Dual and plural in Southern Oceanic languages

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Abstract

Oceanic languages have rich systems of number marking, most including formal exponence of dual number, and very many also marking trial and/or paucal number. In most Southern Oceanic languages number marking combines with person marking, including clusivity, in both independent pronoun paradigms and subject referencing paradigms. Our study of pairs of these two kinds of paradigms in 38 Southern Oceanic languages shows that, in contrast to person values which can have fewer contrasting forms only in a subject referencing paradigm, contrasts in number values may be fewer either in the independent pronoun paradigm or in the corresponding subject referencing paradigm.

1. Introduction

1.1. Objectives

Languages that encode a three-way grammatical number contrast: Singular/Dual/ Plural (SG/DU/PL) may have defective paradigms in the expression of number in one or more grammatical functions. Two basic kinds of questions can be asked about the nature of such defective paradigms: which particular number values are lacking in a given defective paradigm; and which particular paradigms are defective? At another level, we can also ask about the relationship between the expression of number across the different paradigms and about the relationship between the expression of number within a paradigm and the expression of other values within the same paradigm. We propose in this paper to explore these questions.

Following Lynch (2001: 188-190) and Lynch, Ross and Crowley (2002: 112-114), we take it that SOc is a subfamily of Central/Eastern Oceanic made up of all of the non-Polynesian languages of Vanuatu and New Caledonia. There are some 130 languages that belong to SOc, but, although Lynch (2001: 189) presents two alternative analyses of subgroupings for the New Caledonia languages and the southern-most Vanuatu languages (south of and including South Efate), relations between the possible subgroups within SOc remain to be identified (Lynch 2001). Fewer than 50 of the SOc languages have been well or reasonably well described. The discussion in this paper is based on data from 38 of the languages for which there is relevant information available.

It is a notable feature of Oceanic languages that they tend to encode at least the three-way number contrast SG/DU/PL (Lynch 1998: 101) and this is true for SOc with most SOc languages having distinct DU number marking in at least one grammatical category. But many of these languages present defective paradigms for DU number in one or more categories.

Whilst number marking may be applied also to events ('one time', two times', multiple times'), the focus of the present paper is on the kind of contrasting number specification that applies to arguments and to argument referencing. Here, different strategies are available for the marking of number contrasts. In particular, within argument constituents, number may be manifested on N heads, on articles, on demonstratives, and/or on N-modifiers. Argument number can also be manifested in other non-argument categories, most notably in the marking of subject agreement on verbs.

The formal realization of number, the categories and constituents on which number is marked, can be cross-cut by other factors. Corbett (2000: 55-66), for instance, provides a discussion of the effects of an animacy hierarchy in the manifestation of number marking.[1] It is also the case that different languages may encode different parameters in the application of number values. This is especially the case for the delimitation of Paucal (PC) and PL in languages which have the PC value, but it can also be a factor in the uses to which DU number is put. In Neve'ei, for instance,

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[1] The specific animacy hierarchy discussed is as follows (Corbett 2000: 56): speaker (1st person pronouns) > addressee (2nd person pronouns) > 3rd person > kin > human > animate > inaminate.

Musgrave (2007: 30) states that the DU pronouns are used in contexts in which there is joint rather individual action by the participants, as with the distinct interpretations applied in the following examples:

(1)a. *Ar   ar-vwelem.*

    3non-SG 3DU.R -come

    'They (two) came.'

  b. *Ardru   ar-vwelem.*

    3DU   3DU.R-come

    'They (two) came together.' (Musgrave 2007: 30)

Nevertheless, as can be observed in (1a), although the subject pronoun is here non-SG, rather than DU, the dual reference of this argument is encoded in the use of the DU affix on the verb.

Whilst these various factors are ultimately important in the understanding of the encoding of number values (and also to the understanding of the historical expansion and loss of the marking of number values), our investigation is here restricted to an examination of the formal manifestations of number values in SOc languages in just two kinds of paradigms, independent pronoun paradigms and subject referencing paradigms. We have chosen to look at these two kinds of paradigm because these are the two paradigms in SOc languages which most robustly manifest number contrasts.[2]

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[2] SOc languages may also have reduced pronoun forms or affixes as markers of possession or, to a lesser extent, as markers of object roles, but the paradigms for these tend to be considerably defective in the person and number values that they

The consideration of these particular two paradigms is also of interest in that they may interact: in sentences with an overt independent pronoun in the subject role, the presence of a particle or affixal subject referencing element gives rise to double marking of number when both such items have the same number value (as in (1b)) and, when one or other paradigm is defective for some number value, there can formally be a mismatch in the grammatical number encoding of the two items (as in (1a)). We will focus in the first instance on the formal manifestations of number marking. From our analysis of the formal manifestations of number in these paradigms, we then go on to consider other possible factors, including the role of person values, that may impinge on different formal realizations.

1.2.   Studying number values

The present study is essentially typological in its approach and we will therefore be drawing on findings in the typological literature which are relevant to the questions that we address.

   Cross-linguistic investigations of the grammatical expression of number have revealed patterns of occurrence that have led to proposals for a hierarchy in the expression of number values, as: SG > PL > DU > TR(ial) (see Greenberg 1966, Corbett 2000: 38-50). Thus, a language which has TR number is expected to also have DU, a language that has DU is expected to have PL, and so on. This hierarchy also

encode. We also are aware of one language, Anejom̃, which has a three-way SG/DU/PL contrast (as well as a four-way contrast including TR for the proximate) in its demonstrative pronoun paradigms (Lynch 2000: 41).

has implications with respect to the diachronic innovation (and loss) of number values. Both the development and the loss of number values are expected to proceed in accordance with the hierarchical patterning so that both extensions and erosions are expected to apply at the right edge of the hierarchy.

More complex issues arise in the study of number in combination with other values in paradigms. Two recent investigations in this area, Cysouw (2003) and Baerman, Brown and Corbett (2004) both provide detailed treatments of an impressive range of data. Cysouw (2003) is concerned with constructing a typological hierarchy of values encoded in paradigms and Baerman et al (2004) investigate the distribution of values in paradigms in order to propose a formal model to capture the distributions that they observe. We will draw on aspects of the findings of both of these works as we come to identify characteristics of the paradigms in the SOc languages of our investigation.

1.3.   The structure of the paper

The paper is organized as follows. Section 2 presents an overview of number marking in SOc languages and an overview of the Proto-Oceanic antecedents. In Sections 3 to 5 we examine the paradigms which are defective for DU marking in individual languages: in Section 3, languages with defective pronoun paradigms; in Section 4, languages with defective subject referencing paradigms; and in Section 5, languages which lack DU marking in both their pronoun and subject referencing paradigms. In Section 6 we review the occurrences of number values across the paradigms in all of the SOc languages of the sample. Section 7 rounds off the discussion with our conclusions and some general observations.

2. Number marking paradigms

2.1. Independent pronouns and subject marking paradigms

Table 1 shows the exponence of the SG/DU/PL number marking contrasts for independent pronouns (Pro) and for subject marking (Pre) in 38 SOc languages.[3] The 'Pre' category includes both prefixes and preverbal (clitic) particles. The languages

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[3] In alphabetical order, the sources of information on the individual languages are as follows: A'jië (La Fontinelle 1976), Anejom̃ (Lynch 2000), Araki (François 2002), Atchin (Capell and Layard 1980), Aulua (Paviour-Smith 2006), Avava (Crowley 2006a), Bwatoo (Rivierre and Ehrhart 2006), Cémuhî (Rivierre 1980), Iaai (Ozanne-Rivierre 1976), Kwamera (Lindstrom and Lynch 1994), Lamen (Early 2002), Lenakel (Lynch 1978), Lolovoli (Chung 2005), Merei (Hyslop 2001), Mwotlap (Crowley 2002a; François 2003), Nahavaq (Dimock In preparation), Nakanamanga (Schütz 1969), Naman (Crowley 2006c), Nāti (Crowley 1998), Nese (Crowley 2006d), Neve'ei (Musgrave 2007), Nyelâyu (Ozanne-Rivierre 1998), Paamese (Crowley 1982), Port Sandwich (Charpentier 1979), Raga (Crowley 2002b), Sakao (Guy 1974), Southeast Ambrym (Crowley 2002c), South Efate (Thieberger 2006), Sye (Crowley 2002d), Tamabo (Jauncey 2002), Tape (Crowley 2006b), Tinrin (Osumi 1995), Tirax (Brotchie 2007), Unua (Pearce In preparation), Ura (Crowley 1999), Uripiv (McKerras 2005), V'ënen Taut (Fox 1979), Xârâcùù (Moyse-Faurie 1995).

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are positioned vertically in Table 1 corresponding to their geographical location in relative north to south ordering (see Map 1).[4]

MAP 1 about here

TABLE 1 about here

Table 1 shows that 25 out of the 38 languages have SG/DU/PL paradigms with both independent pronouns and with subject referencing elements. Only 4 of the 38 languages lack any exponence of DU in one or other of these categories. The remaining 9 languages have a fully implemented three-way SG/DU/PL contrast in one of the two paradigms, but not in the other. All of these paradigms are well-behaved with respect to the number hierarchy in that, if one number value is missing out of SG/PL/DU, the missing value is DU.

Our examination of the distribution of the forms in the different languages will begin with consideration of the two types of cases in which there is not a complete

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[4] Drehu (Loyalty Islands, New Caledonia) is not included in Table 1 because, although it has the SG/DU/PL contrast in its independent pronoun paradigms, it does not have subject referencing morphology (Moyse-Faurie 1983: 66-69). (The independent pronoun paradigms of Drehu, however, present another level of complexity in that they occur in three sets, distinguished as Ordinary, Higher and Lower forms of reference to entities (see Moyse-Faurie 1983: 67-69)).

correspondence of the encoding of number values across the two paradigms. Before considering these, however, we step aside from the analysis of the synchronic facts, to gain a view of the possible diachronic implications.

2.2.   Number: A diachronic perspective

Lynch, Ross and Crowley (2002) present the following SG/non-SG reconstructed forms for Proto-Oceanic independent pronouns:

(2)   Proto-Oceanic pronoun reconstructions (Lynch, Ross and Crowley 2002: 67)

	SG:	non-SG
1 EXCL	*[i]au*	*ka[m]i, kamami*
1 INCL	-	*kita*
2	*[i]ko[e]*	*ka[m]u, kamiu*
3	*ia*	*[k]ira*

Although the paradigm in (2) shows only a two-way contrast between SG and non-SG, Lynch, Ross and Crowley (2002: 69) claim that there is good evidence that at least the numerals *rua* 'two' and *tolu* 'three' were cliticized to the independent non-SG pronouns to signify dual and trial respectively and that possibly also *vat[i]* 'four' was cliticized to signify paucal. Thus, the proposed reconstructed forms for DU, TR and PC independent pronouns are as shown in (3).

(3)   DU pronoun: non-SG pronoun + *rua* 'two'
      TR pronoun: non-SG pronoun + *tolu* 'three'

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PC pronoun: non-SG pronoun + *vat[i] 'four'

   e.g.: *[k]ira=tolu 'they three'

   Lynch, Ross and Crowley (2002) present three sets of paradigms for Proto-Oceanic

subject proclitics. The three sets are collapsed in a single set in (4) and shown

alongside the independent forms.

(4)   Proto-Oceanic pronouns and subject clitics[5]

      (Lynch, Ross and Crowley 2002: 67)

		Independent pronouns	Subject proclitics
+SG:	1	*[i]au*	*ku=, au=*
	2	*[i]ko[e]*	*mu=, ko=*
	3	*ia*	*(y)a=, ña=, i=*
Non-SG	1 EXCL	*ka[m]i, kamami*	Ø
	1 INCL	*kita*	Ø, *ta=*
	2	*ka[m]u, kamiu*	Ø
	3	*[k]ira*	Ø, *ra=*

   Whereas the independent pronoun paradigm has seven distinct forms realizing the

SG and non-SG person categories, the paradigm for the subject proclitics is defective

for the non-SG categories. A second observation is that most of the proclitic forms are

either identical to the independent forms or are reduced versions of these. Such

outcomes are not unexpected on the assumption that the clitics are weakened copies

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[5] The symbol '=' in (4), and elsewhere, indicates the direction of clitic attachment.

of the corresponding full forms.[6] In fact, Lynch, Ross and Crowley (2002: 67) suggest

that the subject proclitic gaps could have been filled by the corresponding

independent forms. Syntactically, the implication of this suggestion is that the Proto-

Oceanic grammar would have two distinct positions, one filled by an independent

form, pronoun or noun phrase, and another filled by an agreeing, possibly identical,

(weaker) form.[7]

    The paradigms in (4) show only the two-way number contrast between SG and

non-SG. If it is true that duals, trials, etc. could have also had distinct realizations as

pronoun + numeral, then, correspondingly, a full realization of a three- or four-way

number contrast for the subject markers would have obtained on the assumption of the

availability of the two syntactic positions. Such an interpretation for Proto-Oceanic, or

at least for Proto-SOc, would seem to be supported by the robust presence of the

three-way number contrast both for independent pronouns and for subject agreement

markers in the languages shown in Table 1.

    However, without more detailed comparative work on the synchronic outcomes

and sub-grouping thereof, the mappings between the synchronic outcomes in the

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[6] Roberts and Roussou (2003) present a general claim that the syntactic development

in such cases is that the clitic comes to be the occupant of the head of an AgrSP which

is part of the functional structure of the IP, and thus in contrast with the independent

pronoun (or the noun phrase) located in Spec,AgrP.

[7] Corresponding in effect to approaches to the Neo-Melanesian creole forms taken by

Keesing (1988) and by Paviour-Smith (2000).

individual languages and the reconstructed forms are yet to be worked out.[8] With a time frame for SOc of more than 3,000 years (according to dating based on Lapita culture evidence, Lynch 1998: 56), we cannot rule out the possibility of there having been multiple cycles of erosions and innovations applying to the elements in paradigms encoding person and number. Even at the micro-level, the synchronic evidence shows that mutually intelligible dialects can have non-uniform paradigms, such as in the pronoun forms of the Unua and Pangkumu dialects of Unua-Pangkumu (and see also Lynch 1977 on the Tanna dialects):

(5)   Independent pronouns in Unua and Pangkumu (Southeast Malakula)[9]

(Pangkumu forms: Charpentier 1982)

		Unua	Pangkumu
SG:	1	*xina*	*xina*
	2	*xai/xau*	*xau*
	3	*xini*	*xini*
DU:	1 EXCL	***memru***	***nemeru***

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[8] See, however, Lynch (1977) for an analysis of paradigms encoding number in five languages/dialects in three dialect chains of the island of Tanna and Lynch and Ozanne-Rivierre (2001) on Southern Vanuatu and New Caledonia languages. See Kikusawa (2003, 2004) for broader investigation of the diachronic developments in the pronoun paradigms of Oceanic.

[9] For Unua, orthographic <r> versus <rr> corresponds to a phonemic flap versus trill contrast. Jean-Michel Charpentier (personal communication 12/6/03) has explained that the Pangkumu /r/ is a flap occurring in variant forms requiring further investigation.

	1 INCL	*rrarru*	*raru*
	2	*xamru*	*xamru*
	3	*raru*	*raru xeru*
PL:	1 EXCL	**mende**	**nemende**
	1 INCL	**rrate**	**rite**
	2	*xande/xamde*	*xamnde*
	3	**rate**	**xinir**

The pronoun paradigms of Unua and Pangkumu dialects encode the same person and number contrasts, but certain of the pronoun forms (those indicated in bold) show evidence of other changes, including an instance of a replacement in one of the two dialects in the 3PL form.

Although this is not the case with the French lexifier creole Tayo, the only known creole of New Caledonia (see Corne 1990), the Neo-Melanesian creole of Vanuatu, Bislama, also robustly encodes person and number values which are widely found in Vanuatu languages:

(6) Bislama pronouns
     (Crowley 2004: 45)

SG:	1	*mi*
	2	*yu*
	3	*hem*
DU:	1 EXCL	*mitufala*
	1 INCL	*yumitu(fala)*

	2	*yutufala*
	3	*tufala*
TR:	1 EXCL	*mitrifala*
	1 INCL	*yumitrifala*
	2	*yutrifala*
	3	*trifala*
PL:	1 EXCL	*mifala*
	1 INCL	*yumi*
	2	*yufala*
	3	*ol(geta)*

The Bislama system includes person and number values found in Vanuatu languages generally. But in Bislama it is only in the 3rd person that we find a distinct plural form, the DU, TR and PL 1st and 2nd person forms being based on the corresponding independent SG forms and composites thereof, rather than on the non-SG pronouns as with the reconstructed Proto-Oceanic forms.

Thus, whilst we do not have a detailed picture of the mappings between the synchronic forms and their antecedents, given that most of the SOc languages present at least a three-way contrast SG/DU/PL, it seems reasonable to infer that, in languages which do not manifest this three-way contrast, the missing number value or values did exist at an earlier stage (or even in more than one earlier stage) and have been lost in the time intervening between that earlier stage and the present. Therefore in considering the synchronic paradigms, from the diachronic perspective, the

implication is that paradigms which are defective are witness to loss. We will proceed with consideration of these paradigms.

3. Languages with defective pronoun paradigms

3.1. Introduction

In this section we examine the paradigms of the languages shown in Table 1 which lack DU forms in their independent pronoun paradigms but which have the three-way SG/DU/PL contrast in their subject referencing paradigms.

Typologically, the existence of a set of languages with more contrasts in the number values of its subject referencing paradigms than in its pronoun paradigms may be of some interest in view of the proposal put forward in Roberts and Roussou (2003: 180) that agreement paradigms may contain gaps but pronoun paradigms do not. This proposal, however, is based on observations in Rizzi (1986) with respect to subject clitic paradigms in Northern Italian dialects. Rizzi (1986: 401) observes that 10 out of 27 Northern Italian dialects have the person/number gaps in their subject clitic paradigms, exemplified by the Trentino forms shown in (7a), with the example in (7b) illustrating the use of a clitic pronoun in conjunction with the corresponding independent pronoun.

(7)   Trentino

      (Brandi and Cordin 1989: 113)

a.   *Subject clitic*   *Verb: present tense ('speak')*

	Subject clitic	Verb: present tense ('speak')
1SG	-	*parlo*
2SG	*te*	*parli*
3SG	*el/la*	*parla*
1PL	-	*parlem*
2PL	-	*parle*
3PL	*i/le*	*parla*

b.   *Ti*   *te*   *parl-i.*

    2SG   2SG   speak-2SG

    'You speak.'

Other Northern Italian dialects have fewer gaps and, in some cases, the use of (certain of) the clitic pronouns may be optional rather than obligatory. In summarizing his observations, Rizzi (1986: 401) states: "for some choices of grammatical features the subject clitic is obligatory, for other choices either it is optional or does not exist".

The Trentino case that we see in (7) differs from what we will observe of the formal distributions in the SOc languages in that, given the distinct verb suffixes, Trentino (and other Northern Italian dialects) may include double marking of subject reference (in addition to the use of a full DP subject form, proper name, common noun phrase or independent pronoun, as in (7b)).[10] Be that as it may, it is clearly possible (and probably most likely) that the diachronic development of subject clitics is not a one-step process applying across-the-board with all person/number values

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[10] Renzi and Vanelli (1982), Brandi and Cordin (1989).

simultaneously. Such gaps in cliticization processes can potentially be one of the routes by which affixal paradigm outcomes may come to be defective.

The languages of the set examined in this section have DU number in their subject referencing paradigms, but not in their independent pronoun paradigms. They therefore run counter to the Roberts and Roussou proposal that languages may encode more person/number values in their independent pronoun paradigms than in their subject agreement paradigms. On the other hand, as we will see, there are one or more pairs of homophonous forms in the subject referencing paradigms of all but one of the languages of this set.

We are aware that the designation of forms in paradigms as "homophonous" is much less innocent than is the application of this term to diachronically and semantically unrelated word forms, such as English *beer* and *bier*. Thus, whereas other pronouns in English contrast person values for SG versus non-SG, it is nevertheless seems counter-intuitive to suggest that English has a pair of homophonous pronouns *you* '2SG' and *you* '2non-SG'. Our use of the word "homophony" is to be understood as a cover term which simply recognizes the formal identity of forms in what seem to be potentially available positions in paradigms.[11] In some cases, however, we will be led to distinguish between "accidental homophony" and "systematic homophony", the former implying that there is no functional underpinning to the lack of a formal distinction in two or more forms and the latter for

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[11] In this respect, our use of the term "homophony" coincides with the use of this term in Cysouw (2003) and with use of the term "syncreticism" in Baerman et al (2004).

cases in which we consider that there could be a functional underpinning to the coincidence in the formal identity.[12]

Although the pronoun paradigms of the set examined in this section formally have only a two-way number contrast, SG/non-SG, in showing the paradigms, we group the non-SG forms under 'PL' out of convenience. In displaying the paradigms, we also show homophonous forms in bold.

3.2   Paradigms

3.2.1. Atchin (Northeast Malakula)

Although Atchin lacks DU pronouns, it has a three-way number contrast in its three subject particle paradigms: Past, Indefinite and Future. In (8) the forms of the Past subject particles are shown along with the independent pronouns.

(8)   Atchin pronouns and preverbal past tense particles

(Capell and Layard 1980: 48, 75-81)

		Independent pronouns	Past subject particles
SG:	1	*ina*	*me*
	2	*inik(i)/iki*	*mo*
	3	*ini*	*m(w)i/mu/m'*

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[12] For useful discussions of uses of the terms "homophony" and "syncreticism" in language descriptions, see Cysouw (2003: 40) and Baerman et al (2005: 4-7). Thanks to Bill Palmer for raising discussion of the issue.

DU:	1 EXCL	-	*nom*
	1 INCL	-	[not attested]
	2	-	*kom*
	3	-	*mor*
PL:	1 EXCL	*kiam*	*nam*
	1 INCL	*ikir*	*ra(m)*
	2	*kami*	*kam*
	3	*inir(i)*	*mar*

The Past subject particle paradigm is one of three possible particle paradigms. The other two are Definite and Future. It is not clear whether some gaps in the particle paradigms correspond to the non-existence of forms or to the absence of attestation. In addition to the 1INCL.DU of the Past, the apparent gaps are in the 3SG Indefinite and 1EXCL and 1INCL DU Future. In other respects, and aside from the absence of DU independent pronoun forms, all other person/number values have distinct forms in the two paradigms.

3.2.2.   V'ënen Taut (Northwest Malakula)

In discussing the uses of the two sets of non-singular subject markers, Fox (1979: 66-68), shows that, in the presence of a numeral (at least for the numerals 3 – 10), either the plural or what he terms the "restricted plural" (shown in (9) as 'DU') may be used. However, in the presence of the numeral 'two', only the restricted plural is possible and, in the absence of a cardinal numeral, the examples that Fox gives show the dual

interpretation in the presence of the restricted plural. The 'DU' specification given in (9) therefore applies to contexts in which no numeral higher than two is present.

(9)   V'ënen Taut pronouns and preverbal Class 1 Realis subject prefixes

      (Fox 1979: 30, 54-55: 3, 7)

		Independent pronouns	Realis subject prefixes
SG:	1	*kana*	*n-*
	2	*nakəm*	*kə-*
	3	*hin*	*i-*
DU:	1 EXCL	-	***n-r-***
	1 INCL	-	***n-r-***
	2	-	*k-r-*
	3	-	*a-r-*
PL:	1 EXCL	*kam'em'*	***nə-v-***
	1 INCL	*nakəd*	***nə-v-***
	2	*kam'i*	*kə-v-*
	3	*hir*	*a-v-*

The subject marking prefixes shown in (9) are made up of a person marker based on the SG pronoun forms (which can be represented as: /k/ '1SG', /n/ '2SG' and Ø '3SG') and an accompanying number marker: Ø/-*r*-/-*v*-. Depending on the particular aspect marker, the two parts of the subject marking may be non-contiguous. The examples in (10) show the use of first person prefixes with EXCL and INCL pronouns.

(10)a. *Kam'em'*   *n-r-ru*   *n-r-titihap'el.*

        1EXCL.PL   1.R-DU -two   1.R-DU-trip

        'We both tripped.' (Fox 1979: 55)

   b. *Nakəd*   *nə-v-rukrkr.*

        1INCL.PL   1R.PL-ambidextrous

        'We are ambidextrous.' (Fox 1979: 55)

In the examples in (10), the independent pronouns are PL or, more accurately non-SG, and DU/PL contrast is encoded through the use of the contrasting affixes, DU in (10a) and PL in (10b).

3.2.3.   Tirax (Northcentral Malakula)

Tirax lacks distinct DU pronouns, but has the three-way SG/DU/PL number contrast in its preverbal subject markers and it has three subject marking paradigms: Realis, Irrealis and Negative (Brotchie 2007). The Tirax independent pronouns are shown in (11) alongside the Realis subject marking paradigm.

(11) Tirax pronouns and preverbal realis subject markers

     (Brotchie 2007: 3, 7)

		Independent pronouns	Realis subject clitics
SG:	1	*xno*	*n(i)=*
	2	*nɔx*	*x(i)=*

		3	*xain~ xan*	*i=*
DU:	1 EXCL	-	***nar=***
	1 INCL	-	***nar=***
	2	-	*xar=*
	3	-	*r(i)=*
PL:	1 EXCL	*knen*	***nas=***
	1 INCL	*nekir*	***nas=***
	2	*keni*	*xas=*
	3	*xaer*	*s(i)=*

As can be observed in (11), whereas, the first person PL pronouns distinguish inclusive and exclusive, clusivity is not formally distinguished in the subject referencing paradigms. Brotchie (2007: 3) states that plural pronouns may be accompanied by quantifiers or numerals. The examples in (12) show the use of non-SG pronouns in inclusory expressions with DU reference.

(12)a. ***xaer*** *dxi   vinadr   han   **r**=telurl*

 3PL   COM woman 3SG.GEN   3DU.R =go.to.garden

 'He and his wife went to the garden.' (Brotchie 2007: 4)

  b. ***knen***   *dxi   mxodi-k   hxal   **nar**=telurl*

 1PL.EXCL   COM grandchild-1SG.GEN INDEF   1DU.R=work.in.garden

 'me and my grandchild, we were working in the garden . . .'

 (Brotchie 2007: 60)

As in the case of the V'ënen Taut examples of (10), it is the use of the DU referencing affixes which encodes the DU/PL contrast for subjects and which supplies the clusivity value.

3.2.4.   Nakanamanga (Northern Efate)

Nakanamanga also lacks distinct DU pronouns and has the three-way SG/DU/PL contrast in its preverbal subject markers. Ray (1987: 413) identifies the preverbal subject markers simply as particles (in the Nguna dialect) and states that they may occur with or without an independent pronoun subject.

(13)   Nakanamanga (Nguna) pronouns and preverbal subject marking particles
        (Schütz 1969: 25, 46)

		Independent pronouns	Subject particles
SG:	1	*kinau*	*(t)a*
	2	*niigo*	*(te)ku*
	3	*nae*	*(t)e*
DU:	1 EXCL	-	*(t)aro*
	1 INCL	-	*toro*
	2	-	*koro*
	3	-	*(t)ero*
PL:	1 EXCL	*kinami*	*(t)au*
	1 INCL	*nigita*	*tu*
	2	*nimu*	***ku***
	3	*naara*	*(t)eu, (t)ou*

As shown above in (13), the 2SG and 2PL preverbal subject particles can have the same form. Ray (1987:411) states that *rua* 'two' can be added to the plural pronoun for the DU interpretation. He gives the following example showing the use of a plural pronoun (1PL.EXCL) in an inclusory construction with dual reference:

(14) **kinami** *ma mama **aro** pei tea sikai mau*

     'I and the father are one.' (Ray 1887: 411)

3.2.5.   South Efate

The independent pronouns of South Efate do not have distinct DU forms, in contrast with the preverbal clitics which have the three-way number contrast SG/DU/PL in paradigms including homophonous person, but not number forms. Although the forms of the subject clitics vary in accordance with their appearance in three tense/aspect paradigms: Realis, Irrealis and Perfect, inspection of the forms show that the same number values are preserved in each of these types of paradigm, albeit with some distinct alternate forms in the 3DU and 1EXCL.DU of the Perfect paradigm (Thieberger 2006: 105).

(15) South Efate pronouns and preverbal realis subject markers

     (Thieberger 2006: 104-105)

		Independent pronouns	Realis subject clitics
SG:	1	*kineu/neu*	*a=*
	2	*ag*	*ku=*

	3	*ga*	*i=*
DU:	1 EXCL	-	***ra=***
	1 INCL	-	*ta=*
	2	-	***ra=***
	3	-	***ra=***
PL:	1 EXCL	*komam*	***u=***
	1 INCL	*akit*	*tu=*
	2	*akam*	***u=***
	3	*gar*	*ru=*

Uses of plural pronouns with DU referents are shown in (16).

(16)a.   ***Komam***   *mama*   *gamus*   ***rak=fa***   *talm̃at.*

        1PL.EXCL   mother   2PL.GEN   1DU.IRR =go:IR   garden

        'We, your mothers, we should go to the garden.' (Thieberger 2006: 107)

   b.   ***Gar***   ***ra=pak***   *talm̃at*   *pan.*

        3PL   3DU.RS =go.to   garden   hither

        'They (two) went to the garden. (Thieberger 2006: 107)

In (16a) the subject phrase is an inclusory construction (as in the Tirax examples (12a,b)) and both (16a) and (16b) shows the use of an independent PL pronoun with verbal agrement referencing DU. Although the clitic *ra* serves to mark 1DU.INCL/EXCL and 3DU, its person reference is unambiguous when it is accompanied by an independent pronoun (as in (16b)) or by a lexical noun phrase. The same consideration applies to the *u* clitic which encodes 1PL.EXCL or 3PL.

3.2.6.   Sye (Erromango)

Crowley (2002: 705-709) shows that verbs in Sye have a complex system of inflectional markings including five distinct sets of subject markers realized as prefixes attached to distinct sets of tense/aspect morphemes. A further set of echo prefixes contrast SG/DU/PL number, but not person. The non-echo subject marker forms for the Recent Past are shown alongside the independent pronoun forms in (17).

(17) Sye pronouns and Recent Past non-echo subject prefixes
       (Crowley 2002: 698, 706)

		Independent pronouns	Recent past subject prefixes
SG:	1	*yau*	*yaco-*
	2	*kik*	*ko-*
	3	*iyi*	*co-*
DU:	1 EXCL	-	*kaku-*
	1 INCL	-	*koku-*
	2	-	***ku-***
	3	-	***cu-***
PL:	1 EXCL	*kam*	*kakli-*
	1 INCL	*koh*	*kokli-*
	2	*kimi*	***ku-***
	3	*iror*	***cu-***

In the Sye subject-marking paradigm it is notable that there is homophony of the DU and PL subject prefixes for second and third person. In the latter case, as Crowley (2002: 706) notes, unusually, the syncretic forms are formally duals, rather than plurals.

3.3. General observations

3.3.1. Formal distinctions

There are three aspects of the paradigms seen in 3.2.1 –3.2.6 that seem to be worthy of further consideration.

(i) Whereas the corresponding paradigms for Proto-Oceanic shown in (4) are relatively transparent with the respect to the sourcing of the preverbal markers from the independent pronouns, the same is not clearly the case for the preverbal subject markers in all five of the languages represented in 3.2.1 –3.2.6.

(ii) Whereas all of the forms in the independent pronoun paradigms of 3.2.1 –3.2.6 are unambiguous for person and SG/non-SG number, the forms of the preverbal subject markers include one or more homophonous forms in all but one of the six languages represented (the one possible exception is Atchin).

(iii) For five of the six languages represented in 3.2.1 –3.2.6 (the exception is Nakamanga), the preverbal subject markers have sets of distinct forms in different tense/aspect paradigms.

With respect to points (i) and (ii), it is reasonable to assume that both of these effects are outcomes of (morpho-phonological) historical changes which have led to reductions in the forms of the pre-verbal markers. In conjunction with such reductions in the subject referencing paradigms, the synchronic lack of transparency noted in (i) in the correspondences between the two paradigms in the individual languages could also have been brought about by independent innovations in the pronoun paradigms, such as we saw in (5) have been implemented relatively recently in Unua/Pangkumu.

With regard to the synchronically homophonous forms, we can consider the extent to which they are either "accidental" or "systematic" in the synchronic grammars. When formal distinctions are neutralized by regular sound change, the homophonous outcomes may be non-significant for the grammatical/categorial classification of the respective items. But it also the case that the presence of homophonous forms in paradigms can also lead to reinterpretations as to the functions encoded in the items in question. Although we do not have access to the internal grammars of the speakers of the languages, the existence of homophonous forms in the paradigms of the languages may be indicative of existing or incipient absence of contrasts in person/number values. We should therefore consider pairs of homophonous forms in terms of the values that they (potentially) do or do not encode.

Two of the languages of the set, V'ënen Taut and Tirax, have homophonous forms for 1EXCL and 1INCL in their subject referencing paradigms, but they maintain the three-way number contrast in these and all other forms. The 1st person forms in these languages are as follows:

(18)   Homophonous 1st person forms

		V'ënen Taut	Tirax
SG		*n-*	*n(i)=*
DU	EXCL	**n-r-**	**nar=**
	INCL	**n-r-**	**nar=**
PL	EXCL	**nə-v-**	**nas=**
	INCL	**nə-v-**	**nas=**

In these two languages, therefore, it seems that the 1st person value is systematically uniform across all three number values in its failure to encode clusivity. We infer that in this case, whatever has been the diachronic source of the identity of form, clusivity is neutralized in the subject referencing paradigms of V'ënen Taut and of Tirax.[13]

Two other languages, Nakanamanga and Sye, appear to present reductions in number values in their subject referencing paradigms, in both cases in the 2nd person forms and, in Sye, also in its 3rd person forms:

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[13] However, as already noted, the clusivity value can be expressed through the use of the PL INCL or EXCL independent pronoun in the subject position.

(19) Forms homophonous for number (2nd and 3rd person)

		Nakanamanga	Sye
SG:	2	*(te)ku*	*ko-*
	3	*(t)e*	*co-*
DU:	2	*koro*	***ku-***
	3	*(t)ero*	***cu-***
PL:	2	***ku***	***ku-***
	3	*(t)eu, (t)ou*	***cu-***

The homophony in Sye appears to be systematic in that, although the number contrast is maintained for all values in 1st person forms (along with clusivity), the DU/PL contrast has been neutralized in both the 2nd and 3rd person forms. Such a neutralization of the DU/PL contrast is, for this paradigm, a partial reduction which is well-behaved with respect to the predictions of the number hierarchy. In Nakanamanga, on the other hand, the existence of homophony in the SG and PL forms appears more arbitrary (accidental), under the view that a DU/non-DU number contrast is more marked with respect to the predictions of the number hierarchy than is a SG/non-SG contrast.

One further case of person value homophony occurs in the subject referencing paradigm of S Efate:

(20) Homophonous forms in S Efate subject referencing

Realis subject clitics

SG:	1	*a=*
	2	*ku=*
	3	*i=*
DU:	1 EXCL	***ra=***
	1 INCL	*ta=*
	2	***ra=***
	3	***ra=***
PL:	1 EXCL	***u=***
	1 INCL	*tu=*
	2	***u=***
	3	*ru=*

In the S Efate paradigm the three number contrasts are present, and inclusive forms (1 + 2 (+)) are kept distinct from non-inclusive forms, but there is homophony of 1EXCL and 2 in both the DU and PL and with 3rd person in the DU. The consistency of the absence of the DU/PL contrast in 1EXCL and 2 is unexpected, but we can observe that the greater degree of homophony in the DU paradigm is compatible with the predictions of the number value hierarchy.

3.3.2.   Paradigm contrasts

In Section 3.1 we considered the proposal of Roberts and Roussou (2003) with respect to the presence of more person/number values in pronoun paradigms than in agreement paradigms and we observed that the absence of independent DU pronouns alongside the presence of DU number in subject referencing paradigms in the

languages examined in 3.2.1 – 3.2.6 runs counter to their proposal. But it is possible that the thrust of the Roberts and Roussou proposal may rescued in a modified, albeit weakened, form. It could, for instance, be the case that the proposal works for particle/clitic forms as against affixal agreement agreement paradigms, or it could be that it applies to person as against number values.

Although the particle/clitic/affix distinction may be difficult to identify in particular cases and although we cannot guarantee that that the same criteria have been used by the authors of our sources in the designations that they apply, it seems reasonable to us to take these at their face value in the absence of any counter indications. In considering the languages from this perspective, the forms of the subject referencing paradigms of Atchin and of Nakanamanga are particles, those of Tirax and of S Efate are clitics and those of V'ënen Taut and of Sye are prefixes. We do not find any patterns in the values of the homophonous forms that can be matched with the particle/clitic/affix distinction – even the languages represented in the pair-wise presentation of (18) and (19) are distinct in this respect.

If we leave the number value out of the picture, given the absence of grammaticalized DU forms in the independent pronoun paradigms of the languages examined in 3.2.1 – 3.2.6, it is possible that the Roberts and Roussou proposal may be modified as follows:

(21) A language may have more person categories in its independent pronoun paradigm than in its subject referencing paradigm.

The proposal of (21) is consistent with the absence of the clusivity distinction in the subject referencing paradigms of V'ënen Taut and Tirax (18) and with the presence of the homophony in S Efate (20) and it is not invalidated by the data on homophonous forms in Nakanamanga and Sye in (19). But can (21) be maintained when a wider range of languages are taken into consideration?

The categorization of homophonous forms in paradigms examined in Cysouw (2003) is of particular interest because Cysouw devotes some of his discussion to the case of languages which, like the SOc languages, encode DU number along with the clusivity contrast. Cysouw distinguishes between "vertical homophony" where the same number value is homophonous in different person categories and "horizontal homophony", where the same person value is homophonous in different number values (see Cysouw 2003: 228). For the paradigm values under consideration here for the SOc languages, the patterning in terms of Cysouw's designations is shown diagrammatically in (22).

(22) Horizontal and vertical homophony (following Cysouw 2003)

	SG	DU	PL
1EXCL			
1INCL			
2			
3			

Vertical homophony ↕

←Horizontal→ homophony

The V'ënen Taut and Tirax forms in (18) and the S Efate clitics in (20) thus exemplify vertical homophony and the homophonous forms shown for Nakanamanga and Sye in (19) are instances of horizontal homophony in which a number contrast is not encoded.

Among the many languages that Cysouw studied, for those that have both the DU number category and the clusivity oppositions, there were just a few cases of horizontal homophony and the only cases of vertical homophony found were cases in which the clusivity opposition was neutralized (as in (16) in V'ënen Taut and Tirax).[14] The vertical homophony of S Efate therefore provides an instance of an homophony pattern which did not figure in the languages that Cysouw examined. Cysouw (2003: 230) also found one case of a language having both horizontal and vertical homophony, Kwamera.

Cysouw also considers the paradigms of the languages of his study with respect to the presence of distinctions in independent pronoun paradigms versus subject referencing paradigms. On the overall count that he presents (Cysouw 2003: 313), for the languages presenting the greatest number of distinctions in their paradigms (different person and number values), there are more distinctions encoded in the independent pronoun paradigms than in the subject referencing paradigms. But the counts that Cysouw presents are overall counts and we do not see what contrasts there are for pairs of paradigms in individual languages. We thus cannot tell from Cysouw's overall counts whether or not data from individual languages runs counter to (21).

The statement (21) would however be consistent with the general finding of Baerman et al (2004: 57) that syncreticism of subject person is more common in subject marking morphology than in pronouns. Baerman et (2004) also find that

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[14] We view INCL/EXCL opposition as being present in these languages, given that it is present in the independent pronoun paradigms.

syncreticism is more common in non-SG than in SG paradigms and that certain

person values are more likely to be homophonous than others:

(23)   Syncreticism of person (Baerman et al 2004: 59-61)

	More common	*Less common*
Person	(1 or 3) + 2	1 + 3
	1INCL + 1EXCL	1INCL + (2 or 3)

In (23) the '+' symbol is used to show which person values are homophonous. Both

V'ënen Taut and Tirax exhibit the more common collapsing of the clusivity contrast

(identified also in Cysouw 2003) and we have not here found a case in which a

1INCL form is homophonous with a 2 or 3 person value. The S Efate case in which

1EXCL is homophonous with 2 is not represented in (23). Sye has the relatively

common 2 + 3 homophony.

It remains that, in the languages we have examined in this section, except for Sye

which lacks the number distinction for DU in 2nd and 3rd person, the full range of

person and number values (three persons plus clusivity and three numbers) can be

overtly manifested for the subject of a sentence if both an independent pronoun and a

subject referencing marker are present.

In the next section we examine the languages which are defective for number in

their subject referencing paradigms as compared to their independent pronoun

paradigms.

4. Languages with defective subject marking paradigms

4.1. Introduction

In this section we proceed with the examination of the paradigms of the three languages of Table 1 which have DU independent pronouns but which lack DU in their subject referencing paradigms: Mwotlap, Sakao and Nese.

4.2. Paradigms

4.2.1. Mwotlap (Banks)

Mwotlap has a four-way number contrast SG/DU/TR/PL in its pronoun system, but its two sets of subject prefixes, attaching to 8 sets of tense/aspect markings, identify only SG subjects (Crowley 2002). The two sets of subject marking prefixes (labelled Set A and Set B) are shown in (22) alongside the independent pronouns.

(22) Mwotlap independent pronouns and subject prefixes

      (Crowley 2002: 589, 594)

		Independent pronouns	Subject prefixes	
			Set A	Set B
SG:	1	*inɔ*	*nɔk-*	*nɔ-*
	2	*inɛk*	*nek-*	*ne-*

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	3	*ike*	*keni-*	*ke-*
DU:	1 EXCL	*kanyo*		
	1 INCL	*(i)ndyo*		
	2	*komyo*		
	3	*koyo*		
TR:	1 EXCL	*komtel*		
	1 INCL	*intel/detel*		
	2	*kɛmtel*		
	3	*keitel*		
PL:	1 EXCL	*kɛmɛm*		
	1 INCL	*iɣen*		
	2	*kimi*		
	3	*ikey*		

The formal correspondences across the singular paradigms are transparent, but the person categories across the different number values within the pronoun paradigm are only partly systematically recoverable. The presence of SG subject marking versus the absence of non-SG person marking would be consistent with the observations of Baerman et al (2004: 59) that syncretism is more common in non-SG than in SG paradigms.

4.2.2.   Sakao (Northwest Santo)

Sakao also expresses a four-way number contrast in its pronoun paradigm, but with Paucal (PC) in addition to SG, DU and PL. Two sets of subject marking prefixes are distinct for Realis and Irrealis and they encode a SG versus PL contrast.

(24) Sakao independent pronouns and subject prefixes
    (Crowley 2002: 601, 604)

		Independent pronouns	Subject prefixes Realis	Irrealis
SG:	1	*ɣæn*	*am-*	*a-*
	2	*i*	*m-*	*Ø-*
	3	*ni*	*mV-*	***ɣi-***
DU:	1 EXCL	*ɣamru*		
	1 INCL	*ɣɔro*		
	2	*ɣiru*		
	3	*ɣɔru*		
PC:	1 EXCL	*ɣamðæl*		
	1 INCL	*ɣorðæl*		
	2	*ɣðæl*		
	3	*ɣørðæl*		
PL:	1 EXCL	*ɣam*	***tam-***	***ta-***
	1 INCL	*ɣɒr*	***tam-***	***ta-***
	2	*ɣe*	*ɣim-*	***ɣi-***

| | 3 | *ɣœr* | *ɣam-* | *ɣa-* |

The DU and PC independent pronoun forms are transparently constructed from a non-SG pronoun base with the addition of the suffixes *–ru* 'two' and *-ðœl* 'three'. But the presence of the vowel alternations in these forms (although probably phonologically conditioned) supports the treatment of the DU and PC pronouns as word forms rather than as pronoun words accompanied by a numeral modifier word. On the semantic side, the PC interpretation for the PL + 'three' forms also supports the analysis of these as complex word forms.

Among the subject prefixes, the 3SG and 2PL Irrealis forms are homophonous and neither the Realis nor the Irrealis 1PL forms distinguish between INCL and EXCL.

4.2.3. Nese (Northwest Malakula)

Crowley (2006d; 49) presents a four-way contrast for the Nese independent pronouns and two contrasting Realis and Irrealis paradigms of subject prefixes which encode SG versus non-SG.

(25) Nese independent pronouns and subject prefixes

(Crowley 2006d: 49, 67, 69)

		Independent	Subject prefixes	
		pronouns	Realis	Irrealis
SG:	1	*khina*	*ne-*	*de- ~ **je-** ~ **se-***
	2	*khunokh*	*kho-*	*khoje- ~ khose-*

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		3	*khai ~ (khini)*	*Ø-*	*je- ~ se-*
DU:	1 EXCL		*kananrru*		
	1 INCL		*nekrrerru*		
	2		*kam'irru*		
	3		*kharru*		
TR:	1 EXCL		*kanantil*		
	1 INCL		*nekrretil*		
	2		*kam'itil*		
	3		*kharrtil*		
PL:	1 EXCL		*kanan*	*brri-*	*brrije- ~brrise-*
	1 INCL		*nekrre*	***rri-***	***rrije- ~ rrise-***
	2		*kam'i*	*kirr-*	*kirrje- ~ kirrse-*
	3		*kharr*	***rri-***	***rrije- ~ rrise-***

In the case of the subject-marking paradigms, except for the 1SG forms, the relationship between the Realis and Irrealis forms is fully transparent: the Realis is a portmanteau person/number morpheme (Ø in the 3SG) and the corresponding Irrealis from adds –*je-/-se-* to this morpheme. With the independent DU and TR pronouns, only the 3DU form is not predictable as the agglutination of a PL base with following –*rru* 'two' or –*til* 'three' (cf. the comment made by John Lynch in Crowley 2006d: 49). If these pronouns are true DU and TR forms, it would have to be the case that they would be used obligatorily in cases of DU and TR referents (that is, that the use

of PL forms would be excluded in these cases).[15] Unfortunately, information at this level for Nese is probably no longer obtainable.

4.3.   General observations

Bearing in mind the proviso with respect to the DU and TR pronoun forms in Nese, if we take the four-way number contrast shown for the three languages discussed in this section at its face value, then we can point to an interesting contrast between the two sets of languages which lack DU number in one or other of the person encoding paradigms represented in Table 1. Of these two sets, it is only the languages which encode only the two-way SG/non-SG contrast in their subject agreement markings which use a four-way number contrast SG/DU/TR or PC/PL in their independent pronoun paradigms.

The paradigms of the three languages in 4.2.1 – 4.2.3 show a lack of transparency in the formal relationship between the independent pronouns and the corresponding pre-verbal subject markers. Both Sakao and Nese have homophonous forms in their subject-marking paradigms, whilst Mwotlap, lacking homophonous forms, has only SG subject markers. According to the cited sources of information, all three of these languages have prefixes rather than particles/clitics as subject markers.

The homophonous forms in Sakao and in the Nese Irrealis paradigm are shown in bold in (26) in terms of the alignments of Cysouw (2003)

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[15] A point that could be relevant with respect to the use of such forms in other languages as well.

(26) Homophony in Sakao and Nese Irrealis subject referencing paradigms

	Sakao		*Nese*	
	SG	PL	SG	PL
1EXCL	*a-*	***ta-***	*de-/**je**-/**se**-*	*brrije-/brrise-*
1INCL	-	***ta-***	-	***rrije-/rrise-***
2	Ø	***ɣi-***	*khoje-/khose-*	*kirrje-/kirrse-*
3	***ɣi-***	*ɣa*	***je-/se-***	***rrije-/rrise-***

Except for the neutralization of the clusivity distinction in Sakao, found also in

V'ënen Taut and Tirax (18), the vertical/person homophonies in Sakao and Nese do

not appear to be systematic. The homophony of 1INCL.PL and 3PL in Nese belongs

to a less common pattern in terms of the findings of Baerman et al (2004) shown in

(23). However, given the presence of homophonies in these languages we can observe

that they are compatible with the proposal of (21) in that they have fewer distinct

forms in their subject referencing paradigms than they do in their independent

pronoun paradigms.

5. Languages without three-way SG/DU/PL number

5.1. Introduction

In examining the languages of this set, we will endeavour to determine whether or not they share the complexity characteristics associated with the languages of the set described in Section 3 in terms of the points summarized in 3.3 and with respect to the observations of 4.3.

5.2.   Paradigms

5.2.1.   Tamabo (Malo Island, South Santo)

Following the description of Jauncey (2002), the subject marking morphemes of Tamabo are particles which attach as clitics to tense/aspect or negative morphemes when these are present.

(27)   Tamabo independent pronouns and subject particles
        (Jauncey 2002: 610)

		Independent pronouns	Subject particles
SG:	1	*iau*	*ku=*
	2	*niho*	*o=*
	3	*nia*	*mo= (realis), a= (irrealis)*
Non-SG:	1 EXCL	*kamam*	***ka=***
	1 INCL	*hida*	***ka=***
	2	*kamin*	*no=*
	3	*nira*	*na=*

For Tamabo, we find that, with the sole exception of the two 3SG forms for Realis versus Irrealis, the subject marking particles occur in just a single set containing only one homophonous form *ka* '1EXCL.non-SG/1INCL.non-SG'. There is only marginal transparency in the person forms across the two paradigms.

5.2.2.   Araki (Araki Island, South Santo)

(28) Araki independent pronouns and subject marking clitics

   (François 2002: 42, 44))

		Independent pronouns	Subject clitics Realis	Irrealis
SG:	1	*na*	*nam=*	*na=*
	2	*niko ~ nko*	*om=*	*o=*
	3	*nia*	**mo=**	**co=**
non-SG:	1 EXCL	*kaṁiam*	*kam=*	*kaṁia=*
	1 INCL	*nica*	*cam=*	**co=**
	2	*kaṁin*	*ham=*	**ha=**
	3	*nida ~ nda*	**mo=**	**ha=**

The subject marking paradigms of Araki have a degree of complexity given that they exist in two sets and that they contain three homophonous forms: *mo=* 3SG/non-SG, *co=* 3SG/1INCL.non-SG, and *ha=* 2PL/3non-SG. The 2 and 3 PL homophony in the Irrealis coincides with one of the more common patterns of (23). There is transparency in the relations of the person forms across the pronoun and subject marking paradigms in the case of the 1SG, 2SG and 1EXCL.non-SG forms.

5.2.3. Lamen (Lamen Island, Northwest Epi)

Early (2002) presents a single set of subject marking prefixes for Lamen:

(29) Lamen independent pronouns and subject prefixes

(Early 2002: 672)

		Independent pronouns	Subject prefixes
SG:	1	*onu*	*ne-*
	2	*ko*	*o-*
	3	*naga*	*Ø-*
non-SG:	1 EXCL	*omami*	*me-*
	1 INCL	*isa*	*te-*
	2	*amiyu*	***a-***
	3	*la(la) ~ nala*	***a-***

Except for the 2SG and 1EXCL.non-SG forms, the relationships between the person forms across the paradigms are quite opaque. The subject referencing paradigm includes two homophonous forms, 2non-SG and 3non-SG, which, as for Araki, represent one of the more common patterns from Baerman et al (2004) shown in (23).

5.2.4. Ura (Northern Erromango)

As for closely related Sye, Ura has complex sets of paradigms of subject marking prefixes with six distinct sets expressing the same range of person categories as those

expressed in the independent pronouns (Crowley 1999: 157). The preconsonantal Recent Past subject prefixes are shown in (30).

(30) Ura independent pronouns and Recent Past subject prefixes
      (Crowley 2002: 127, 158)

		Independent pronouns	Recent past subject prefixes
SG:	1	*yau*	*yau-*
	2	*qa*	*ki-*
	3	*iyi*	*(c)i-*
non-SG:	1 EXCL	*qis*	*(q)ur-*
	1 INCL	*qim*	*qimir-*
	2	*gimi*	*qir-*
	3	*leil*	*(c)ir-*

There is no paradigm-internal homophony in the two set of paradigms shown in (30) and the only clearly transparent relations between the person forms across the paradigms are those for 1SG and 1INCL.PL. The presence of *–(i)r* distinguishes non-SG from SG.

2.3   Summary

All of the languages represented in 5.2.1 – 5.2.4 have seven fully contrastive SG/non-SG independent pronouns. Except for Ura, the subject marking paradigms in these languages include one or more homophonous forms. Two of the more common

patterns of homophony are represented in this set: the absence of the clusivity contrast in Tamabo and the 2/3 homophony in paradigms of Araki and Lamen. Araki also shows two unusual cases of homophony: 3SG and 3PL in the Realis and 3SG and 1INCL.PL in the Irrealis.

6. One or two paradigms without DU: Characteristics

6.1. General observations

In addition to the absence of DU number exponents, the paradigms that been presented in Sections 3 – 5 show variant realizations with respect to the following characteristics:

1. Presence/absence of TR or PC number.
2. Presence/absence of homophonous forms in subject marking paradigms.
3. Presence/absence of transparency in person forms across paradigms.
4. Prefixal versus particle/clitic realizations of subject marking forms.
5. Presence/absence of complexity in subject marking paradigms (more than one paradigm versus a single paradigm).

The distribution of these characteristics is shown in Table 2.

Table 2 about here

6.2. Homophony and opacity

In all of the languages represented in Table 2, the forms of the pronoun paradigms are fully contrastive for the persons and numbers included (whether or not they have exponents of DU) and it is only in the subject marking paradigms that we find homophonous forms. Where there is homophony in the subject marking paradigms, it is then automatically the case that there will be no complete distinct one-to-one formal correspondence between the pronouns and the subject-marking forms. Thus [+homophony] in Column 2 necessarily matches with [+opacity] in Column 3. Even though in the case of the languages lacking DU pronouns there cannot be a transparent relation between a DU independent pronoun (which does not exist) and a DU subject-marker, one or more of the subject markers in the [+opaque] category are however opaque in the SG and/or PL categories. With the two languages which do not have homophonous forms in their subject-marking paradigms, Mwotlap has transparent relations between its pronouns and its two set sets of SG subject markers and Ura lacks transparency between its pronouns and its six sets of subject-marking paradigms.

6.3. Prefixes versus particles/clitics

On the assumption that the subject marking morphemes have developed out independent pronoun forms, it would not be unexpected to find that phonological

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reductions applying in the diachronic development of particle/clitic/prefixal forms would result in the neutralization of some distinctions. Assuming progressions in the order: particle > clitic > prefix, we could expect that the prefixal paradigms would include more homophony than the particle/clitic paradigms.[16] (It is also more likely that the prefixal subject marking paradigms could include more opaque relations with corresponding person forms in pronoun paradigms.) However, comparison of Columns 2 and 4 show that there is no one-to-one correspondence distinguishing prefixes from particles/clitics with respect to the presence of homophony in the subject-marking paradigms. Given also the close correspondence between the presence of homophony and opacity, it is not unexpected that comparison of Columns 3 and 4 shows a lack of correspondence for these characteristics also.

We might also have expected that greater complexity of subject-marking paradigms (more paradigms) would also be more likely to be associated with prefixal forms as against particles/clitics, but the comparison of Columns 4 and 5 shows that this is not the case either.

Overall then, the prefix versus particle/clitic characteristic of the subject-marking forms does not lend support to the expected progression of grammatical effects that were hypothesized to be associated with diachronic phonological weakenings distinguishing particle-like forms from affixes.

6.4. Trial/Paucal number

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[16] Since it can be difficult to formally distinguish between particles and clitics, we group these together.

6.4.1. Trial/Paucal number in languages lacking DU in a paradigm

Given the number hierarchy SG > PL > DU > TR/PC, it would be unexpected to find values for TR or PC in paradigms lacking DU. This is indeed the case as the languages lacking DU in both types of paradigm have no TR or PC values and, of the languages examined in 3.2, 4.2 and 5.2, TR/PC is found in fact only in the pronoun systems of languages which also have DU in their pronoun paradigms. But, whereas all of the languages which have DU only in their pronoun systems also have TR/PC in their pronoun systems, none of the languages which have DU in their subject-marking paradigms also have TR/PC in their subject-marking paradigms. This distribution of TR/PC therefore appears to differ in a significant way from the distribution of DU in the different paradigms in that DU may be present in the subject marking pardigms, but absent in the corresponding independent pronouns. The distribution of the number values in the the two types of paradigm which non-matching values are shown in Table 3.

Table 3 about here

Whereas the absence of contrasting DU pronouns does not entail the absence of DU in subject-marking paradigms, the absence of TR/PC values in the pronoun

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system seems to line up with the absence of TR/PC in the corresponding subject-marking systems.

In order to consider further the behaviour of TR/PC number values, in the next section we will survey the distribution of the use of TR/PC in languages which have exponents of DU number values in both their independent pronouns and their subject marking paradigms.

6.4.2.   Trial/Paucal in languages with both DU pronouns and DU subject marking morphology

Languages having both DU pronouns and DU subject marking morphemes potentially may also have TR or PC contrasts in either or both of these types of paradigms. Table 4 sets out the distribution of the encoding of TR/PC in both of these paradigms for the languages shown in the first column of Table 1.

Table 4 about here

The pattern that we observe in Table 4 confirms the conclusions that we reached in the preceding section in that there can be languages which have TR/PC in their

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pronoun systems, but which lack TR/PC in their subject-marking paradigms (Tape, Avava and Nāti). The distribution of TR/PC in the subject-marking paradigms also suggests that a subject-marking paradigm may have TR/PC values only if these values are present in the corresponding pronoun paradigm.

In the absence of a five-way contrast PL/PC/TR/DU/SG, the synchronic PC values of a four-way system PL/PC/DU/SG can be taken to be the reflexes of a commonly occurring semantic shift from TR to PC (Corbett 2000: 268 and, for Oceanic languages, see fn. 8). The grammatical TR value is thus relatively unstable and it may be that TR/PC was only ever non-robust in some of the languages in which this value is absent. Another factor that comes into play is that in cases in which there has been a shift from TR to PC, the boundaries between the values of the ensuing PC versus PL contrast can be relatively indeterminate. In such cases the neutralization of the distinction, with loss of one or other of the values, and of the forms corresponding to that value, is not unexpected. As an instance which possibly illustrates one type of outcome of such developments, the paradigms for pronouns and for subject marking prefixes in Unua appear not to have reflexes from the same sources in the PL parts of the two paradigms

(31) Independent pronouns and Realis subject marking in Unua

		Independent pronouns	Realis subject marking
SG:	1	*xina*	*no-*
	2	*xai/xau*	*u-*
	3	*xini*	*i-*
DU:	1 EXCL	*mem**ru***	*mVr-*

	1 INCL	*rra**rru***	***rru-***
	2	*xam**ru***	*mur-*
	3	*ra**ru***	***ru-***
PL:	1 EXCL	*men**de***	*mVm-*
	1 INCL	*rra**te***	*rrV-*
	2	*xan**de**/xam**de***	*mim-/mum-*
	3	*ra**te***	*rV-*

Whereas the formal relationship between the DU parts of the two paradigms is transparent (both including a reflex of POc **rua*), the same is not true for the PL parts of the two paradigms. In contrast with the case of DU, the lack of transparency in the formal marking of PL across the two paradigms suggests that the sources of these forms are different. It would seem that the *te/de* of the plural pronoun forms has its origin as a numeral increment, which could have been from either **tolu* 'three' or **pat(i)* 'four' (synchronically, the numerals in Unua are: *ɣeter* 'three' and *ɣeβetʃ* 'four'),[17] whereas, in the absence of a numeric increment, the 1EXCL.PL and 2PL forms could simply be reduced forms of the POc non-SG pronouns. Under this analysis, the Unua PL pronouns evolved out of an earlier (TR >) PC > PL shift, whereas the PL subject referencing paradigm derives from bare PL pronouns. .

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[17] Both possibilities are represented in the languages examined in Lynch and Ozanne-Rivierre (2001) and Lynch (1977: 23) has observed that the Tanna languages all have number marking affixes which are distinctly different in form from the corresponding numerals.

7. Conclusions

With respect to the formal manifestations of number in the paradigms of the languages that we have examined, we have come to the following conclusions:

(32) Number in the paradigms

   A. All of the individual paradigms of the 38 languages surveyed conform to the hierarchy of the expression of number values: SG > PL > DU > TR/PC.

   B(i) Languages which have DU in their pronoun paradigm may lack DU in their subject marking paradigm(s).

   (ii) Languages which have DU in their subject referencing paradigm(s) may lack DU in their pronoun system.

   C(i) No language which has TR or PC in its subject marking paradigm(s) does not also have TR or PC in its pronoun system.

   (ii) Languages which have TR or PC in their pronoun paradigm may lack TR or PC in their subject referencing system.

Because of the existence of the (32Bii) cases, we have put forward a modified version of the Roberts and Roussou (2003) proposal that languages may have fewer contrasts in their subject referencing paradigms than in their independent pronouns, which we repeat here:

(21) A language may have more person categories in its independent pronoun

        paradigm than in its subject referencing paradigm.

A stronger version of (21) would include a second clause ruling out the inverse
possibility:

(21)'a. A language may have more person categories in its independent pronoun

          paradigm than in its subject referencing paradigm.

    b. A language may not have more person categories in its subject referencing

          paradigm than it its independent pronoun paradigm.

Both clauses of (21)' are compatible with the SOc data that have studied here.

In studying the different paradigms we have also considered the extent to which

the presence of homophony in the different paradigms is consistent with what have

been observed to be typologically unmarked tendencies in paradigms. With reference

to the findings of Cysouw (2003) and of Baerman et al (2004), the presence of

homophonous INCL/EXCL forms in V'ënen Taut, Tirax, Sakao and Tamabo fall into

a cross-linguistically unmarked pattern. Another pattern of homophony which is

found in more than one language of our data and which falls into one of the more

common cases identified in Baerman et al (2004) (shown in (23)) is the 2/3 person

homophony of Sye, of Araki and of Lamen non-SG forms (and also in S Efate

combined with 1EXCL in the DU). The data have also evinced other less common, or

previously unobserved, cases of homophony variously present in different languages.

It may be that these should be viewed as instances of "accidental" homophony if the

typological tendencies are taken as indicative of the potential presence/absence of contrasting values in paradigms.

Whereas the investigations carried out in Cysouw (2003) and in Baerman et al (2004) were focused on occurrences of homophony in individual paradigms, in our examination of the SOc paradigms we have been concerned to consider the subject marking paradigms alongside the independent pronoun paradigms of the particular languages. Whilst the homophonies that we have observed in individual paradigms are compatible in some cases with observed common patterns, we have also found a not insignificant number of marked cases of homophony given the small number of genetically related languages of our sample. An unexpected finding of our study concerns the presence of TR/PC independent pronouns relative to the absence of DU marking in subject referencing paradigms. We have also been led to put forward the proposal of (21)' in view of our findings with respect the distribution of number and person values across the pairs of paradigms in the individual languages.

It would clearly be of interest to test our findings by extending the scope of this type of investigation to other languages from other language families. Another area for further work on the languages of the present sample would involve the examination of the occurrences of homophony in the subject referencing paradigms of the languages which have the three-way SG/DU/PL contrast both in their independent pronoun paradigms and in their subject referencing paradigms.

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Abbreviations

COM 'comitative', DU 'dual', EXCL 'exclusive', GEN 'genitive', INCL 'inclusive', INDEF 'indefinite', IRR 'irrealis', PC 'paucal', PL 'plural', R 'realis', RS 'realis subject', SG 'singular', SOc 'Southern Oceanic', TR 'trial'

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Table 1: Number contrasts in **Pro**nouns and **Pre**verbal subject markers

SG/PL/DU: SG/PL:	Pro & Pre	Pre Pro	Pro Pre	Pro & Pre
	Lolovoli Raga Merei		Mwotlap[b] Sakao	Tamabo Araki
		Atchin V'ënen Taut Tirax	Nese	
	Uripiv Tape Naman Neve'ei Avava Unua Aulua Nāti Port Sandwich Nahavaq SE Ambrym Paamese			
		Nakanamanga South Efate Sye[a]		Lamen Ura
	Lenakel Kwamera Anejoñ Iaai Nyelâyu Cémuhî Bwatoo A'jië Tinrin Xârâcùù			
	25	6	3	4

[a]Sye: DU is distinct in 1st person, but not in 2nd and 3rd person.
[b]Mwotlap: Preverbal markers are SG only.

Table 2: Characteristics of paradigms in languages lacking DU in one or more
paradigms

	1 TR/PC	2 Homophony	3 Opacity	4 Prefix	5 Complexity
Pro: no DU					
Atchin	-	-	+	-	-
V'ënen Taut	-	+	+	+	+
Tirax	-	+	+	-	+
Nakamanga	-	+	+	-	-
South Efate	-	+	+	-	+
Sye	-	+	+	+	+
Pre: no DU					
Mwotlap	+	-	-	+	-
Sakao	+	+	+	+	+
Nese	(+)	+	+	+	(+)
Pro/Pre: no DU					
Tamabo	-	+	+	-	(+)
Araki	-	+	+	-	+
Lamen	-	+	+	+	-
Ura	-	-	+	+	+

Table 3:   Languages with non-matching number paradigms

Languages	Preverbal subject marking	Independent pronouns
Mwotlap	SG	SG/PL/DU/TR
Sakao	SG/non-SG	SG/PL/DU/PC
Nese	SG/non-SG	SG/PL/DU/TR
Atchin	SG/PL/DU	SG/non-SG
V'ënen Taut	SG/PL/DU	SG/non-SG
Tirax	SG/PL/DU	SG/non-SG
Nakanamanga	SG/PL/DU	SG/non-SG
South Efate	SG/PL/DU	SG/non-SG
Sye	SG/PL/DU	SG/non-SG

Table 4: TR/PC in languages with DU in both independent pronoun and subject-
marking paradigms

	Pronouns	**Pre**verbal markers
	TR/PC	TR/PC
Lolovoli	-	-
Raga	-	-
Merei	-	-
Uripiv	-	-
Tape	TR	-
Naman	-	-
Neve'i	-	-
Avava	PC	-
Unua	-	-
Aulua	-	-
SE Ambrym	PC	PC
Nāti	TR	-
Port Sandwich	-	-
Nahavaq	-	-
Paamese	PC	PC
Lenakel	TR	TR
Kwamera	TR	(TR)
Anejom̃	TR	TR
Iaai	(PC)	(PC)
Nyelâyu	-	-
Cémuhi	-	-
Bwatoo	-	-
A'jië	-	-
Tinrin	-	-
Xârâcùù	-	-