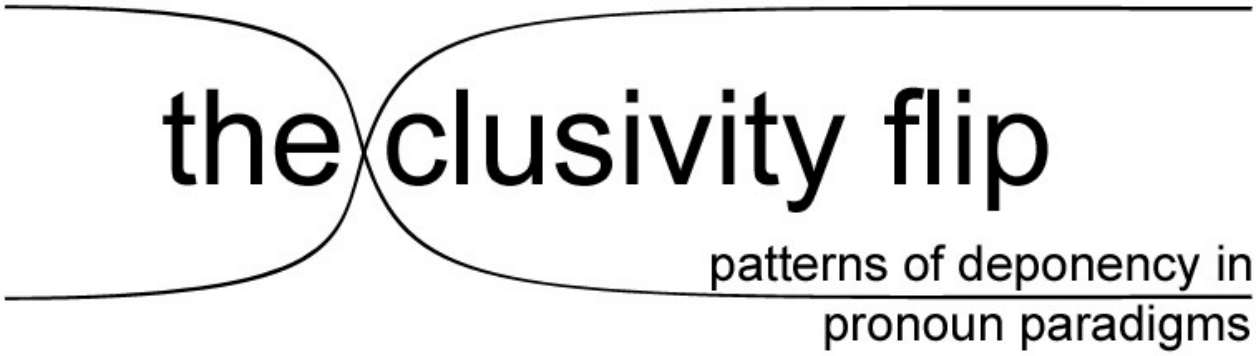

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1. Introduction

Clusivity is a semantic opposition that encodes the inclusion or exclusion of the addressee. Hence, the speaker makes the choice between including or excluding the addressee in the reference. This distinction is absent from Indo-European languages, but it has been attested in 35 percent of the languages of the world (Bickel & Nichols 2005: 58). Bickel & Nichols show that clusivity is an areal phenomenon, which is most salient in the area called the *Pacific Rim*, viz. Southeast Asia, Oceania, Australia, and the Pacific Coast of North and South America. They demonstrate convincingly that this distribution can be *'explained by early population movements around the Pacific, movements which started out from the Ancient Sunda region (today's Southeast Asia) and have left the most salient traces in Australia and South America'* (2005: 68). The contrast is widespread in Australian languages appearing in independent pronouns and in pronominal affixes or clitics.

This paper will illuminate a special pattern of clusivity, which is attested in the pronominal paradigms of about a dozen Australian languages. The pattern exhibits a kind of deponency. Deponency can be defined as a mismatch between morphology and morpho-syntax. Put it another way, it is the wrong morphology in the right place. Consider the following example from Mangarrayi (Fig.1), which is spoken in Australia's Top End.

free pronouns	**Minimal**	**Unit Augmented**	**Augmented**
1	ngaya	ngi-rr	ngi-rla
1+2	ngi	nga-rr	nga-rla
2	nyanggi	nu-rr	nu-rla
3	-	-	-

Fig.1: the independent pronouns of Mangarrayi (Merlan 1982)

The mismatch occurs between the exclusive (1) and the inclusive (1+2), when we compare the minimal and the non–minimal number categories. The non–minimal forms of the inclusive *nga-rr* and *nga-rla* are built on the stem of the minimal exclusive *ngaya*. Analogously, the non–minimal forms of the exclusive *ngi-rr* and *ngi-rla* are built on the stem of the minimal inclusive *ngi*. Hence, the pronominal roots signaling clusivity cross over. Accordingly, I will call the phenomenon: clusivity flip. Such puzzling irregularity demands an explanation.

I set out two goals for this thesis. First, I will develop a typology of the phenomenon, which systematizes the attested types of clusivity flip and shows their distribution. A

second goal is to find clues and explantions that motivate this seeming anomaly. Does it represent independent developments or does it descent from a single system passed to a dozen of languages through diffusion or genetic inheritance?

I will introduce the reader to the different types of pronoun systems, which are attested in the Australian languages (§2). A definition and a survey of syncretisms between the various number and person categories follows (§3). In (§4), I will introduce the phenomenon of clusivity flip and give an account of its structure and distribution. (§5) will discuss three approaches to explain the phenomenon, namely diffusion, genetic retention and parallel development. Some concluding remarks are expressed in (§6).

2. Types of pronouns systems in Australian languages

In the following section I will give an overview of the different structures that are present in the pronoun paradigms of Australian languages. (Dixon 2002) divides these into Type 1, 2 & 3. This threepart division focuses on the presence or absence of an inclusive–exclusive opposition. Furthermore, it is concerned with the morphological treatment of the inclusive category.

2.1. No inclusive–exclusive opposition

A Type 1 system, as can be seen in (Fig.2), lacks the inclusive–exclusive opposition. This system is similar to many languages across the world, in that the non–singular first person forms make an ambiguous reference to both, inclusive and exclusive *'we'*. The term *'unified–we'* has been used in the literature to describe this phenomenon (Cysouw 2003: 80). Without the dual number category it represents a system that is found in the English independent pronouns.

1sg	1du	1pl
2sg	2du	2pl
3sg	3du	3pl

Fig.2: Type 1 pronoun paradigm (adopted from Dixon 2002: 243)

Dixon mentions that of the 195 Australian languages, for which sufficient data is available, 20 percent are of Type 1.

As this paper is concerned with the morphological overlap between the inclusive and the exclusive, Type 1 systems are only mentioned here for the sake of completeness, but will be of no further concern.

2.2. Absolute number systems (sg-du-pl)

Type 2 systems (Fig.3) exhibit the prototypical contrast in clusivity. In a Type 2 system the number categories are expressed in system of absolute number markers. This means that within the dual or trial number category the referential value will always be two persons, or three respectively. Therefore, an absolute number system leaves the 1+2sg position blank, because the smallest group within the inclusive person category is two, namely the speaker–hearer dyad (you and I).

1sg	1du	{1tr}	1pl
	1+2du	{1+2tr}	1+2pl
2sg	2du	{2tr}	2pl
3sg	3du	{3tr}	3pl

Fig.3: Type 2 pronoun paradigm (based on Dixon 2002: 244)[2]

The great majority of Australian languages employ a Type 2 system. Dixon reports 66 percent (2002: 244). An example for a Type 2 system is given in (Fig.4).

	Singular	**Dual**	**Plural**
1	ngayu	ya-rru-bu	ya-rru
1+2		yayi-bu	yayi
2	nyengu	nengge-rra-bu	nengge-rru
3	nawu (masc) ngalu (fem)	bu-rru-bu	bu-rru

Fig.4: Mirriwung independent pronouns (taken from Blake 1988)

We can see in *Mirriwung* (Fig.4), how an absolute number system works. The plural morpheme is *-rrV*. By adding the morpheme *-bu* to *-rrV* the dual number is created.

The inclusive forms break out of this pattern, because the *-rrV* number marker is absent. However, morphologically the speaker–hearer dyad (you and I) clearly belongs to the dual category, because it is marked with *-bu*. Hence, *-bu* is an absolute number

2The trial number category is not widespread. It occurs only in a handful of languages, e.g.: Wunambal.

marker, in that it refers to two persons across the paradigm. Another obervation is that all of the first person forms (inclusive and exclusive) are marked uniformly with *nga-* (singular) or with *ya-* (non–singular).

2.3. Relative number systems (min-ua-aug)

Type 3 systems (Fig.5) treat the inclusive forms morphologically much more like a separate person category. The referential value of the number markers is always relative to the minimal group of each person category. For example, the unit-augmented number increases the minimal group by one. Therefore, it signals dual in the first exclusive, the second and the third person. In the inclusive, however, the minimal group is two. Hence, the unit-augmented category refers to three persons, namely speaker, hearer and one other person. The augmented number marker on the other hand, signals three or more referents in all person categories except for the inclusive, where it denotes to four or more referents. In contrast to an absolute number system (2.2) the 1+2min slot can be filled. The referential value is the minimal group of the inclusive, viz. the speaker–hearer dyad (you and I). In (Fig.5), the number of referents for each position is expressed in brackets to provide clarification.

1min	(1)	1ua	(2)	1aug	(3+)
1+2min	(2)	1+2ua	(3)	1+2aug	(4+)
2min	(1)	2ua	(2)	2aug	(3+)
3min	(1)	3ua	(2)	3aug	(3+)

Fig.5 Type 3 pronoun paradigm (based on Dixon 2002: 244)

Due to the morphological treatment, relative number systems give rise to the assumption that the inclusive is a separate person category, instead of being a special kind of first person plural. The inclusive evidently shares reference with the first and the second person. Therefore, the reader should not be confused, when I speak of an *inclusive person category*. In fact, many authors (Cysouw 2005, Daniel 2005) have argued in favour of such an analysis. I will return to this in chapter 3.2.

Type 3 systems are found almost exclusively in the non–Pama–Nyungan languages. Most of them are situated in Australia's Top End, especially in Arnhem Land. The *NyulNyulan* languages in the West Kimberleys represent another patch of the Type 3

systems. Dixon indicates that 14 percent of Australian languages employ a Type 3 system (2002: 244). An example of a Type 3 system is given in (Fig.5).

	Minimal	**Unit Augmented**	**Augmented**
1	ngayu	ya-rr-ga-mirri	ya-rr-ga
1+2	yayu	ya-rr-ju-mirri	ya-rr-ju
2	juwa	gu-rr-ga-mirri	gu-rr-ga
3	ginya	yi-rr-ga-mirri	yi-rr-ga

Fig.5 the independent pronouns of Nyigina (Stokes 1982)

The independent pronouns of *Nyigina* work within a relative number system. The morpheme *-rr* marks augmented number. By adding the morpheme *-mirri* the unit–augmented number is created. Hence, *-mirri* in combination with *-rr* increases the number of referents by one. Hence, in the first, second and third person it denotes two referents. In the inclusive, however, it expresses three referents (you, I and one other person). The augmented number (*-rr*) denotes three or more referents in the first, second and third person, but to four or more referents in the inclusive.

We can clearly see, that for each person the referential number value is calculated on the basis of the minimal group, viz. the referential value is relative to the minimal group. Therefore, the speaker–hearer dyad (you and I) patterns like a singular in the other person categories. Similar to *Mirriwung* above, all first person pronouns of *Nyigina* (inclusive and exclusive) are marked uniformly with *nga-* (1min) or *ya-* (1+2min and all non–minimal).

There are some languages, which lack an unit–augmented category. Hence, there is only a minimal vs. augmented opposition. Still, in these languages, the minimal inclusive patterns with the minimal forms of all other person categories.

2.4. Marking strategies

There are several ways in which Australian languages make the distinction between inclusive and exclusive reference. One has to mention that there is an obvious dichotomy in analysing the morphology of the pronouns. One group of languages permits segmentation of pronominal forms (in separate morphemes marking for person and number). This is not possible in the second group. These two groups match very closely the genetic classification of Australian languages put forward in the 1960s. O'Grady, Wurm & Hale (1966) proposed twenty eight language families, one of which (the Pama–Nyungan

family) covers 7/8 of the continent. The remaining 27 language families (and isolates) are squeezed in a comparatively small area, that reaches from the West Kimberleys to the Gulf of Carpentaria. These languages are referred to by exclusion as non–Pama–Nyungan languages. Number–segmentability is only possible for the non–Pama–Nyungan languages. It has been employed by Blake (1988) to give further evidence for the existence of a Pama–Nyungan family, in which one cannot break up the pronouns in separate morphemes for person and number.

Both groups of languages show similar strategies to mark this semantic opposition. In *Nyawaygi* (Pama–Nyungan), for example, the exclusive pronouns are based on the inclusive forms. The pronouns for the 1+2du *ngali* and the 1+2plural *ngana* are extended by morpheme *li* to form the exclusive pronouns 1du *ngali**li**ngu* and 1plural *ngana**li**ngu* (Dixon 1983: 464). The opposite strategy of employed in *Kayardild* (non–Pama–Nyungan). The exclusive pronouns are *ngarra* (1dual) and *ngalda* (1plural). These are extended by a morpheme *ku* to form the inclusive counterparts: *nga**ku**rra* (1+2dual) and *nga**ku**lda* (1+2plural).

In contrast to morphological addition, in which one form is based on the forms from the other category, languages may simply have different forms. In the Pama–Nyungan languages, these are different pronouns. In the number-segmentable non–Pama–Nyungan languages the pronominal roots (or stems), which signal the person category, may be different.

3. Syncretism and clusivity

3.1. An attempt to define syncretism

The term syncretism describes a phenomenon in which two or more grammatical categories (number and/or person) are expressed by the same form. This definition is ambiguous in that syncretism can be looked at from a synchronic or from a diachronic perspective. From the synchronic point of view, there is no isomorphism between form and function. From a diachronic perspective, a particular syncretism signals the falling together or neutralization of the two grammatical categories in question. Cysouw uses the term syncretism as a *'neutral empirical cover-term'* (2005: 75-76) for all observed cases involving structural ambiguity or homophony. This is not useful for the purposes of this paper. As will be seen in chapter 4, a regular pattern like the clusivity flip implies a deeper level of semantic relationship, thus a diachronic perspective. For a full discussion on the

term see (Luraghi 2000).

We can draw two alternative conclusions concerning the semantic relationship between the respective grammatical categories. Firstly, the syncretism is a result of an incidential phonological merger. I will call this *coincidential symmetry*, because the actual forms may be homophonous, but they are so only by chance. Secondly, the observed syncretism is due to a shared etymology. I will call this *motivated symmetry*, because one has to assume that a semantic shift has taken place at an earlier stage. For my purposes here, this distinction is crucial, because one of my very questions is whether the puzzling recurrence of clusivity flip has any motivation, and if so what it is. Therefore, I do not take mere homophony as a sufficient characterisation of the clusivity flip.

Furthermore, syncretisms may vary in the degree of ambiguity. The prototypical case is a complete syncretism, where there the language in question provides no means for disambiguation. This is attested in the two closely related languages of the *Bunuban Family* spoken in the West Kimberleys, namely *Gooniyandi* and *Bunuba*. In both languages a single form refers to the inclusive minimal (1+2min) and to the exclusive augmented (1aug), whereas a separate form encodes the inclusive augmented (1+2aug). This form (1+2min = 1aug) is *yiyi-rr-* in the bound pronouns and *ngiyi-rri* in the independent pronouns of *Bunuba* (Rumsey 2000) and *ji-rr-* and *ngidi* in *Gooniyandi* respectively (McGregor 1996a). There is no means of disambiguation between the two categories.

Another type is the partial syncretism. First, it might be partial in that it occurs only in one paradigm, but not in another. For example, the bound pronouns of *Burrara* and *Gurrgoni* exhibit a syncretism between the first exclusive non-singular forms (1ua, 1aug) and the second non-singular forms (2au, 2aug). The bound pronouns are *nyi-rri-* (1ua/2ua) and *nyi-burr-* (1aug/2aug) in *Burrara* and *nyi-ni-* (1ua/2ua) and *nyi-burr-* (1aug/2aug) in *Gurrgoni*. In the paradigm of the independent pronouns these categories have different exponents. Hence, the optional use of an independent pronoun can disambiguate the reference.

A different type of partial syncretism is disambiguated by optional number marking. In *NyulNyul*, for example, the inclusive minimal (1+2min), the inclusive augmented (1+2aug) and the exclusive augmented (1aug) are all expressed by *ya- -rr*. If the number marker *-rr* is left out, as McGregor notes, *'it refers to the speaker hearer dyad: that is when reference is made to the 1&2 minimal category'* (1996a: 40). This, however, is optional, as the form with the number marker can still refer to the 1+2 minimal.

In a third type of partial syncretism, identical pronominal roots ars disambiguated by

number marking. In *Mangarrayi* (see above: Fig.1), the inclusive minimal pronoun is *ngi*. The exclusive non–minimal pronouns are *ngirr* (unit–augmented) and *ngirla* (augmented). We can see that some kind of overlap exists between the inclusive and exclusive. It is questionable whether to call this case syncretism at all, because the forms are not neutralized in any instance. For example, Cysouw restricts his survey of pronominal syncretisms to *'cases of exact likeliness'* (2005: 75).

However, there are two reasons why I argue in favour of a wider interpretation of syncretism. Firstly, the forms in question are number segmentable, which allows us to distinguish the pronominal roots marking person from those morphemes marking number. In this way, we can observe a syncretism only within the pronominal roots independent of a possible disambiguation through the number markers. Secondly, as mentioned above, I am interested in the investigation of *'motivated symmetry'*, which signals more than mere accidential homophony. It signals that a semantic shift has taken place. It has been pointed out before that semantic shifts can cause a syncretism between different person categories (Koch 1996: 240–241). Assuming this, I suggest that at a later stage the syncretism was disambiguated by analogical leveling (e.g.: by separating neutralized forms with a number marker or by innovating new forms). Thus, traces are left only in the pronominal roots. By excluding these kinds of syncretisms from the definition and hence from the data, we would lose significant evidence for a semantic shift. For those reasons, I will call this case syncretism. This phenomenon is what I refer to as clusivity flip. It will be introduced in detail in chapter 4.

The two types of syncretism, the complete and the partial (including its three subtypes), can be visualized as decreasing scale, ranging from the most ambiguous to the least ambiguous (and virtually non–ambiguous).

3.2. Pronominal syncretism in Australian languages

In the following section, I would like to give a number of different examples for these types of syncretisms mentioned in the preceding section. I have to point out that this section should be seen as survey within Australian languages, with a focus on the non–Pama–Nyungan languages. At this stage, I do not want to suggest *'motivated symmetry'* as an explanation for all the syncretisms that will be mentioned below. In fact, I agree with (Cysouw 2005: 99) in that most of these originated from a phonological merger. This is what I called *'accidental symmetry'* above. It is only in chapter 4 that I will make a case for

the *'motivated symmetry'* based on the evidence from the clusivity flip

The examples below are ordered according to which person categories are involved in the syncretism. These are: between the inclusive and exclusive (3.3.1.), involving the second person (3.3.2.) and involving the third person (3.3.3.).

3.3. Person syncretisms in Australian languages

3.3.1. Inclusive / exclusive syncretism

Let us now turn to the examples. The most common type of syncretism is one which neutralizes the inclusive and the exclusive category in one way or another. It ranges from a complete neutralization of clusivity (in *Bininj Gun-wok*) to a neutralization which is restricted to the non-singular (or non–minimal) number categories (*Marrithiyel*, *Ngaliwurru*, *NyulNyul*). A famous special case is the one which neutralizes the 1+2min and the 1aug in *Gooniyandi* and *Bunuba*, leaving a separate form for the 1+2aug (McGregor 1989).

In the case of *Bininj Gun-wok*, there is a single independent pronoun *ngad* which refers to the 1+2min, 1+2aug and the 1aug. This results in a unified 'we', as it is common in many European languages. This syncretism is attested only in the direct forms. The oblique independent pronouns distinguish inclusive and exclusive (Evans 2003a: 263). Furthermore, this syncretism is obligatorily disambiguated by the verbal prefixes. In *Bininj Gun-wok* the verbal prefixes have discrete forms for the inclusive and exclusive in all number categories.

A widespread type involves the syncretism between the inclusive and the exclusive in the non–minimal (non–singular) forms but a separate form referring just to the speaker–hearer dyad. It is attested in the verbal prefixes of *Marrithiyel*, *Ngaliwurru*, *Kamu*, *Warray*, *NyulNyul*, *Bardi*, *Yawurru* and *Nyigina*. One example is given in (Fig.6).

	Minimal	**Augmented**
bound pronouns		
1	nga-	ya-TNS-rr-
1+2	ya-	ya-TNS-rr-
2	mi-	gu-TNS-rr-
3	wa-	i-TNS-rr-

Fig.6: the verbal prefixes of Yawurru (taken from the appendix of Harvey 2003b)

In *Marrithiyel*, *Ngaliwurru* and *Kamu*, the syncretism cannot be disambiguated, because it is attested in the independent pronouns as well. For instance, in *Ngaliwurru*, which is spoken South of the Daly River, *yi-rr-* is the verbal prefix refering to the 1+2 and

the 1 plural. The same reference in the independent pronouns is covered by *yirri* (Harvey 2003b). Of the languages above, *Warray*, *NyulNyul*, *Bardi*, *Yawurru* and *Nyigina* do have a means of disambiguation through their independent pronouns. The independent pronouns have discrete forms for the 1aug and the 1+2aug. Leaving aside *Warray*, the remaining four belong to the *NyulNyulan Family*. This seems to point towards an explanation inferring genetic relatedness. However, in *Warrwa*, another member of the *NyulNyulan Family*, this syncretism is not attested (McGregor 1994). Also, *Nungali*, which is closely related to *Ngaliwurru* does not exhibit this syncretism. Therefore, genetic relatedness seems to be an insufficient explanation.

The third type of syncretism involving the inclusive and exclusive person has already been mentioned above. This famous case is attested in *Gooniyandi* (Fig.7) and the closely related *Bunuba*, both are spoken in the Southern part of the Kimberleys. It is also one of the best described cases (McGregor 1989, 1990, 1996b; Rumsey 2000).

	Minimal	**Augmented**
bound pronouns		
1	li-	ji-rr-
1+2	ji-rr-	ja-rr-
2	ji-	nggi-rr-
3	Ø-	bi-rr- ~ rri-
free pronouns		
1	nganyi	ngidi
1+2	ngidi	yaadi
2	nginyji	gidi
3	niyi	bidi

Fig.7: verbal prefixes and independent pronouns of Gooniyandi (McGregor 1996b)

In both languages one form covers the 1+2min and 1+2aug category. Greenberg coined the term Assiniboine system for this kind of syncretism. It cannot be disambiguated by use of the independent pronouns, because these exhibit this syncretism as well. McGregor points out that at least for the semantic roles of 'Goal' and 'Affected' disambiguation is possible by adding a pronominal enclitic *-ngangi* for 1+2min reference (McGregor 1996b: 161). However, this is not possible for the subject role 'Actor'.

3.3.2. Involving the second person

An interesting fact about the *Gooniyandi* prefixes, is that within the system of verbal prefixes the neutralized form *yirr-*, which refers to the 1+2min and the 1aug, seems to be based on the 2min form *yi-* by adding the augmented marker *-rr*. This overlap is disambiguated by the presence of the number marker for 1+2min and 1aug reference. It can be further disambiguated by the use of the independent pronouns, in which the forms do not show this kind of relationship. It is hard to account for this syncretism. It could be due to a phonological merger, in which the initial consonant was palatalized: ng → ny. In the enviroment of a high front vowel this is a well attested process. At a later stage it might have undergone lenition: ny → y. There is, however, no further evidence pointing towards this explanation.

There are similar cases. For example, in *Wagiman* (Fig.8), which is spoken East of the Daly River, the verbal prefix *ngi-* refers to the 1+2aug and the 1aug, but also to the 2min. Thus, not only clusivity is neutralized in the non-minimal number, but also the 2min is involved. The latter can be disambiguated by the use of the independent pronouns. These, however, show a different syncretism. The form *ngego* is employed for both inclusive and exclusive, thus neutralizing clusivity in the augmented number. There is a discrete form *nginyang* for the inclusive minimal.

	Minimal	**Augmented**
bound pronouns		
1	nga-	ngi-
1+2	ngin-	ngi-
2	ngi-	ngu-
3	Ø- , ga- (NP)	ba-
free pronouns		
1	ngagun	ngego
1+2	nginyang	ngego
2	ngigun	ngogo
3	Ø-	(ya-)wu-rr-

Fig.8: verbal prefixes and independent pronouns of Wagiman (taken from Harvey 2003b)

The independent pronouns in *Tiwi* (Fig.9), spoken on Bathurst and Melville Islands, also employ a neutralized form *ngawa* for 1+2aug and 1aug. This is obligatorily disambiguated by the verbal prefixes, which have discrete forms for each of the categories. The verbal prefixes, however, have a syncretism between the 1aug and 2aug, which is expressed by *ngindi-*.

	Minimal	Augmented
bound pronouns		
1	ngi-(rri-)	ngi-ndi-
1+2	mu-(rri-)	nga-(rri-)
2	nyi- (NP) ji- (P)	ngi-ndi-
3	a- (masc NP) a-mbi- (fem NP) yi- (masc P) ji- (fem P)	wu- (NP) bi-(rri-) (P)
free pronouns		
1	ngiya	ngawa
1+2	muwa	ngawa
2	nginyja	nuwa
3	ngarra (masc) nyirra (fem)	wuda

Fig.9: the verbal prefixes and the independent pronouns of Tiwi (taken from Harvey 2003b)

The same syncretism is attested in the languages *Burrara* (Fig.10) and *Gurrgoni*, which are spoken on the Northern coast of Arnhem Land. Both are part of the *Maningrida Family* and are closely related. The syncretism between the 1 and 2non-minimal verbal prefixes has been mentionend in (3.1.) already. However, the means of disambiguation are provided by the independent pronouns, which itself show a different syncretism. They neutralize clusivity in the non-minimal number. Cysouw argues that the syncretism in the verbal prefixes (between 1 and 2non-minimal) *'probably arose relatively recently by a merger of a lamino-palatal and a dorso-velar nasal.'* (2005: 95). He bases this conclusion on a comparison with the closely related *Ndjebbana* (McKay 2000).

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	ngu-	nyi-rri-	nyi-bu-rr-
1+2	a-rr-	a-rri-	ngu-bu-rr-
2	nyi-	nyi-rri-	nyi-bu-rr-
3	a- ~ Ø-	(a)bi-rr-	a-bu-rr-

Fig.10: the verbal prefixes of Burrara (taken from Harvey 2003b)

3.3.3. Involving the third person

The odd cases are the ones which involve the third person, because these violate a significant distinction. Many authors (Plank 1985; Harvey 2003b; Cysouw 2005) have stressed the distinction between speech act participants (1, 1+2, and 2nd person) and non–

participants (3rd person). Others have termed it locutor vs. non–locutor (Daniel 2005). On the basis of this distinction, one would expect that syncretisms involving the third person would not occur.

There are, however, two cases in Australian languages. In the verbal prefixes of Alawa (Fig.11), spoken between the Barkly Tablelands and Arnhem Land, the third person non–singular forms are built on the second person singular stem. The 2sg prefix is *yi-* and the third non–singular forms add *-rr-* for dual and *-l-* for plural reference (Sharpe 1972). The independent pronouns do not have discrete forms for these categories. This has not been mentioned in the literature so far.

	Singular	**Dual**	**Plural**
bound pronouns			
1	nga-	ngu-rr-	ngu-l-
1+2		nya-	nya-lu-
2	yi-	wu-rr-	wu-l-
3	na- (masc) arr- (fem)	yi-rr-	yi-l-

Fig.11: the verbal prefixes of Alawa (Sharpe 1972)

There is no evidence in favor of or against an explanation through phonological changes, when we compare these forms to ones in the closely related languages Marra or *Warndarrang*.

Another example comes from *Gaagudju*, which is spoken in the West of Arnhem Land. The verbal prefix for the second person (there is no number distinction in the verbal prefixes of *Gaagudju*) is *nyi-*. This form also refers to the third person feminine (the third person masculine is unmarked). This syncretism can be disambiguated by the independent pronouns, which have discrete forms for the second and third person categories.

3.4. Explanations and some preliminary conclusions

Before turning to the heart of this paper, which will shed light on a particular type of syncretism called clusivity flip, I want to give an overview of the implications that can be drawn from the observed syncretisms for Australian languages and for linguistic typology in general.

The syncretisms mentioned here all revolve around the speech act participant category, viz. the first person, the second person and the inclusive, thus leaving aside the

third person. The two cases of *Alawa* and *Gaagudju* are puzzling and interesting, but they should be viewed as an exception. Harvey notes that the opposition between participants and non–participants *'is of importance in analysing these neutralizations'* (2003b: 485).

Heath goes as far as calling the observed ambiguities *'the messiest and most opaque of all transitive combinations'* concluding that *'grammarians have often despaired in analysing them structurally'* (1991: 80). The data shows that this can be extended to the intransitive forms. Heath shows that some of the forms are *'demonstrable recent morphological innovations unrelated to historical phonology'* (1991: 86). He therefore concludes that there seems to be a method to obscure the relationship between speaker and addressee.

The most comprehensive survey of syncretisms in pronoun paradigms across the world's languages has been carried out by Cysouw (2005). He looked at syncretisms involving the inclusive person category. It is obvious that the inclusive shares reference with both, first and second person. Therefore, the central question was whether the inclusive is a type of first person plural as is commonly held, or whether it is a type of second person. Cysouw points out that this has been assumed by some authors (e.g. Zwicky 1977, Plank 1985) who worked on Algonquian languages. His method is a cross–linguistic survey of patterns of syncretism. He assumes that, if the inclusive is a kind of first person plural, then one would expect to find more syncretisms between the inclusive and first person, than between the exclusive and the first person. Cysouw's findings show *'a clear asymmetry between the inclusive/first person and exclusive/first person syncretism.'* (2005:98) The exclusive/first person syncretism is significantly higher (2005:97). He therefore concludes, that *'the exclusive can be seen a kind of first person, but the inclusive cannot'* (2005:98).

The second question, of whether the inclusive is a kind of second person, is also answered by comparing syncretisms. If the inclusive in fact is a kind of second person, then one would expect to find more syncretisms between the inclusive and the second person, than between the inclusive and the third person. Cysouw (2005:98) calls the former semantically tranparent (along with the exclusive/third person combination) and the latter semantically opaque (along with exclusive/second person combination). However, his findings show that the distributions of these kinds of syncretism are no different, nor are any of these diachronically instable (2005:98ff).

This analysis ties in with the conclusions from a paper by Daniel (same volume: 2005). Daniel makes the statement that *'inclusive*[s] *in all inclusive languages should be*

considered not as a subcategory within the first person' (2005:3) He concludes that *'there seems to be not enough typological evidence to say that inclusives tend to be morphologically related to first-person exclusives'* (2005:37).

This conclusion runs counter to what will be presented in the following chapter, where the attested syncretism targets only the inclusive and exclusive.

4. Clusivity flip

The phenomenon of a regular pattern of morphological overlap between the inclusive and the exclusive has been mentioned by a number of authors (Evans et al. 2001, Harvey 2003b and Baker unpublished[3]). I will capture the phenomenon here in its full range and develop a typology for it.

I will start this rather descriptive part with the prototypical clusivity flip (4.1), which shows a stem crossing-over from the exclusive mininmal to the inclusive non-minimal forms and from the inclusive minimal to the exclusive non-minimal forms. In the next two sections, I will consider the partial clusivity flip, in which a stem crosses over only from the exclusive to the inclusive (4.2) or vice versa (4.3). The final section (4.4) zooms out again in order to dicuss the distribution of the phenomenon in Australia.

The clusivity flip should be considered as kind of deponency. The classic example of deponency is the latin verb *miror* 'I admire' (*miratus sum* 'I have admired'), which looks like a passive, but is in fact an active form. This mismatch between morphology and morpho-syntax is meant by deponency. Therefore, deponency in our case can be regarded as an especially perverse kind of syncretism: Two grammatical categories are not neutralized, but even the more complicated: the exponents of the two categories are exchanged.

4.1 Prototypical clusivity flip

The verbal prefixes and the independent pronouns of *Ngandi* (Fig.12) exhibit a prototypical clusivity flip. The verbal prefixes show that once we strip off the number markers (*-rri* for unit-augmented; and *-r* for augmented), the morpheme ***nga***- signals exclusive in the minimal number, but inclusive in the non-minimal number. Analogously

3 I would like to thank Brett Baker for making available to me an unpublished paper, which further spawned my interest in the problem.

nya- refers to inclusive in the minimal number, but exclusive in the non-minimal number (Heath 1978:67).

The same happens in the independent pronouns. The structure there, however, is not so clean. By stripping off the number markers (*-rni* for unit-augmented, and *-rr* for augmented), we are left with ***ng****aya*- referring to exclusive in the minimal number, and ***ng****orrko*- referring to the inclusive in the non-minimal number. And analogous ***ny****aka* refers to inclusive in the minimal number, and ***ny****owo*- signals exclusive in the unit-augmented (and ***ny****e*- in the augmented). We thus have a clusivity flip expressed by the initial (nasal) element, but not the vowel.

	Minimal	**Unit Augmented**	**Augmented**
prefixes			
1	nga-	nya-rri (M)	nya-rr-
1+2	nya-	nga-rri (M)	nga-rr-
2	nu-	na-rri- (M)	na-rr-
3	ni- (masc) na- (fem)	ba-rri- (M)	ba-
free pronouns			
1	ngaya	nyowo-rni (M)	nye-rr
1+2	nyaka	ngorrko-rni (M)	ngorrko-rr
2	nugan	nuka-rni (M)	nuka-rr
3	ni-wan (masc) na-wan (fem)	bowo-rni (M)	ba-wan

Fig.12: the verbal prefixes and independent pronouns of Ngandi (Heath 1978b)

A general observation can be made as to which element signals clusivity. It seems to be the initial consonant, viz. the velar nasal (*ng-*) versus the palatal nasal (*ny-*). This might sound a little farfetched, and one could argue that the English pronouns *'we'*, *'he'* and *'she'* also differ only in their initial consonant, which does not allow for such generalisations. However, in *Ngandi* this pattern is pervasive and stretches across all pronominal paradigms. It also holds true for the transitive prefixes (see Heath 1978: 68). When the first person minimal acts upon the third person the form is ***ng****anu*-. In the first person exclusive dual and plural the form ***ny****arru*- is employed. When the inclusive minimal is acting upon the third person the form is ***ny****anu*- and in inclusive dual and plural it is ***ng****arru*-. Again it seems that it is only the initial consonant that makes the distinction.

Essentially the same happens in *Nunggubuyu* (Heath 1984). The crucial difference in *Nunggubuyu* is that the independent pronouns do not exhibit a clusivity flip, as can be seen in (Fig.13).

	Minimal	Unit Augmented	Augmented
prefixes			
1	nga-	nii-ni- (masc) nii-ngi- (fem)	nu-rru-
1+2	na-	ngii-ni- (masc) ngii-ngi- (fem)	ngu-rru-
2	nun-	nii-ni- (masc) nii-ngi (fem)	nu-rru-
3	ni- (masc) ngi- (fem)	wi-ni- (masc) w(b)a-ngi- (fem)	w(b)u-rru-
free pronouns			
1	ngaya	ya-rr-ga-mirri	ya-rr-ga
1+2	yayu	ya-rr-ju-mirri	ya-rr-ju
2	nagang	nu-gu-rni (masc) nu-gu-rngi (fem)	nu-gu-rru
3	ni-ga (masc) ngi-ga (fem)	wu-gu-rni (masc) wu-gu-rngi (fem)	wu-gu-rru

Fig.13: The verbal prefixes and the independent pronouns of Nunggubuyu (Heath 1984)

Again it seems that in *Nunggubuyu* the initial consonant signals clusivity. The difference from *Ngandi* is that the inclusive minimal (and exclusive non-minimal) is signaled by the alveolar nasal and not the palatal nasal. This observation can also be made for the transitive prefixes (Heath 1984: 350).

In the next three languages, *Rembarrnga* (Fig.14), *Ngalakan* (Fig.15), and *Dalabon* (Fig.16) it is also the initial consonant which signals clusivity.

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	nga-		ya-rra-
1+2	ya-		nga-rra-
2	nginy-		na-rra-
3	Ø- , ga- (NP)		ba-rra-
free pronouns			
1	ngi-nda	ya-nda-parraq	ya-nda
1+2	yi-nda(rra)-parraq	nga-gunda-parraq	nga-gunda
2	danda	na-gunda-parraq	na-gunda
3	niq-danda (masc) ngaciq-danda ~ ngayiq-danda (fem)	bu-nda-parraq	bu-nda

Fig.14: the verbal prefixes and the independent pronouns of Rembarrnga (McKay 1975)

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	nga-	yarra-	yala-
1+2	ya-	ngarra-	ngala-
2	dja-	narra-	nala-
3	ka-	barra-	bala-
	Singular	**Dual**	**Plural**
free pronouns			
1	ngey	njerr	njel
1+2		njeh	ngorr (~ngol)
2	njing	norr	nol
3	yibung	bunu	bulu

Fig.15: the verbal prefixes of Dalabon A (Evans et al. 2001) and the independent pronouns of Dalabon B (Evans et al.2004)

	Minimal	Augmented
bound pronouns		
1	ngu-	yi-rri-
1+2	yi-	ngu-rru-
2	nginy-	nu-rru-
3	Ø-	bu-rru-
free pronouns		
1	ngay-kaq	yi-rr-kaq
1+2	yi-kaq	ngu-rr-kaq
2	nginy-jaq niny-jaq (M)	nu-rr-kaq
3	jiny-jaq (F)	bu-rr-kaq

Fig.16: the verbal prefixes and the independent pronouns of Ngalakan (Merlan 1983)

Again it is the initial consonant which makes the distinction between inclusive and exclusive reference. The two consonants are the velar nasal (for exclusive minimal and inclusive non-minimal) and the lateral approximant (for inclusive minimal and exclusive non-minimal). For all three languages the clusivity flip occurs in both the verbal prefixes and the independent pronouns. Furthermore the transitive prefixes exhibit the same pattern for all three languages. (see (McKay 1975: 142) for *Rembarrnga*; (Merlan 1983: 88) for *Ngalakan*; and (Evans et al. 2001: 199) for *Dalabon*)

Dalabon has a *Type 2* pronoun system, employing absolute number categories. As you can see from (Fig.15), I have used a *Type 3* system for the verbal prefixes. Evans et. al. point out that the inclusive augmented form *ngala-* is somewhat hypothetical, as the *ngarra-* (which is the 1+2ua in Fig.15) usually covers this reference. He recorded one speaker, who used *ngala-* in variation with *ngarra-* (Evans et al. 2001: 193). This leads to a

reanalysis of the paradigm to a *Type 3* system. In a minimal augmented system *ngala-* receives the cardinality four or more, whereas *ngarra-* receives the cardinality three. Therefore, I have called it *Dalabon B* (Type 3), as opposed to *Dalabon A* (Type 2).

Another observation regardless of the number system is that *Dalabon* has different consonants signaling clusivity, when we compare the verbal prefixes with the independent pronouns. For the former these consonants are /ng/ and /y/. For the latter they are /ng/ and /nj/.

In the Maran language *Warndarrang* the same kind of flip is attested, although the actual forms involved are messier (Fig.17) than in the previous languages.

	singular	**dual**	**plural**
bound pronouns			3
1	nga-	nyi-rr(i)/d-	nyi-di-
1+2		nya- (_C) nyany- (_V)	nga-la-
2	nyi-	ngu-d- ~ ngu-rri-	ngu-du-
3	(g)a-	(g)a-rr/d-	(g)a-la-
free pronouns			
1	nginga	nyi-rra-yi	nyi-d-burr
1+2		nyanya	ngala
2	nyinyu ni-wa (M)	ngu-rra-yi	ngu-d-burr
3	ngi-wa (F)	yi/wu-rra-yi	wu-la-yi

Fig.17: the verbal prefixes and the independent pronouns of Warndarrang (Heath 1980)

As we can see from (Fig.17) the element which signals clusivity is the initial consonant. The vowels are distributed irregularly. Furthermore segmentation in number and person for the inclusive augmented form is not possible in a straightforward manner.

Another example comes from *Wardaman*, which is spoken in the central Top End. It also exhibits a clusivity flip. There are some morphological difficulties (Fig.18).

	Minimal	**Augmented**
bound pronouns		2
1	nga-	yi-rr-
1+2	nga-yi-	nga-rr-
2	yi-	nu-
3	Ø-	(ya-)wu-rr-
free pronouns		
1	ngayugu	yirrug
1+2	yawung-guya	ngarrug
2	yinyang	nurrug
3	-	-

Fig.18: the verbal prefixes and the independent pronouns of Wardaman (Merlan 1994)

The first observation is the morphological formation of the inclusive minimal form. It consists of the first person *nga-* and the second person *yi-*, thus it literally translates to English as *'I - you'* (Merlan 1994: 126). The transitive combinations exhibit the same pattern (Merlan 1994: 127). This pattern suggests to classify *Wardaman* as a case of partial flip. In contrast to this, though, is the pattern found in the independent pronouns, which display a prototypical flip. Here the initial consonant signals clusivity.

The languages mentioned above are all spoken in Arnhem Land and all of them belong to the Gunwinyguan family, so that it is possible that all result from a single inherited proto-system. However, I will argue against that in chapter 5.2.

Another example comes from a quite distant family, comprising two closely related languages spoken between the Barkly Tablelands and the Gulf of Carpentaria, namely *Garrwa* and *Wanyi*. With respect to the phenomenon of clusivity flip their pronouns are very similar. The independent forms of *Garrwa* are given in (Fig.19).

	Singular	**Dual**	**Plural**
free pronouns			
1	ngayu	ngali	nurru
1+2		nunggala	ngambala
2	ninjdji	nimbala	narri
3	njulu	bula	yalu

Fig.19: the independent pronouns of Garrwa (adopted from Blake 1988)

The elements signaling clusivity are a combination of the initial consonant and first vowel. Thus, we have *nga-* for exclusive to inclusive and *nu-* for inclusive to exclusive. When we compare the structure of *Garrwa* and *Wanyi* to the independent forms of *Dalabon*, another difference becomes obvious. In *Dalabon* the exclusive dual (and the exclusive plural) is marked by the same element as the inclusive dual. In *Garrwa* and *Wanyi* the exclusive dual is grouped with the exclusive singular (and the inclusive plural). The clusivity flip in *Garrwa* and *Wanyi* is not as clear as the previous languages, because the forms are not segmentable in an easy way. This observation reaffirms Blake (1988)'s remark that *Garrwa* and *Wanyi* are the only languages which do not clearly fall into the Pama–Nyungan or the non–Pama–Nyungan pronoun set.

The last example of a prototypical flip is attested in *Mangarrayi* which is spoken in South Arnhem Land. In some classifications *Mangarrayi* is considered part of the Gunwinyguan family (Alpher, Evans, Blake 2003). The pronominal paradigm is given in (Fig.20).

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	nga-	ngi-rr-	ngi-rla-
1+2	ngi-	nga-rr-	nga-rla-
2	nya-	nu-rr-	rla-
3	Ø-	wu-rr- , bu-rr (N-)	wu-rla- , ba- (N-)
free pronouns			
1	ngaya	ngi-rr	ngi-rla
1+2	ngi	nga-rr	nga-rla
2	nyanggi	nu-rr	nu-rla
3	-	-	-

Fig.20: the verbal prefixes and the independent pronouns of Mangarrayi (Merlan 1982)

Again the pattern is also attested in the transitive combinations (Merlan 1982: 160). The striking difference of the clusivity flip in *Mangarrayi* is in which element signals clusivity. The initial consonant is the velar nasal in both inclusive and exclusive reference. The distinction is made by the first vowel, which is /i/ for inclusive minimal (and exclusive non-minimal) and /a/ for exclusive minimal (and inclusive non-minimal).

4.2. Partial flip

4.2.1. Partial clusivity flip – exclusive to inclusive

In three languages of the Maningrida Family, spoken in North Arnhem Land, the inclusive augmented form is built on the stem of the first minimal. The three languages are *Burrara* (Fig.21), *Gurrgoni* (Fig.22) and *Ndjebbana* (Fig.23).

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	ngu-	nyi-rri-	nyi-bu-rr-
1+2	a-rr-	a-rri-	ngu-bu-rr-
2	nyi-	nyi-rri-	nyi-bu-rr-
3	a- ~ Ø-	(a)bi-rr-	a-bu-rr-

Fig.21: the verbal prefixes of Burrara (adopted from Harvey 2003b)

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	ngu-	nyi-ni- (NFUA) nyi-rrinyin (FUA)	nyi-burr-
1+2	arr-	a-ni- (NFUA) a-rrinyin- (FUA)	ngu-burr-
2	nyin-	nyi-ni- (NFUA) nyi-rrinyin (FUA)	nyi-burr-
3	a- (masc) jin- (fem)	abu-ni- (NFUA) abu-rrinyin (FUA)	a-burrrr-

Fig.22: the verbal prefixes of Gurrgoni (adopted from Harvey 2003b)

bound pronouns	Minimal	Unit Augmented	Augmented
1	nga-	nyi/a-rri- (non.fem) nya-rra- -nya (fem)	nya-rru-
1+2	ga(go)-	ngi/a-rri- (non.fem) ngabarru(ga)- -nya (fem)	ngaba-rru/a-
2	ngana(ga)-	ni/arri- (non.fem) na-rra- -nya (fem)	na-rru-
3	ga- (non.fem) ya- (fem)	bi/arri- (non.fem) ba-rra(ga)- ~barra- -nya (fem)	ba-rru-

Fig.23: the verbal prefixes of Ndjebbana (adopted from Harvey 2003b)

In *Burrara*, *Gurrgoni* and *Ndjebbana* it is the initial consonant which signals clusivity. The first two are much more similar in structure, as well as in the actual forms. In the first two languages the categories of 1min and 1+2aug are involved in the flip. In *Ndjebbana* this is extended to the 1+2 unit–augmented. Furthermore, in *Ndjebbana* the independent pronouns exhibit the same flip, whereas in *Burrara* and *Gurrgoni* the independent pronouns are different. As was mentioned in 3.2.2., they neutralize clusivity in the non-minimal forms.

Another group of languages exhibiting a somewhat different flip are the Barkly languages [4]. In (Fig.24) the independent pronouns of *Wambaya* are given.

free pronouns	Singular	Dual	Plural
1	ngawurniji, ngawu	ngurluwani	ngirriyani
1+2		mirndiyani	ngurruwani
2	nyamirniji, nyami	gurluwani	girriyani
3		wurluwani	irriyani

Fig.24: the independent pronouns of Wambaya (Nordlinger 1998)

Wambaya has some form of *mi-* for the 1+2dual (the speaker–hearer dyad), which does not pattern with rest of the paradigm. This is a typical phenomenon for a number of other languages, within what has been grouped as the Mirndi subgroup (Green & Nordlinger 2004). These are *Jingulu*, *Ngarnga* and the *Wambayan* dialect cluster comprising *Wambaya*, *Gudanji* and *Binbinka*. The other first person form (+ the inclusive) exhibit the velar nasal as the initial consonant, which is similar to what has been observed in 4.1 in *Mangarrayi*. We can see that the non–singular forms, regardless of being dual or plural, all share an element *-wani* (after back vowels) or *-yani* (after front vowels). The dual

4 I would like to thank Rachel Nordlinger for pointing this out to me.

is further marked by an element *-rlu* (leaving aside the 1+2dual). Therefore the remaining stem, which signals clusivity is composed of the velar nasal and the first vowel. The exclusive dual form seems to pattern with the inclusive plural, both sharing the element *ngu-*. This kind of flip is different from the type attested before. The main difference in the Barkly languages lies in the fact that the first singular is not involved. Furthermore the first inclusive groups with the first exclusive plural, which is not the case in any of the patterns mentioned before. According to the pronouns set out in (Blake 1988: 57) almost all the Barkly languages share this pattern, (*Ngarnga*, *Wambayan*). Only in *Jingulu* (Pensalfini 2003) is the exclusive dual based on a stem *ngi-* and therefore patterns neatly with the exclusive plural instead of the inclusive plural. This seems to fit in with the doubt that (Green & Nordlinger 2004) cast on the Barkly languages as a subgroup, in which they emphasize the distance between these and *Jingulu*.

4.2.2. Partial clusivity flip – inclusive to exclusive

In the last type of clusivity flip there is regular morphological relation between just the inclusive dual (or minimal) and the exclusive non-minimal (or non-singular) forms. This case has been attested in *Jawoyn* (Fig.25), which is spoken in the centre of Australia's Top End.

	Minimal	**Augmented**
bound pronouns		
1	nga-	nyi-rri-
1+2	nyi-	nya-
2	nginy-	nu-
3	Ø- ,ga- (NP)	bu-
free pronouns		
1	ngarrk	nyi-rrang
1+2	nyi-yarrk	nya-rrang
2	nginy	nu-rrang
3	ngayu	bu-rrang

Fig.25: the verbal prefixes and independent pronouns of Jawoyn (adopted from Harvey 2003b)

As can be seen from (Fig.25), the element which signals clusivity is the first consonant in the minimal number and the corresponding vowel in the augmented number. The initial consonant of the inclusive augmented is also the palatal nasal, as opposed the velar nasal in the exclusive minimal.

The partial flip in *Gajirrabeng* is very similar (Fig.26). *Gajirrabeng* is spoken in the Northern Territory around the Victoria River.

	Minimal	**Augmented**
bound pronouns		
1	ngen-	yi-rr-
1+2	yi-	ya-rr-

Fig.26: the verbal prefixes of the 1. and 1+2 person of Gajirrabeng (adopted from Harvey 2003: 485)

The structure and the elements signaling clusivity here are similar to *Jawoyn* with the difference that in *Gajirrabeng* it is not the palatal nasal, but the lateral approximant. Apart from that the flip is obvious in both languages because the forms are number segmentable.

The third language which exhibits this kind of partial flip is *Anindilyakwa*, which is spoken in Groote Island. This is attested in the nominal prefixes in (Fig.27)

	Singular	**Dual**	**Plural**
nominal prefixes			
1	ningi-	yini- (masc.) yirri-ngi- (fem.)	yirri-
1+2		yi-	ngarri-
2	ningkwi-	kwini- (masc.) kirri-ngi- (fem.)	kwirri-
3	ni- (masc.) thi- (fem.)	wirrini- (masc.) wirringi- (fem.)	wirri-

Fig.27: the nominal prefixes in Anindilyakwa (Leeding 1996: 195)

The structure of the partial flip in *Anindilyakwa* is very clean. As the forms are number segmentable, we can strip of the number markers and arrive at a clear pattern, in which the morpheme *yi-* signals inclusive and exclusive dual and exclusive plural. The exclusive singular does not pattern with the inclusive plural however, as the singular has the rather unusual form *ningi-*. The inclusive plural is *ngarri-*.

4.3. Structure and distribution of the various clusivity flip patterns

In this section, I will give a structural and geographical overview of what has been said so far. There are two types of clusivity flip in the languages mentioned above; complete flip and partial flip. The latter can be subdivided again with regard to the direction, whether the cross-over takes place from the inclusive minimal (or singular) to the exclusive non–minimal (or non–singular) or vice versa. I will call them henceforth type A, B

and C respectively.

We have seen that number–segmentability plays an important role. The pronouns of most of the languages involved are in fact number–segmentable, leaving aside *Garrwa* and *Wanyi*, where this is not possible in a straightforward manner. However, once we strip off the number markers, the stems signal to which of the two categories the pronouns belongs. In most languages the stem is clearly assignable to one of the two categories. There are few (e.g.: *Wardaman*, *Ndjebbana*, *Garrwa* and *Wanyi*) where the forms are much messier. I have tried to capture this distinction by assigning a very rough scale or a 'flip score' to each language. Clean cases receive a 2. Obscured cases receive a 1.

I based this classification on the bound pronouns (verbal or nominal prefixes), as I believe these are more archaic and much more stable. This opinion is supported by Harvey (2003b). There are some languages, however, where I decided that the independent forms should be considered too. For example, *Wardaman* would not exhibit a flip (or only a partial flip), if we solely look at the verbal prefixes. The 1+2minimal *nga-yi-* form can be analysed as consisting of the 1min + the 2min, thus giving the literal translation *'I and you'*. The independent pronouns, however do exhibit a prototypical clusivity flip (*type A*). The actual stems in Wardaman, which signal clusivity are not exactly the same. For example, the augmented forms are *yirrug* for exclusive, *ngarrug* for inclusive and *nurrug* for the second person. The shared element of the three forms, which refers to the augmented number seems to be *-rrug* (Merlan 1994: 108). The remaining stems *yi-*, *nga-* and *nu-* are different from the minimal forms, *ngayugu* (for exclusive), *yawung-guya* (for inclusive) and *yinyang* (for second person). The inclusive minimal has a suffix *-guya*, which signals dual number. I call these the messy cases, because the forms are not exactly alike. However, in *Wardman's* independent pronouns it is still obvious that the exclusive minimal stem *nga-* crosses over in the augmented number to the inclusive. Likewise, I assume that some part of the inclusive minimal stem (*yV-*) crosses to the exclusive in the augmented number. In languages like *Ngandi*, *Rembarrnga* or *Mangarrayi* the situation is much clearer.

Another observation was made with regard to the element which signals clusivity. In cases like *Mangarrayi* or the Barkly languages it was only the first vowel which made the distinction between inclusive and exclusive, regardless of the number category. In *Mangarrayi*, the exclusive minimal *nga-* crosses over to the inclusive non-minimal forms, contrasting with the inclusive minimal *ngi-*, which goes the opposite way. In languages like *Nunggubuyu*, *Rembarrnga* or *Dalabon B*, it is only the initial consonant that signaled

clusivity. In *Nunggubuyu*, for example, the forms are *nga*- (1min), *ngi*- (1+2ua) and *ngu*- (1+2aug) as opposed to *na*- (1+2min), *ni*- (1ua) and *nu*- (1aug). As we can see, the vowel changes consistently in the number categories; /a/ for minimal, /i/ for unit–augmented and /u/ for augmented. Therefore it is only the two consonants the velar nasal and the alveolar nasal, which make the distinction. Most languages, however, employ a mixture of initial consonants and vowels.

In order to give the reader an overview of the phenomenon, I have included all of the information in the map on the next page (Fig.28). The two values in circles within each language area stand for the type of clusivity flip (A,B or C) and whether they are clean (2) or obscured (1). The shades of grey refer to the element which signals clusivity: light grey (only the first vowel), grey (mixture of vowel and initial consonant), and dark grey (only the initial consonant).

The phenomenon has not been reported in other parts of the world. Even within Australia the distribution is uneven. All the languages exhibiting the flip are non–Pama–Nyungan. Hence, the phenomenon occurs only in the North of the continent. There are no cases in the literature reported from Pama–Nyungan languages. My own dataset (in the Appendix) contains only a dozen Pama–Nyungan languages none of which exhibits clusivity flip.

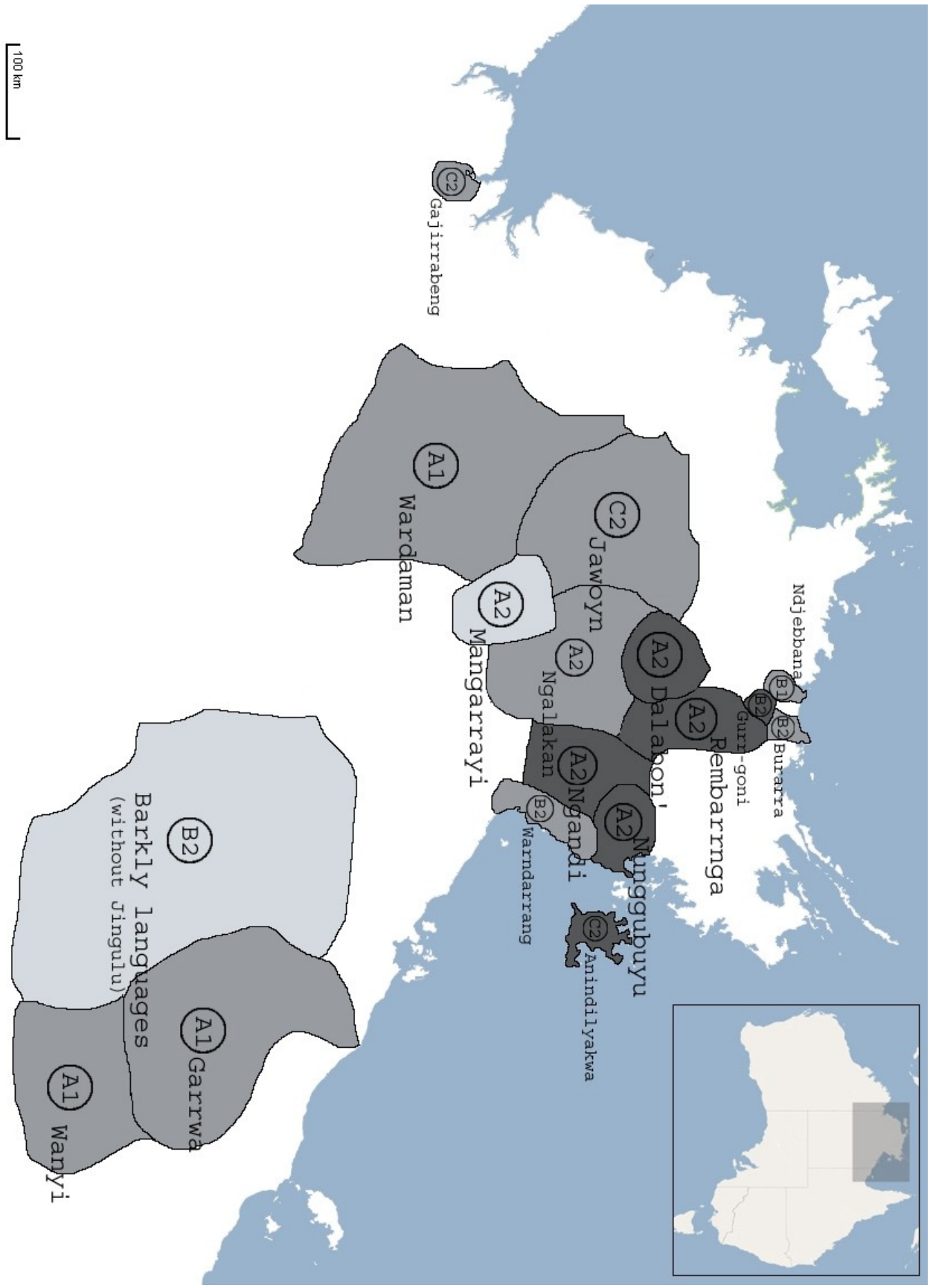

Fig.28: areal distribution of the various types of clusivity flip

5. Explanation(s)

A pattern like the clusivity flip demands an explanation. Aikhenvald and Dixon suggest that similarities amongst languages with regard to their forms or structures can be explained within 5 notions (2001: 1ff.). These 5 notions are: universal tendencies, chance, borrowing, genetic relatedness and parallel development. I will exclude the first two from further consideration. I believe that universal tendencies would demand a much broader distribution of the phenomenon that stretches beyond the Australian languages, yet until now examples of clusivity flip have not been reported outside Australia. Chance seems to be an unconceivable explanation for such a regular pattern.

The remaining three notions, borrowing (or diffusion), genetic retention and parallel development, will be considered in turn in the following sections. I want to give an obvious truth in advance by stating that no single notion will be sufficient. An integrated approach seems to be a more reasonable solution.

5.1. The influence of diffusion

Many authors have commented on the resistance of pronouns to borrowing (Heath 1978a, Blake 1988), whether they are free or bound. However, there are a number of cases where free pronouns have been borrowed. The best known case is certainly the Old English borrowing of the pronouns *they*, *their* and *them* from Old Norse, which replaced *hie*, *hiera* and *him* respectively (Baugh 1959). However, Blake comments on this well known case that it *'implies large scale lexical borrowing'* (1988: 4), which is certainly the case for Old English, but not for the languages in question. In the following section, I will review a small, but significant part of the literature on diffusion. There are a number of publications concerning this issue (Heath 1978a, Dixon & Aikhenvald 2001).

The most exhaustive study on diffusion in Aboriginal Australia is Jeffrey Heath's *Linguistic Diffusion in Arnhem Land* (1978a). Therein, Heath examines the diffusional patterns between the Pama-Nyungan languages of the Yolngu group (Ritharngu, Dhuwal), which are spoken in Northeast Arnhem Land, with the non-Pama-Nyungan languages (Rembarrnga, Ngandi, Nunggubuyu), which are spoken in the neighbouring country.

Heath (1978a: 102) gives no evidence for the diffusion of independent pronouns. On the contrary, he concludes that *'these forms have been highly resistant to borrowing'* (1978a: 102). Moreover, he goes on to exclude the bound forms as well. In general it has

been assumed by many authors that bound grammatical forms are much harder to borrow than free forms. This is due to what Heath calls *'the haziness of boundaries'* (1978a: 105). He states that *'grammatical morphemes and stems (the latter including pronominal and demonstrative stems) which have been most resistant to diffusion are therefore these: (a) verbal inflectional suffixes; (b) pronominal prefixes and prefix complexes added to the verbs; (c) independent pronouns; (d) demonstrative stems; (e) adverbial forms based on demonstrative stems.'* (Heath 1978a: 103).

This resistance to borrowing not only holds between typological different languages, like *Ritharngu* (Yolngu, Pama–Nyungan) and *Ngandi* (Gunwinyguan, non–Pama–Nyungan), but also between typologically more similar languages (*Rembarrnga*, *Ngandi* and *Nunggubuyu* – all non–Pama–Nyungan).

Another exhaustive cross–linguistic study on diffusion is Dixon and Aikhenvald's publication *Areal diffusion and genetic inheritance* (2001). Aikhenvald gives evidence from the unrelated languages *Bora* and *Resígaro* spoken in the Amazon basin. According to her study *Resígaro* has borrowed one personal pronoun from Bora (2001:185).

In the larger debate on the genetic relatedness of the Australian languages, Dixon suggests that pronouns hold evidence for diffusion. He points out the that the pronoun *ngali* (with 1dual or 1+2dual reference) is widespread across the Australian continent (viz. across the Pama-Nyungan languages), but is lacking 9 languages spoken on the fringe of the region. On several occasions, he employs this observation as evidence against *ngali* being a Pama–Nyungan innovation, but in favour of a diffusionist approach, in which *ngali* had spread across the Australian languages (2001: 97, 2002: 280). However, there are problems with this analysis. The pronoun is also present in the Yolngu languages and *Yanyuwa*, which are not part of the diffusion zone, but are separated from it by non–Pama–Nyungan languages.

A more general critizism against the diffusionist approach is launched by Evans (2005) in his review of Dixon's *Australian Languages*. He points out that by taking diffusion as a kind of null-hypothesis one makes falsifiability almost impossible. He concludes that by taking the opposite approach (postulating genetic relatedness) one is in a much better position for a *'refinement of general laws by the identification of borrowings'* (Evans 2005: 252).

The strongest evidence against diffusion in our case comes from the examples of clusivity flip itself. As we have seen in chapter 4.1. and 4.2., the actual forms are different. They are different even in the contiguous language area in Arnhem Land, for example

between *Nunggubuyu*, *Ngalakan* and *Mangarrayi*. Hence, this structure cannot have diffused directly.

However, indirect diffusion can still have an influence. The clusivity flip, as we have seen above, is a structural phenomenon. The actual forms involved vary from language to language and even the elements signaling clusivity vary. Therefore, another approach is to argue for indirect diffusion. Ross (1999 & 2001) coined the term metatypy in order to describe a *'change in morphosyntax and grammatical organisation which a language undergoes as a result of its speakers' billingualism in another language.'* (1999: 7) Metatypy is typically driven by calquing, viz. the copying of contructions when translating from one language to the other. Hence, calquing can account for new syntactic or morphological patterns in a language (syntax) and grammatical reorganisation (semantics). There are some examples for structural diffusion. In the Amazonian basin, as Aikhenvald (2001) points out, *Resígaro* has borrowed a Dual number category without borrowing the actual forms.

Heath points out that indirect borrowings in Arnhem Land are of a functional nature (1978a: 125 ff.). *Ritharngu*, unlike *Dhuwal* and other Yolngu languages, has borrowed a functional principle, namely that in clauses a pronominal cross-reference through bound pronouns is obligatory. This is the case in *Rembarrnga*, *Ngandi* and *Nunggubuyu*, but not in *Dhuwal*, where a subject is sometimes unspecified leaving its identification to discourse context (1978a: 127). Heath does not mention structural diffusion of the kind that would explain a particular pattern of distribution in a pronoun paradigm.

We have seen that it is not possible to exclude pronouns from diffusion, although examples are rare. Bound forms are even less prone to borrowing. It is generally difficult to develop universal hierarchies and contraints on borrowing. I agree with Timothy Curnow, who concludes Dixon and Aikhenvald's book by stating that we *'may never be able to to develop such constraints'* (2001: 434).

As we have seen, direct diffusion can be excluded from the list of explanations for clusivity flip. In a contiguous area like Arnhem Land one would expect to find forms, which are similar or which at least can be related to one another.

Indirect borrowing or metatypy, on the other hand, may well have played a role. These processes have influence on important constraints on the reshaping of a pronominal paradigm. For example, the number system (relative vs. absolute) might have changed due to metatypy. A dual category might also have been borrowed from one language to the other, as we seen in Aikhenvald's example.

5.2. Genetic inheritance

In order to assess the influence of genetic rentention, we have to begin by reviewing the families and subgroupings that are involved in the phenomenon. (Fig.29) gives an overview of the current classification of non–Pama–Nyungan languages. As we can see from (Fig.28) above, there are at least 3 discontinuous blocks in which the clusivity flip occurs.

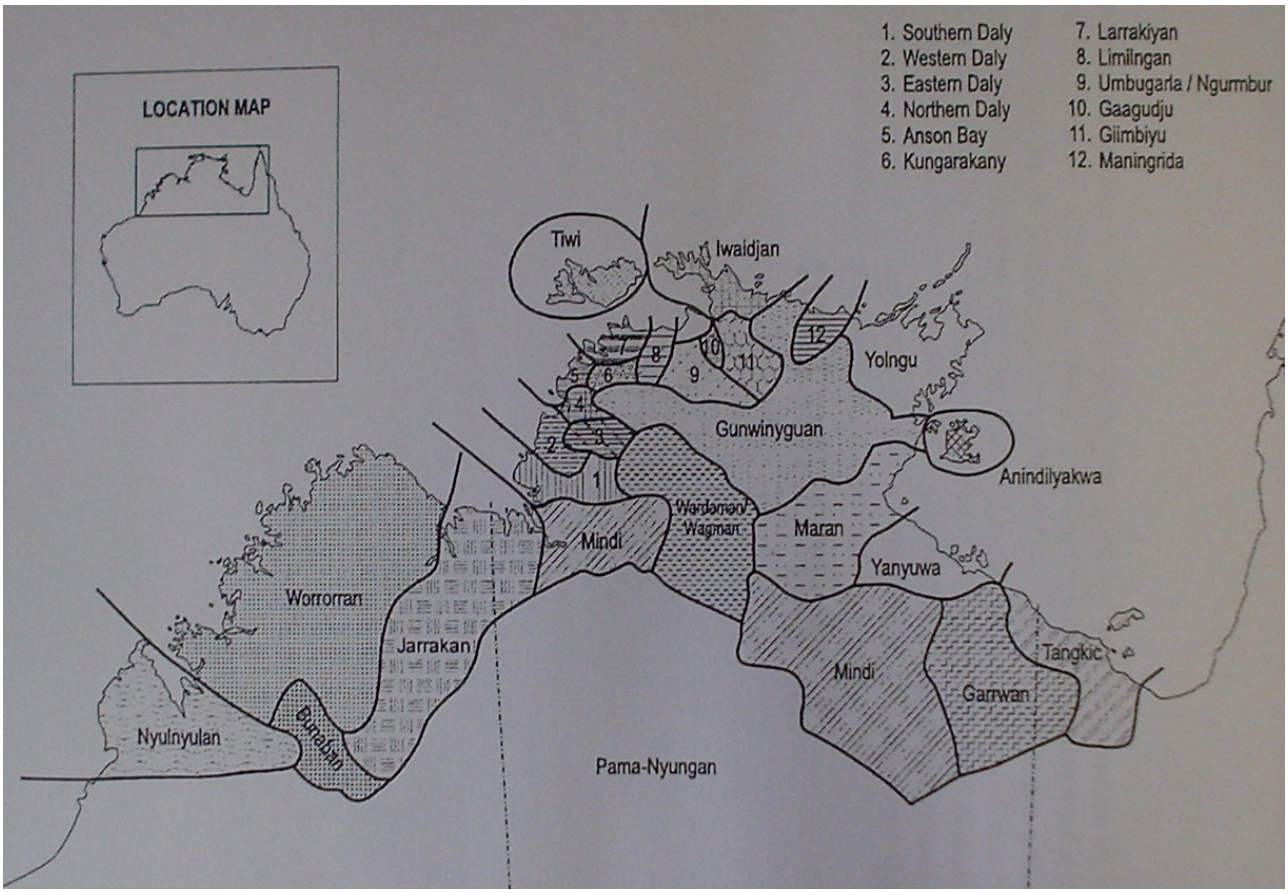

Fig.29: The non–Pama–Nyungan families (adopted from Evans 2003b: 303)

Most of the languages languages that are involved in clusivity flip are spoken within Arnhem Land. The Gunwinyguan family is certainly the largest family in this area. It was originally set up by O'Grady et al. (1966) and has undergone many changes since. The revised family tree of Gunwinyguan is illustrated in (Fig.30).

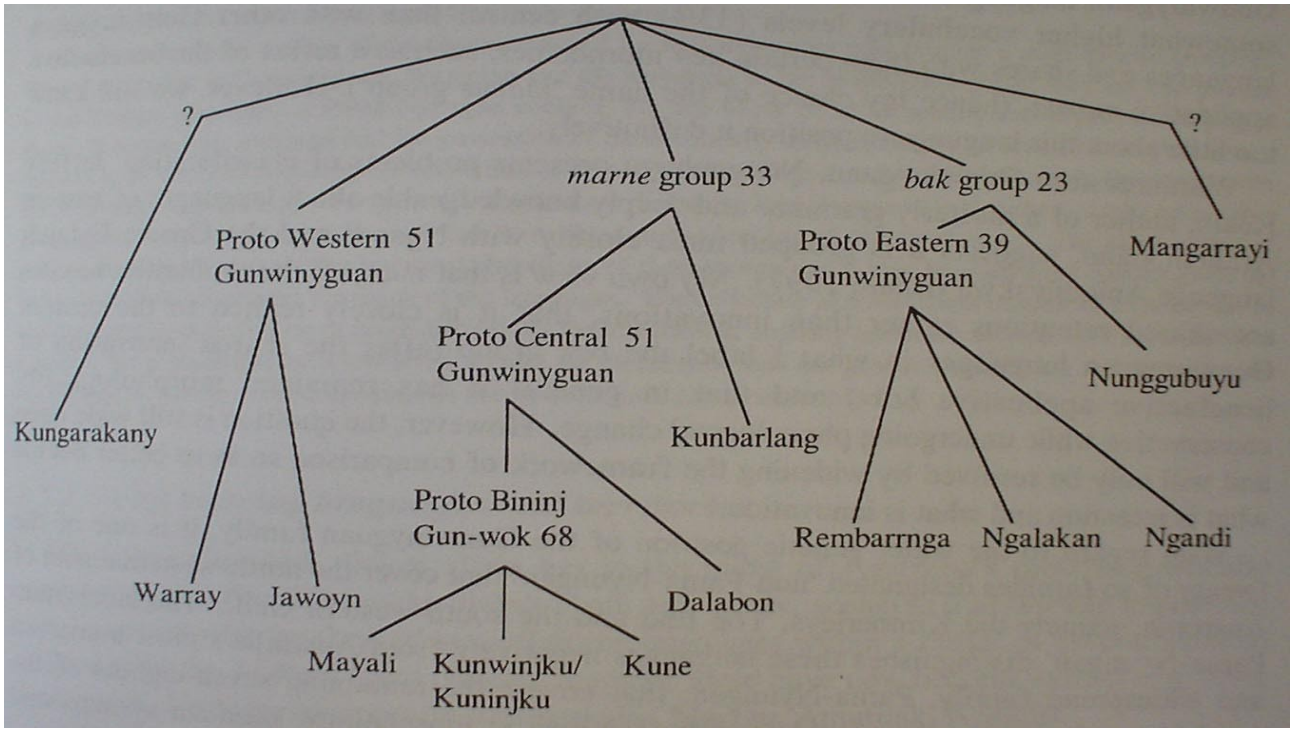

Fig.30: The Gunwinyguan family (adopted from Evans 2003a: 33)[5]

In the following section, I will go through these languages briefly addressing their genetic relatedness. Mark Harvey (2003a) has grouped *Jawoyn* together with *Warray* as belonging to Gunwinyguan. He remarks that both are closer related to one another than each is to any other Gunwinyguan language. However, *Warray* does not exhibit the clusivity flip. Evans' *marne* group (see Fig.30) does not exhibit the clusivity flip with the exception of *Dalabon*, in which a prototypical flip is attested. All the members of the *bak* group display the flip. Amongst these, Brett Baker (2004) gives evidence for a closer relation between *Rembarrnga* and *Ngalakan* based on the morphology of verbal inflection. Heath has suggested grouping *Nunggubuyu* with *Ngandi*, hence including it in the Gunwinyguan family. *Nunggubuyu* was considered as an isolate before. Furthermore, he argues that *Anindhilyakwa* is another member of Gunwinyguan (Heath 1997). Evans is careful with this assumption pointing out that *'the evidence here is slender and in my view one should, for the moment, maintain the conservative position that it is a family-level isolate.'* (2005: 224). The status of *Mangarrayi* is uncertain. Francesca Merlan groups it within the Maran languages, based on the demonstratives and nominal prefixes (Merlan 2003). Alpher, Evans and Harvey (2003) include *Mangarrayi* within the Gunwinyguan family on the basis of verb suffixes.

Warndarrang is closely related to *Alawa* and *Mara*, the Maran languages (Heath

5 Nick Evans pointed out to me that the position of Kunbarlang is already outdated.

1980). However, only *Warndarrang* displays the clusivity flip.

Rebecca Green (2003) suggests that *Burrara* (and Gurr–goni), *Nakkara* and *Gunavidji* (*Ndjebbana*) should be grouped in a single family, which she calls Maningrida. *Burrara*, *Gurr–goni* and *Ndjebbana* display the same type of flip. In *Nakkara* it is not attested at all.

Wardaman was placed originally within Gunwinyguan, but Merlan (1994) stresses the close relatedness between *Wardaman*, *Yangman* and *Wagiman*, based upon verbal particles (1994: 4). The group is often called *Yangmanic*. Within it only *Wardaman* displays the clusivity flip (only in its independent forms).

Gajirrabeng has been classified as a member of the Jarrakan family within the Mirriwung subgroup (McGregor 1988: 45). Unfortunately there was not much material on the language available to me. I took the verbal prefixes from (Harvey 2003b: 485). An important observation is that the closely related *Mirriwung* does not exhibit the flip.

Garrwa and *Wanyi* form a family of their own (Breen 2003), which is called the Garrwan family. Both display the same type of clusivity flip.

The Barkly languages make up the Eastern part of the Mirndic subgroup (Chadwick 1997). Although Green & Nordlinger (2004) have questioned the existence of such a group, they conclude that it is at the moment the *'most plausible means of explaning the pronominal similarities'*, namely the inclusive dual form *mirnd* or *mind* (2004: 310). As we have seen above, the *Wambayan* dialects and *Ngarnga* share the flip. The Western Mirndic languages, but also *Jingulu* (Eastern) do not exhibit the flip. This observation supports the proposal of a Ngurlun subgroup containing *Wambayan* and *Ngarnga*, which has been suggested by (Green & Nordlinger 2004).

We can clearly see from the language families and subgroups, that the clusivity flip contradicts these in a number of cases. For example, *Dalabon* is the only language within its subgroup that displays the flip. Although *Jawoyn* and *Warray* are closely related, only in the former the flip is attested. *Mangarrayi* is different from the other members of its group, regardless of whether one groups the language within Gunwinyguan or Maran. If we follow (Alpher, Evans & Harvey 2003) *Mangarrayi* contradicts the other Gunwinyguan languages in that it distinguishes inclusive from exclusive only by the vowel and not by the initial consonant. If we accept (Merlan 2003) and group *Mangarrayi* within the Maran family, then it is only *Warndarrang*, which displays the flip in the family. In the remaining two languages, *Alawa* and *Mara*, it is not attested.

Within the Gunwinyguan family, the forms are not related through sound changes.

For example, the pronominal stem, which crosses over from the inclusive to the exclusive in the Gunwinyguan languages varies a great deal, as can be seen in (Fig.31) from the first five languages (the status of *Mangarrayi* and *Nunggubuyu* is uncertain).

	inclusive to exclusive	exclusive to inclusive
Jawoyn	nyi-	nga- / nya-
Ngandi	nya-	nga-
Ngalakan	yi-	ngu-
Rembarrnga & Dalabon	ya-	nga-
(Mangarrayi)	ngi-	nga-
(Nunggubuyu)	nV-	ngV-
Garrwa	nu-	nga-
Warndarrang	nyV-	nga-

Fig.31: pronominal stems

We can clearly see that the pronominal root, which crosses over from the exclusive to the inclusive is much more stable across the different languages, than vice versa. However, this root is also stable compared to unrelated languages, like *Garrwa* and *Warndarrang*. Hence, the pronominal root which is much more informative concerning genetic relatedness, is the one crossing over from the inclusive to the exclusive. As can be seen from (Fig.31), this root cannot be traced back to a common, possibly proto–Gunwinyguan, ancestral root.

There are some examples, where the occurrence of the clusivity flip matches the genetic relatedness in structure as well as in the actual forms. In the cases of the Barkly languages and the Garrwan languages the distribution supports the genetic analysis as we have seen above.

Following these observations, one can make only a very general statement on the influence of genetic inheritance, viz. that the languages are all non–Pama–Nyungan. However, it is an interesting observation in itself that to my knowledge there is no evidence from Pama–Nyungan languages[6]. This might be due to the lack of number–segmentability.

In this section, I have pointed out that genetic inheritance alone is an insufficient explanation, but it should of course be taken into account. For example, the Wororan and NyulNyulan languages do not display any kind of clusivity flip. It follows that genetic inheritance plays a role at a very deep level where all of the non–Pama–Nyungan languages are ultimately related.

6 The claim is somewhat hypothetical, as I have not enough Pama–Nyungan languages in my dataset. I have included a couple of Pama–Nyungan languages (from across the continent) in the Appendix. However, there are no relevant cases of person syncretism in Pama–Nyungan languages reported in the literature.

5.3. Parallel development

A well–known case of independent development is the verbal suffix *-st* in German and English, which marks the 2nd person. The development took place after the languages split. Dixon describes the notion of parallel development as follows: '*Two languages (of the same genetic group, or from the same linguistic area) may share an inner dynamic which propels them to change, independently, in the same way.'* (2002: 22). The same idea was captured in Sapir's notion of *drift* (1921).

Indeed, this might be the most reasonable explanation for the clusivity flip. But what kind of *inner dynamic* can account for changes of this kind? (Harvey 2003b) remarks that the 1+2 combination should be viewed as a *'point of paradigmatic weakness [...] The 1+2 combination is therefore a prime target for continual morphological remodelling.'* (2003b: 489) We should therefore conclude that the languages in question share the inner dynamic of resphaping and reshuffling their pronominal paradigms. Moreover, this inner dynamic follows certain preferences or it is limited by constraints which are shared across the languages too. Harvey points out two preferences with regard to this reshaping: *'One is a preference to indicate the participant vs non–participant opposition by commonly marking all members of the participant category. The other is a preference to distinguish the various person + number subcategories within the overall participant category.'* (2003b: 485) We can see that the two can contradict one another and create the kinds of syncretism described above.

5.3.1 Problems of sketching out a semantic path

This leads us back to the distinction between *accidental symmetry* vs. *motivated symmetry*, which Harvey also comments on (2003b: 478). A *motivated symmetry* would require us to sketch out a semantic path which the actual forms took. One such path is to suggest that the non–singular inclusive had undergone semantic narrowing at some stage. Therefore, it must have originally referred to both inclusive and exclusive. This means that markedness is involved here. There are several meaning of the term markedness. For example, a word can be expanded by a number marker or by a case marker. Hence, it is grammatically marked. However, I use the term here differently. Markedness also distinguishes two expressions, in which one expression denotes a subset of the other. In other words, one pronominal form might denote the inclusive and exclusive category

(unmarked), whereas another form only denotes one of the two, but not the other (marked). This implies a special usage of the marked form. Hence, the unmarked form occurs more often. Following others (e.g.: Robertson 1983), I assume, that when a category undergoes markedness split, viz.: each category (inclusive and exclusive) receives a separate form, the original form remains with the unmarked, whereas the marked form is created anew.

In order to proof that the inclusive stem derives from this original form, we would have to find empirical evidence, that shows that the inclusive is the unmarked category. Hence, the inclusive would have to occurs more often, than the exclusive. In a simple corpus analysis, I have counted the number of occurences of inclusive vs. exclusive for each number category. The text samples are taken from three languages: *Nunggubuyu* (Fig.32), *Wardaman* (Fig.33) and *Kunwinjku* (Fig.34).

	min	ua	aug
1	524	44	1054
1+2	25	16	97
total	549	60	1151
ratio (1 / 1+2)	95% / 5%	73% / 27%	92% / 8%

Fig.32: number of occurences of incl. vs. excl. in Nunggubuyu (corpus: Heath 1980)

	min	aug
1	209	154
1+2	19	14
total	228	168
ratio (1 / 1+2)	92% / 8%	92% / 8%

Fig.33: number of occurences of incl. vs. excl. in Wardaman (corpus: Merlan 1994)

	min	ua	aug
1	53	0	32
1+2	4	0	20
total	57	0	52
ratio (1 / 1+2)	93% / 7%	-	61% / 39%

Fig.34: number of occurences of incl. vs. excl. in Kunwinjku (corpus: Caroll 1995)

It is clear from the three tables that the empirical data not only contradicts this assumption, but in fact gives counter–evidence. At a ratio of 92 percent to 8 percent there

is no question about which of the two, the inclusive or the exclusive category occurs more often. Hence, the exclusive is the unmarked category.

However, in a large number of languages not exhibiting the clusivity flip, the inclusive form is based on the exclusive singular stem. Consider *Kunbarlang* below (Fig.35).

	Singular	**Dual**	**Plural**
bound pronouns			
1	nga-	nga-na-	nga-tta-
1+2		nga-rrki-	
2	ki-	ngu-nu-	ngu-ttu-
free pronouns			
1	ngayi	nganangka	ngarrka
2	nguda	nungutbe	nungutbe

Fig.35: verbal prefixes and independent pronouns of Kunbarlang (taken from Harvey 2003b)

As in *Kunwinjku*, the independent pronouns of *Kunbarlang* neutralize the inclusive–exclusive opposition. The first person plural is *ngarrka*. In the verbal prefixes, there is a single form referring to the inclusive without number distinction. This form is *ngarrki-*, which suggests that the semantic path of the inclusive form originates in the first person plural.

Another example comes from the Wororan languages, spoken in the Kimberleys. The verbal prefixes of *Worora* are given in (Fig.36).

	Minimal		**Augmented**
bound pronouns			
1	nga-		a-rr-
1+2		nga-rr-	

Fig.36: the verbal prefixes of Worora (taken from Harvey 2003b)

Again there is only one form covering all the number categories in the inclusive. The form is built on the stem *nga-*, which refers to the first singular exclusive. The same is attested in *Umida*, *Gunin* and *Wunambal*.

In the light of all the languages that built their inclusives on first person stems (and there are more than those, which display the clusivity flip), it seems that the data from the corpus analysis cannot be correct. In the Wororan languages and in *Kunwinjku*, the process of markedness split has left us with a puzzling observation: Accepting the assumption that the original form remains with the unmarked category, we would have to conclude that the inclusive is in fact the unmarked category and not the exclusive (as the data from the corpora show). The answer to this might lie in the pragmatics of the

recording procedure of the texts that constitute the corpora. When looking into the concrete usage of the inclusive forms in the text, I observed that most of these occurred in direct speech of the characters in the stories. Only a few inclusives occurred with reference to the storyteller and the addressee (in this case the linguist)[7], which is the common usage for inclusives. It seems that by the pragmatics of a situation in which a person tells stories about his/her own culture to a potential stranger, the use of inclusives of limited and therefore less likely to occur. In the third corpus (Kunwinjku (Fig.34) the linguist, who recorded the stories, was more embedded in the situation. The diverging percentages support this analysis. The distribution between exclusive and inclusive augmented in Kunwinjku is 61% / 39% (in Nunggubuyu it was 92% / 8%). The main problem with these kinds of criteria is that they are hard to operationalize. Therefore it is difficult to find useful data to decide which is the unmarked category. All that we are left with are the traces in the pronominal forms.

5.3.2. Possible paths

In this section, I will propose another approach to the problem, which allows us to trace gradual changes within a pronominal paradigm. The central questions can be phrased like this: How many steps do I need to arrive at the structure of the clusivity flip? How many different paths are there to arrive at the clusivity flip? Are there other languages that attest the structures which emerge at intermediate steps of the process.

In order to arrive anywhere, one needs a starting point from which we can postulate a gradual step-by-step change. There are two deep–level reconstructions of non–Pama–Nyungan pronouns. These are (Blake 1988), who reconstructed a set of independent pronouns (Fig.37) and (Harvey 2003b), who reconstructed a set of verbal prefixes (Fig.38).

	Minimal / Singular	**Augmented / Plural**
1	*ngay	*nyi-rrV
1+2	*nya	*nga-rrV
2	*nginy	*nu-rrV, ku-rrV
3	*nu (non-feminine) *ngaya (feminine)	*pu-rrV

Fig.37: Blake's (1988) reconstructed set of independent pronouns

7 for examples of direct speech, look into: (Heath 1980b) text examples 155.1, 163.20,167.2 or (Merlan 1996) text examples: text VII (11), text IX (118), text XVII. for examples in which the linguist is addressed, look into (Merlan 1996) text example: text III (313)

	Minimal / Singular	Augmented / Plural
1	*nga-	*yV-rrV- ~ *nyV-rrV-
1+2	*mV-	*ngV-rrV-
2	*cV-	*nV-rrV-, *ku-rrV-
3	*ka- (NP), Ø-	*pV-rrV-

Fig.38: Harvey's (2003b) reconstructed set of verbal prefixes

Let me draw your attention to the fact that Blake's reconstruction displays a prototypical flip. It is signaled by a combination of initial consonant and the following vowel (*nya/nyi for inclusive to exclusive and *nga for exclusive to inclusive). Harvey's reconstruction exhibits a partial flip from the exclusive to the inclusive (*nga-/ngV-). Harvey argues that the 1+2min **mV-* must have been present in the ancestor language, because it is attested in a number of languages in non–contiguous areas (2003b: 492).

I will take Harvey's reconstruction as starting point, because I agree with him in the fact that bound prefixes are more archaic and less subject to change than the independent forms (2003b: 477). In order to properly trace the changes within Harvey's reconstruction, I will replace the actual forms with variables (Fig.39). Furthermore, I will consider only the inclusive and exclusive categories and blend out the second the third person.

	Minimal / Singular	Augmented / Plural
1	a	b-pl
1+2	c	a-pl

Fig.39: abstract structure of Harvey's reconstruction

The lower case letters (a,b,c) stand for the different pronominal roots. The *-pl* stands for a segmentable plural/augmented marker. I will introduce a *-2* element for a segmentable dual/ua marker. Thus we arrive at a schematic representation, like in (Fig.40).

	Minimal	Unit Augmented	Augmented
1	a	a-2	a-pl
1+2	b	b-2	b-pl
	Singular	**Dual**	**Plural**
1	a	a-2	a-pl
1+2		b-2	b-pl

Fig.40: schematic representations with variables a & b (relative and absolute number system)

There are two kinds of changes in the model that i propose. There is either a change in the actual forms or there is a change in the grammatical organisation of the paradigm. The former results by adding a number marker (*-pl* or *-2*) or by replacement of

one form by another or by the loss of a form. The latter change includes the creation of new categories (e.g.: dual or unit-augmented number category).

Furthermore, I will set out two constraints. Firstly, each step involves only one morphological replacement, loss or change. The only exception is a step which involves a change in the grammatical organisation. By creating a dual or unit-augmented category we need to introduce two forms at the same time. Secondly, no new forms are introduced. The existing forms may be lost or shift their meaning. They might receive number markers through analogical leveling, but there will be no new forms. The resulting pathways are confusing at first sight (Fig.40). The table are numbered (1 – 22). In each table the elements affected by a change are shaded.

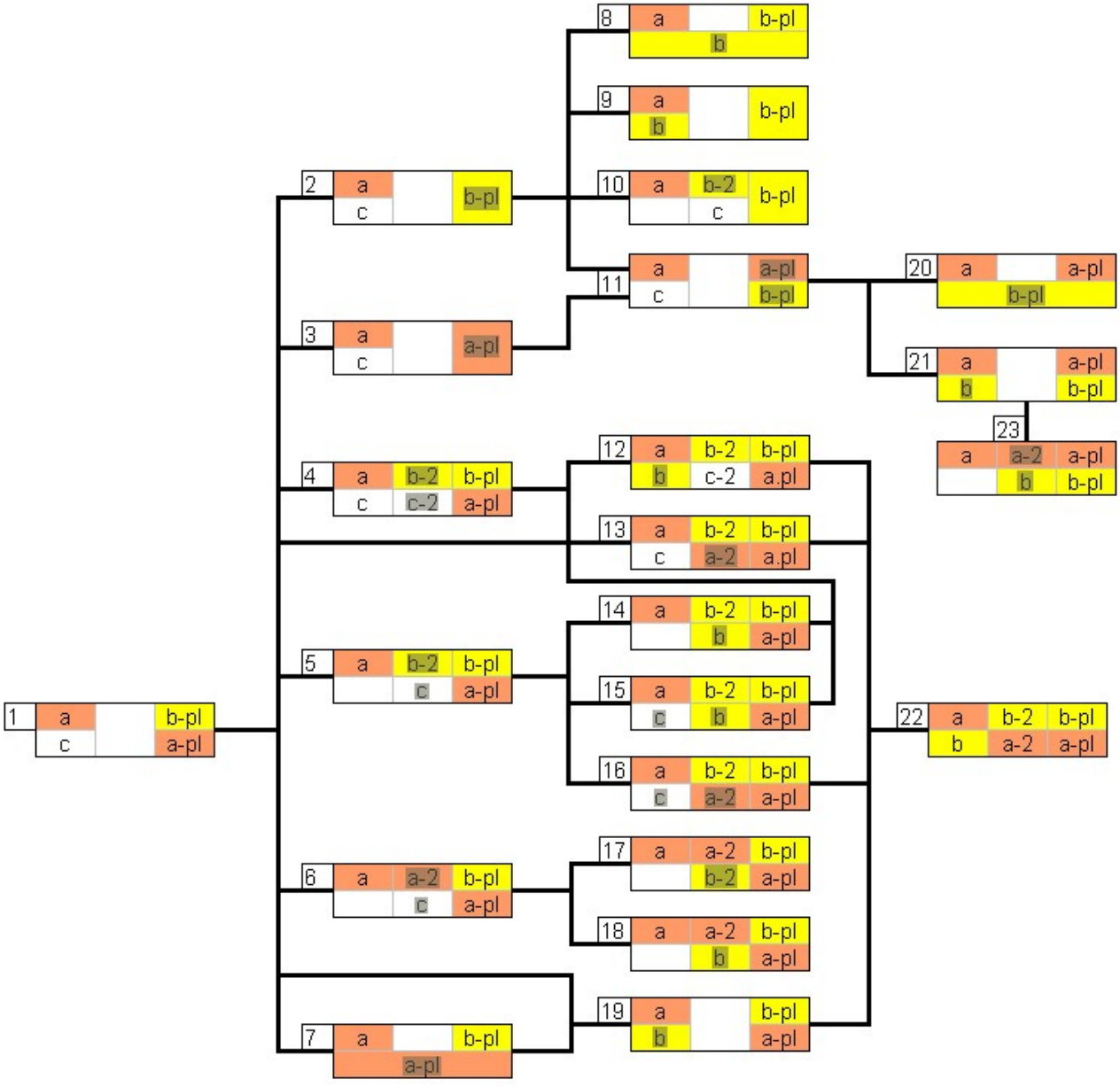

Fig.40: scheme of gradual change (starting from Harvey's reconstructed prefixes in table 1)

The table is read from left to right. Starting from table 1, which represents the structure of Harvey's reconstruction, we see that there are number of options (2–7, 13 & 19), which one another open for another set of options (8–19) and so on. A twofold distinction can be made between those tables exhibiting the clusivity flip (regardless of the particular type) and those which do not exhibit the clusivity flip. The former are expressed in tables 4–7, 13 & 19. The latter are expressed in table 2 & 3.

For clarification, I will go through three pathways. Firstly, the change from table 1 to table 7 involves the loss of the **c** form, thus neutralizing the number distinction in the inclusive. The **a-pl** form covers the inclusive minimal and augmented. In a second change from table 7 to table 19, analogical leveling has created a new inclusive minimal form **b**, which is based on the exclusive augmented **b-pl**. One can arrive at table 19 directly from table 1 by replacement of the **c** form. In a third step from table 19 to table 22 the grammatical organisation of the paradigm is changed by introducing a unit-augmented number category. Hence, two new forms are created. Again by analogy, these are based on the augmented forms **b-pl** and **a-pl** of the respective category.

A second pathway starts with the change from table 1 to table 5. Here, a new number category (dual) is created. By analogy the exclusive dual form **b-2** is based on the exclusive plural form **b-pl**. A similar change take place between table 1 and table 6. The difference here is that by analogy the exclusive dual form **a-2** is based on the inclusive plural form **a-pl**. Continuing from table 5, there are three options, table 14–16 respectively. Table 15 and 16 involve a change in the grammatical organisation, because the number system changes to a relative number system. Hence, the **c** form is treated like a singular. The newly created form can be based either on the inclusive plural (**a-2** – table 16) or on the exclusive dual/plural (**b** – table 15). The third option (table 14) would not change the number system, but simply replace the **c** form with a **b** form. In a third step all the three tables can change again. By replacement, table 16 would change to a prototypical clusivity flip in table 22. Tables 14 & 15 need two further steps in order to arrive at table 22. The step to table 13 involve for both (table 14 & 15) the replacement of the inclusive dual (unit–augmented in table 15). The status of the **c** is not important here. In a final step the **c** form is replaced or created anew in order to arrive at the prototypical clusivity flip in table 22.

A third pathway starts with the change from table 1 to table 2. As we can see, the **a-pl** form is lost in this step. Only in a second step, which involves the kind of markedness split mentioned above (table 2 to table 11), the **a-pl** form is created anew. This time its reference is not the inclusive plural, but the exclusive plural. Alternatively, one could arrive

at table 11, via table 3, which involves the loss of the **b-pl** form. In a third step from table 11 one could simply replace the **c** form (and arrive at table 21) or the **c** form is lost (table 20). Going back our pathway to table 2, there are other alternatives available. In a step from table 2 to table 8 (or table 9) a new **b** form is created by analogy. In table 8 this **b** form is refering to the inclusive category without number distinction. In table 9 it refers only to the minimal inclusive. In the step from table 2 to table 10 the dual number category is invented, thus creating by analogy a **b-2** form, which is based on the plural **b-pl**.

It is obvious that these structural changes can become quite complicated and tricky. However, the advantage of such an analysis is that we can search for languages, which fit the various tables. The following languages[8] match the structural patterns in (Fig.40):

table 4: Burrara, Gurr-goni (assuming that the 1+2min & 1+2ua dropped the initial /m/)
table 7: Wunambal, Umida, Ngarinyin, Gunin, Worora
table 8: Mirriwung, Kija
table 9: NyulNyul, Bardi, Yawurru, Nyigina
table 10: Ngaliwurru
table 11: Limilngan
table 14: Warndarrang, Dalabon A
table 17 & 18: Garrwa, Wanyi
table 19: Rembarrnga (prefixes), Wardaman (free pronouns), Ngalakan
table 20: Iwaidja, Maung
table 22: Rembarrnga (free pronouns), Nunggubuyu (prefixes), Ngandi, Dalabon B
table 23: Alawa

6. Conclusion

It seem quite obvious that structural reshaping can account for a number of patterns found in the languages of Australia's Top End. The forces which lead to changes of this kind are well attested. The two preferences mentioned by Harvey (2003b) play an important role here. Firstly, the preference to mark the participant commonly as opposed to the non–participants. Secondly, to distinguish the various person and number combinations within the participant category. In addition to the two preferences there is a tension between the absolute and the relative number system, in which the actual form

8 pronominal paradigms of the dataset are given in the Appendix

shift their references or in which new forms are created through the power of analogical levelling. Furthermore, we have seen that there a numerous ways to arrive at a pattern of clusivity flip, without some special motivation. The only motivating element is the presence of clusivity flip in the reconstructed forms. Starting from these reconstructions, the path leading to some kind of clusivity flip seems to be a natural and likely way of structural reshaping. This way we are able to explain the phenomenon of the clusivity flip in most languages.

An interesting observation can be made concerning the stability of paradigms, when we compare table 14 with table 17 & 18. As you can see, I have indicated no further change from table 17 & 18 to table 22. The reason for this is that another step would create a type of clusivity flip that cross-cuts between the unit-augmented and the augmented number (and not between the minimal and the non–minimal numbers). This pattern is not attested in any language and seems highly unlikely. In order to arrive at table 22 (from table 17 or 18) the dual form (or unit–augmented form) would have to shift its meaning from exclusive to inclusive. This process would have to take place independently of other number categories. However, it seems that the dual (or unit–augmented) category is the main target of analogical levelling. It is not subject to semantic shift independent of the other number categories.

We can find evidence for this, if we compare the languages that exhibit this pattern. *Garrwa* and *Wanyi* are examples for table 17 & 18. The forms in those two languages are not number segmentable in a straightforward manner, it is hard to decide between table 17 and 18. However, an example for table 14 is *Warndarrang* and *Dalabon A*. We saw from Evans' remark, that one speaker employed a relative number system, which then changes table 14 (*Dalabon A*) to table 22 (which I called *Dalabon B*). It seems that in the case of *Dalabon*, a change between the two patterns, regardless of direction, is possible. *Garrwa* and *Wanyi* display a much more stable pattern and therefore this change is unlikely.

Another interesting conclusion lies in the fact, that the clusivity flip seems to result from a natural pathway of structural reshaping, because the reconstructed forms already display a partial flip. This implies, that languages like *Kunbarlang*, *Limilngan* or *Maung* have developed away from the original reconstruction, because in these languages the exclusive augmented forms align with the exclusive minimal. The exclusive augmented must have shifted its meaning from originally referring to the inclusive. This could oly be explained through markedness split. We thus, would face the same problem as in chapter 5.3.1. It seems to be unclear, which of the two, inclusive or exclusive, is the unmarked

category. Maybe, the balance is relatively even and therefore only a small margin decides which is the unmarked. This would explain the variation between languages, in which the forms cross over and those in which the form align.

I do not want to conceal problems with my analysis. There are three flaws in this theory. Firstly, these structural changes are based on the assumption that we can relate the observed forms to the ones found in Harvey's reconstruction. This is possible mainly through the initial consonants. However, there are a number of languages (e.g.: *Mangarrayi* & the Barkly languages), in which the first vowel signals clusivity. In these languages the initial consonant is the same in the inclusive and the exclusive. It is obvious that we cannot explain these changes, because it is difficult to relate these stems to the reconstructed forms.

Secondly, the languages exhibiting a partial flip C (from the inclusive to the exclusive) also cannot be explained in this theory. These languages are *Gajirrabeng*, *Anindhilyakwa* and *Jawoyn*. We could of course posit sound changes, which would then change the type of the flip. In *Anindhilyakwa*, for example, it is only the first person singular *ningi-*, which does not fit in. If we assume that this form changed at a later stage and therefore can be related to a velar nasal (ng), we could posit a prototypical flip for *Anindhilyakwa* at this earlier stage.

Thirdly, the structural patterns of reshaping do not involve the second person. We have seen from the syncretisms in chapter 3.2, that the second person is involved in many of them. A further study should expand the structural reshapings in order to include the second person. This would of course increase the number of possible scenarios exponentially. However, it should provide insight as to the degree of involvement of the second person in patterns like clusivity flip.

I have set out two goals at the beginning of this paper. One was to develop a typology of the phenomenon. The other was to explain why it occurs. It will be obvious to the reader that I have progressed further with the former. However, I have demonstrated that a counter-intuitive pattern like the clusivity flip can be explained through structural reshuffling and reshaping of pronominal paradigms. In addition to that, the role of genetic inheritance becomes obvious, as most of the patterns can be related to Harvey's reconstruction of proto non–Pama–Nyungan prefixes. In some cases the structural changes support previous genetic analysis. In others, like the Gunwinyguan languages, genetic relatedness is not sufficient. The third influence comes from diffusion. An inner dynamic and a coherent strategy to mark number categories with segmentable number

markers may well have diffused over the languages in question.

A structural approach to the analysis of pronominal paradigms of Australian languages can provide further insight to their development. It can also support research, which has been achieved on other grounds, e.g. the comparative method. Futhermore, it offers the kind of groundwork, which will prove most useful to typological questions concerning the stability of grammatical paradigms.

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8. Appendix

Sources for the languages are given in the text. Languages that are not cited in the text, but appear here, are taken from (Harvey 2003b). The sources for the Pama – Nyungan languages are given with the languages below.

Alawa

	Singular	Dual	Plural
bound pronouns			
1	nga-	ngu-rr-	ngu-l-
1+2		nya-	nya-lu-
2	yi-	wu-rr-	wu-l-
3	na- (masc) arr- (fem)	yi-rr-	yi-l-
	Singular	**Dual**	**Plural**
free pronouns			
1	ngina	nga-rru	nga-lu
1+2		nyanu	nya-lu
2	nyagana	wu-rru	wu-lu
3	nu-rla (masc) ngadu-rla (fem)	yi-rru-rla ~ yu-rru-rla	yi-lu-rla ~ yu-lu-rla

Bardi

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	nga-		a-TNS-rr-
1+2	a-		a-TNS-rr-
2	mi-		gu-TNS-rr-
3	i-		i-TNS-rr-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngayu		arrudu
1+2	ayu		arridil
2	ju		gu-rr
3	ginying		i-rr

Bininj gun-wok

	Minimal	Unit Augmented	Augmented
1	nga-	(ng)ani- / ngane-	(ng)arri-
1+2	ngarr-	gani- / kane- ngune-	garri- ngurri-
2	yi-	Dj (ng/g)uni- W (ka)bene-	Dj (ng/k)urri- W (ka)bene-
3	M ga- / ba- K ka- / Ø -	M (ga)bani- E (ka)bini-	M (ga)bani- E (ka)bini-
	Minimal		**Augmented**
free pronouns			
1	ngaye I ngayi E ngayih		(ng)ad
1+2	ngad ngudda		(ng)ad ngudda
2	Dj (ng/g/w)udda masc nungga(h)		Dj (ng/g/w)udda
3	fem ngaleng		bedda

Bunuba

	Minimal	Augmented
bound pronouns		
1	ng- ~ l- yiyi-rr- (C_)	yiyi-rr- (C_) jiyi-rr-
1+2	jiyi-rr-	ya-rr- (C_) ja-rr-
2	ngg- ~ gingg-y- ~ j- ~ ny-	nggu-rr- ~ gu-rr- ~ u-rr-
3	Ø -	wu-rr- (C_) bu-rr-
	Minimal	**Augmented**
free pronouns		
1	ngayini	ngiyi-rri
1+2	ngiyi-rri	yaa-rri
2	nginji	yinggi-rri
3	niy	biyi-rri

Burarra

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	ngu-	nyi-rri-	nyi-bu-rr-
1+2	a-rr-	a-rri-	ngu-bu-rr-
2	nyi-	nyi-rri-	nyi-bu-rr-
3	a- ~ Ø-	(a)bi-rr-	a-bu-rr-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngay-pa	nga-ti-pa (non.fem) nga-rriny-ji-pa (fem)	ngayburr-pa
1+2	nga-rri-pa	nga-ti-pa (non.fem) nga-rriny-ji-pa (fem)	ngayburr-pa
2	nginyi-pa	ana-go-to-pa (non.fem) ana-go-rriny-ji-pa (fem)	ana-goyburr-pa
3	ni-pa	bi-ti-pa (non.fem) bi-rriny-ji-pa (fem)	bi-rri-pa

Dalabon

	Singular	Dual	Plural
bound pronouns			
1	nga-	yarra-	yala-
1+2		ya-	ngarra-
2	dja-	narra-	nala-
3	ka-	barra-	bala-
	Singular	**Dual**	**Plural**
free pronouns			
1	ngey	njerr	njel
1+2		njeh	ngorr (~ngol)
2	njing	norr	nol
3	yibung	bunu	bulu

Gaagudju

	Minimal		Augmented
bound pronouns			
1	arr(a)-		arr(a)-
1+2	marra-		marra-
2	nyi(N)-		nyi(N)-
3	Ø- (masc) nyi(N)- (fem)		Ø- (masc) nyi(N)- (fem)
	Minimal		**Augmented**
free pronouns			
1	ngaayi		ngaa-
1+2	ma'neerra		ma'naa-
2	ngiinya		ngi'nyaa-
3	naawu- (masc) ngaayu (fem)	no'woo- (masc) ngo'yoo- (fem)	no'woo-

Gajirrabeng

	Singular	Dual	Plural
bound pronouns	(harvey 2003: 485)		
1	ngen-		yi-rr-
1+2	yi-		ya-rr-
2			
3			

Garrawa

free pronouns			
1	ngayu	ngali	nurru
1+2		nunggala	ngambala
2	ninjdji	nimbala	narri
3	njulu	bula	yalu

Gooniyandi

	Minimal		Augmented
bound pronouns			
1	li-		ji-rr-
1+2	ji-rr-		ja-rr-
2	ji-		nggi-rr-
3	Ø-		bi-rr- ~ rri-
	Minimal		**Augmented**
free pronouns			
1	nganyi		ngidi
1+2	ngidi		yaadi
2	nginyji		gidi
3	niyi		bidi

Gunin/Kwini

	Singular		Plural
bound pronouns			
1	ng(V)-		nya-rr-
1+2	nga-rr-		nga-rr-
2	g(V)-		gi-rr-
3	b(V)-		bi-rr-
	Singular		**Plural**
free pronouns			
1	ngaya		nyarra ~ nyarru
1+2	nangarra		nangarra
2	naa		nirra ~ nirru
3	bini		birreni

Gurr-goni

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	ngu-	nyi-ni- (NFUA) nyi-rrinyin (FUA)	nyi-burr-
1+2	arr-	a-ni- (NFUA) a-rrinyin- (FUA)	ngu-burr-
2	nyin-	nyi-ni- (NFUA) nyi-rrinyin (FUA)	nyi-burr-
3	a- (masc) jin- (fem)	abu-ni- (NFUA) abu-rrinyin (FUA)	a-burrrr-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngayi	nga-CLASS-yu	nga-ycbu-rru
1+2	ngarr(ic)	nga-CLASS-yu	nga-ycbu-rru
2	ngarr	nugo-CLASS-yu	nugo-ycbu-rru
3	niye (NF) ngijiye (F)	bo-CLASS-yu	bo-rr(o)

Iwaidja

	Singular		Plural
bound pronouns			
1	nga-		nga-rr-K-
1+2	a-rru-K-		a-rru-K-
2	ang-		gu-rru-K-
3	K-		a-
	Singular	**Dual**	**Plural**
free pronouns			
1	ngabi	ngabi-li-janad	nga-rru-rri
1+2		nuyi-ngabi	nga-rri
2	nuyi	nuyi-li-janad	nuwu-rri
3	yanad	wanad	wandad

Jaminjung

	Singular	Dual	Plural
bound pronouns			
1	nga-	yi-nyi-	yi-rri-
1+2		mindi-	yu-rri-
2	na-	gu-nyi-	gu-rri-
3	ga-	bu-nyi-	bu-rri-
free pronouns			
1	ngayug	yi-rri-nyi	yi-rri
1+2		mindi	yu-rri
2	nami	gu-rri-nyi	gu-rri
3	ji	bu-rri-nyi	bu-rri

Jawoyn

	Minimal		Augmented
bound pronouns			
1	nga-		nyi-rri-
1+2	nyi-		nya-
2	nginy-		nu-
3	Ø- ,ga- (NP)		bu-
	Minimal		**Augmented**
free pronouns			
1	ngarrk		nyi-rrang
1+2	nyi-yarrk		nya-rrang
2	nginy		nu-rrang
3	ngayu		bu-rrang

Jingulu

	Singular	Dual	Plural
bound pronouns			
1	nga-	nginy-	ngirr-
1+2		mind-	ngurr-
2	nya-	kunyi-	kurri-
3	ya-	wunyi-	wurri-
	Singular	**Dual**	**Plural**
free pronouns			
1	ngaya	nginyiyila	ngirriwala (ngirriyala)
1+2		mindiyila	ngurrawala
2	nyama	kunyiyila (kunyuwurlu)	kurrawala
3	-	wanyikila	-

Kamu

	Minimal	Augmented
bound pronouns		
1	a-	a-rru-
1+2	am(bu)-	a-rru-
2	any(ju)-	nunggu-rru-
3	Ø- ~ b/gu-	b/gu-rru-
	Minimal	**Augmented**
free pronouns		
1	nguru	ngerru
1+2	ngemu	ngerru
2	nunggurr	nunggurr
3	gurna	gurna(wurr)

Kija

	Minimal	Augmented
bound pronouns		
1	ngV-	yi-rrV-
1+2	yV-	yV-
2	na-	na-rrV-
3	ngi- (masc) nyi- (fem)	bV-rrV-
	Minimal	**Augmented**
free pronouns		
1	ngayin	ya-rre-ben
1+2	yayin	yuwurrun
2	nyengen	nengge-rre-ben
3	mawun (masc) ngal (fem)	burru

Kunbarlang

	Singular	Dual	Plural
bound pronouns			
1	nga-	nga-na-	nga-tta-
1+2	nga-rrki-	nga-rrki-	nga-rrki-
2	ki-	ngu-nu-	ngu-ttu-
3	ga-	ga-ba-rra-	ba-tta-
	Singular	**Dual**	**Plural**
free pronouns			
1	ngayi	nganangka	ngarrka
1+2		nganangka	ngarrka
2	nguda	nungutbe	nungutbe
3	nuga (masc) giga (fem)		

Limilngan

	Minimal	Augmented
bound pronouns		
1	nga-	nga-rr-
1+2	mi-	ga-rr-
2	nginy-	a-rr-
3	w-	i-rr-
	Minimal	**Augmented**
free pronouns		
1	ngayki	nguyi
1+2	ngami	guyi
2	nginy	wunguyi

Malak-Malak

	Minimal	Augmented
bound pronouns		
1	a/e-	a/e(-rrV)-
1+2	a/enggV-	a/err(gV)-
2	nV(n)-	nu(ng)gV(-rrV)-
3	yV(n)- (masc) nV(n)- (fem)	wV(-rrV)-
	Minimal	**Augmented**
free pronouns		
1	nga	yewöt
1+2	yenggi	yerrgit
2	wangarri	nugut
3	yöndön (masc) nöndön (fem)	wörröndön

Mangarrayi

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	nga-	ngi-rr-	ngi-rla-
1+2	ngi-	nga-rr-	nga-rla-
2	nya-	nu-rr-	rla-
3	Ø-	wu-rr- , bu-rr (N-)	wu-rla- , ba- (N-)
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngaya	ngi-rr	ngi-rla
1+2	ngi-	nga-rr	nga-rla
2	nyanggi	nu-rr	nu-rla
3	-	-	-

Marra

	Singular	Dual	Plural
bound pronouns			
1	nga-	ni-rri-	ni-wi-
1+2		na-	na-wu-
2	ni-	nu-rru-	nu-wu-
3	wa- (C_) , ga-	wa-rri- , ba-rri- (C_)	wa-la- , ba-la- (C_)
	Singular	**Dual**	**Plural**
free pronouns			
1	ngina-rra	ni-rri-nya	ni-rri-wi-nya
1+2		naga-rra	na-rr-wu-nya
2	niya-rra	nu-rru-nya	nu-rr-wa-nya
3	nangga-yi (masc) nga-yi (fem)	wu-rru-yi	wu-lu-yi

Marrithiyel

	Minimal	Augmented
bound pronouns		
1	ngV-	g/ngirri-
1+2	g/ngVmbV-	g/ngirri-
2	(gi)nV-	(gi)nV-
3	gV-	gu- ~ firri-
	Minimal	**Augmented**
free pronouns		
1	yigin	ga-di
1+2	nganggi	ga-di
2	nany	na-di
3	nang (masc) ngiya (fem)	we-di

Maung

	Minimal	Augmented
bound pronouns		
1	nga-	nga-rr-
1+2	arrg-	arrg-
2	an-	gu-rr-
3	i- (masc) iny- (fem)	aw(u)-
	Minimal	**Augmented**
free pronouns		
1	ngabi	nga-rri
1+2	ngarrwurri	ngarrwurri
2	nuyi	nuwu-rri
3	yanad (masc) in-yanad (fem)	wenad

Miriwung

	Minimal	Augmented
bound pronouns		
1	nga(nV)-	yi-rr(V)-
1+2	yV- ~ ya-rru-	yV- ~ ya-rru-
2	n(V)-	na-rr(V)-
3	g(V)- (masc) ny(V)- (fem)	be-rr(V)-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngayu	ya-rru-bu	ya-rru ~ yuwu-rru
1+2		yayi-bu	yayi ~ yuwu-rru
2	nyengu	nengge-rra-bu	nengge-rru
3	nawu (masc) ngalu (fem)	bu-rru-bu	bu-rru

Na-kara

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	nga-	ngi-na- (masc) ngi-rr(a)- (fem)	ngi-rrba-
1+2	rra-	ngu-na- (masc) ngu-rr(a)- (fem)	ngu-rrba-
2	nya-	nu-na- (masc) nu-rr(a)- (fem)	nu-rrba-
3	Ø- (masc) gi- (fem)	ba-na- (masc) ba-rr(a)- (fem)	(ba-)rrba-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngarra-pa	ngi-naya-pa (masc) nga-ngiyaga-pa (fem)	ngi-perra-pa
1+2	ngarra-pa	ngu-naya-pa (masc) nga-nguyaga-pa (fem)	ngu-perra-pa
2	nyeya-pa	nu-naya-pa (masc) na-ngayaga-pa (fem)	nu-perra-pa
3	naga-pa (masc) ngiyaga-pa (fem)	ba-naya-pa (masc) ba-ngiyaga-pa (fem)	ba-perra-pa

Ndjebbana

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	nga-	nyi/a-rri- (non.fem) nya-rra- -nya (fem)	nya-rru-
1+2	ga(go)-	ngi/a-rri- (non.fem) ngabarru(ga)- -nya (fem)	ngaba-rru/a-
2	ngana(ga)-	ni/arri- (non.fem) na-rra- -nya (fem)	na-rru-
3	ga- (non.fem) ya- (fem)	bi/arri- (non.fem) ba-rra(ga)- ~barra- -nya (fem)	ba-rru-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngaya-pa	nyi-rri-ge-pa (masc) nya-rra-ya-pa-nya (fem)	nyi-rra-pa
1+2	nga-rra-pa	ngi-rri-ge-pa (masc) nga-rra-ya-pa-nya (fem)	ngu-rra-pa
2	nyinyja-pa	ni-rri-ge-pa (masc) na-rra-ya-ge-pa-nya (fem)	nu-rra-pa
3	na-ge-pa (masc) nga-ya-pa (fem)	bi-rri-ge-pa (masc) ba-rra-ya-pa-nya (fem)	ba-rra-ya-pa

Ngalakan

	Minimal		Augmented
bound pronouns			
1	ngu-		yi-rri-
1+2	yi-		ngu-rru-
2	nginy-		nu-rru-
3	Ø-		bu-rru-
	Minimal		**Augmented**
free pronouns			
1	ngay-kaq		yi-rr-kaq
1+2	yi-kaq		ngu-rr-kaq
2	nginy-jaq		nu-rr-kaq
3	niny-jaq (M) jiny-jaq (F)		bu-rr-kaq

Ngaliwurru

	Singular	Dual	Plural
bound pronouns			
1	nga-	yi-ny-	yi-rr-
1+2		mind-	yi-rr-
2	na-	gu-ny-	gu-rr-
3	ga-	bu-ny-	bu-rr-
	Singular	**Dual**	**Plural**
free pronouns			
1	ngayug	yi-rri-nyi	yi-rri
1+2		mindi	yi-rri
2	nami	gu-rri-nyi	gu-rri
3	ji	bu-rri-nyi	bu-rri

Ngandi

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	nga-	nya-rri (M)	nya-rr-
1+2	nya-	nga-rri (M)	nga-rr-
2	nu-	na-rri- (M)	na-rr-
3	ni- (masc) na- (fem)	ba-rri- (M)	ba-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngaya	nyowo-rni (M)	nyerr
1+2	nyaka	ngorrko-rni (M)	ngorrkorr
2	nugan	nuka-rni (M)	nukarr
3	ni-wan (masc) na-wan (fem)	bowo-rni (M)	ba-wan

Ngarinyin

	Minimal	Augmented
bound pronouns		
1	nga-	nya-rr-
1+2	nga-rr-	nga-rr-
2	nyin-	gu-rr-
3	a- (masc) nya (fem)	bu-rr-
	Minimal	**Augmented**
free pronouns		
1	ngin	nya-rr-un
1+2	nga-rr-un	nga-rr-un
2	nyangan	nu-rr-un

Nungali

	Singular	Dual	Plural
bound pronouns			
1	nga-	yi-ny-	yi-rr-
1+2		bidi-	yu-rr-
2	ngaju-	wu-ny-	wu-rr-
3	wa-	wi-ny-	wi-rr-
	Singular	**Dual**	**Plural**
free pronouns			
1	ngayug	yi-nygi-yirram	yi-rri-mulu
1+2		bidi-yirram	yu-rru-mulu
2	ngaminju	wu-nygi-yirram	wu-rru-mulu
3			

Nunggubuyu

	Minimal	Unit Augmented	Augmented
bound pronouns			
1	nga-	nii-ni- (masc) nii-ngi- (fem)	nu-rru-
1+2	na-	ngii-ni- (masc) ngii-ngi- (fem)	ngu-rru-
2	nun-	nii-ni- (masc) nii-ngi (fem)	nu-rru-
3	ni- (masc) ngi- (fem)	wi-ni- (masc) w(b)a-ngi- (fem)	w(b)u-rru-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngaya	ya-rr-ga-mirri	ya-rr-ga
1+2	yayu	ya-rr-ju-mirri	ya-rr-ju
2	nagang	nu-gu-rni (masc) nu-gu-rngi (fem)	nu-gu-rru
3	ni-ga (masc) ngi-ga (fem)	wu-gu-rni (masc) wu-gu-rngi (fem)	wu-gu-rru

Nyigina

	Minimal		Augmented
bound pronouns			
1	nga-		ya-TNS-rr-
1+2	ya-		ya-TNS-rr-
2	mi-		gu-rr-
3	yi- ~ wa-		yi-TNS-rr- ~ wa-TNS-rr-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngayu	ya-rr-ga-mirri	ya-rr-ga
1+2	yayu	ya-rr-ju-mirri	ya-rr-ju
2	juwa	gu-rr-ga-mirri	gu-rr-ga
3	ginya	yi-rr-ga-mirri	yi-rr-ga

Nyulnyul,

	Minimal		Augmented
bound pronouns			
1	nga-		ya- -rr
1+2	ya- (-rr)		ya- -rr
2	mi-		ku- -rra
3	i- ~ yu-		(y)i- -rr(a) ~ (y)u- -rr(a)
	Singular		**Plural**
free pronouns			
1	ngay		yarrad
1+2	yay		yadir
2	juy		kurr
3	kinyingk		irr ~ yirr

Rembarrnga

	Minimal		Augmented
bound pronouns			
1	nga-		ya-rra-
1+2	ya-		nga-rra-
2	nginy-		na-rra-
3	Ø- , ga- (NP)		ba-rra-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngi-nda	ya-nda-parraq	ya-nda
1+2	yi-nda(rra)-parraq	nga-gunda-parraq	nga-gunda
2	danda	na-gunda-parraq	na-gunda
3	niq-danda (masc) ngaciq-danda ~ ngayiq-danda (fem)	bu-nda-parraq	bu-nda

Tiwi

	Minimal		Augmented
bound pronouns			
1	ngi-(rri-)		ngi-ndi-
1+2	mu-(rri-)		nga-(rri-)
2	nyi- (NP) ji- (P) a- (masc NP) a-mbi- (fem NP)		ngi-ndi-
3	yi- (masc P) ji- (fem P)		wu- (NP) bi-(rri-) (P)
	Minimal		**Augmented**
free pronouns			
1	ngiya		ngawa
1+2	muwa		ngawa
2	nginyja		nuwa
3	ngarra (masc) nyirra (fem)		wuda

Umida

	Singular	Plural
nominal prefixes		
1	ng-	njar-
1+2	ngar-	ngar-
2	ngun- ~ nugu-	njir-
3	ja-	

	Singular	Dual	Trial	Plural
free pronouns				
1	ngaju	jaradu	jariri	jari
1+2		ngaragu	ngariri	ngari
2	ngudju	njowadu	njowiri	(n)jowe(i)
3	jigeru (masc) njigeri (fem)	jagadi	igeriwuri	

Wardaman

	Minimal	Augmented
bound pronouns		
1	nga-	yi-rr-
1+2	nga-yi-	nga-rr-
2	yi-	nu-
3	Ø-	(ya-)wu-rr-
	Minimal	**Augmented**
free pronouns		
1	ngayugu	yirrug
1+2	yawung-guya	ngarrug
2	yinyang	nurrug
3	-	-

Wagiman

	Minimal	Augmented
bound pronouns		
1	nga-	ngi-
1+2	ngin-	ngi-
2	ngi-	ngu-
3	Ø- , ga- (NP)	ba-
	Minimal	**Augmented**
free pronouns		
1	ngagun	ngego
1+2	nginyang	ngego
2	ngigun	ngogo
3	Ø-	(ya-)wu-rr- , b after nasals in transistive forms

Warndarrang

	Singular	Dual	Plural
bound pronouns			
1	nga-	nyi-rr(i)/d- nya- (_C) nyany- (_V)	nyi-di-
1+2			nga-la-
2	nyi-	ngu-d- ~ ngu-rri-	ngu-du-
3	(g)a-	(g)a-rr/d-	(g)a-la-
	Singular	**Dual**	**Plural**
free pronouns			
1	nginga	nyi-rra-yi	nyi-d-burr
1+2		nyanya	ngala
2	nyinyu	ngu-rra-yi	ngu-d-burr
3	ni-wa (M) ngi-wa (F)	yi/wu-rra-yi	wu-la-yi

Wambaya

	Singular	Dual	Plural
bound pronouns			
1	ngi-	ngurlu-	ngirri-
1+2		mirndi-	ngurru-
2	nyi-	gurlu-	girri-
3	gini- (masc.) ngiyi- (non.masc.)	wurlu-	irri-
	Singular	**Dual**	**Plural**
free pronouns			
1	ngawurniji, ngawu	ngurgluwani	ngirriyani
1+2		mirndiyani	ngurruwani
2	nyamirniji, nyami	gurluwani	girriyani
3		wurluwani	irriyani

Warrgat

	Minimal		Augmented
bound pronouns			
1	nga-		nga-rrV-
1+2	mV-		nga-ma- ~ ga-rrga-
2	nV-		ga-rra-
3	Ø-		fV-rrV-
	Singular	**Dual**	**Plural**
free pronouns			
1	ngany	nga-ja-mada	nga-ja
1+2		nganggu	gi-ja
2	nina	ni-ja-mada	ni-ja
3	nanguny (M) nganguny (F)	wi-ja-mada	wi-ja

Warray

	Minimal		Augmented
bound pronouns			
1	at-		i-
1+2	ma-		i-
2	an-		a-
3	Ø- , ga- (NP)		ba-
	Minimal		**Augmented**
free pronouns			
1	ngek		yi-kirring
1+2	nyama		yebe
2	nguny		ni-girring
3	-garla		bi-girring

Warrwa

	Minimal		Augmented
bound pronouns			
1	nga-		nga-
1+2	ya-		ya-
2	mi-		ku-
3	zero- ~ i- ~ ngi-		ngi- ~ i-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngayu	yaarra-wili	yaarra
1+2	yawu		yadirr
2	juwa	kurra-wili	kurra
3	kinya	yirra-wili	yirra

Worora

	Minimal		Augmented
bound pronouns			
1	nga-		a-rr-
1+2	nga-rr-		nga-rr-
2	ngun-		nyi-rr-
3	a- (masc) nyiN- ~ nyaN- (fem)		gaa-rr-
	Minimal	**Unit Augmented**	**Augmented**
free pronouns			
1	ngayu	a-rre-rnrdu	a-rri
1+2	nga-rre-rnrdu	nga-rri-nggurri	nga-rri
2	ngunju	nyi-rre-rnrdu	nyi-rri
3	awa (masc) nyangga (fem)	arrga	arrga

Wunambal

	Singular	Plural
nominal prefixes		
1	ng-	njar-
1+2	ngar-	ngar-
2	g-	gir-
3	b-	

	Singular	Dual	Trial	Plural
free pronouns				
1	ngaya	nja-rra-miya	nja-rra-na	nja-rra
1+2		nanga-rra-miya	nanga-rra-na	nanga-rra
2	naa	nu-rra-miya	nu-rra-na	nu-rra
3	bini	bi-rre-ni-miya	bi-rre-ni-na	bi-rre-ni

Yawuru

	Minimal	Augmented
bound pronouns		
1	nga-	ya-TNS-rr-
1+2	ya-	ya-TNS-rr-
2	mi-	gu-TNS-rr-
3	wa-	i-TNS-rr-

	Minimal	Unit Augmented	Augmented
free pronouns			
1	ngayu	ya-rr-garda	ya-rr-yirr
1+2	yayu	yadirri(gurdirri)	yadirri
2	juyu	gu-rr-garda	gu-rr-yirr
3	ginyangga	yi-rr-garda	gangajun(u)

Pama – Nyungan

Djinang arnhem land / NT

	Singular	Dual	Plural
free pronouns			
1	ngarri	ngilinyi	nginibi
1+2		ngili	ngilimi
2	nyuni	nyumi	ngilidji
3	nyani	bilingi	djani

Waters, Bruce. 1989. *Djinang and Djinba – A Grammatical and Historical Perspective.* Canberra: Pacific Linguistics. Series C. No.114.

Gumbaynggir grafton / NSW

	Singular	Dual	Plural
free pronouns			
1	ngaya	ngaligay	ngiyagay
1+2		ngali	ngiya
2	nginda	bula	ngugawiny
3	gulana	bulari	ngiyanggidam

Eades, Diana. 1979. Gumbaynggir. In: Dixon, R.M.W. & Barry Blake (eds.). *Handbook of the Australian languages. vol. 1.* page: 243 – 361.

Guugu Yimidhirr north of cooktown / QLD

	Singular	Dual	Plural
free pronouns			
1	ngayu	ngaliinh	ngana
1+2		ngali	nganhdhaan
2	nyundu	yubaal	yurra
3	nyulu	bula	dhana

Haviland, John. 1979. Guugu Yimidhirr. In: Dixon, R.M.W. & Barry Blake (eds.). *Handbook of the Australian languages. vol. 1.* page: 27 – 180.

Nyangumarta western desert / WA

	Singular	Dual	Plural
free pronouns			
1	ngaju	ngalayi	nganarna
1+2		ngali	nganyjurru
2	nyuntu	nyumpala	nyurra
3	paliny	pulany	jana

Sharp, Janet. 2004. *Nyangumarta – A language of the Pilbara Region of Western Australia.* Canberra: Pacific Linguistics.

Ritharngu arnhem land / NT

	Singular	Dual	Plural
free pronouns			
1	ngara	ngalinyu	nganapu
1+2		ngali	ngalima
2	ni	numada	numa
3	ngay ~ nga	manda	dali

Heath, Jeffrey. 1980. *Basic Materials in Ritharngu: Grammar, Texts and Dictionary.* Canberra: Pacific Linguistics. Series B – No. 62.

Walmajarri western desert / WA

	Singular	Dual	Plural
free pronouns			
	ngaju ~		nganimpa ~
1	ngaji	ngajarra	nganampa
1+2		ngalijarra	ngalimpa
2	nyuntu	nyurrajarra	nyurrawarnti
3	nyantu	nyantujarra	nyantuwarnti

Hudson, Joyce. 1978. *The core of Walmatjari grammar.* Canberra: AIAS.

Watjarri south western desert / WA

	Singular	Dual	Plural
free pronouns			
1	ngatja	ngalitja	ngantju
1+2		ngali	nganju
2	njinta	njupali	njurra
3	palu	pula	tjana

Douglas, Wilfrid H. 1981. Watjarri. In: Dixon, R.M.W. & Barry Blake (eds.). *Handbook of the Australian languages. vol.2.* Canberra: Australian National University Press. page: 196 – 271.

Woiwurrung melbourne / VIC

	Singular	Dual	Plural
free pronouns			
1	wan	wangan	wanganyinyu
1+2		wangal	wanganyin
			wat gurrabil(la)
	warr	wabul	wat balak
2			wat wurdundhu
3	munyi	munyi bulabil	munyigadhan

Blake, Barry. 1991. Woiwurrung. The Melbourne Language. In: Dixon, R.M.W. & Barry Blake (eds.). *Handbook of the Australian languages.* Melbourne: Oxford University Press Australia. page: 31 – 122.