kind discussed here: combinations of prefixes, as opposed to clitics. There is a plethora of literature on the effects of markedness scales on linguistic expressions, starting perhaps with Silverstein (1976), who pointed out that split ergative systems almost always obey a referential (or animacy) hierarchy, with SAPs at the top, followed by 3rd person, human, animate, with inanimates at the bottom (and see Simpson 2012). Overt case marking then picks out the unusual, infrequent or 'marked' combinations of referentiality and grammatical roles: e.g. non-pronominal agents and pronominal patients. Du Bois (1987), for instance, proposed that ergative case alignment was a natural outgrowth of the standard combination of referential expression choice and animacy of arguments in a transitive clause, where Agents tend to be human, definite and topical, and Patients tend to be inanimate, indefinite/nonspecific and backgrounded (Comrie 1989; see also Jäger 2007; Haig and Schnell 2016). Aissen (2003) surveys languages in which accusative marking differs according to how prototypical or expected the object is. McGregor and Verstraete (2010) provide a similar survey of optional ergative marking.

There is also evidence from neuroscientific studies that suggests that unexpected associations between referential status and argument role can produce brain signals typically associated with ungrammaticality or surprise, the so-called 'mismatch negativity' response (Bornkessel-Schlesewsky and Schlesewsky 2009). The response is elicited (in the studies discussed there) in SOV or SVO languages, by object before subject word order, unless the

object is otherwise prominent, and by Patients followed by Agents with unexpected referentiality characteristics (e.g. inanimate, non-human). The authors show that these effects obtain regardless of the grammatical characteristics of the language in question (i.e. whether or not the grammar exhibits a prototypicality effect) and are thus presumably a universal response.[8] The authors propose a model whereby listeners construct an argument structure on the basis of 'prominence information', which includes word order, case marking, but also animacy and referential type (NP, Pro, ∅): 'The [model] posits that, during online language comprehension, actor and undergoer roles are assigned to arguments on the basis of prominence information' (Bornkessel-Schlesewsky and Schlesewsky 2009, 42). Thus, clashes arise between the expectations arising from these assignments compared to the assignment given by the grammatical form of the utterance. 'Online comprehension' is presumably relevant to situations involving spoken dialogue, where we are most likely to find local configurations used.

Local configurations involve a conflict between two harmonic scales of association: the factors of person reference hierarchies and of discourse roles. The first says that objects are more likely to be 3rd person than 1st or 2nd person, and the second says that 1st and 2nd person pronouns are more likely to be topical than 3rd person pronouns (see e.g. Comrie 1989; Haspelmath 2004, for similar proposals). Local configurations conflict with these scales, because in either configuration, 1 → 2 or 2 → 1, a highly topical referent is realised as an object. I suggest that this is a situation in which there is no good solution, and that speakers of languages with developing or even established prefixing systems resolved it on an essentially *ad hoc* basis, at different times and in different places leading to in some cases rapid turnover of the forms involved (I discuss evidence for this below). It is also a situation that likely led to a processing problem, because an otherwise prominent referent is in a non-prominent argument role (object). I suggest further that the processing problem was compounded by the rarity of local configurations in discourse: these combinations occur infrequently enough that their realisations were not constantly activated and stored in short-term memory, and, being less readily accessible, had to be occasionally recreated 'on the fly', apparently by pulling in pronominal morphology from elsewhere; evidence for this is also discussed below. Lastly, the local configuration appears to have been particularly problematic for systems of double prefixation, as opposed to,

8 A 'prototypicality effect' is where the grammar itself signals whether or not the argument configuration is prototypical, or not, through for example differential object marking.

for example, split affixing systems (with agreement morphology on different sides of the verb), or clitic systems. I discuss some possible reasons for this below as well.

Local configurations are infrequent

Evidence for the infrequency of local configurations can only come from corpora of spoken language. The available corpora of Indigenous Australian languages are all small, by world standards (under one million words and usually much less than that), and are overwhelmingly monologic. These corpora thus tend to have only 1st or 3rd person arguments, outside of reported speech. I report on a couple of Indigenous corpora below. But first, I report on a convenience sample from the spoken portion of ICE-NZ (International Corpus of English-New Zealand): the corpus 'S1A - Dialogue, private', which contains around 131,773 words of speech, and the corpus 'S1B - Dialogue, public', which contains around 142,788 words of speech.[9] This corpus was chosen because it was publicly available (to researchers), searchable with regular expressions, and contained spoken dialogue components, because dialogues are likely to give us the best conditions for the occurrence of these local configurations.

Out of the more than 270,000 words in this dialogic component of the corpus, there were 39 occurrences of 'me' in the same clause as a subject 'you' (Table 13.10). Of these, 28 were occurrences of 'me' in the Object function. There were 11 occurrences of 'me' in Dative (indirect object) function, with the verbs 'give', 'bring', 'teach', 'cook', 'suggest', 'show', 'say "hi" (for)'. A significant number of instances of 'me' in both Object and Dative function occur in non-assertive contexts (64 per cent). There are presumably epistemic reasons for this: it is difficult for the speaker to assert knowledge on the part of the hearer, and the speaker is likely to downplay their epistemic authority in such contexts.[10]

9 Macquarie University Linguistics Department Corpus, ICE-NZ corpus, 1994, last accessed 26 October 2022, ling.mq.edu.au/corpus/.

10 Thanks to Ilana Mushin and Mark Harvey for discussion on this point.

Table 13.10: Function of 1st person 'me' in the 2 → 1 configuration in ICE-NZ.

Object	28/39 (72%)
Dative	11/39 (28%)
Non-assertive	25/39 (64%)

The results for combinations of 1st person singular Subject 'I' with 2nd person Object 'you' are slightly larger: there are around 83 examples in the corpus. In a majority (76 per cent) of these examples, 'you' does not function as a straightforward object, it either represents the Dative (Indirect Object) argument of a ditransitive such as 'tell', 'give' and so on, or the argument of a complement clause, in examples such as 'I think you should …', 'I heard you did X', 'I asked you to …', 'I want you to …'.

Table 13.11: Function of 2nd person 'you' (object) in the 1 → 2 configuration in ICE-NZ.

Object	20/83 (24%)
Dative	33/83 (40%)
Argument of complement clause	30/83 (36%)

Thus, in either configuration, 'standard' assertive subject-object contexts are in the minority: in 2 → 1, contexts are frequently non-assertive; in 1 → 2, the 2nd person argument is frequently a Dative or the argument of a complement clause.

In order to get a rough idea of how frequent these configurations are, we can compare their frequencies to the frequency of these pronouns overall in this corpus, shown in tables 13.12–13.14, both around 20,000 per million words, whereas in local configurations they are somewhere between 400 and 800 per million.[11] Thus, the frequencies of SAPs in either argument of a local configuration are a fraction of their frequencies in other configurations, between 0.04 per cent and 0.8 per cent: below the threshold that Erker and Guy (2012, 536) regard as 'frequent', which is 1 per cent of comparable forms.

Table 13.12: Occurrences of 'I' in the ICE-NZ spoken corpus.

S1A - Dialogue, private	3,562
S1B - Dialogue, public	2,281
Total	5,843

11 Corpus frequency is standardly provided in numbers per million words.

Table 13.13: Occurrences of 'you' in the ICE-NZ spoken corpus.

S1A - Dialogue, private	2,532
S1B - Dialogue, public	1,864
Total	4,396

Table 13.14: Occurrences of 'me' in the ICE-NZ spoken corpus.

S1A - Dialogue, private	2,960
S1B - Dialogue, public	4,231
Total	7,191

I submit that combinations of 2 ↔ 1SG in spoken English are exceedingly rare.

The difference reported here is similar to that reported by Jäger (2007, 80), based on the CHRISTINE corpus of spoken English, shown in Table 13.15.[12] As these data show, 95 per cent of transitive clauses involving only pronominal arguments involve 3rd person objects, with either local (SAP) or 3rd person Agents. Clauses with local objects constitute just 4 per cent altogether, the rarest being those with a 3rd person Agent.

Table 13.15: Distribution of arguments by pronominal person category in the CHRISTINE corpus.

	Local O	3rd person O	Total
Local A	39 (3%)	764 (76%)	803
3rd person A	8 (0.7%)	194 (19%)	202
Totals	47	958	1,005

Source: Adapted from Jäger (2007).

While the proportion of 3 → SAP configurations is smaller than SAP → SAP, we should keep in mind that there is a difference between English and the prefixing languages discussed here. In prefixing languages, agreement for the 3rd person is obligatory for all NPs which are not SAPs, so the proportion of 3 → SAP will be much larger than in English, where '3 → SAP' means pronominal A and pronominal O in this context. Note that 4 per cent is the proportion of clauses having a Local Object, from clauses with only pronominal arguments. The proportion of Local Objects

12 Geoffrey Sampson, 'CHRISTINE Corpus: Documentation: Release 2', 18 August 2000, last modified 1 January 2004, www.grsampson.net/ChrisDoc.html.

in *all* clauses (containing NP arguments of various types) will be much smaller, although it was not possible to determine the proportion based on the information given by Jäger (2007).

We can show similar results using Indigenous language corpora, despite their deficiencies. Even though the Wubuy corpus (Heath 1980a) is small and overwhelmingly monologic, it does contain 406 instances of 'you' in translation (which could correspond to a number of formally distinct 2nd person categories in the original texts), because of reported speech in mythological texts. Despite this, the number of instances of local configuration prefixes is tiny (listed in Heath 1984, 349). There is a single instance of *ŋunu-* (1 → 2SG.REALIS) (38.1: 'I speak to you'), three instances of *numpa-* (e.g. 7.12 'you stole from me') and two instances of *nimpa-* (both 2SG → 1SG), all of them imperative, six instances of *(ŋ)anampa-* 1PL.EXCL → 2PL.IRR, five examples of *ŋana-* 1SG → 2PL, one of *ŋiri-* 2PL → 1 and one of *(w)a-* (1 → 2SG.IRR) (28.8 'I will play for you').[13] Thus, there are around 19 examples of local configuration prefixes in the entire corpus, around 4 per cent of the total proportion of 2nd person forms, judging by the translations. We can estimate the local configurations as a proportion of the total number of agreement configurations from the number of predicates in the corpus, which is 8,610. Local configurations, therefore, make up around 0.2 per cent of these: a tiny fraction.

Marley (2020, Appendix B) provides a list of the frequencies of all prefix forms found in the Bininj Gun-wok (BGW) corpus, of around 50,000 words, including some dialogues.[14] Many prefix forms are ambiguous both within and between varieties of Bininj Gun-wok, however, so it is not possible to gauge the frequency of local configurations directly from this information. Further analysis of the reference of these prefixes in context very kindly provided by Alex Marley (pers. comm.) allows us to arrive at a very similar result to those obtained for both English and Wubuy, shown in Table 13.16, where the percentages shown are the percentages of all agreement forms in the corpus (15, 614).

13 The numbers given here in parentheses refer to Heath's (1980a) Wubuy text collection.

14 Thanks to Alex Marley (pers. comm., 14 June 2022) for providing additional analysis of the reference of the prefix forms in the corpus.

Table 13.16: Frequencies of local agreement prefixes in the Bininj Gun-wok corpus.

1→2	2→1
86 (0.5%)	158 (1%)

Source: After Marley (2020, Appendix B).

Thus, an examination of corpora from English and from two Indigenous languages suggests that local configurations are rare in discourse and tend to be associated with particular contexts: non-assertivity in the case of 2 → 1 and indirect objects, in the case of 1 → 2.

The processing of agreement morphology

There is good evidence that prefix strings in languages with reasonably separable prefixes, such as Dalabon, Ngalakgan and Wubuy are accessed as a block. This evidence comes from the occurrence (and acceptance, by speakers) of pauses between the prefix string and the rest of the verb (Evans et al. 2008; Baker 2008; Bundgaard-Nielsen and Baker 2020, respectively). Meakins and Nordlinger (2013, 225) have an example from the PN language Bilinarra suggesting that pauses can also occur before the bound clitic string in this language. This behaviour suggests that such may have been the case for the languages which preceded the modern NPN languages as well. Research on the processing (see e.g. Baayen, Dijkstra and Schreuder 1997) and production (Prado and Ullman 2009) of complex morphology suggests that it is subject to a memory trace effect: frequently occurring morphology is more quickly accessed than rare morphology, particularly in the case of irregular morphology. I submit that in Indigenous languages, it was probably the case that local configurations were infrequent, and subject to memory recall issues, leading to rapid turnover in some cases (as with the Rembarrnga 1 → 2PL forms, discussed below), to short-lived solutions and to a good deal of inter-speaker variation. We can get an indication of some of the variability in prefixal agreement systems from (Marley 2020). Marley's description demonstrates that variability does not just affect the local configurations, but only the local configuration prefixes exhibit the kind of person syncretism, argument suppression and portmanteau forms that we have discussed; other person combinations are largely transparent. In these parts of the paradigm, the variability is largely with respect to (a) syncretism of number and (b) selection of pronominal forms. Marley (2020, 332) points out that syncretism is a feature of transitive

combinations, as opposed to intransitive ones, but she also observes that corpus frequency is apparently *not* a factor correlated with syncretism, but the local configuration certainly is: 'The most intense syncretism occurs in the second person objects, particularly those involving the interaction of first and second persons' (Marley 2020, 335); and 'the 1>2 area of the paradigm has particularly high rates of variation and syncretism' (343).

Marley (2020, 328) discusses syncretism and variation in the Bininj Gunwok prefixing system from the standpoint of processing-based models of language change. She notes that frequency can have apparently conflicting effects on language change. On the one hand, as demonstrated by Zipf (1929), high frequency items tend to undergo reduction more than low frequency items (see e.g. Bybee 2002; Pluymaekers, Ernestus and Baayen 2005). On the other hand, low frequency items may undergo regularisation and levelling before their high frequency members of the same paradigm, as a consequence of imperfect learning' (Marley 2020, 328; Erker and Guy 2012, 549). Marley points out that 'Bybee's (2002, 2006) "usage-based model" frames this phenomenon as a corollary of linguistic processing, as repeated exposure to a linguistic feature strengthens mental representation. In contrast, lower frequency items have not enjoyed the same reinforcement and so have a weaker mental representation, potentially leading to change or even loss. The relevance to the current study is clear: local configurations are infrequent enough to lead to regular replacement. In the case of Bininj Gunwok, local configuration prefixes are replaced by extending the meanings of other prefixes in the paradigm, through syncretisation of existing number and/or person categories.

Some of these short-lived solutions were perhaps subject to the effect of competition for the initial topic slot, as well as perhaps indeterminacy about which argument should go first. One way out of the problem is to encode only one of the arguments. This is, in fact, a common solution, discussed above as 'person syncretism'. For languages where 3SG is represented by paradigmatic zero (i.e. zero contrasting with some overt morphology in a different person/number category), syncretising the subject person/number category with 3SG has the effect of supressing the identity of the subject, because the contrast between the potential subjects in a configuration involving, say, 2SG.O, is neutralised: only 1st or 3rd person subjects are possible, and if there is no contrast between them in that configuration, there is effectively no overt morphological expression of the subject; the subject's identity can only be recovered through inference. The effect of encoding just one of the two participants – and this is overwhelmingly the

object: person syncretism with zero rarely affects the object – in a local configuration is reminiscent of a passive; like a passive, it preserves an argument in topic position where it would otherwise be relegated to object. In addition, and again like a passive, it downplays the agency of the subject, in this case by effectively eliminating it.

In this respect, we approach Heath's (1990, 1998) explanation for these widespread patterns, found not only in Australian prefixing languages, but also in the languages of the Americas and elsewhere, where local configurations exhibit a range of non-transparent agreement morphology. Heath (1991, 1998) proposes that portmanteaux, syncretisms and other deviations from predicted agreement morphology are the result of politeness strategies: speakers 'disguise' the intended referents of local configurations so as to avoid situations which would be face-threatening. Carter and McCarthy (2006, 382) similarly suggest that the use of 'singular *us*' in the dialects of English referred to above is a politeness strategy: by avoiding direct reference to 1SG, it softens a demand. Recall that singular *us* is particularly associated with requests for transfer, and in some varieties, is restricted to that context. Notably, the 2 → 1 configuration in Australian languages commonly involves number as well as person syncretism of 1SG to 1PL, as discussed below.

While Heath's proposal may be helpful in understanding some features of prefixal agreement deviance, it cannot be a general explanation. First, as pointed out by (Evans et al. 2001, 210) independent pronouns never show this kind of behaviour in Australian languages; that is, there are no reports of any Australian language (to my knowledge) using 3rd person independent pronouns in a context requiring 1st or 2nd person reference, outside of these bound, prefixal local configurations. There are no examples of this kind in the Wubuy or Ngalakgan corpora, for instance (the two languages with which I am most familiar), and I have never heard speakers use such a construction. And it is not obvious why there should be that disassociation, since the term 'politeness strategies' would appear to imply conscious behaviour. Indeed, in situations of potential ambiguity, speakers may use independent pronouns to make clear the intended referent, as in these Bininj Gun-wok examples from Marley (2020, 266, 348). In (4a), the prefix *kandi-* syncretises over all 2/3NONSG → 1, and in (4b), *(ng)undi-* syncretises over all 1/3NONSG → 2:

(4a) *yidok* *minj* ***kandi****-nayin* ***ngaye****?*
is.it NEG 2/3NONSG>1-see.IRR **1SG.DIR**
'… didn't you see me?'

(4b) *Al-kodjokodjok* ***ngaye*** *dja* *Ngal-kodjok* ***undi****-nang*
FE-skin.name.REDUP 1SG.DIR CONJ FE-skin.name 1ua>2DU-see.PP

unewoneng *ngune-h-warrewon*
2UA.OBL 2UA-IMM-ruin.NP
'Alkodjokodjok, Ngalkodjok and I saw you two misbehaving'

Note that in the latter case, *both* subject and object arguments have expression in independent pronouns.

A similar example, from Wubuy, is shown in (5). Again, it's the object which is overtly specified in the independent pronoun, and like the Bininj Gun-wok examples, the prefix syncretises over number distinctions which are made overt in the independent pronoun (in this case, specifying dual number, where the prefix only indicates that the object is non-singular). In all three cases, the prefix is in addition opaque, i.e. portmanteau (see Marley 2020; Heath 1984, 349, for discussion).

(5) ***anampa****-najiː,* ***nukurŋaː,*** *ŋana-warŋajuŋ* *jampa*
1 → 2NONSG.IRR-see.PRES 2FEM.DU.OBL 1 → 2NONSG-pity.PP because
'I will look at you two (FEMININE), because I feel sorry for you …' (Heath 1980a, 123)

Similarly, as again pointed out by Evans and Marley (2023), where an argument in a local configuration is expressed by a Dative enclitic, rather than in a prefix, we similarly find fully transparent realisations of person/number categories, as in this Ngalakgan example (Baker 2008, 180), where the non-subcategorised Beneficiary argument is expressed by a Dative enclitic:

(6) *ŋu-ŋe=ŋkore*
2PL.S-cook.PR-1 2PL.DAT
'You mob cook **for us**!'

The same combination of arguments, here expressed transparently, would be expressed in the opaque form *jini-*, if they were instead expressed as a prefix, which is not only opaque but also syncretic for number, unlike the prefix+enclitic combination.

Lastly, while some local configuration prefixes are 're-used' from other parts of the paradigm (especially those with 3rd person subjects), other local configuration prefixes are very specific in both their meanings and their forms. For example, the Ngalakgan and Rembarrnga prefixes for 2SG → 1SG (*cun-* and *tan-*, respectively) are not syncretic with any other prefix in the paradigm, nor are they vague in meaning. These two prefixes only have the interpretation 2SG → 1SG. Despite the analyst's discomfort in finding no clear derivation for prefixes like this, to speakers, they are quite explicit. Indeed, the fact that we get a unique prefix in just the space where both arguments are singular is quite unexpected on the 'pragmatic disguise' story.

One way of saving this proposal would be to assume that independent pronouns are subject to different pragmatic constraints, but since independent pronouns seem to be often used only for purposes of focus, contrast or disambiguation in prefixing languages (Baker 2002; and cf. Simpson 2012, 76, on Warlpiri), it is not obvious why they should escape politeness strategies where the prosodically weaker, less salient agreement morphology doesn't. On the other hand, to the extent that clitic systems are 'more like' independent pronoun systems than like prefixal agreement systems, then it could be that the reasons that we generally lack person syncretism and portmanteaux in clitic systems might be a symptom of the same 'escape from politeness'.

Heath (1998) notes that many of the patterns he identifies in the local configuration of Australian languages are replicated in the Indigenous languages of the Americas, demanding an explanation. Notably, the languages he discusses are similar to the Australian ones: they are languages with affixal agreement for multiple verb arguments. There are no languages with bound pronominal clitics described with this behaviour, although not all of the languages necessarily require both arguments to be realised on the same side of the verb stem (e.g. Chukchi; Dunn 1999, 184). I have pointed out that there are problems with Heath's explanation, in that avoidance of particular configurations of arguments is only found in affixing systems, and not in independent or clitic systems (to a large extent), which, to my knowledge, have not been countered. But clearly there is something to be accounted for here. Despite having otherwise similar agreement systems,

PN clitic agreement systems, with the notable exception of Warumungu and a handful of other languages, appear not to exhibit the sorts of deviant morphology found in NPN prefixing systems, as I now show.

Agreement systems in Pama-Nyungan languages

Only one PN language, Yanyuwa, has a prefixing system, and it lacks portmanteaux according to the available descriptions, although it does exhibit one common pattern of pronominal 'avoidance' observed in other prefixing languages. That is, in combinations of 1SG and 2SG arguments, the subject is suppressed and only the object is expressed in the prefix, according to (Kirton 1970, 830), as shown in (7); forms of the SAP subjects combined with 3rd person objects are provided for comparison.[15]

(7) a. *kiŋa-ɻama*
INDIC.1SG → 2SG-hit.PST
'I hit you'

b. *kaɲa-ɻama*
INDIC.2SG → 1SG-hit.PST
'you hit me'

c. *kawuliŋa-ɻama*
INDIC.1SG → 3DU-hit.PST
'I hit them'

d. *kawuliŋa-ɻama*
INDIC.2SG → 3DU-hit.PST
'you hit them'

We find similar phenomena in Kalkatungu (Blake 1979, 38), in that, generally, one clitic is realised in agreement with the subject or object of a transitive clause, whichever is highest on the animacy hierarchy, also in Wakaya, traditionally spoken to the east of Warumungu and to the north-west of Kalkatungu (Breen 1974). Blake notes further that, in Kalkatungu, in contexts where both arguments are SAP, both arguments are occasionally realised and both orders are found (1^2 and 2^1, where '^' indicates linear precedence of clitic pronouns), with no apparent preference able to be determined. In one mood, however, the evitative, a special portmanteau form for 1SG → 2SG occurs =*kuŋacin* (where the initial element /ku/ is a

15 Although it should be pointed out that the proper analysis of the Yanyuwa prefixing system is difficult to untangle from the available sources. Compare *kaŋawani* 'I came back', with person marker *ŋa-* for 1SG. The usual agreement marker for 2SG is *iŋa-* (as in (7d)), but this is transformed to *iŋa-* by morpho-phonemic rule in (Kirton 1978: 10), although we find the same string *iŋa-* apparently indicating 1SG.S in combination with the 3du object form in (7c), where the 3DU is marked by *wula-* ordinarily. The initial /k/ segment is the Indicative marker.

clitic base in this construction), which Blake notes cannot be derived from any of the synchronic pronouns (Blake 1979, 41).[16] I discuss the clitic system of NPN Yukulta below.

The majority of PN languages with a bound agreement system have a system of clitics, usually enclitics (Blake 1987,103–4). In these systems, reduced forms of pronouns generally show reduction from the left edge of the pronoun; this is also true of prefixing Yanyuwa. Kukatj (Table 13.17) and Malyangapa provide good examples of this tendency (Dixon 2002, 355). In Kukatj, the first segment of the free form of singular subject pronouns is absent from the reduced form; non-singular clitics show various behaviour (this difference between singular and non-singular clitics is also found in Ritharrngu: Heath 1980b; see also Laughren, this volume), and so do dative forms, including reduction from the right (3SG) or from both edges (1DU.INCL).

Table 13.17: Kukatj free and bound pronouns.

	Subject free	Subject bound	Dative free	Dative bound
1SG	*ŋəw*	*-əw*	*ŋija:npən̪*	*-amp*
2SG	*jət*	*-ət*	*na:mpən̪*	*-namp*
3SG	*jəl*	*-əl*	*wa:npən̪*	*-wamp*
1DU.INCL	*ŋəl*	*-ŋəl*	*ŋa:lpən̪*	*-alp*
1DU.EXCL	*ŋəɲ*	*-ŋəɲ*	*ŋa:ə(li)pən̪*	*-aɲəmp*
2DU	*juwəl ~ wil*	*-wəl*	*wi:npən̪, juwənpən̪*	*-wənp*
3DU	*pəl ~ pil*	*-pəl*	*pi:npən̪*	*-pənp ~ -pinp*
1PL.INCL	*ŋən*	*-ŋən*	*ŋa:npən̪*	*-anp*

Source: Breen (1989).

In Malyangapa (Table 13.18), it is the first CV of the free form which is typically absent from the reduced form (though some non-singular person/number categories behave differently, as with Kukatj); cf. also Kugu-Nganhcara (Smith and Johnson 2000, 398) and Ngiyambaa (Donaldson 1980, 124).

16 Blake (1979, 41) compares it to the 1SG subject clitic pronoun *-ŋa* found in Western PN languages (see Laughren, this volume) as well as the neighbouring Ngarna languages such as Yanyuwa and Warumungu. Thanks to Mary Laughren (pers.comm.) for alerting me to this form.

Table 13.18: Malyangapa pronouns.

	Free pronouns			Bound pronouns		
	A	S	O	A	S	O
1SG	*ŋaṯu*	*ŋaɲi*	*ŋaɲiṉa*	*-ṯu*	*-ɲi*	
2SG	*jintu*	*jini*	*jiniṉa*	*-ntu*	*-ni*	
3SG	*ṉuntu*	*ṉuṉu*	*ṉuṉa*	*-mpu*	*-ṉa* (human) *Ø*	
1DU	*ŋali(pula)ŋu*	*ŋali(pula)*	*ŋali(pula)ṉa*	*-li*		*-liṉa*
2DU	*ṉula(pula)ŋu*	*ṉula(pula)*	*ṉula(pula)ṉa*	*-la*		*-laṉa*
3DU	*pulaŋu*	*pula*	*pulaṉa*	*-pula*		*-pulaṉa*
1PL	*ŋanaŋu*	*ŋana*	*ŋanaṉa*	*-ŋana*		*-ŋanaṉa*
2PL	*ṉuɻa(kuɳta)ŋu*	*ṉuɻa(kuɳta)*	*ṉuɻa(kuɳta)ṉa*	*-ra*		*-raṉa*
3PL	*ṯana*	*ṯana*	*ṯanaṉa*	*-ŋa*		*-ŋaṉa*

Source: Austin (1978), cited in Dixon (2002).

NPN prefixes do not, in general exhibit left edge reduction (but see Table 13.24 and Table 13.26 for discussion of the 1 → 2NONSG portmanteau forms in Ngalakgan and Ngandi). To the extent that prefixes can be compared with independent (full) pronouns, the similarities are with the left edge and not the right edge (Dixon 2002, 354). If NPN prefixes developed from a clitic pronoun system, then either (a) they did so before reduction began or (b) the clitic system was a proclitic system, as in Dalabon, which has clitic object pronouns and prefixed subject pronouns (Evans et al. 2008).

Hierarchical systems are not limited to NPN: there are some PN clitic agreement systems that have a hierarchical system, such as Ngiyambaa (Donaldson 1980). And there is one NPN language with a clitic agreement system which is also hierarchically organised: Yukulta (Keen 1983). None of these languages evinces portmanteau forms, although the Yukulta system is exceedingly complex compared to PN clitic systems, and does have some person syncretism in parts of the system, as well as a kind of inverse marking. In Yukulta, inverse configurations, as well as some irrealis contexts, condition a switch to what Keen calls 'anti-passive case' alignment, the effect of which is to maintain SAP objects in first position in the clitic complex (Keen 1983, 218; Evans 1995, 427 calls it a 'General Detransitivized Construction'). I have argued above that this was an important consideration in the development of portmanteaux in prefixing languages as well, leading to prefixes which index the object only, through syncretism of SAP with 3rd person.

The majority of PN clitic systems show little deviation from what we would expect on the basis of recurrent partials in the paradigm; i.e. there are no portmanteaux, no person syncretism and little in the way of suppletive forms. Warlpiri is typical in this regard; the paradigm of person agreement enclitics is provided in Table 13.19 (from Nash 1980, 59; neglecting the 3rd person oblique clitic *=ɭa*).[17]

Table 13.19: Warlpiri pronominal agreement clitics.

Subject	Object	
ŋa	*cu*	1
n(pa)	*ŋku*	2
ɭi	*ŋali(ŋki)*	12
ɭicara	*caraŋku*	11
n(pa)-pala	*ŋku-pala*	22
pala	*palaŋu*	33
ɭipa	*ŋalpa*	122
ŋa-lu	*ŋanpa*	111
nku-lu	*ɲara*	222
lu	*cana*	333

Source: After Nash (1980, 59).

The pronominal forms are preceded by markers of a range of tense, aspect and mood. Unlike NPN languages, there are no portmanteaux for combinations of 1st and 2nd person. Nearby Warumungu, however, also has a clitic agreement system (Simpson 1990) which does include some portmanteau forms, in combinations involving 2PL.OBJ. Notably, Warumungu has a hierarchical system of agreement with what Simpson describes as an inverse marker. Examples (8) and (9) show the clitics for 1PL.EXCL and 3PL subjects (3SG is Ø-marked).

(8) *walpu-ɲu* *ankkul*
hit-PAST.PUN 1PL.EXCL.S
'We hit him.'

17 I have used Nash's glosses for person/number categories (in turn following Hale 1973, 315), where the categories are the usual 1, 2, 3 plus 12 '1st inclusive dual', increments to these digits indicate the addition of person/number increments, e.g. '11' denotes 1st person exclusive dual, while '122' indicates '1st inclusive plural' (generalising over, e.g. 123, 112, 1233, 1223 etc.).

(9) *walpu-ɲu* *accul*
hit-PAST.PUN 3PL.S
'They hit him.'

Example (10) shows the usual order of arguments in a clitic cluster: S precedes O. Note that the form of the 3PL clitic in object function is different to the subject form in (9):[18]

(10) *walpu-ɲu* *ankul-caɳi*
hit-PAST.PUN 1PL.EXCL.S-3PLO
'We hit them.'

Example (11) has the same sequence of pronouns, followed by a form *-ŋki ~ -ŋkki*. The interpretation is the inverse of (10): 3PL.S acting on 1PL.EXCL.O. Here, the marker *-ŋki ~ -ŋkki* provides the inverse interpretation (Simpson 1990). Note that the form of the 3PL marker is still in the typical form associated with objects elsewhere in the paradigm, but nevertheless has a subject interpretation in this cluster. This is one of the characteristics that distinguishes the Warumungu inverse marker from the 'inverse' marking described for NPN: it can't be interpreted as an Accusative case marker.

(11) *walpu-ɲu* *ankul-caɳi-ŋkki*
hit-PAST.PUN 1PL.EXCL.O-3PL.S-INV
'They hit us.'

Warumungu is highly unusual among PN languages in having what appears to be a genuine inverse marker. PN languages characteristically have a number of clitic pronouns for different case functions, which enables hearers to interpret sequences regardless of pronoun order (barring syncretism). The Warumungu inverse marker *-ŋki ~ -ŋkki* looks like the Warumungu Ergative case marker (which, Simpson argues, is its probable source).[19] But the difference from the use of this form in most PN languages is that this

18 Note that Warumungu has a geminate/singleton and/or fortis/lenis distinction, where geminates alternate with singletons under not fully understood conditions. This is the reason for the difference in the 1PL.EXCL form in (10) vs. (8).

19 The Ergative case has the allomorphs *-ŋku, -ŋka, -ŋki* on disyllabic nouns and *-ccu, -cca, -cci* on longer nouns, with the vowel quality determined by the preceding vowel of the stem (Simpson 2002). An alternative source for the inverse marker is the mysterious Wakaya 'converse' clitic *-ŋku* (MASC.) *~ -ŋki* (NON-MASC.) described by Breen (1974), based on a few examples, which appears to set up a contrast with a contextual proposition 'X, Y on the other hand', although this may also be derived ultimately from the Ergative.

case marker is *only* present when an inverse interpretation is warranted. It is not present in direct configurations, for example. It is also, as noted, (apparently) attached to an object form of a pronoun, a highly unusual state of affairs.

The paradigm of Warumungu transitive agreement clitics is shown in Table 13.20 and Table 13.21.

Simpson (1990; 2008) doesn't identify any portmanteau clusters as such, but there appear to be several clusters that cannot be straightforwardly derived from a sequence of the subject and object forms found in the direct and inverse configurations involving 3SG arguments, i.e. SAP → 3, 3 → SAP. These are set out in Table 13.22, apart from the combination 3PL → 1PL.EXCL, which was already discussed above in connection with example (11).

Table 13.20: Warumungu transitive clitic combinations, non-dual objects.

OBJ →		**1SG**[20]	**2SG**	**3SG**	**1PL.INCL**	**1PL.EXCL**	**2PL**	**3PL**
SUBJ↓		*accu ~ anccu (sgS), acci (plS)*	*aŋku ~ (ɻ)nkkV*	*Ø*	*aɲul*	*ankku ~ aŋkki*	*ŋʈurkku*	*cuɳu (sg.S), caɳi (pl.S)*
1SG	*aŋ-*	–	*aŋaŋkku*	*aŋi*[21]	–	–	*aŋʈurkku*	*aŋacuɳu*
2SG	*aŋ-*	*aŋaccu ~ aŋanccu*	–	*aŋi*	–	*aŋankku*	–	*aŋacuɳu*
3SG	*Ø*	*accu*	*aŋku*	*(ama)*[22]	*aɲuŋkku*	*ankku*	*arkku*	*acu(ɻ)nu*
1DU.INCL	*ajil*	–	–	*ajil*	–	–	–	–
1DU.EXCL	*acili*	–	*acili(ɻ) nkki*	*acil ~ accil*	–	–	–	–
2DU	*ampul-*	*ampulacci*	–	*amppul*	–	–	–	–
3DU	*awul-*	*awulacci*	*awulu(ɻ) nkku*	*awul*	–	–	–	–
1PL.INCL	*aɲul*	–	–	*aɲul*	–	–	–	*aɲulcaɳi*
1PL.EXCL	*?alku-*	–	*??*	*ankkul*	–	–	*alkuŋʈukku*	*ankulcaɳi*

20 Next to the person/number category labels for the columns and rows I have provided recurrent partials of the clitics found in combination with 3SG Ø arguments as well as elsewhere in the paradigm where there are distinct allomorphs. The convention <(ɻ)n> indicates an apical nasal that alternates between between /n/ and /ɳ/.

21 The final vowels on these forms appear to be epenthetic, rather than a marker of 3SG; see (Simpson 2008) for discussion.

22 This form is given in parentheses in Simpson (1990), but it is not explained why.

OBJ →		1SG[20]	2SG	3SG	1PL.INCL	1PL.EXCL	2PL	3PL
2PL	*akul-*	*akulacci*	–	*alkkul*	–	*akulaŋkki*	–	*akulcaŋi*
3PL	*acul-~ accul*	*aculacci ~ ankulu(ɻ)nkku*	*aculu(ɻ)nkku*	*accul*	*aɲulcaŋi-ŋkki ~ aɲulcaŋi-kki*	*ankulcaŋi-ŋkki ~ ankulcaŋi-kki*	*acunʈulku ~ acultuku*	*aculcaŋi*

Source: After Simpson (1990).

Table 13.21: Warumungu transitive clitic combinations, dual objects.

Warumungu		1DU.INCL	1DU.EXCL	2DU	3DU
SUBJ↓	OBJ→	*ajiŋkki*	*acikki*	*(m)pukku*	*apulu*
1SG	*aŋ-*	–	–	*aŋampukku ~ aŋapukku*	*aŋapulu*
2SG	*aŋ-*	–	*aŋacikki*	–	*aŋapulu*
3SG	*Ø*	*ajiŋkki*	*acikki*	*ampukku*	*apulu*

Source: After Simpson (1990).

Table 13.22: Possible portmanteaux in Warumungu.

Combination	Form	Constituent forms with 3SG	Notes
3PL → 1SG	*ankulu(ɻ)nkku*	*accul, accu*	–
1DU.EXCL → 2SG	*acili(ɻ)nkki*	*acil ~ accil, aŋku*	–
3DU → 2SG	*awulu(ɻ)nkku*	*awul, aŋku*	–
3PL → 2SG	*aculu(ɻ)nkku*	*accul, aŋku*	–
3SG → 1PL.INCL	*aɲuŋkku*	*aɲul, Ø*	inverse
1SG → 2PL	*aŋʈurkku*	*aŋi, a(r)kkul*[23]	no straightforward 2PL form
3SG → 2PL	*arkku*	*a(r)kkul, Ø*	no straightforward 2PL form
1PL.EXCL → 2PL	*alkuŋʈukku*	*ankkul, a(r)kkul*	no straightforward 2PL form
3PL → 2PL	*acuŋʈulku ~ acultuku*	*accul, a(r)kkul*	no straightforward 2PL form

The form for 3SG → 1PL.INCL, *aɲuŋkku*, is evidently an inverse form, combining the 1PL.INCL pronoun *aɲul* with the Ergative case or Inverse marker *-ŋkku*, with deletion of the /l/ from the cluster. It is therefore analogous to the 3PL → 1PL.EXCL form *ankulcaŋi-ŋkki* discussed above in (11); the 3PL → 1PL.INCL form is similarly inverse: *aɲulcaŋiŋkki*. Aside from

23 This is the intransitive form. The 3SG → 2PL form is also opaque, as shown in the following line.

these forms, the other forms listed in Table 13.22 lack evident explanations on the basis of the rest of the paradigm. Particularly problematic are the 2PL.O forms. The form found in the combination 3SG.S → 2PL.O is *arkku*, which agrees with the independent subject form of 2PL, *arkkul*. Other combinations of subjects with 2PL.O do not show straightforward reflexes of this form, however. They instead involve a number of forms: *ɳtukku* in 1PL.EXCL → 2PL *alkuɳtukku* (where the *alku* component likewise fails to agree with the 1PL.EXCL form *ankkul* found elsewhere), *ɳtulku* or *tuku* in 3PL → 2PL *acuɳtulku ~ acultuku* and, finally, *turkku* in 1 → 2PL *aɳturkku*. In short, the entire paradigm of 2PL object forms is largely opaque, in that none of the forms is predictable on the basis of any other forms in the paradigm. Opaque forms are also found in the paradigm of 2SG objects. The 3SG → 2SG form is *aŋku*, but 1DU.EXCL → 2SG is *acili(ɻ)nkki*, 3DU → 2SG is *awulu(ɻ)nkku* and 3PL → 2SG is *aculu(ɻ)nkku*, all with an anomalous form of the 2SG object, *-(ɻ)nkkV*.

The prime configuration for portmanteau forms in NPN languages, however, the 1SG → 2SG form, is *not* portmanteau in Warumungu, it is the perfectly transparent *aɳaŋkku*. The fact that the 1SG and 3SG.S forms with 2SG.O are transparent, but every other form is opaque, is somewhat suspicious. We would expect, given the behaviour of NPN languages, that the reverse would be the case, especially given the common pattern of 1/3 syncretism in combination with 2SG Objects noted above for Mangarrayi and other languages. The 2SG intransitive form is *aŋi* and, thus (like the 1SG form), the 2SG Object form is not transparently derived from the subject form. Notably, the *-(ɻ)nkkV* forms found outside of the 1/3SG.SUBJ combinations are easier to find a source for. Simpson (2008, 79) compares them to the pre-Arandic and proto-PN **ɲunku* 2SG.DAT pronouns reconstructed by (Koch 1997), which thereby pattern with the 1SG.O form in Warumungu, *accu*, which she derives from pre-Arandic **acə(ŋə)* and proto-PN **ŋacu* 1SG.DAT (Koch 1997). By contrast, the source of *aŋku* is unclear. Although the 2SG.O form in neighbouring Warlpiri is *-ŋku*, Simpson compares the Warumungu form to the Arandic 2SG.DAT forms in *ŋkə(ŋə)*.[24] The source of the latter is similarly unclear, Koch (1997) comparing it to proto-PN **ɲunku,* though with unexplained nasal assimilation. The source of the Arandic 2SG.NOM form *ŋe* is also unexplained.

24 Indeed, the 1SG → 2SG clitic combination in Warlpiri, *-ŋa-ŋku*, is very similar to the Warumungu one, *-aŋa-ŋku*.

The neighbouring Arandic language, Kaytetye, is even more surprising. Unlike Warumungu, the pronouns in Kaytetye are not bound forms, but it nevertheless also evinces some probable portmanteaux in combinations of 1↔2 arguments.[25]

(12) 1SG → 2SG *(a)cənə* cf. *acə* 1SG.ERG, *ŋkəŋə* 2SG.ACC/DAT
2SG → 1SG *ntəʈə* cf. *ntə* 2SG.ERG, *acəŋe* 1SG.ACC/DAT

The derivation of these portmanteaux pronouns is obscure, but Koch (pers. comm.) suggests:

a. *cənə* < 1SG.ERG **ŋacu* + 2SG.ACC/DAT **ɳunu/ɲunu*
ntəʈə < 2SG.ERG* *ɳuntu/ɲuntu*. The 1SG element is unexpected though, the predicted form would be **ntacə*.

Finally, three closely related NSW South Coast languages, Dharawal, Dharumba and Dhurga (Capell 1956, 36; Eades 1976, 52; Besold 2013, 233), also have a 'fused' compound pronoun just in the combination 1SG.S/2SG.O: =*kun* or =*kuŋ*, a form which cannot be derived from the equivalent bound pronouns separately. But given the patchy nature of the extant materials, it is difficult to say much more about it. It is quite possible that there are other systems in the literature that have not come to my attention, although to date all four of these examples (i.e. Kalkatungu, Warumungu, Kaytetye and the NSW South Coast language) have escaped mention in the discussion of Australian pronominal systems, as far as I am aware.

Whatever the ultimate explanation of the opaque forms found in these languages, their significance is that they demonstrate that portmanteaux are not limited to NPN languages, nor are they limited to prefixing systems, although both of those generalisations hold almost perfectly *without* them. Even in clitic agreement systems with a hierarchical (rather than grammatical function-ordered) organisation, such as in NPN Yukulta or Ngiyambaa, we normally fail to find portmanteau expression of local configurations. But we *do* find advancement of object in some clitic systems, in particular Yukulta, as with passive constructions, and similar to the syncretic forms in NPN languages, which suppress the subject in local configurations.

25 Thanks to Harold Koch for alerting me to the existence of this pattern, as well as supplying the forms and their likely analysis.

Inheritance and innovation in local configuration prefixes

The preceding sections have demonstrated that portmanteaux and person syncretism are widespread in NPN languages with prefixed agreement, but are almost entirely absent in PN languages. Despite the *fact* that portmanteaux and person syncretism are widespread among NPN languages, the forms of portmanteaux are rarely reconstructible in a straightforward fashion, even between closely related languages. I argue that this provides a possible clue to their paths of development. We find evidence of apparently old, inherited forms (or alternatively, forms involving unusual phonological processes), rapid turnover and forms involving sources outside of the prefixing system. Thus, a portion of the portmanteau system is in fact reconstructible. I begin by considering two closely related languages: Ngalakgan and Rembarrnga. Following that, I discuss Ngandi and Wubuy, two other languages which are related, but less closely than Ngalakgan and Rembarrnga, demonstrating that as soon as the genetic distance widens, portmanteau comparability and reconstructibility decline rapidly.

Syncretism and inheritance in 2 → 1 configurations

In Baker (2004), I demonstrate that Rembarrnga and Ngalakgan are closely related, based primarily on their verbal inflection paradigms. Indeed, many inflecting verbs in the two languages inflect identically. Ngalakgan and Rembarrnga only share around 20 per cent of their vocabulary overall, but levels like this are typical of neighbouring, genetically related languages in this region (Harvey 2011). They also have very similar prefixed pronominal indexing systems, such that it is possible to reconstruct a system which is ancestral to both. Despite this, the forms for local configurations only show partial overlap, as shown in Table 13.23 – the 2 → 1 configuration – and Table 13.24 – the 1 → 2 configuration. I discuss each separately in what follows.

Table 13.23: 2 → 1 prefixes in Rembarrnga and Ngalakgan, bolded border highlights the cognate portion of the paradigm.

	1SG.O[26]		**1PL.EXCL.O**	
	Rmba ŋan-	***Ngkn ŋun-***	***Rmba jaran-***	***Ngkn jiriŋ-***
2SG.S *ta-/cu-*	*tan-*	*cun-*	*jara-*	*jini-*
2PL.S *na-/nur-*	*jana-*	*jini-*	*jaranpa-*	*jini-*

In Ngalakgan, number is largely syncretised outside of the SG → SG configuration: there is just one form syncretising over all 2 → 1 configurations where at least one argument is plural: *jini-*. In Rembarrnga, by contrast, there are four distinct forms in the 2 → 1 configuration. The Rembarrnga 2PL → 1SG form *jana-* is cognate with Ngalakgan *jini-* (in Ngalakgan, the only vowels in agreement prefixes are the high vowels {i, u}, in Rembarrnga, all prefixes use just the /a/ vowel, with the exception of the 2SG prefix form *ŋiŋ-*). So there is cognacy between the prefixes in Rembarrnga and Ngalakgan on the left-hand side of the table (indicated through the heavier border weight), with a singular object. The right-hand side of the table, with plural object, shows distinct forms. The Rembarrnga 2SG → 1PL.EXCL form *jara-* is identical to the *intransitive* prefix for 1PL.EXCL. The object form of this prefix is *jaran-*, with the /n/ accusative marker, seen in the 2PL → 1PL.EXCL form *jaranpa-*, which shows 2/3 syncretism, since this is the form also used for 3PL → 1PL.EXCL and *pa-* is the 3PL.S prefix. Since inflecting verbs are overwhelmingly either transitive or intransitive in both languages, there is little chance of confusion about the interpretation of the *jara-* prefix: with a transitive verb, it can only mean 2SG → 1PL.EXCL. The 2PL.S → 1O form *jana-*/*jini-* is conceivably derived from a hypothetical Rembarrnga **jaran-na-*/Ngalakgan **jiriŋ-ŋu-* which would be a transparent 2PL → 1PL.EXCL configuration in both languages. In both languages, there is an alternation in augmented objects between CVrVN- and CVN- forms, limited to 3PL in Ngalakgan, e.g. 3PL → 3PL *puruŋpu- ~ punpu*: Rembarrnga *paranpa- ~ panpa*, but more extensive in Rembarrnga: 3PL → 2PL *naranpa- ~ nanpa-*, 3SG → 2PL *naran- ~ nan-*. So *jana-*/*jini-* is the predicted outcome of this reduction process. This would provide evidence that proto-Rembarrnga-Ngalakgan **jana- ~ jini-* was likely the form used for all combinations of 2 → 1 with a plural argument, as in Ngalakgan. Its current restriction to the 2PL → 1SG configuration in Rembarrnga doesn't make a lot of synchronic

26 In the headers for the columns and rows I provide the forms of the prefixes found in combination with 3SG ∅ arguments.

sense, suggesting that the Rembarrnga *jara-* and *jaranpa-* forms in the 2 → 1PL.EXCL configuration are an innovation, akin to the rapid replacement of forms in this part of the paradigm observed for neighbouring Bininj Gun-wok (discussed above).

Inheritance

The preceding section noted that the 2 → 1 configuration with at least one plural argument shows cognacy between Rembarrnga and Ngalakgan. Intriguingly, this portion of the Ngandi paradigm (Table 13.25) also appears to be cognate, with the form *ɲana-* found in the 2 → 1 configuration where at least one argument is nonsingular, matching Rembarrnga *jana-* and Ngalakgan *jini-*. As with the latter languages, *ɲana-* may be derived from the 1PL.EXCL prefix *ɲar-* plus 2PL *nar-*, with a special allomorph of the 2PL *na-* (Heath 1978, 74) and reduction of the /rn/ cluster, a process which applies to some other prefixes in Ngandi, e.g. the 1PL.EXCL → 3FEM prefix *ɲana-*, is derivable from the same sequence: *ɲar-* plus 3FEM *na-*. This may be evidence of inheritance from a higher ancestor, although Ngandi is classified in a different subgroup than Rembarrnga and Ngalakgan by Baker (2004) and van Egmond and Baker (2020), and so the inheritance would have to be more remote than their respective immediate ancestors. Alternatively, it is the semi-accidental result of a set of inherited pronominal forms undergoing similar phonological processes separately in each group.

The 2SG → 1SG form also appears to show genetic inheritance. Ngalakgan *cun-*:Rembarrnga *tan-* bears a resemblance to the specifically transitive 2SG. SUBJ prefix Ngalakgan *cu-*: Rembarrnga *ta-*, but it takes an additional nasal coda, as if it were an object, or an inverse-marked prefix, although this is not an inverse configuration. This prefix finds no reflexes in neighbouring, related languages like Ngandi or Wubuy, but, aside from Rembarrnga and Ngalakgan, only Dalabon has a 2SG prefix of this form, *ca?-* (which, however, is used for intransitive subjects and transitive objects in Dalabon, the opposite of its function in Ngalakgan and Rembarrnga). Dalabon, unusually, lacks the inverse/accusative marker /n/ found in most neighbouring languages. The closest analogue is found in Ngarinyin (Rumsey 1978, 115), in the Kimberley, which has both 2SG → 1SG *can-* (cf. 2SG.Subj *(n)ca-* in other combinations, e.g. 2SG → 3SG.MASC *aɲca-*, 2SG → 3SG.FEM *ɲiɲca-*), and syncretic 1/3SG → 2SG *ɲun-*, an exact match to the pattern in Rembarrnga and Ngalakgan, whose 1/3SG → 2SG prefix *ŋiɲ-* is discussed immediately below. Alawa has a similar form, 1SG → 2SG *ci-*, where a prefix like this is

otherwise unattested in the pronominal system for 2SG (other forms of the 2SG.SUBJ appear to mostly involve *ji-*; the object forms show no obvious pattern). As in Ngalakgan and Rembarrnga, the Alawa prefix is unique to the 1SG → 2SG combination.

Similar forms with these very specific interpretations occurring over such a wide area would provoke the somewhat uncomfortable suggestion that some portmanteau forms in this part of the paradigm have a very ancient pedigree. It is unclear how to reconcile this with the proposal that pA had a clitic system and that portmanteaux developed later, and separately in each language. It is also possible that the existence of recurrent pronominal morphology inherited from pA led to similar outcomes independently in a number of languages. It is possible (indeed, likely) that the frequency of the 2SG → 1SG combination is much higher than that of other combinations of 2 → 1, in contexts such as *Give me X!* for instance, and that it is a mistake to regard the whole 2 → 1 area of the paradigm as a unit for the purposes of language change. Indeed, the patterns found in the languages discussed in this section suggest that the 2SG → 1SG combination behaves differently than the rest of the 2 → 1 cells (and see further Laughren, this volume, for discussion of differential rates of change in different parts of the pronominal paradigms of Western PN languages).

Syncretism, innovation and Dative pronouns in the 1 → 2 configuration

The pattern in the 1 → 2 configurations of Rembarrnga and Ngalakgan (Table 13.24) is different from that of the 2 → 1 configuration just discussed. In this case, inherited or even comparable forms are scarce. In the SG → SG cell, both languages use the 2SG prefix *ŋiɲ-*. This prefix is specifically intransitive in Ngalakgan, the transitive prefix is *cu-*, and the 3SG → 2SG.O form is *ɳun-*. In Rembarrnga, though, the prefix is found both in intransitive clauses and also as the object of 3rd person subjects, at least for the north-eastern dialect of Rembarrnga (McKay 1975, 114): 3SG → 2SG *ŋiɲ-* and 3PL → 2SG *ŋiɲpa-*. Ngalakgan has likely innovated the 2SG object form *ɳun-* from the 2PL *ɳuɳ-* (< **ɳuruɳ-*), by analogy with other minimal:augmented pairs such as *jin-* 1DU.INCL.OBJ:*jiriɳ-* 1PL.EXCL.OBJ, *ŋun-* 1SG.OBJ:*ŋuruɳ-* 1PL.INCL.OBJ. The neighbouring, south-western, dialect of Rembarrnga uses this same pattern in the 3SG → 2SG form, as *nan-*. The 1SG → 2SG form *ŋiɲ-* is thus a further example of syncretisation between 1st and 3rd person subjects, in combination with an SAP Object, for the NE dialect of Rembarrnga and

(historically, perhaps) also SW Rembarrnga and Ngalakgan. Rembarrnga extends this to the 1PL.EXCL → 2SG form, by using *ŋiŋpa-*, which is identical with the 3PL → 2SG form. In this case, we cannot, in fact, argue that the subject is simply unrepresented, because *pa-* is the form of the 3PL.SUBJ in other combinations, such as 3PL → 1SG *ŋanpa-*. Ngalakgan, on the other hand, uses *jiri-*, a cognate of Rembarrnga *jara-*, which indexes the *reverse* argument configuration (2 → 1PL.EXCL).[27] As with Rembarrnga, *jiri-* in Ngalakgan is otherwise used as an explicitly intransitive prefix indexing 1PL.EXCL.SUBJ.

Table 13.24: 1 → 2 prefixes in Rembarrnga and Ngalakgan.

	2SG.O		**2PL.O**	
	NE *Rmba ŋiŋ-*	**SW *Rmba/Ngkn nan-/ŋun-***	***Rmba ŋa(ra)n-***	***Ngkn ŋuŋ-***
1SG.S *ŋa-/ŋu-*	*ŋiŋ-*	*ŋiŋ-*	*ŋaŋa-*	*ŋuku-*
1SG.S/3SG.S	*nan-*		–	–
1pl.excl.S *jar-/jir-*	*ŋiŋpa-*	*jiri-*	*ŋajar-*	*ŋuku-*

Dative pronouns

In the 2PL.OBJ cells, we find a marked divergence between the languages. Rembarrnga uses transparent combinations of 2PL.OBJECT prefix *ŋa(ra)n-* and 1SG Subject prefix *ŋa-* for the 1SG → 2PL and *ŋa(ra)n-* plus 1PL.EXCL subject prefix *jar-* for 1PL.EXCL → 2PL, with reduction of /ra/ and deletion of the Accusative marker /n/, both processes observable elsewhere in the Rembarrnga paradigm. I assume these are innovations, reflecting the OBJ-SUBJ order of prefixing in Rembarrnga, which is unlike that of Ngalakgan, Ngandi and Bininj Gun-wok, the languages most closely related to Rembarrnga, although neighbouring Dalabon has a similar arrangement with object proclitics preceding subject prefixes. This part of the Rembarrnga paradigm, then, is again evidently innovative.

The Ngalakgan prefix for the combination 1 → 2PL, *ŋuku-*, is unlike anything else in the Ngalakgan prefixing paradigm, and an apparently clear portmanteau form. The initial syllable, /ŋu/, is one allomorph of the 2PL prefix, but not the object form, which is *ŋuŋ-*. The final syllable, /ku/, is otherwise found in the prefix paradigm only as a marker of NEUT noun class,

27 A cognate 1PL.EXCL prefix /jir-/ is also used for all combinations of 2 → 1 where at least one argument is nonsingular, in Anindilyakwa (van Egmond 2012, 142).

and of the NonPast for verbs with 3rd person subjects. Its presence here is thus anomalous. Outside of Ngalakgan, /ku/ is the Inverse marker in the Ngandi prefixing system. Ngandi and Ngalakgan were spoken contiguously and are related, although not especially closely (see Baker 2004 for discussion of their relationship; Ngandi is much more closely related to Wubuy, based on its verb TAM inflection morphology). Heath (1997), discussing Ngandi, proposes that /ku/ is an old quasi-epenthetic element, akin to the meaningless syllable /ŋu/ in Wubuy, repurposed as an Inverse marker, where most other languages (including Ngalakgan) used an Accusative case marker /n/ for this function. If this is the source of *ɳuku-*, then it would mean '2pl Inverse', but it would be the only such use of this Inverse marker in Ngalakgan or in neighbouring languages apart from Ngandi, and in any case, this is *not* an inverse configuration. My best suggestion is that it derives from the Dative enclitic 2pl pronoun, which is currently *=ɳuŋkore* in Ngalakgan, but which in related, neighbouring languages lacks the nasal-stop cluster, e.g. Rembarrnga *-nakorə*, Ngandi *ʔɳukkuraji*, Dalabon *-nokolŋ*, Wubuy *nukuraa*; indeed, Ngalakgan is the odd one out here. The object proclitics in Dalabon are closely related to both the independent pronouns and the possessive/dative clitics (Evans et al. 2001, 203), and Ngandi (Table 13.25) also evinces a likely 2pl Dative enclitic-sourced portmanteau in exactly the same slot. Lending support to this idea is the fact that in both Ngalakgan and Rembarrnga, apart from encliticising to verbs and nouns as markers of Indirect Object/Benefactive or Possessor, the Dative clitics can also occur independently, as predicates or items in focus. In the focus position, they immediately precede the predicate, i.e. in a position immediately preceding the pronominal prefix string, as in (13). I suggest a construction of this kind was the origin of forms like *ɳuku-* in Ngalakgan (and potentially other prefixes, ultimately).

(13) *ŋu-mu-caʔ-koric-**kore**,* ***kore*** *ŋu-mu-koric*
1sg-veg-now-grind-1pl.incl.dat 1pl.incl.dat 1sg-veg-grind
'I'm grinding it (veg class) now for us, I'm grinding it FOR US'

In Rembarrnga, in addition to constructions like those in Ngalakgan, Dative clitics can be predicates, producing structures formally similar to prefixed verbs (McKay 1975, 110). In (14), the 2sg Dative pronoun /=(ŋ)kə/ is apparently prefixed to the 'sit' verb, functioning as a stative predicate.

(14) *poʈi* *miccinta?* ***kə****-ni*
spear long.ago 2SG DAT-STAT.PP
'That spear was yours before.'

There is a notable difference between the argument structure of verbs taking only prefixes vs verbs taking Dative clitics in addition (or instead); as example (13) shows, the latter can agree with all three arguments, whereas prefixes can agree with a maximum of two arguments.[28] Nevertheless, it is not too much of a stretch to imagine that Dative pronouns could have functioned as pronominal agreement for verbs on occasion. As we have seen, 1 → 2 configurations tend to involve ditransitives and complement clauses in English, so a Dative pronoun representing the 2nd person Object in these configurations would make some sense, and perhaps also because Dative pronominals are much more common than local configurations (because they are used to mark possession), speakers found the former quicker to access than the latter.

In short, there are differences between local configurations: 2 → 1 paradigms tend to be reconstructible, and cognate between languages, even relatively distant languages, whereas 1 → 2 paradigms don't. In the latter case, we find suppression of the subject in favour of zero or 3rd person, so the prefix generally only indexes 2nd person directly. There is some evidence of the sourcing of new forms from the Dative pronoun paradigm, also observable in Ngandi (below). In general, the 1 → 2 configuration appears to show relatively more rapid turnover than the rest of the prefix paradigm, based on the lack of cognacy between even closely related languages. I suggest a reason for this below.

Local configurations in other Gunwinyguan languages

Widening the scope somewhat, it becomes harder to compare languages that are less closely related to each other than Ngalakgan and Rembarrnga are. Dalabon also has portmanteaux prefixes for some SAP → SAP combinations, but they don't resemble those in Ngalakgan and Rembarrnga (and Dalabon in addition lacks the /n/ Accusative marker); in all local configurations, Dalabon uses the equivalent form with 3rd person object (Evans et al. 2001,

28 In addition, the example in (12) involves a combination of 1SG and 1PL.INCL arguments, a combination which is not possible to produce using prefixes alone (in any NPN language that I know of).

199). The prefixes for local configurations in Ngandi and Wubuy are shown in Table 13.25 and Table 13.26. These two languages are certainly related (Heath 1997; Baker 2004; van Egmond and Baker 2020), although not as closely as Rembarrnga and Ngalakgan, and have certainly undergone a long period of separate development.

In the first place, and unlike what we find for Rembarrnga and Ngalakgan, the structure of the local paradigms in each language is quite different. Ngandi is like Ngalakgan in having one form in each configuration that is specific to the SG → SG combination, and another form for all other combinations. Wubuy, by contrast, neutralises number distinctions for the 1st person argument in both 1 → 2 and 2 → 1, though not for 2nd person. It is difficult to find straightforward resemblances in their local configuration prefixes, apart from the relatively transparent prefix *ŋana-*, which indexes 1SG → 2SG in Ngandi, but 1 → 2PL.REALIS in Wubuy, though the 1SG → 2SG.REALIS form in Wubuy is similar: *ŋunu-*. In both Ngandi and Wubuy, *ŋana-* is the expected result of a combination of 1SG.SUBJ *ŋa-* and 2PL.OBJ *na(r)-*, which would be regular in both languages apart from the lack of Accusative marking in Wubuy (Heath 1984, 349), although it is unclear whether local configurations ever exhibit straightforward inverse/accusative marking outside of those forms borrowed from the 3rd person part of the paradigm. The Wubuy form *ŋunu-* could likewise be the result (with regressive vowel harmony) of 1SG *ŋa-* and 2SG *nu(n)-* (Heath 1984, 349), as with Heath's (1978) suggested derivation for Ngandi *ɲunu-* from 1PL.EXCL *ɲar-* plus 2SG *nu-*. The Ngandi form *kura-* for all other combinations of 1 → 2 involving one plural participant is mysterious, although similar forms are found in Maung (which has 1SG → 2SG *kun-* and *kurun-* in all other combinations of 1 → 2 with one plural participant, these are also the basis of the 3 → 2 forms, suggesting an origin as 2nd person object forms; Capell and Hinch 1970). I suggest that it is derived, like the Ngalakgan form *ŋuku-* discussed above, from the Dative 2PL enclitic pronoun *=ŋukkuraji?*, via initial truncation.[29] 2PL formatives of this kind are found throughout the NPN area (Blake 1988, 12; Harvey 2003, 497), and the Ngandi form may indeed be old.

29 Heath (1978, 74; 1991, 82) derives the Ngandi form from *kur-na- (1PL.EXCL-2PL-) with deletion of /n/ after /r/. He has no suggestions about the origin of his proposed mysterious 1st person allomorph **kur-*.

The 2SG → 1SG form *ɲunu-*, like Rembarrnga *tan-* and Ngalakgan *cun-*, has no obvious analysis (Heath suggests a derivation from 1PL.EXCL → 2SG, as noted above), although striking similarities are found in Ndjébbana, which has 1SG → 2SG.R *ŋana-* (cf. Ngandi *ŋana-* for the same combination) and 2SG → 1SG.R *ɲana-* (where Ngandi has *ɲunu-*).

Table 13.25: 2 → 1 prefixes in Ngandi and Wubuy.

	Ngandi		**Wubuy**
	1SG.O	**1PL.EXCL.O**	**1O**
2SG.S	*ɲunu-*	*ɲana-*	*numpa-* ~ *nimpa-*
2PL.S	*ɲana-*	*ɲana-*	*ŋiri-*

Table 13.26: 1 → 2 prefixes in Ngandi and Wubuy.

	Ngandi		**Wubuy**	
	2SG.O	**2PL.O**	**2SG.O**	**2PL.O**
1sg.S	*ŋana-*	*kura-*	*ŋunu-*(R), *(w)a-*(Irr)	*ŋana-*(R), *(ŋ)anampa-*(Irr)
1pl.excl.S	*kura-*	*kura-*		

The Wubuy forms are harder to untangle, but involve contrasts in Realis/Irrealis as well as person and number. The Realis/Irrealis distinction is neutralised in the 2 → 1 forms, but the 2SG → 1 form *numpa- ~ nimpa-* looks like an Irrealis form. Heath (1984, 365) suggests it could be from 2SG *nun-* plus the specifically Irrealis 2SG prefix *w_2a-*, where 'w_2' is a /w/ that alternates with /p/, but, as he notes, that then doesn't explain the variant *nimpa-* (and in addition, it is rather mysterious why a prefix should index the same argument twice), but we see what looks like the same formative elsewhere in the paradigm 1 → 2PL.IRR *(ŋ)anampa* and 1 → 2SG.IRR *(w)a-*. Irrealis prefixes in Wubuy characteristically involve allomorphs of the Irrealis prefix *$w_2$an-*, and I propose that *(w)a-* is in fact just another form of this Irrealis prefix, not specific to 2SG; similar forms are reconstructed for Mirndi in Osgarby (2018). The neutralisation of the Realis/Irrealis distinction makes some sense in light of the fact that 2 → 1 configurations are frequently non-assertive in English. The 2PL → 1 prefix *ŋiri-* doesn't find any close match elsewhere in the paradigm, although superficially it resembles the 1PL.INCL prefix *ŋVrV-*, where the vowels alternate depending on context and function, a pattern Dixon (2002, 443) notes for a number of languages. In addition, two of the Wubuy prefixes in the 1 → 2 set show the signs of early phonological variation. The 1 → 2PL.IRR form *(ŋ)anampa-* is the only prefix indicated with optional velar nasal deletion in Heath (1984).

Current speakers of Wubuy, however, have generalised optional initial velar nasal deletion to a broader range of prefixes, similarly to Bininj Gun-wok speakers reported in Marley (2020). The 1 → 2SG.IRR form *(w)a-* also shows optional initial segment deletion, which is found with other prefixes commencing in the Irrealis prefix underlyingly.

In short, portmanteaux, even in closely related languages, are difficult to derive and show few similarities between groups, although paradoxically we find some shared forms turning up in geographically and genetically distant languages, particularly in the 2 → 1 configuration. A selection from a number of NPN languages is provided in the Appendix, together with the forms found elsewhere in the paradigm for the SAP categories. I suggested above that the 2 → 1 configuration appears to be more conservative than the 1 → 2 configuration; I suggest that this is possibly because of the notable difference between the behaviour of 1st and 2SG pronouns in the history of Australian languages. The 1SG form is remarkably conservative across the continent, while the 2SG form is quite difficult to reconstruct, even between closely related languages (Blake 1988; Harvey 2003). In particular, the vast majority of NPN languages evince *ŋa-* for 1SG.S, while 2SG.S is much more variable. Even in closely related languages such as Ngalakgan and Rembarrnga, the forms and distribution of 2SG show disagreement. Given that one strategy for representing the local configuration is to suppress the subject in favour of the object, we predict that 2 → 1SG in particular should favour 1SG morphemes, which are conservative, while 1 → 2SG forms should favour 2SG morphemes, which are highly variable.

Conclusion

I started with the question of how languages in the NPN group might have developed from a language more similar to Warlpiri, and pointed out that portmanteaux, while a notable stumbling block in this proposed path of development, are not limited to the former, they are also found in Warumungu, as well as a handful of other PN languages. I have pointed out that the characteristics of these portmanteaux are that they are in some cases potentially derivable, but they tend to diverge between related languages, suggesting rapid replacement of forms, with a variety of strategies at play (also noted by Heath 1991), including person and number syncretism, suppression of subjects, and agreement with a conjunct of both arguments (as a 1PL.INCL form). One might regard the disparity in the synchronic

forms of local configuration prefixes as an indication that they have never, in fact, been fully integrated into the rest of the prefixal system. I have suggested that a relevant factor may be their (in)frequency in spoken language, as well as a conflict in associations between speech act participant referents, discourse roles and argument functions, along the lines suggested in Haspelmath (2004), and which have previously been argued to play out in typical case marking splits in ergative-absolutive systems (Silverstein 1976). Work such as that summarised in Bornkessel-Schlesewsky and Schlesewsky (2009) suggests that local configurations might cause planning difficulties, with flow-on effects in the grammar.

Perhaps an additional relevant factor is the structure of prefixing systems as opposed to clitic systems. As pointed out by Simpson and Withgott (1986, 150), clitic structures exhibit a number of potentially significant differences from affixation structures:

> First, unlike affixes, their [i.e. clitics'] position is determined syntactically. They appear obligatorily either in sentence-initial position or after the first constituent in the sentence, regardless of its category … They have no 'root' and no 'head'; in the examples, neither the subject clitic or the object clitic has semantic or morphological precedence over the other clitic.

Simpson and Withgott distinguish the clitic systems they primarily discuss (Warumungu and Warlpiri) from those they refer to as 'reduced pronoun' systems, on the basis of the relationship between clitic pronouns and independent ones. In Warumungu, there are no independent pronouns, only clitics. And in Warlpiri, the clitic pronouns are formally (i.e. segmentally) distinct from the independent pronouns. In clitic systems like those of Warumungu and Warlpiri, they argue, clitic clusters are assembled in the lexicon before insertion into syntax. By contrast, reduced pronouns (as in e.g. Ritharrngu) are the result of post-lexical reduction rules conditioned by speech rate and planning processes. Presumably, a system like the latter underlies clitic systems such as those of Warumungu and Warlpiri, and ultimately, prefix systems like those of the NPN languages I have been describing. However, it is conceivably the case that different kinds of planning, processing and lexical storage procedures underlie each of these types of system, which may have influenced the development of the deviant patterns in the prefixation systems in particular. In general, the further that bound pronoun systems diverge from independent pronoun systems in the same language, the less likely the former are to be subject to analogical pressure from the latter.

Despite the general lack of portmanteaux outside of Warumungu and a few other PN languages, we find some patterns which are similar to those in NPN languages, including suppression of the subject argument in inverse and local configurations in particular, as in Yanyuwa, Kalkatungu and Wakaya, and promotion of SAP arguments at the expense of non-SAPs as in Yukulta, which presumably are reflections of some of the same pressures I have discussed above. Despite the failure to explain the differences between prefixing and clitic agreement, one advantage of the processing explanation advanced here is its universality: the processing requirements and frequency characteristics are likely to be similar in every speech community. This is an advantage because portmanteaux in the local configuration are found not just in Australia but in a large number of languages around the world with multi-argument verbal agreement (Heath 1998), and given that the outcomes are very similar, regardless of region, we need an explanation that will work cross-linguistically. That explanation is, however, still some way off.

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Appendix: A selection of local configuration prefixes in NPN languages plus Yanyuwa (all are bound prefixes)

Transitive 2 → 1 combinations.

	Ngnd[30]	Wbuy	Ngkn	Rmba	Alwa	Wdng*[31]	Mrra*	Njbna[32]*	Bnba	Ykta	Ungn*	Mwng*	Mryi	Ynwa
2SG/1SG	*ɲunu*	*numba ~ nimba*	*cun*	*tan*	*ci*	*ŋara*	*naŋku*	*ɲanta (I), ɲana (R)*	*in, jin*	*nki*	*can*	*ŋan*	*ŋan**	*ŋ̤a*
2PL/1	*ɲana*	*ŋiri*	*jini*	*jana*	*culul*	*ŋararu*	*nampiri*	*npara*	*npir, nt*	*nkul*	*ŋanta*	*ŋarun*	*ŋanpa**	*ŋ̤impala*
2/1PL	*ɲana*	*ŋiri*	*jini*	*jara*	*ɲun*	*ɲililu*	*nirku, niwiŋku*	–	–	–	*ɲata*	*ŋarun*	–	–
2SG/1PL	–	–	–	–	–	–	–	*capanta (I), capana (R)*	*in, ji*	–	–	–	–	–
2PL/1PL	–	–	–	–	*ɲunur*	–	–	*ɲanpiri*	–	–	–	–	*ŋijanpa**	–

Transitive 1 → 2 combinations (bound prefixes).

	Ngnd	Wbuy	Ngkn	Rmba	Alwa	Wdng*	Mrra*	Njbna*	Bnba	Ykta	Ungn*	Mwng*	Mryi	Ynwa
1SG/2SG	*ŋana*	*ŋunu*	*ŋiɲ**	*ŋiɲ**	*ɲa*	*ŋa*	*niŋku*	*ca (I), ŋana (R)*	*iɲ, ŋiɲ*	*ŋa*	*ɲun*	*kun*	*ɲan**	*iŋa*

30 Languages and sources: Ngnd: Ngandi (Heath 1978), Wbuy: Wubuy (Heath 1984), Ngkn: Ngalakgan (Merlan 1983), Rmba: Rembarrnga (McKay 1975), Alwa: Alawa (Sharpe 1972), Wdng: Warndarrang (Heath 1980c), Mrra: Marra (Heath 1981), Njbna: Ndjébbana (McKay 2000), Bnba: Bunuba (Rumsey 2000), Ykta: Yukulta (Keen 1983), Ungn: Ungarinyin (Rumsey 1978), Mwng: Mawng/Maung (Capell and Hinch 1970), Mryi: Mangarrayi (Merlan 1982), Ynwa: Yanyuwa (Kirton 1970, 1978). Shaded cells indicate combinations that are subsumed under a syncretic form (generally higher up in the table).

31 '*' Indicates suppletion between the SAP Subject and 3rd person Subject. If the asterisk is at the top of the column it indicates this is a general property of the local configuration prefixes, otherwise it is applied to particular cells.

32 'I', 'R' indicate Irrealis and Realis forms, respectively.

	Ngnd	Wbuy	Ngkn	Rmba	Alwa	Wdng*	Mrra*	Njbna*	Bnba	Ykta	Ungn*	Mwng*	Mryi	Ynwa
1PL/2	*kura*	*ŋana*	*jiri*	*najar*	*ŋurku, ŋulku*	*ɲiri, ɲiriŋu, ɲiliŋu*	*niri, niwi, nimpir*	*nɲara*	*iriɲ*	*ŋal*	*ɲinta*	*kurun*		*iɳaŋaṯara*
1/2PL	*kura*	*ŋana*	*ŋuku*	*ŋaŋa*	–	*ŋarŋu, ŋalŋu*	*ŋarku, ŋalku*	*nanta, nanara*	*aŋkiriɲ, iriɲ*	*ŋarŋu (du), ŋanpuŋa*	*kunta*	*kurun*	*ŋujan*	–
1PL/2SG	–	–	–	–	*aɲi*	–	–	–	–	–	–	–	*ŋiḻa*	–

Intransitive prefixes (enclitics in Yukulta).

	Ngnd	Wbuy	Ngkn	Rmba	Alwa	Wdng	Mrra	Njbna	Bnba	Ykta	Ungn	Mwng	Mryi	Ynwa
1SG	*ŋa*	*ŋa*	*ŋa*	*ŋa*	*ŋa*	*ŋa*	*ŋa*	*ŋa*	*ŋa/l*	*-ṯa/ka*	*ŋa*	*ŋa*	*ŋa*	*ŋa*
1PL.EXCL	*ɲar*	*niri*	*jiri*	*jara*	*ŋul*	*ɲiti*	*niwi*	*ɲara*	*car*	*-ŋa*	*ɲar*	*ŋar*	*ŋiḻa*	*nu*
2SG	*ŋu*	*nu*	*ŋiɲ*	*ŋiɲ*	*ji*	*ɲi*	*ni*	*ca (l)/ ŋana (R)*	*ŋk/kiŋk*	*-jini/-ɲi*	*ɲin*	*an(ŋ)*	*ɲa*	*Ø*
2PL	*ŋar*	*niri*	*nuru*	*nara*	*wul*	*ŋutu*	*nuwu*	*nara*	*ŋkur ~ kur ~ ur*	*-wur*	*kur*	*kur*	*ḻa*	*iru*
1DU.INCL	*ɲa*	*na*	*ji*	–	*ɲa*	*ɲa*	*na*	*jV (l), ka (R)*	*cijir*	*-kur*	*ŋar*	*ark*	*ŋi*	*li*
1PL.INCL	*ŋar*	*ŋuru*	*ŋuru*	–	*ɲul*	*ŋala*	*nawu*	*ŋapara*		*-kur*		–	*ŋaḻa*	*mpala*
3SG	*Ø/NC*[33]	*Ø/NC*	*Ø/NC*	*Ø*	*NC*	*wa*	*wu*	*NC*	*Ø*	*-ŋi/Ø*	*NC*	*NC*	*Ø*	*NC*

33 'Ø/NC' means that Ø is an option for the expression of some 3NONSG arguments, but overt expression of noun class/gender is also an option. 'NC' means that expression of noun class is obligatory (i.e. Ø is not an option).

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