CHAPTER 18

Language variation and change in a North Australian indigenous community

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Speakers in a Warlpiri community in northern Australia are participants in a complex multilingual situation in which there has been a dramatic change in the last thirty years. Children, and adults under approximately age 30, now speak a new bilingual mixed language as the language of their everyday communication. The new language, Light Warlpiri, systematically combines elements from the variety of Warlpiri spoken in Lajamanu (Lajamanu Warlpiri) and Aboriginal English or Kriol (an English-lexified creole). Both Lajamanu Warlpiri and Light Warlpiri are learned and spoken in the community. In both languages grammatical relations are indicated by an ergative-absolutive case-marking system on overt agents and a nominative-accusative system of bound pronouns, and both show variable word order. But in Light Warlpiri ergative case-marking is optional, and word order and pragmatic factors also contribute information about indicating agents. The study shows that there has been intergenerational change in the use of ergative case-marking in Warlpiri, with younger speakers using it on agents less often than older speakers. Both children and adults use ergative marking more often on agents that are postverbal, and children produce this pattern more frequently than adults do, which suggests that they are regularizing a pattern found in adult speech.

1. Introduction

Speakers in the multilingual community of Lajamanu, a Warlpiri community of approximately 600 people in northern Australia, are participants in a complex multilingual situation in which there has been a dramatic change in the last thirty years.

1. I am indebted to Jane Simpson, Melissa Bowerman, Penelope Brown, Bhuvana Narasimhan and Patrick McConnell for discussions of the ideas in this paper. This chapter is a revised version of chapters from my PhD thesis from the University of Sydney.
Children, and adults under approximately age 30, now speak a new bilingual mixed language, which systematically combines elements from the heritage language, the variety of Warlpiri spoken in Lajamanu (Lajamanu Warlpiri) and Aboriginal English or Kriol, an English-lexified creole (AE/Kriol) (O'Shannessy 2005:31). The new language, Light Warlpiri, is called a bilingual mixed language because neither of its source languages can be considered to be the sole parent language (Bakker 2003:1) – both types of source language make substantial contributions to its structure and lexicon.

Speaking styles in the community typically include considerable code-switching, between Lajamanu Warlpiri and AE/Kriol, and between Lajamanu Warlpiri, Light Warlpiri and AE/Kriol. Since there are several ways of speaking in one community, and changes to a new way of speaking have been rapid, there might be considerable variation between speakers in producing each of the two main languages, Lajamanu Warlpiri and Light Warlpiri. The emergence of Light Warlpiri was brought about by one age group, who are now young adults in the community, so there might be systematic variation within languages between age cohorts of speakers, for example, between younger and older adults or between children and adults.

The area of most interest is in how speakers encode grammatical relations in each language. Two systems for indicating grammatical relations, word order (in AE/Kriol, nominative-accusative pattern) and case-marking (in Lajamanu Warlpiri, ergative-absolutive pattern), are in contact. The contact between systems invites two questions: (a) how is each system used in the new language? And (b) has contact between languages influenced how the case-marking system is used in the traditional language? In discussing core arguments of verbs, I use the distinction of Dixon (1979) between A arguments (subject arguments of transitive verbs), O arguments (non-subject direct arguments of transitive verbs) and S arguments (arguments of intransitive verbs). In Lajamanu Warlpiri, and to a lesser extent in Light Warlpiri, grammatical relations are indicated through an ergative-absolutive case-marking system – A arguments are marked with a case-suffix, but O

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2. When people from the Lajamanu community speak to non-Warlpiri people from other communities, they speak a code which could be categorized as either Aboriginal English or acrolectal Kriol (Kriol with relatively more properties from English, as opposed to basilectal Kriol, which has relatively more properties from heritage languages). Some lexical, phonological and syntactic elements occur in both Kriol and Aboriginal English, which means that when some elements are inserted into a Warlpiri clause, it is unclear whether the source language of the elements is Kriol or Aboriginal English. For this reason I label the source of elements which could be from either of these languages AE/Kriol, although I am aware that Aboriginal English and Kriol are considered separate languages, with distinct origins (Malcolm & Kaldor 1991).
and S arguments are not marked. In contrast, in varieties of English and Kriol, grammatical relations are indicated through word order in a nominative-accusative system – both S and A arguments occur before the verb, and O arguments occur after the verb.

The two systems meet in Light Warlpiri and compete for the function of indicating grammatical relations – both case-marking and word order take on the role to some extent. So does the competition between the two systems in Light Warlpiri influence how the same speakers speak Lajamanu Warlpiri? For instance, do speakers in all age groups apply ergative case-marking obligatorily on A arguments in Lajamanu Warlpiri? Or do younger speakers apply it less often, as they do in Light Warlpiri? Do all speakers of each language use ergative marking and word order patterns according to the same criteria? For example, do speakers apply ergative marking more often when the risk of argument ambiguity is high, perhaps because both core arguments are overt, or because both core arguments are animate?

This paper examines variation in ergative case-marking and word order within the two main languages spoken in the community along the parameter of age, examining speech from adults in several age groups and from children. Children are included because they are the children of the group of young adults who made the dramatic shift to speaking Light Warlpiri, raising the question of whether they are pushing language change even further with their own innovations or maintaining stability by reproducing the patterns their parents use.

In the next section I sketch the sociolinguistic situation in the community. Following that I explain why variation studies in language contact situations and involving children are useful, then outline the data collection and methodology for the studies in Lajamanu Community which I report on. I then examine ergative case-marking and word order patterns across age groups, first in Lajamanu Warlpiri only, then through a comparison of Lajamanu Warlpiri and Light Warlpiri.

2. Sociolinguistic background

Until the 1930s most Warlpiri had lived a traditional hunter-gatherer lifestyle, moving freely through a large area of the Tanami Desert in Central Australia. There had been very little contact with non-Indigenous people, but there was some through the establishment of gold mines and cattle stations in the area.

3. Ergative marking is obligatory on A arguments except for first and second person singular pronouns (Bavin & Shopen 1985:152) – it can be omitted from a preverbal pronoun, but is rarely omitted from a postverbal pronoun (Laughren, p.c.).
From the 1940s government agencies set up welfare-oriented communities throughout Central Australia and Indigenous people were forced to abandon their traditional lifestyle and live within government controlled communities. In the case of Lajamanu this involved a section of the larger Warlpiri population being separated from their families and moved to a site far from other Warlpiri communities, approximately 600 kilometers from the area where other Warlpiri are settled. Until 1967 people in Lajamanu lived under a system of government welfare, receiving rations in lieu of payment for work, but now the community is self-governing. However there is still little opportunity for paid employment in the community and most people rely on welfare payments. Traditional activities such as hunting for food continue, but are a supplement to food bought in the local store. The nearest commercial centre is a town 570 kilometers to the north, so the community is fairly socially isolated. Nevertheless the Warlpiri often travel to the commercial centers in the north and to the other Warlpiri communities in the south to visit family and participate in cultural activities, for example, ceremonial practices and sports carnivals.

People in the community speak Lajamanu Warlpiri, Aboriginal English or Kriol (an English lexified creole), Standard Australian English, and the newly emerged bilingual mixed language, Light Warlpiri. Older Warlpiri speakers, over approximately thirty years old, mainly speak Lajamanu Warlpiri, but typically code-switch between, and borrow from, Kriol and English. Younger adults now speak the new language, Light Warlpiri, as their main language, and also code-switch into Lajamanu Warlpiri and English or Kriol. Children learn both Light Warlpiri and Lajamanu Warlpiri from birth, but they target Light Warlpiri as the language of their everyday interactions, and they speak it almost exclusively until 4 to 6 years of age, when they begin to speak Warlpiri as well, in some contexts. The extent to which children speak Warlpiri when they are young appears to vary between families.

Light Warlpiri has arisen from contact between Lajamanu Warlpiri, Kriol, and varieties of English. Most verbs and the verbal morphology are from Aboriginal English or Kriol, while most nouns and the nominal morphology are from Warlpiri. It has an innovative auxiliary paradigm, which is derived from Warlpiri and Kriol auxiliary systems (O'Shannessy 2005: 39).

Grammatical relations in Lajamanu Warlpiri are indicated through case-marking in an ergative-absolutive pattern, and word order has no syntactic function. Light Warlpiri functions differently. Grammatical relations are indicated in Light Warlpiri partially through ergative case-marking, partially through word order and partially through pragmatic strategies. In both languages the most common word order pattern is SVO.
The following examples show how Light Warlpiri combines elements from Lajamanu Warlpiri and AE/Kriol. In the examples, elements drawn from classic or Lajamanu Warlpiri are in *italics*, and those from Kriol, Aboriginal English or Standard Australian English are in plain font. The auxiliaries are underlined. Example (1) shows Lajamanu Warlpiri, (2) shows AE/Kriol, and (3) shows Light Warlpiri.

(1) *karnta-jarra-riu ka-pala-g* wajilipi-nyi kuuku
   girl-DUAL-ERG IMPF-3DL-3SG chase-NPST monster
   The two girls are chasing the monster. (Lajamanu Warlpiri)

(2) det tu gel dei jeis-im monsta
   DET two girl they chase-TR monster
   Those two girls are chasing the monster. (AE/Kriol)

(3) *de-m jeis-ing it kuuku det tu karnta-jarra-(ng)*
   3PL-NFUT chase-PROG 3SG monster that two girl-DUAL-ERG
   Those two girls are chasing the monster. (Light Warlpiri)

All three examples are similar in meaning. The diagnostic of Warlpiri is the use of a Warlpiri verb and auxiliary, as in (1) above, and the diagnostic of Light Warlpiri is the use of an AE/Kriol verb and Light Warlpiri auxiliary, as in (3). Example (3) has an AE/Kriol verb, a Light Warlpiri auxiliary, and Warlpiri nouns. Note that ergative case-marking, realized as -ng, is optional on the A argument NP, *karnta-jarra*, 'girl-dual'.

An example of an adult code-switching between Light Warlpiri and Warlpiri is given in (4).

(4) a. an *i-m krai-in nana*
   CONJ 3SG-NFUT CRY-PROG DIS
   It is crying; you know.

   b. *yula-mi mayi*
   CRY-NPST INTERR
   Is it crying? (A31:C04.2.1)

In (4) a woman is telling a story from picture stimulus to her daughter. She produces a clause in Light Warlpiri, (4a), which includes an AE/Kriol verb, 'crying', and a component drawn from Warlpiri, *nana* – a discourse marker which can be loosely glossed as 'you know'. She then switches to Warlpiri in the next clause, (4b), with 'Is it crying?'.

I refer to Warlpiri as described in the literature (Granites & Laughren 2001; Hale 1973, 1982; Hale, Laughren, & Simpson 1995; Laughren 1982, 2002;
Laughren, Hoogenraad, Hale, & Granites 1996; Nash 1986; Simpson 1991; Simpson & Bresnan 1983; Swartz 1982, 1991) as "classic Warlpiri." Lajamanu Warlpiri differs a little from classic Warlpiri, mainly with regard to phonotactic constraints, including whether words can end in consonants as well as vowels. Lajamanu Warlpiri is distinct from the new language, Light Warlpiri – Lajamanu Warlpiri can be thought of as classic Warlpiri with some sound changes. From here on I will use the term Warlpiri to include either classic or the Lajamanu variety of Warlpiri, except where there is a need to be specific about which variety is referred to. I use the term "code-switching" to mean using elements from more than one language in a string of speech, either intra- or inter-sententially. I use "borrowing" to mean that a single word from another language is inserted into a clause and is a typical insertion for most speakers.

3. Language variation in language contact and child language settings

The apparent time construct of Labov (1963) shows that synchronic differences between age groups can herald diachronic change. Significant differences between age groups reflect diachronic change, while homogeneity between age groups reflects stable variation. The apparent-time construct has been shown to be robust for both phonological and grammatical features in monolingual communities (Bailey 2002:320), although not yet for communities such as Lajamanu in which there is rapid change.

Language contact situations have been the focus of relatively little variationist work because the variation in multilingual communities is greater than in monolingual and majority language communities (Sankoff 2002:640). Nevertheless studies in these situations have identified minority-language influences on the dominant societal language and also influences of the dominant language on the minority languages (Fortescue 1993; King 2000; Kroskrity 1998; Matras 1998; Poplack 1997; Prince 1988; Sankoff 2002; Sankoff et al. 1997; Silva-Corvalan 1994, all cited in Sankoff 2002).

There are also relatively few studies of variation in child speech. Those conducted concentrate on when children reproduce particular patterns of variation and the constraints on children's learning of them (Roberts 2002:336). Roberts (1997) found that three- and four-year-old English-speaking children produce systematic phonological variation in patterns similar to those of their parents, showing that children can discern stable variation patterns in phonology when they are quite young. Roberts and Labov (1995) examined the phonology of English-speaking pre-school children in a context in which some of the properties affecting adult variation are in the process of change. The children showed differ-
ent patterns from the adults for some properties of the changing sounds. This suggests that the children were becoming active participants in the language change process. The finding that children can be active agents of change is important, as it shows that they are sensitive to socially influenced variation and that their agency can have important consequences in language change as they mature and become adult speakers (Roberts 2002: 339).

The methodology of my study differs from that of other variationist studies in that I am not analyzing a spontaneous speech corpus. The reason is that to investigate the phenomenon of ergative case-marking a very large corpus would be needed, but is not available at present. Instead I examine a set of elicited narratives, as explained below.4

4. Data collection and methodology

The studies focus on ergative case-marking on A arguments and on the order of A and O arguments relative to the verb. But a problem arises because crosslinguistically A arguments are more likely to occur as pronouns, or to be elided in null-subject languages, than to occur as lexical NPs (Du Bois 2003: 25). In both Lajamanu Warlpiri and Light Warlpiri, core argument NPs can be omitted and subject information is provided by bound pronouns. If the A argument is omitted, ergative case-marking cannot occur, so analysis can only take place on data with overt A arguments. The elision of overt A arguments means that in spontaneous speech it is unlikely that there will be many overt A arguments, so an enormous amount of data would need to be collected to extract enough data points for analysis.

To solve the problem I used an elicited production technique for data collection, developing three picture books in which the pictures form stimuli for speakers to tell narratives. The pictures are designed so that throughout the narratives the speaker must use overt NPs in order to disambiguate the protagonists, providing a higher number of overt NPs in the narratives than is typically found in spontaneous speech. Although the stimulus tool leads the speaker to use overt NPs, it does not force the speaker to use an overt NP as an A argument as opposed to an S argument, which could distort a speaker’s distribution of overt versus non-overt

4. Data collection was funded by the Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands, and The University of Sydney, Australia. I am grateful to Elaine Johnson Nangala, Elizabeth Ross Nungarrayi, Agnes Donnelly Napanangka, Valerie Patterson Napanangka, Tanya Hargraves Napanangka, Leah Johnson Napaljarri, Sabrina Nelson Nakamarra, Lajamanu Community Education Centre staff and other members of Lajamanu Community for help with data collection and transcription.
NPs, for example, according to Du Bois' (2003) Preferred Argument Structure. For instance, if the stimulus picture shows a woman picking up a dog, there is nothing to stop the speaker from (re-)introducing the woman as an intransitive actor (e.g. "the woman comes"), and then using a null or pronominal form for the A argument (e.g. "and (she) picks up the dog"). The stimulus tool itself simply makes it necessary for a speaker to use an overt S or A argument instead of a null form. In some languages the animacy of the A argument affects the occurrence of ergative case-marking (Gaby 2008; McGregor 1992, 1998, 2006; Verstraete 2005), and might do so in these languages too, so the stimulus stories were constructed so that pairs of A and O argument referents involve different combinations of animacy.

To encourage the adults to tell the narratives in a speech style that they typically use when speaking with other community members, a specific task design was implemented. The speaker told the narrative to a listener, and the listener used toys and dolls to "act out" the narrative while she heard it being told. Each speaker chose the person with whom they would perform the task, so that she was speaking directly to someone with whom she felt comfortable and with whom she often talked. This was to encourage the person to speak as naturally as possible, within the constraints of a contrived task.

The same picture stimuli were used with the children, but without a speech partner acting out the narrative. Pilot sessions showed that the children were not able to narrate the story for a partner; rather, they tended to give instructions as to how to move the toys, resulting in a series of imperatives. So the children narrated the stories to the researcher, having been asked to talk in either Lajamanu Warlpiri or Light Warlpiri. To help the children cue into the language they were asked to speak in, they watched a short video clip of a child telling a story in the target language of the narrative before performing the task. The narrative in the video clip was unrelated in content to the target stimuli and included transitive and intransitive verbs and some overt S and A argument NPs. After the children watched the video clip they were asked to tell the story in the picture book in the same way as the child in the video.

Narratives were collected in Lajamanu Warlpiri from three age groups of adults (20, 30–50, 60+ years) and two age groups of children (mean ages 6;11 and

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5. I tried to have children tell the story to a Lajamanu Warlpiri-speaking adult, but some children were either reluctant to talk to the adult because of family relationships or reluctant to talk in Warlpiri, whereas they would talk to me in Lajamanu Warlpiri. I think some children were reluctant to talk to a Warlpiri adult in Lajamanu Warlpiri because they have a conventional way of talking to community members - usually in Light Warlpiri - and to change that convention felt uncomfortable to them. Although the children know me well, I fall outside the community conventions so within-group constraints do not apply.
8;11), and also in Light Warlpiri for the three groups who speak it (mean ages 20, 6;11 and 8;11). All adult speakers are women. Children aged six and above were selected because at that age they are confident enough to tell a story in both Lajamanu Warlpiri and Light Warlpiri. The mean ages of the two groups are 6;11 and 8;11, so for convenience I will call the age groups ages 7 and 9 from now on.

Table 1 shows the languages, number of speakers and age groups from which narrative data were collected. In this section a subset of narrative texts – ages 7, 9, 20, 30–50, 60+ – is used to examine variation within Lajamanu Warlpiri across age groups. In the following section a partially overlapping subset – ages 7, 9, 20 – is used to examine systematic differences between Warlpiri and Light Warlpiri. The stories were transcribed by me in CHAT format (MacWhinney 1987; MacWhinney & Bates 1978) with the help of a speaker of Lajamanu Warlpiri or Light Warlpiri. Clauses which were partly unintelligible were deleted. All remaining clauses were coded for language, age group, speaker identification code, transitivity (+/- transitive), and if transitive, whether or not the A argument can host an ergative case-marker. In both languages, A arguments which can host ergative marking include lexical NPs (from either source language in Light Warlpiri), free Warlpiri pronouns and Warlpiri demonstratives, so I call arguments which can host an ergative marker “host” A arguments.

5. Ergative marking and word order in Lajamanu Warlpiri and Light Warlpiri

5.1 Ergative marking and word order in Lajamanu Warlpiri

The total number of transitive clauses with overt host A arguments included in the analysis of Lajamanu Warlpiri in this section is 560. Table 2 shows the percentage of transitive clauses with ergatively marked A arguments and whether they are preverbal or postverbal, for each age group.

6. Some younger children can tell a story in both languages, but not all can, so for ease of comparison I chose age 6 as the minimum age.
Table 2. Child and adult Warlpiri narratives: number of transitive clauses with host A arguments and percentages with ergative marking for each word order, per age group

<table>
<thead>
<tr>
<th>Age</th>
<th>7</th>
<th>9</th>
<th>20</th>
<th>30 to 50</th>
<th>60+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trans clauses</td>
<td>66</td>
<td>95</td>
<td>59</td>
<td>128</td>
<td>212</td>
<td>560</td>
</tr>
<tr>
<td>% ergative</td>
<td>80</td>
<td>79</td>
<td>86</td>
<td>89</td>
<td>100</td>
<td>Mean: 90</td>
</tr>
<tr>
<td>% AV order</td>
<td>51</td>
<td>83</td>
<td>79</td>
<td>68</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>% Erg AV order</td>
<td>64</td>
<td>77</td>
<td>91</td>
<td>88</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>% Erg VA order</td>
<td>96</td>
<td>87</td>
<td>66</td>
<td>90</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 shows that in each age group there are far more host A arguments with ergative marking than without. The 60+ age group contributes many more transitive clauses than the other groups and always uses ergative marking on A arguments.

5.1.1 Ergative marking in Lajamanu Warlpiri
A multilevel logistic regression analysis with a binomial link function was conducted. The dependent variable is ergative marking. Animacy of the A argument referent is included as a potentially explanatory factor because it has been shown to influence the occurrence of ergative marking in other languages (Gaby 2008; McGregor 1992, 1998, 2006; Verstraete 2005). The other factors listed below are included because they might influence ergative marking by playing a role in disambiguation of core arguments. Only transitive clauses with host A arguments are included in the analysis, and they were coded for the following properties, which are entered into the analysis as independent variables: +/- A argument is preverbal, +/- A argument is animate, +/- O argument is animate, +/- O argument is overt. Age group of speaker (7, 9, 20, 30 to 50). Text (book a, b or c of three stimulus books) and speaker are included as random effects. The 60+ age group was removed from the analysis because speakers in this group use ergative marking on all A arguments, so the questions of how ergative marking is distributed and conditioned do not apply to them. In the remaining groups, there is a lot of within-group variation in when ergative marking is used – the standard deviation is 0.77 – so differences between the age groups are difficult to see. To solve this problem the two remaining adult groups (ages 20 and 30 to 50) were collapsed together as one new group of adults and the two children's groups (ages 7 and 9) were joined as one new group of children.

7. I am indebted to Professor Harald Baayen, Radboud University Nijmegen and Max Planck Institute for Psycholinguistics, Nijmegen, for his assistance with these analyses.
The results\(^8\) show that overall A arguments are more likely to have ergative marking when they are postverbal (p = 0.003), or animate (p = 0.046). But preverbal A arguments are more likely to have ergative marking when the speaker is an adult than when the speaker is a child (p = 0.004). In other words, children mark postverbal arguments significantly more often than adults do.

5.1.2 Word order in Lajamanu Warlpiri

Previous research on Warlpiri shows that A arguments that are prominent for some reason tend to be in preverbal position (Hale 1992; Mushin 2005; Simpson, to appear; Swartz 1991). Research on other flexible word order languages shows that elements that are newsworthy or important are positioned early in the string (Givon 1988; Mithun 1987). In this section Lajamanu Warlpiri narratives from children and adults are analyzed to see whether the word order patterns vary across age groups and how word order is conditioned. Table 2 above provided an overview of the word order patterns in the Lajamanu Warlpiri narratives, showing the number of transitive clauses for each age group and the percentage of those with preverbal A arguments.

The following factors are independent variables in the analysis: +/− A argument is animate, +/− A argument is new, +/− Ergative marking is present, +/− O argument is overt, +/− O argument is animate. As in the analysis of ergative marking, age groups are collapsed to form a single group of adults and a single group of children, but the 60+ age group is included in the adult group in this analysis, because it is about variation in word order. The same statistical procedure as in the previous analysis was used. The dependent variable is Preverbal A arguments, the independent variables are the factors listed above, and speaker and text (book a, b, or c of three picture books) are random effects.

The results show that there is a lot of variation between speakers in each group, but there is still considerable systematicity. Overall, A arguments are more likely to be preverbal when they do not have ergative marking (p < 0.001), or are newly introduced into the discourse (p < 0.001). A arguments are more likely to be preverbal and to have ergative marking when the speakers are adults than when they are children (p = 0.002). These findings are consistent with the findings for the conditions of ergative marking in Lajamanu Warlpiri – that postverbal A arguments are more likely to be ergatively-marked, and that children’s narratives show a stronger correlation between ergative marking and word order than adult narratives do.

\(^8\) Details of the statistical output are included in the Appendix.
5.1.3 *Interim discussion*

Labov’s (1963) apparent time construct is useful in interpreting the variation between adult groups in how often host A arguments have ergative marking. Although the analysis of ergative marking did not include the oldest group, the difference between always applying marking and not always applying it is an important one. The difference between generations in this synchronic study reflects a diachronic change, from obligatory to non-obligatory ergative marking on A arguments. The most likely reason for the change is contact with English and Kriol. The oldest group of speakers came into contact with English speakers first in adolescence, but at that time contact was only minimal. As they grew older there was increasing contact with English speakers, although not intensively.

This group of adults worked on cattle stations and in government community organizations and were exposed to varieties of English from a small number of individuals, but they did not attend school or become literate in English (with one exception, who is not a participant in the study). The next age groups, in contrast, were in contact with English speakers from a younger age, and the contact was more intensive, because they were taught in English at school. The group that had more intensive contact with English from a younger age is the group that first shows non-obligatory ergative marking.

The difference seen in the children’s patterns, that of marking postverbal A arguments more often than preverbal A arguments, may also reflect diachronic change, but this cannot be confirmed until the children are adults. For the moment I can say that the children have tuned in to a pattern found in adult speech, and reproduce it with even greater regularity than the adults do. Children can be active agents of change by reproducing one pattern more frequently than others found in the input (Roberts 2002:339), and they might be agents of change in Lajamanu Warlpiri.

In Lajamanu Warlpiri, animate A arguments are more likely to be ergatively marked than inanimates, a pattern which runs counter to that found in many other languages, including those in which ergative marking is optional, in which inanimates are marked (Comrie 1989; Gaby 2008; McGregor 1992, 1998, 2006; Silverstein 1976; Verstraete 2005). The difference can be explained by examining the antecedent to the current pattern. The oldest speakers always mark A arguments, and younger speakers mark A arguments slightly less often, so the language as spoken in this community is changing from being a language in which all A arguments are marked to one in which not all A arguments are marked. But the percentage of marking is still quite high – around 90%. If we assume that obligatory ergative marking means marking the more agentive arguments (A arguments as opposed to S or O arguments), then, when marking is less than obligatory, it seems reasonable to continue to mark the more agentive arguments – the
A arguments that are higher in animacy, if some A arguments are not going to be marked, they are the less agentive ones—those lower in animacy.

Turning now to word order, in adult Lajamanu Warlpiri more A arguments are preverbal than postverbal overall, suggesting that preverbal position is becoming the canonical position for A arguments.Animate A arguments are more prototypical A arguments than inanimates (Hopper & Thompson 1980:253), and a more prototypical A argument is likely to be in the canonical position, that is, preverbal position. When ergative marking is applied to less than 100% of A arguments, those A arguments in what could be considered to be in non-canonical-A position can be seen to be most in need of morphological marking to indicate their subjecthood. The proportion of preverbal A arguments in the narratives in this study is similar to the figures given by Swartz (1991:62) for another set of Lajamanu Warlpiri narratives (in which AV order occurs two times as often as VA order), so I consider AV order to be a stable pattern. In the data in my study, A arguments are preverbal more often when the referents are new to the discourse, or animate. Positioning A arguments that are new to the discourse preverbally is consistent with word order pragmatics of other flexible word order languages (Givon 1988; Mithun 1987) and with the observation that prominent arguments are positioned preverbally in classic Warlpiri (Hale 1992; Mushin 2005; Simpson, To appear) and Lajamanu Warlpiri (Swartz 1991:45).

The correlation of ergative marking and word order found for the age groups under age 60 (i.e. that postverbal A arguments are more likely to be marked than preverbal A arguments), suggests that word order in Lajamanu Warlpiri spoken by younger adults and children is less variable than that for the oldest group of speakers. The finding that children reproduce this pattern more than adults do suggests that the correlation might become stronger over time, as the current cohort of children grows older. If the current children's group maintains the relationship between case-marking and word order as they grow older, and if their patterns form the input for the next generation of child learners, then the pattern will become more entrenched.

5.2 Ergative marking and word order in Light Warlpiri and Lajamanu Warlpiri compared

The question for this section is whether the children recognize the subtle morphosyntactic difference between the two languages as they are spoken by adults—specifically, different distributions of ergative marking in each language. To a large extent the same allomorph of the ergative marker, -ng, is used in both languages in adult speech. Other allomorphs of the ergative are also used, -ngi/-ngu, -ngki/
Table 3. Warlpiri and Light Warlpiri narratives: number of A arguments, percentage ergative marking, percentage preverbal A, per age group

<table>
<thead>
<tr>
<th>Age</th>
<th>Language</th>
<th>7</th>
<th>9</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Light Warlpiri</td>
<td>Lajamanu Warlpiri</td>
<td>Light Warlpiri</td>
<td>Lajamanu Warlpiri</td>
</tr>
<tr>
<td>A arguments</td>
<td>78</td>
<td>66</td>
<td>81</td>
<td>95</td>
</tr>
<tr>
<td>% Ergative</td>
<td>58</td>
<td>80</td>
<td>44</td>
<td>79</td>
</tr>
<tr>
<td>% AV order</td>
<td>60</td>
<td>51</td>
<td>74</td>
<td>83</td>
</tr>
<tr>
<td>% Erg AV order</td>
<td>48</td>
<td>64</td>
<td>41</td>
<td>77</td>
</tr>
<tr>
<td>% Erg VA order</td>
<td>70</td>
<td>96</td>
<td>52</td>
<td>87</td>
</tr>
</tbody>
</table>

-\textit{ngku} (and in Lajamanu Warlpiri -\textit{rli/-rlu} are used), but the -\textit{ng} variant is the most common. The only other way that ergative marking varies between languages is in its distribution.

The analyses make a two-way comparison. They compare the patterns 20-year-old adults and children produce in Light Warlpiri with the patterns they produce in Warlpiri, and they examine the extent to which the children are adult-like in how they distribute ergative marking on host arguments in each language. The same procedure with the same set of stimulus picture books as described in the previous section was used. Three age groups – adults aged 20 and children of ages 7 and 9 – told narratives in both Light Warlpiri and Warlpiri. In the adult group two different sets of speakers each told the stories in one language only. The children each told the stories twice, once in each language, with two or more weeks between each story-telling session. The order in which they told a story in one language or the other was counter-balanced.

Table 3 presents the number of transitive clauses with A arguments that can host ergative marking, the percentage of ergative marking and the percentage of A arguments that are preverbal. The table shows that speakers in all age groups use ergative marking in Lajamanu Warlpiri narratives more often than in Light Warlpiri narratives, but that the percentage of preverbal A arguments does not differ much between languages.

5.2.1 Ergative marking in both languages

The statistical procedure and the potentially explanatory factors are the same as those used in my previous analysis of ergative marking in Warlpiri only, except that in this second study the language in which the story was told is also a potentially explanatory factor. The factors entered into the analysis as independent variables are: Language (Warlpiri or Light Warlpiri), Age group of speaker (7, 9 or 20), +/- A argument is animate, +/- A argument is preverbal, +/- O argument is overt, +/- O
Table 4. Warlpiri and Light Warlpiri, ergative marking, summary of statistical analysis results

<table>
<thead>
<tr>
<th>Ergative marking, Warlpiri and Light Warlpiri</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>More ergative marking in Warlpiri than in Light Warlpiri</td>
<td>p = 0.001</td>
</tr>
<tr>
<td>Across both languages</td>
<td></td>
</tr>
<tr>
<td>7 yr olds use more ergative marking in VA order than AV</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>9 yr olds use slightly more ergative marking in VA order than AV</td>
<td>p &lt; 0.055</td>
</tr>
</tbody>
</table>

argument is animate. Again, the dependent variable is ergative marking and speaker and text (book a, b, or c of three picture books) are random effects.

The results, summarized in Table 4, show that for all age groups, when a story is told in Warlpiri, there is more ergative marking on A arguments than when it is told in Light Warlpiri (p < 0.001). Children aged 7 mark postverbal A arguments in both languages more often than children aged 9 and adults (p < 0.001). Children aged 9 are approaching significance in marking postverbal A arguments in both languages more often than the adults (p = 0.055).

5.2.2 Word order in both languages

Turning now to word order, the purpose of the statistical analysis is to see if children and young adults show differences between Lajamanu Warlpiri and Light Warlpiri in word order preferences when genre and age are held constant. The independent variables are the same as those used in the previous analysis of word order patterns, except that in this analysis language is also a potentially predictive factor. The factors entered into the analysis as independent variables are: Language (Warlpiri or Light Warlpiri), Age group of speaker (7, 9 or 20), +/- Ergative marker is present, +/- A argument is animate, +/- A argument is new, +/- O argument is overt, +/- O argument is animate.

The results, summarized in Table 5, show that children and adults use similar word order strategies in both languages – there is no main effect of language, nor any interaction effect of language and another variable. Across all age groups there is more AV order when A arguments are new (p < 0.001), or animate (p < 0.001), or the O argument is inanimate (p = 0.004). Both groups of children use AV order less often than the adults (age 7: p < 0.001, age 9: p = 0.001). Both groups of children position inanimate A arguments preverbally more often than adults do (age 7: p < 0.001; age 9: p = 0.006). Ergative marking only plays a role for the seven-year-olds, who position A arguments preverbally most often when they are not marked (p = 0.01).
Table 5. Warlpiri and Light Warlpiri, word order, summary of statistical analysis results

<table>
<thead>
<tr>
<th>Word order, Warlpiri and Light Warlpiri</th>
<th>Across both languages, there is more AV order when:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A argument is new</td>
<td>( p &lt; 0.001 )</td>
</tr>
<tr>
<td>A argument is animate</td>
<td>( p &lt; 0.001 )</td>
</tr>
<tr>
<td>O argument is inanimate</td>
<td>( p = 0.004 )</td>
</tr>
<tr>
<td>And,</td>
<td></td>
</tr>
<tr>
<td>7 yr olds use more Erg when VA order than other groups do</td>
<td>( p = 0.01 )</td>
</tr>
<tr>
<td>7 and 9 yr olds use more VA order than adults do</td>
<td>( p &lt; 0.001, p = 0.001 )</td>
</tr>
<tr>
<td>7 and 9 yr olds use more AV order when A is inanimate</td>
<td>( p = 0.001, p = 0.006 )</td>
</tr>
</tbody>
</table>

6. Discussion

There is a clear difference between languages in how often A arguments are ergatively marked overall, and children show adult-like patterns in distributing marking in different quantities in each language. But the children use the same strategy in both languages for choosing when to mark A arguments, which is to mark postverbal A arguments more often than those which are preverbal. Recall that the analysis of Lajamanu Warlpiri narratives showed that postverbal A arguments are marked more often across all age groups. That pattern did not emerge for the adults in this second analysis – only the children mark postverbal A arguments more often. This might be because there are only 4 to 5 adults in each of the adult groups in the study and there were not enough data points for the adult pattern to emerge. In another study of ergative marking that includes spontaneous Light Warlpiri speech as well as elicited speech, the pattern of marking postverbal A arguments more often than preverbal A arguments is seen in adult speech also (O'Shannessy 2006:143). So the children appear to be tuning in to a pattern found in adult spontaneous speech and reproducing it. The youngest children produce a pattern in both languages that is not present in adult Light Warlpiri speech in this data set, but is seen in another data set that includes adult spontaneous speech.

With regard to word order, across all age groups, there is more AV order when A arguments are animate, or O arguments are inanimate. The most natural kind of transitive construction is one in which the A argument is high in animacy and definiteness and the O argument is lower in animacy and definiteness (Comrie 1989:128). The word order patterns in the data suggest that the unmarked word order for transitive clauses in this type of speech event in both languages is AVO. A arguments that are new to the discourse are also more likely to be preverbal, correlating with the same finding for Lajamanu Warlpiri narratives across all age groups.
The results for the children are interesting – the youngest group, the seven-year-olds, shows a correlation between word order and ergative marking that is not shown in this data set for the other age groups – they mark postverbal A arguments significantly more often than preverbal A arguments. This group of children seems to be spearheading a regularization of the relationship between word order and ergative marking in both languages. A correlation of word order patterns and ergative marking was also found in the set of Lajamanu Warlpiri-only narratives that included the older adults, ages 30 to 50. The correlation is not as strong for adults’ speech as for the children. An explanation invoking language contact processes seems likely. Adult word order strategies in both languages might be in flux. In Lajamanu Warlpiri they might be changing under the influences of English, Kriol and Light Warlpiri; and in Light Warlpiri they might not be stable because patterns in the language are still being formed. The children receive variable input in the sense of hearing a range of word order patterns. Their response to the variation in the patterning appears to be to regularize the patterns in their own production.

7. Summary

In Lajamanu Warlpiri there has been a shift between generations of speakers from obligatory to non-obligatory ergative marking on A arguments. Adults distribute ergative marking differently between Lajamanu Warlpiri and Light Warlpiri – they use it more often in Lajamanu Warlpiri, and less often in Light Warlpiri. But their word order patterns are similar in both languages. The children are adult-like in that they also distribute ergative marking differently in each language. And they are similar to adults by producing similar word order patterns in the two languages. But the children differ from the adults in a systematic way – they show a stronger correlation of ergative marking and word order in both languages than the adults do in either language. The children see the emergent correlations between ergative marking and word order in adult speech in both languages and reproduce the patterns even more often than the adults. So the children’s strategies are more similar in each language than the adults’ strategies are.

All age groups use similar word order patterns in both languages to some extent – an A argument is more likely to be preverbal when it is animate, or new, or when the O argument is inanimate. In contexts of potentially high ambiguity, such as when there is an animate O argument in the clause, all age groups use ergative marking for disambiguation, but they do not all use word order for that function. The seven-year-olds prefer to mark VA order with ergative marking more often than the other groups – if they continue to use this pattern as they grow older it
will develop into a more stable pattern of A^V and VA^ENG in both languages in the future. It remains to be seen whether their patterns change as they mature.

In sum, in the Lajamanu community there is a complex linguistic situation in which several languages are spoken. Code-switching between the languages is common, and as a result a new language has emerged very rapidly, spoken by young adults and children. Two systems for indicating grammatical relations are in contact – ergative case-marking and SVO word order. The questions are whether these two systems are used in the same way by different age groups of speakers within each language, and whether they differ between languages. In Lajamanu Warlpiri there has been a substantial shift: the use of ergative case-marking from obligatory to less than obligatory use – for the oldest group of speakers ergative case-marking is obligatory on host A arguments (with certain categorical exceptions) but for younger speakers it is not. But all age groups of younger speakers, including children, apply ergative marking to about the same proportion of A arguments, and according to the same conditioning factors, as each other, such that there is a correlation of word order and ergative marking. All age groups of Light Warlpiri speakers, including children, apply ergative case-marking in Light Warlpiri less often than in Lajamanu Warlpiri. The youngest group of children applies ergative marking more often to postverbal A arguments than to preverbal A arguments (and the next age group up is approaching significance in using this pattern). Future research will be needed to address the questions that now arise. Will the correlation of word order and ergative marking patterns in both languages in the current cohort of children's speech become more stable as the children grow into adults? Or will their patterns conform to those of the current cohort of adults? If the children's patterns remain stable, they will clearly be the agents of language change. If their patterns alter to resemble those of their parent generation, then their current patterns will be interpreted as intermediate stages on the path of language acquisition. Only empirical analyses will provide the results.

References


Appendix

Table A1. Lajamanu Warlpiri: Narratives, ergative case-marking

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate</th>
<th>Std. error</th>
<th>Z value</th>
<th>Pr</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>3.1207</td>
<td>0.66571</td>
<td>4.6870</td>
<td>2.773e-06</td>
</tr>
<tr>
<td>Preverbal A</td>
<td>-1.97682</td>
<td>0.66121</td>
<td>-2.9897</td>
<td>0.002793</td>
</tr>
<tr>
<td>Inanimate A</td>
<td>-0.72901</td>
<td>0.36683</td>
<td>-1.9873</td>
<td>0.046884</td>
</tr>
<tr>
<td>Adults</td>
<td>-1.20025</td>
<td>0.78848</td>
<td>-1.5222</td>
<td>0.127951</td>
</tr>
<tr>
<td>Preverbal A and adults</td>
<td>2.36584</td>
<td>0.82293</td>
<td>2.8749</td>
<td>0.004042</td>
</tr>
</tbody>
</table>

Table A2. Light Warlpiri and Lajamanu Warlpiri: Narratives, ergative case-marking

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate</th>
<th>Std. error</th>
<th>Z value</th>
<th>Pr</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>-0.10640</td>
<td>0.50574</td>
<td>-0.2104</td>
<td>0.8333614</td>
</tr>
<tr>
<td>Language Warlpiri</td>
<td>1.38081</td>
<td>0.24684</td>
<td>5.5938</td>
<td>2.221e-08</td>
</tr>
<tr>
<td>Age 7</td>
<td>1.18136</td>
<td>0.65400</td>
<td>1.8064</td>
<td>0.0708601</td>
</tr>
<tr>
<td>Age 9</td>
<td>0.40337</td>
<td>0.66339</td>
<td>0.6080</td>
<td>0.5431612</td>
</tr>
<tr>
<td>Preverbal A</td>
<td>0.75114</td>
<td>0.52125</td>
<td>1.4411</td>
<td>0.1495705</td>
</tr>
<tr>
<td>Age 7, Preverbal A</td>
<td>-2.30190</td>
<td>0.68683</td>
<td>-3.3502</td>
<td>0.0008076</td>
</tr>
<tr>
<td>Age 9, Preverbal A</td>
<td>-1.30666</td>
<td>0.68319</td>
<td>-1.9126</td>
<td>0.0558030</td>
</tr>
</tbody>
</table>
Variation in Indigenous Minority Languages

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