Ordering arguments about: Word order and discourse motivations in the development and use of the ergative marker in two Australian mixed languages

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Abstract

Light Warlpiri and Gurindji Kriol are mixed languages which are spoken in northern Australia. They systematically mix the lexicon and morpho-syntax of a traditional Australian language (Warlpiri and Gurindji) and an Australian contact variety (Kriol), bringing systems from the source languages into functional competition. With respect to argument disambiguation, both Warlpiri and Gurindji use a case marking system, whereas Kriol relies on word order. These two systems of argument marking came into contact and competition in the formation of the mixed languages. The result has been the emergence of word order as the dominant system of argument disambiguation in the mixed language, the optionality of the ergative marker, and a shift in the function of the ergative marker to accord discourse prominence to the agentivity of a nominal.
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1. Introduction

Light Warlpiri and Gurindji Kriol are two newly emerged mixed languages spoken in northern Australia (McConvell and Meakins, 2005; O'Shannessy, 2005) which show optional ergative marking, henceforth OEM. Although OEM has been observed in a number of other Australian languages as an internal feature of the language system (Gaby, 2008, this volume; McGregor, 1992, 1998, 2006b; Schultze-Berndt, 2006; Verstraete, 2005, 2010), we argue that optional ergativity in Light Warlpiri and Gurindji Kriol is the result of language contact, specifically, competition between argument marking systems: word order from Kriol and case-marking from Warlpiri and Gurindji. This kind of interaction between systems of argument marking has been observed to varying extents in other Australian language contact situations (Bavin and Shopen, 1985; Langlois, 2004; Lee, 1987; McGregor, 2002; Pensalfini, 1999; Richards, 2001; Schmidt, 1985). In this paper we argue that the

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interaction of Kriol SVO word order with the Warlpiri and Gurindji ergative case-marking systems has resulted in (i) the establishment of an AVO pattern as the pragmatically unmarked pattern, (ii) a corresponding decrease in the functional load of the ergative marker as an argument marker and (iii) a shift toward its use as a discourse marker. The result is that both word order and information packaging affect the appearance of the ergative marker in the mixed languages. When subjects of transitive clauses (A arguments)[2] are postverbal they are marked more often than when they are preverbal, and the ergative marker is also used to accord prominence to a subject's agentivity.

In this paper we describe the nature of and motivations for the appearance of the ergative marker in Light Warlpiri and Gurindji Kriol, and propose a path of development of optional ergativity from a language contact perspective. We begin by placing Light Warlpiri and Gurindji Kriol within the context of other language contact situations in Australia which involve interactions between systems of argument marking (Section 2). A more specific account of the split V–N structure of these two mixed languages is given in Section 3 and the argument marking systems of their source languages – Lajamanu Warlpiri,[3] Gurindji and Kriol – follow in Section 4. In Section 5 we give a quantitative account of the interaction between word order and case-marking in the new mixed languages, demonstrating the development of complementary relationships between word order and ergative case marking. We show that argument disambiguation alone cannot account for the use of ergative marking, and suggest that the ergative case marker is beginning to show the properties of a discourse marker which accords prominence to the agentivity of the A argument, i.e. it foregrounds information about the agentivity of this argument. In this respect, we argue that ergative marking does not alter the semantic value of the agentivity, rather it signals that the hearer should attend to this feature of the nominal because the information runs counter to expectations. Discourse prominence is a feature of the categories of both focus and topic (Choi, 1999; Simpson and Mushin, 2008). The discourse function of the ergative comes into play when the A argument is in focus, for example, to contrast the agentivity of participants (Section 6.1). It also plays a role when the A argument is topicalised—in left-dislocation (Section 6.2), right dislocation (Section 6.3) and topic chaining structures (Section 6.4). It is within topicalisation constructions that the effects of word order and discourse on the ergative marker converge. Left and right dislocations, which emphasise topics, show a departure from the unmarked AVO pattern. The corresponding presence of the ergative marker accords prominence to the agentivity of dislocated subjects. Finally, we discuss language contact and its role in the development of the ergative marker from a purely syntactic function in Warlpiri and Gurindji to carrying discourse properties in the new languages (Section 7.1), and account for some of the differences in its use between Light Warlpiri and Gurindji Kriol (Section 7.2).

The data for this paper were collected over three years at Lajamanu (Light Warlpiri) and Kalkaringi (Gurindji Kriol) as a part of the Aboriginal Child Language project (ACLA, see Simpson and Wigglesworth, 2008). Both data sets consist of conversations and narratives based on picture stimuli (Egan, 1986; Mayer, 1994 [1969]; O'Shannessy, 2004) from 25 female participants in the age range of 20–30 years. They were recorded and transcribed with the assistance of a number of Warlpiri and Gurindji research assistants (mentioned in the acknowledgements).

The syntactic and discourse patterns presented in this paper are still emerging. The two new mixed languages may be stabilising, or could be in the process of a more dramatic shift towards Kriol, and speakers show considerable variation in all areas of both languages. This study captures just one, possibly intermediate, stage in the life of the two new languages, in which some discourse patterns might not yet have emerged fully.

2. OEM in Australian contact situations

Optional ergative languages are characterised by ''the situation in which, in specifiable lexical or grammatical environments, a case marking morpheme [. . .] may be either present or absent from an NP of a specifiable type without affecting the grammatical role borne by that NP'' (McGregor, 2010). OEM has most commonly been

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[2] We use Dixon's (1979) syntactico-semantic distinctions of A (transitive subject), S (intransitive subject) and O (transitive object). But when we report other's research we maintain their use of SVO, in which S includes both transitive (A) and intransitive (S) arguments.

[3] Lajamanu Warlpiri is the variety of Warlpiri spoken in the community of Lajamanu. It can be thought of as classic Warlpiri (Hale, 1973, 1982; Hale et al., 1995; Laughren, 2002; Laughren and Hoogenraad, 1996; Nash, 1986; Swartz, 1982, 1991) with some phonotactic changes. We use the term Warlpiri to include classic Warlpiri and the Lajamanu variety of Warlpiri, and distinguish the varieties where necessary.

observed as an internal feature of some Australian languages, for example Baagandji (Hercus, 1976), Gooniyandi (McGregor, 1992, 1998), Jaminjung (Schultze-Berndt, 2000, 2006), Kuuk Thaayorre (Gaby, 2008, this volume), Murrinth-patha (Walsh, 1976), Umpithamu (Verstraete, 2005, 2010), Wagiman (Cook, 1988) and Warrwa (McGregor, 2006b). But in a number of cases the variable use of the ergative marker is attributed to language contact, specifically, the adoption of the English/Kriol SVO word order system of indicating arguments, and the decreasing dominance of an argument marking system involving case-marking. For example, Schmidt (1985), in her examination of structural change in Dyirbal, describes OEM in terms of the incremental replacement of the case marking system. In Dyirbal the loss of the case marking system corresponds to a gradual increase in the use of English word order and prepositions. In this in-between stage of language loss, ergative marking has become optional. Her predicted end point is the complete replacement of the Dyirbal system of argument marking with the English word order system.

Similar situations have been described for Yuendumu Warlpiri (Bavin and Shopen, 1985) and Nyulnyul (McGregor, 2002). Bavin and Shopen conducted comprehension and production tests for Warlpiri speakers in Yuendumu. In the comprehension tasks, they found that, in school-aged children, errors occurred most commonly when the object preceded an A argument. The children produced AO patterns more often than OA patterns, and did not always use the ergative marker where it would be expected to occur (Bavin and Shopen, 1985:86–88). Bavin and Shopen suggest that the children sometimes relied on word order to signal grammatical relations, making ergative marking redundant. In the case of Nyulnyul, contact has had a different effect on an ergative system. Nyulnyul is an OEM language, following a pattern similar to that described for Gooniyandi and Warrwa. However the two remaining semi-speakers of Nyulnyul do not use the ergative marker optionally. Instead both use the ergative marker categorically: one speaker marks all transitive subjects, and the other marks none (McGregor, 2002:170). One of the explanations McGregor gives for the differing use of the ergative marker is the intrusion of SVO word order from English. In Nyulnyul, 89% of clauses pattern as SVO, rather than SOV which McGregor (2002:171) gives as the preferred order in many ergative languages.

The adoption of SVO word order has affected other argument marking systems in traditional Australian languages such as Lardil and Tiwi. In traditional Lardil, obligatory object marking distinguishes transitive and intransitive clauses, and therefore, indirectly, A and O. However, in New Lardil object marking is optional (Richards, 2001:434–435). Speakers of both varieties of Lardil use SVO word order more often than other types. But in New Lardil, SVO word order has supplanted other word order possibilities—94% of its clauses are SVO, compared with 38% in Old Lardil (Richards, 2001:441). In Modern Tiwi, Lee (1987:293) notes a correlation between the use of cross-referencing bound pronouns and word order. Traditional Tiwi is a head-marking language where grammatical relations are indicated on the verb by means of pronominal affixes. Free nominals are not case-marked and their position is largely determined by information structure. However in the Tiwi of younger speakers, word order is more rigid and is influenced by the English SVO pattern. Where SVO word order is adopted, the subject and the object are not encoded on the verb. Conversely, word order is more flexible when pronominal affixes are used.

The adoption of English/Kriol word order does not always lead to corresponding changes in the argument marking systems of traditional Australian languages. Langlois (2004:82) reports that in Areyonga Teenage Pitjantjatjara a clear preference for SVO word order has emerged, but the core case-marking system has remained intact. Speakers of this variety of Pitjantjatjara use SVO word order a third more often than an SOV pattern, compared with speakers of traditional Pitjantjatjara who are twice as likely to use SOV as SVO word order. Despite the shift towards SVO order, transitive subjects are always marked with an ergative suffix. More generally, Langlois observes far less structural influence from English than is noted for Dyirbal, Nyulnyul, Yuendumu Warlpiri, Lardil or Tiwi, though it is quite possible that some effect may occur if English influences penetrate further into the structures of Pitjantjatjara.

Jingulu (Pensalfini, 1999) shows another type of contact-induced change which has resulted in the reinterpretation of the ergative marker. Jingulu is a hybrid of a dependent-marking and head-marking language, with both case-marked nominals (ERG-ABS) and coreferential pronouns affixed to the verb (NOM-ACC). Pensalfini (1999:232) describes a homophony between the ergative forms and focus markers. The focus marker can appear on both subjects (A and S) and objects. Where the focus marker appears on A, it is used in conjunction with ergative marking such that there is a repetition of the same phonological form (233). Pensalfini suggests that the homophony of the ergative marker and focus marker is not an accident, but rather the result of contact with Kriol. The combination of the

increasing dominance of Kriol, which is a NOM-ACC language, with the increased importance of verbal agreement marking which is also NOM-ACC, allowed for a reinterpretation of Jingulu as an accusative language. This reanalysis made ergative case marking redundant as an argument indicator, and it was reanalysed as discourse marking (238).

Aside from the case of Jingulu, the adoption of SVO word order seems to be common in situations of contact between Australian languages and English/Kriol. The results, however, are varied, from the lack of an effect on the traditional systems of argument-marking (Pitjantjatjara) to the loss of the traditional system (e.g. Dyirbal and Tiwi). This difference may represent incremental stages of change which have come to completion at various stages in these languages, or the operation of other factors which contribute to more or less dramatic changes. We discuss a probable path of development of the function of ergative marking in Light Warlpiri and Gurindji Kriol in Section 7.1. In the situations described above where a causal relationship has been established between AVO word order and a change in a pre-existing argument marking system, the nature of the interaction between the two systems is not well documented. For example, in Dyirbal it is not clear whether AVO word order is the only pattern available to speakers, and following from this, whether ergative marking is affected if AVO order is not adopted. The interaction between word order and ergative marking accounts for the emergence of OEM in Light Warlpiri and Gurindji Kriol and is documented in Section 5. Finally, the most dramatic effect of language contact in Australian languages seems to be the reinterpretation of the ergative marker from indicating a purely syntactic function to indicating a discourse function (in Jingulu), although the process of the change is not clear. Despite Pensalfini's description of how the ergative marker may have lost its function as an argument marker, it is not easy to see how it came to be a focus marker, as opposed to marking another function, or having no function. For Light Warlpiri and Gurindji Kriol we describe how the ergative marker's syntactic and discourse functions relate to each other (Section 6) and how it may have developed the discourse functions (Section 7.1). We begin the discussion by introducing the split structures of the mixed languages.

3. The structure of Light Warlpiri and Gurindji Kriol

The two mixed languages that are the focus of this study, Light Warlpiri and Gurindji Kriol, are spoken in northern Australia in small communities approximately 100 km from each other. Light Warlpiri is spoken in Lajamanu which is the northern-most Warlpiri-speaking community. The mixed language is spoken alongside Warlpiri, but Light Warlpiri is the main language of the younger people in Lajamanu—people under the age of approximately 30 years speak it as their main everyday language (O'Shannessy, 2005). Similarly, Gurindji Kriol is the first language of all speakers under the age of 35 in Kalkaringi.[4] Kalkaringi is a Gurindji community, but only older people use Gurindji and even then often code-switch between Gurindji and Kriol (Meakins and O'Shannessy, 2005). Both new mixed languages were preceded by pervasive code-switching practices which contributed to their formation (McConvell and Meakins, 2005:10; O'Shannessy, 2005:32).

Light Warlpiri and Gurindji Kriol are best classified as V–N mixed languages (cf. Bakker, 2003:122). The classic example of this type of language, Michif, draws its verbal lexicon and structure from Cree and its nominal lexicon and structure from French (Bakker, 1997). Like Michif, Light Warlpiri and Gurindji Kriol show a structural split between the noun phrase system and the verb phrase system. In both mixed languages Kriol[5] contributes much of the verb phrase structure including the tense, aspect and mood systems, and the traditional languages – Warlpiri and Gurindji – supply the nominal structure including case and derivational morphology. Unlike in Michif, the form of nouns and verbs can come from either source language, although in Light Warlpiri most verb forms are from Kriol (Meakins and O'Shannessy, 2005:45). The example below demonstrates the structural split schematically. In all of the examples the traditional languages are represented in italics, Kriol in plain font, round brackets signal optional elements and boldface shows the source language elements that occur in the new languages. The mixed language examples are shown between those from the source languages to demonstrate the influence from the source.

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[4] When we refer to Kalkaringi, we include Daguragu which is a settlement 8 km away. These communities were set up separately historically, however they operate as a single entity in terms of kin relations and administration.

[5] The Kriol component of Light Warlpiri is actually best described as an Aboriginal English/Kriol influence, however for simplicity we describe it as Kriol here.

(1)

det monsta	**im ged-im**		det dog	(AE/Kriol)
the monster	3SG get-TR		the dog	

↓

kuuku(-ng)	**i=m**	**ged-im**	***jarntu***	(Light Warlpiri)
monster-ERG	3SG=NFUT	GET-TR	dog	

↑   ↑

kuuku-rlu	*ka=ø=ø*	*ma-ni*	***jarntu***	(Warlpiri)
monster-ERG	IPFV=3SG=3SG	get-NPST	dog	

'The monster is getting the dog.'

In example (1), the verb in Light Warlpiri is from Kriol and the nominals are from Warlpiri. The Light Warlpiri auxiliary system (e.g. *i-m*) is a composite structure which maps Kriol and English pronoun and TAM forms onto the Warlpiri auxiliary structure. The compositional structure of the auxiliary system is not obvious from analysis of a single clause, but is clear when the full auxiliary system is seen, as explained in O'Shannessy (2005). In (2) the core Gurindji Kriol VP structure *i bin jarrwaj im* 'he speared him' is drawn from Kriol, while the nominal structure including case marking originates from Gurindji. Note, however, that a Gurindji coverb is used in the Kriol-based VP structure, and similarly a Kriol noun occurs with Gurindji inflectional morphology *man-tu* (man-ERG). The structural split of both mixed languages has been described in more detail elsewhere (McConvell and Meakins, 2005; Meakins and O'Shannessy, 2005; O'Shannessy, 2005, 2006).

(2)

det man	**im=in**	**spiyar-im**	**(im)**	det guana	gat	jik	(K)
the man	3SG=PST	spear-TR	3SG	the goanna	PREP	stick	

↓

man*(-tu)*	**(i)**	**bin**	***jarrwaj***	**(im)**	**det**	**guana**	***karnti-yawung***	(GK)
man-ERG	3SG	PST	spear	3SG	the	goanna	stick-COM	

↑   ↑

ngumpit-tu	*ngu-ø-ø*		*jarrwaj*	*pa-n-i*	**kirrawa**	***karnti-yawung***	(G)
man-ERG	AUX-3SG-3SG		spear	hit-PRF-PST	goanna	spear-COM	

'The man speared the goanna with a stick.'

Though aspects of the Kriol and traditional language systems have fused, the source language systems are altered in the new languages. For example, as is seen in (1) and (2), the use of the ergative case marker in the new languages has become optional. In contrast, in Warlpiri and Gurindji, A arguments are almost always ergatively marked (exceptions are detailed below). In addition the ergative is used on some subjects of intransitive verbs (S) in Gurindji Kriol. (3) is a sequence from a story told using picture stimuli. Ergative marking appears in conjunction with the intransitive verb 'go' in (3a), and with the transitive verb 'get' in (3b) but not with 'break' in (3c). Note that in (3c), the verb construction is similar to the Gurindji coverb-inflecting verb structure.

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(3)   (Gurindji Kriol)
(a)   *Nimarra*   an   Leyton-*tu*   gon   na.
       SUBSECT   and   NAME-ERG   go   FOC.
       'Nimarra and Leyton set off then.'
(b)   Clayton-*tu* ged-im   na   "ah   dij   da   gud   *ngapuk*"   Leyton   bin   tok.
       NAME-ERG get-TR   FOC   ah   this   the   good smell   NAME   PST   talk
       'Clayton got (some bush medicine) saying "This one smells like a good plant."'
(c)   *Nimarra*   bin   ged-im   *kirtkirt-karra*.
       SUB.SECT   PST   get-TR   break.REDUP-PROG
       'Nimarra broke some off then.'

4. The argument-marking systems in LW and GK's source languages

The traditional language sources of Light Warlpiri and Gurindji Kriol, Warlpiri and Gurindji respectively, are split ergative languages where the nominals pattern according to an ergative-absolutive system, and the bound pronouns, according to a nominative-accusative system. The system follows a commonly observed pattern in Australian languages (Dixon, 1994). Nominal arguments are distinguished by case marking – A is almost always marked ergative (see below), and S and O are unmarked – and are commonly elided in both Warlpiri and Gurindji. In both Warlpiri and Gurindji bound pronouns generally attach to an 'auxiliary' element and cross-reference arguments (McConvell, 1996:56) (Hale, 1973:310; Swartz, 1982:70), as indicated in the examples below.

(4)   *ngarrka-patu-rlu$_i$*   *ka-lu$_i$-jana$_{ii}$*   *karnta-patu$_{ii}$*   *nya-nyi*.
       man-PL-ERG   IMPF-3PL.NOM-3PL.ACC   woman-PL   see-NPST
       'The men see the women.' (Warlpiri, Laughren and Hoogenraad, 1996: 161)
(5)   *ngumpit-tu$_i$*   *ngu-lu$_i$-rla$_{ii}$*   *patpat*   *ma-na-ni*   *warrija-wu$_{ii}$*.
       Aboriginal-ERG   AUX-3PL-3DAT   touch   get-IPFV-PST   crocodile-DAT
       'Aborigines used to feel around for crocodiles.' (Gurindji, McConvell 1996:87)

In both of these languages ergative case marking is mostly obligatory, with some exceptions. Lajamanu Warlpiri differs from classic Warlpiri in the distribution of ergative markers. In classic Warlpiri, the ergative is obligatory on A arguments except on first and second person singular free pronouns where ergative marking is optional (Bavin and Shopen, 1987:152). In the Lajamanu Warlpiri of adult speakers under 50 years old, ergative marking occurs on approximately 90% of A arguments (O'Shannessy, 2009). The shift to non-obligatory ergative marking on A arguments in Lajamanu Warlpiri is probably due to contact with English and Kriol. In Lajamanu community we see a path from the obligatory marking of classic Warlpiri (of speakers over 50 years old) in most domains, to less than obligatory marking in Lajamanu Warlpiri (of speakers under 50 years old), then a further shift to even less application of marking in Light Warlpiri. In Gurindji, ergative marking is obligatory for A nominals, with the exception of semi-transitive clauses where a verb subcategorises for a dative object, for example in the case of speaking and perception verbs (McConvell, 1996:87). Moreover, free pronouns do not receive ergative case marking as transitive subjects (55). It is unlikely that these examples of unmarked A arguments would have greatly influenced OEM present in Gurindji Kriol, as the ergative pattern has been generalised to free pronouns in Gurindji Kriol, and neither these nominals nor the subjects of speaking and perception verbs differ from other A arguments in the proportion of ergative marking they receive.

Constituent order in both Warlpiri and Gurindji is relatively free and largely dependent on information packaging. While the auxiliary element in Warlpiri and Gurindji, which host pronominal enclitics, is most often found in second position, the position of nominal adjuncts, arguments and complements is more flexible. In classic Warlpiri, the clause initial position and the preverbal position have been described in terms of discourse structure. Hale (1983, 1992) suggests that preverbal position is a focus position, and elements which occupy this position, whether they are A, S or O arguments or other parts of speech, represent new information. Swartz (1988, 1991) emphasises the clause initial position in his analysis of Warlpiri information structure, suggesting that it is a discourse prominent position and elements are highlighted in this position. Simpson (2007; Simpson and Mushin, 2008) uses 'discourse prominence' in

the sense of Choi (1999) to reconcile the two positions presented by Hale and Swartz. Discourse prominence relates to the relative importance of information in the discourse, and Choi analyses discourse prominence as one feature of both topic and focus, as discussed in the introduction. Thus, in Choi's analysis, while an element in focus presents new information, this information may be either prominent or non-prominent. Similarly given information, or the topic, may be prominent or non-prominent. Choi's notion of discourse prominence with respect to topic and focus will become important later for our analysis of ergative marking in Light Warlpiri and Gurindji Kriol (Section 6). Using Choi's notion of discourse prominence, Simpson (2007:420) proposes that "relatively prominent information, whether topical or new information, occurs in the position before the AUX [auxiliary], as Swartz suggests [. . .] relatively new information, as Hale suggests, precedes the verb". Similarly, prominent elements in Gurindji are fronted, demonstrated by the question-answer sequence in (6).

(6)   (Gurindji)
(a)   *wanyjika-warla*   *ngu-n-∅*   *yuwa-n-i*   *kartak*?
        where-FOC   AUX-2SG.SBJ-3SG   put- PST-PRF   container
        'Where did you put the billy?'
(b)   *janyja-ngka*   *ngu-rna-∅*   *yuwa-n-i*   *ngayu*.
        ground-LOC   AUX-1SG.SBJ-3SG put-PST-PRF   1SG
        'I put it on the ground.'

In terms of frequency of word order patterns, Swartz (1991:56, 62) reports that AV order in Warlpiri occurs two times more often than VA order. Thus A nominals are accorded prominence in a clause more often than they are not.

In contrast, pronouns and nominal arguments are distinguished differently in Kriol. Case is only overtly marked in the pronoun system in Kriol. In this respect, Kriol behaves like English, using different forms to distinguish between subject and object referents. Similarly word order has a different function in Kriol, relating primarily to argument marking. Kriol is typical of many creole languages in its relative lack of morphology, including case morphology (McWhorter, 1998). Instead it distinguishes A and O arguments through the use of AVO as the pragmatically unmarked word order, derived from English (Hudson, 1983; Munro, 2005:119). In order to change the discourse prominence of an element, the referring expression must be dislocated from the main clause. In example (7) the object is highlighted by being in initial position. Additionally a discourse marker, *na* (<now), is also used to contribute to the discourse prominence of the entity.

(7)   najawan   gowena   na   dei   bin   dig-im-ap   from   hol.
        another   goanna   FOC   3PL   PST   dig-TRN-up   from   hole
        'They dug another goanna out of its hole.' (Hudson, 1983: 46)

5. The interaction between word order and ergative marking

The different systems of marking arguments and structuring discourse information in the traditional Australian languages and Kriol, raise a question about the consequence of contact and competition between these systems. This section begins exploring the roles that ergative marking and word order play in Light Warlpiri and Gurindji Kriol, and how these two systems interact. We argue that the use of ergative marking in the mixed languages is correlated with word order. We show that AVO is the most prevalent and unmarked word order which is used to differentiate arguments. However, where word order departs from an AVO pattern, ergative marking is used for argument disambiguation. To investigate this claim, we conducted a statistical analysis of the data using multilevel logistic regression with a binomial link function (Pinheiro and Bates, 2000).[6] This method is appropriate when the data do not form a normal distribution, are binary in nature (i.e. the ergative marker either is present or is not present), and when speakers contribute different numbers of items to the data set.

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[6] We are indebted to Harald Baayen, then at the Radboud University Nijmegen and the Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands (now at the University of Alberta) for assistance with this analysis.

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	Gurindji Kriol			Light Warlpiri		
	Number transitive clauses	*% total transitive clauses*	*% ergative on A*	Number transitive clauses	*% total transitive clauses*	*% ergative on A*
A overt	610	*100*	**64**	300	*100*	**59**
O not overt	288	*47*	68	107	*36*	56
O overt, any order	324	*53*	59	193	*64*	61
AVO order	244	*40*	50	179	*60*	55
AV order regardless of overtness and position of O	474	**78**	54	205	**68**	55
VA order regardless of overtness and position of O	135	22	**96***	95	32	**68***

Fig. 1. Percentage of ergative marking per level of potential explanatory factor, per language. *Significant result.

The data set for the statistical analysis consists of 300 Light Warlpiri transitive clauses with overt A arguments from 5 female participants aged between 20 and 30 years, and 612 Gurindji Kriol clauses from 20 female participants also in their twenties. In both new languages free pronouns from the traditional languages can host the ergative marker, so clauses containing them are included, but free pronouns from Kriol cannot, and clauses containing them as A arguments are not included. These clause tokens are extracted from conversation and picture-prompted narrative. The transitive clauses with overt A arguments were coded for language, the presence of ergative marking and word order.[7] 'Language' was coded to investigate differences in the distribution of the ergative marker between Light Warlpiri and Gurindji Kriol. 'Speaker' (individual speakers) and 'genre' (narrative or spontaneous speech) were included as random variables. If one speaker spoke in a particular style and contributed a lot of sentences, the data could be skewed by that speaker. The same applies to text types—one genre could be more likely to have certain features. Including 'speaker' and 'genre' as random variables avoids any potential skewing. The variables were coded as follows:

Dependent variable:	ergative marking	(± ERG is present)
Independent variables:	language	(Light Warlpiri or Gurindji Kriol)
	word order	(AV or VA)
	O overtness	(± O is overt)
Random variables:	speaker	(one of 25 speakers)
	genre	(narrative or spontaneous text)

The percentage of A arguments with ergative marking according to each factor and in each language is given in Fig. 1.

Figs. 1 and 2 show the total numbers of clauses and percentage of ergative marking for each level of each factor in transitive clauses. An asterisk indicates the independent variables which are statistically significant. (The full output of the analysis and explanatory notes are provided in Appendix A). The figure shows the extent of use of the ergative marker and AV(O) word order in the two mixed languages. The ergative marker occurs on 59% of A arguments in the Light Warlpiri data, and on 64% of A arguments in the Gurindji Kriol data. AV word order is the most commonly used word order in both languages—68% of Light Warlpiri and 78% of Gurindji Kriol clauses are AV (see Fig. 1). Additionally, when the O argument is overt, the predominant order is AVO—in Light Warlpiri and Gurindji Kriol

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[7] Other factors such as the formality of context and the language of the stem have been tested in separate investigations specifically focussing on argument disambiguation in Light Warlpiri and Gurindji Kriol. These factors were not found to be significant and the findings are not presented here. Other variables such as the animacy of A and transitivity factors do affect the appearance of ergative marking in Gurindji Kriol and Light Warlpiri in other data sets, and are discussed elsewhere (Meakins, 2009; O'Shannessy, 2006). Note that, in trial tests of the data presented in this paper, animacy did not emerge as significant. These differences in results suggest that, while animacy plays some role, its strength of influence is not comparable to word order.

	Gurindji Kriol			Light Warlpiri		
	Number transitive clauses, O overt	*% transitive clauses, O overt*	*% ergative on A arguments*	Number transitive clauses, O overt	*% transitive clauses, O overt*	*% ergative on A arguments*
O overt, any order	324	*100*	*59*	193	*100*	*61*
AVO	244	**76**	*50*	179	**93**	*55*

Fig. 2. AVO order clauses as percentage of clauses with overt O.

respectively, 93% and 76% of clauses with overt O arguments have AVO order (see Fig. 2). Though the languages differ in their distribution of ergative marking or word order, the statistical analysis shows that this difference is not significant.

Fig. 1 also provides information about the interaction of ergative marking and A position. The two languages have a similar distribution of ergative-marked preverbal and postverbal A arguments—in both languages about 55% of preverbal A arguments are ergative-marked, and ergative marking and word order are in a complementary relationship. Postverbal A arguments are more likely to be marked than preverbal A arguments ($p < 0.001$), but the correlation is stronger in Gurindji Kriol than in Light Warlpiri ($p < 0.001$)—in Gurindji Kriol 96% of postverbal A arguments are marked, compared to 68% in Light Warlpiri.

These results demonstrate some differences and similarities between Light Warlpiri, Gurindji Kriol, and their source languages. The new languages differ from the traditional languages in how frequently ergative marking is applied. Ergative marking is present but optional in the new languages, whereas it is basically categorical in Warlpiri and Gurindji. In contrast, the frequency of word order patterns in Light Warlpiri and Gurindji Kriol are similar to Swartz' figures for Warlpiri in which there are twice as many clauses with AV order as VA order.[8] Thus, where the new and old languages differ in the application of ergative marking, their word orders are comparable. It may appear that little change in word order has occurred in the formation of the new languages, and that it behaves in much the same manner as in Warlpiri and Gurindji, with only some minor interference from Kriol. However we suggest that, though the surface patterns of word order look similar, the functions of both ergative marking and word order are in the process of changing under the influence of Kriol. The change is indicated in the statistically significant correlation between ergative marking and VA word order in Light Warlpiri and Gurindji Kriol. The relative lack of ergative marking on agents in AV order suggests that AV order at least partially indicates agents.

We suggest that AVO is becoming the pragmatically unmarked word order in the two new mixed languages, marking argument position rather than information structure.[9] With the functional load of argument marking borne by word order, morphological marking is not required on preverbal A arguments. Where AVO order is not found, ergative marking can be brought to the task of disambiguating arguments. Other features of the clause such as co-referential pronouns and relative animacy also contribute to the identification of arguments. The following examples demonstrate how arguments are marked in Light Warlpiri and Gurindji Kriol. In (8) and (9) the preverbal position marks 'this monster' and 'a man' as the agents. As shown in Fig. 1, approximately 45% of clauses in both Light Warlpiri and Gurindji Kriol have unmarked preverbal A nominals.

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[8] It is not within the scope of this paper to perform a similar statistical analysis to compare word order patterns of Warlpiri and Light Warlpiri, and Gurindji and Gurindji Kriol to determine whether any differences are significant. It is the meaning associated with the patterns, rather than the relative proportions which are of interest.

[9] In part this argument is supported by claims from Greenberg (1966:67) and Kroeger (2004:141) who state that the most frequently found word order in a language is the pragmatically unmarked pattern. However given that AV word order is also the most frequent in Warlpiri and Gurindji, the claim is problematic in this context.

(8) *nyampu*   *kuuku*   i=m   luk-ing   *jarntu.*   (LW)
    this   monster   3SG=NFUT look-PROG dog
    'This monster is looking at the dog.'

(9) wan man bin *nurt*   im   *kajirri.*   (GK)
    ART man PST put.pressure   3SG.O   old.woman
    'A man sat on an old woman.'

Where A nominals do not appear in the preverbal position, ergative marking is more likely to be found and provides information about distinguishing arguments. For example in situations such as in examples (10) and (11), where both nominals are of equal animacy and the A nominal is postverbal, ergative marking provides reliable information about which argument is the agent, in addition to other contextual information that might be present. Without ergative marking, if the preverbal nominal is assumed to be the agent, the intended meaning of both of these clauses could be misinterpreted.

(10) *kurdu-pawu*   i=m   hold-im   wan man-*i-ng.*   (LW)
    child-DIM   3SG=NFUT hold-TR   ART man-EPEN-ERG
    'A man is holding a child.'

(11) *kajirri*   *nurt*   im   *ngumpit-tu.*   (GK)
    old.woman put.pressure 3SG.OBJ   man-ERG
    'A man sat on an old woman.'

Thus though much of the functional load of argument marking is borne by word order, the ergative marker continues to contribute to the identification of the A argument, particularly where word order departs from the unmarked AVO pattern. Other features in the clause such as co-referential pronouns, the relative animacy of the actors, a knowledge of how participants act in real world events and the immediate discourse context also provide cues as to which participant is likely to be an agent (Meakins, 2009). However, as will be demonstrated in the next section, argument marking alone does not motivate the presence of ergative marking in Light Warlpiri and Gurindji Kriol.

6. The ergative marker and discourse prominence

The occurrence of both AV and VA word orders in the new languages, with and without ergative marking, suggests that the ergative is not entirely predicted by word order and that it has an additional function other than that of indicating arguments. The ergative occurs where word order and other strategies are sufficient for indicating arguments. As shown in Fig. 1, about 55% of A arguments in Light Warlpiri and Gurindji Kriol occur with ergative marking even where an AV pattern is adopted. (12) and (13) are examples where the ergative marker is used despite the clear identification of A. Several types of information converge to lead to the conclusion that 'the snake' is the A argument—the preverbal position of 'snake', the lexical semantics of the verb and nominals, and knowledge of the behaviour of snakes with regard to human legs. Nonetheless the A argument is marked ergative.

(12) wal *warna-ng* i=m   bait-im   *wirliya.*   (LW)
    well snake-ERG 3SG=NFUT bite-TR   leg.
    'Well the snake bit his leg.'

(13) det *jinek-tu* *katurl*   im   na leg-*ta.*   (GK)
    ART snake-ERG bite   3SG.O FOC leg-LOC
    'The snake bit him on the leg.'

Additionally, it is not always clear that word order motivates the appearance of the ergative marker where postverbal A arguments are found. For example in (14) and (15) the agent of the kissing appears postverbally and is marked ergative,

however the object is also postverbal and a preverbal pronoun which cross-references the A argument is also present. These examples contrast with other postverbal examples such as (10) and (11) where the objects are preverbal, and a cross-referencing pronoun is not always present. The difference between these examples is that the ergative marker is needed to disambiguate the nominals in (10) and (11), whereas in (14) and (15), a hearer who is expecting AVO order would have the correct interpretation of the sentence before the case-marked nominal is heard. Thus the interaction of word order and case-marking in these examples does not entirely relate to argument disambiguation. We analyse these structures as right dislocations which relate to the prominence accorded to the A nominal's agentivity, as discussed in Section 6.3.

(14)   yeah i=m   kis-im   *Melana*   na   *Libiya-ng*   (LW)
       yes 3SG=NFUT kiss-TR   NAME   FOC   NAME-ERG
       'Yes Libiya is kissing Melana now.'

(15)   i   bin   faind-im   det   *ngakparn*   *karu-ngku*.   (GK)
       3SG.S NF   find-TRN   ART   frog   child-ERG
       'The kid found the frog.'

In Gurindji Kriol ergative marking also appears on subjects of intransitive verbs (S), even though only one argument is present in intransitive clauses and therefore not in need of disambiguation. This is a major difference in the use of the ergative marker between Light Warlpiri and Gurindji Kriol, as Light Warlpiri almost always restricts the use of the ergative marker to A arguments.[10] (16) is an example of an S argument in Gurindji Kriol with an ergative suffix.

(16)   an   det   *karu-ngku partaj*   det   tri-*ngka* i   bin   *partaj*.   (GK)
       and   ART   child-ERG go.up   ART   tri-LOC   3SG   PST   climb
       'And the kid climbed up the tree.'

The use of ergative marking in these contexts suggests that this case marker is beginning to encode more than syntactic relations (see also McGregor, 2010, and Rumsey, 2010, on the use of ergative marking in intransitive contexts). As mentioned in Section 2, discourse variables often play a role in conditioning ergative marking in several optional ergative Australian languages. The most thorough pragmatic accounts are McGregor's (1992, 1998, 2006b) work on discourse level expectedness and the degree of agentivity of an actor in Gooniyandi and Warrwa. McGregor defines 'expectedness' in terms of how predictable an actor is within a narrative episode, and animacy as a semantic value of the actor. Actors which are expected and which have an expected level of agentivity are generally elided. A full NP occurs when the actor is unexpected. The presence of ergative marking on the full NP signals normal or higher than expected agentivity, with the absence of marking signifying an actor low in agentivity (McGregor, 1998:518). The use of ergative marking in other OEM-type Australian languages is considered marked in terms of McGregor's notions of expectedness and agentivity. In Warrwa (McGregor, 2006b), Kuuk Thaayorre (Gaby, 2008) and Jaminjung (Schultze-Berndt, 2006), the presence of an ergative marker in transitive clauses is unmarked discursively, while the absence of an ergative marker signals an unusually low degree of agentivity. In Warrwa the use of a specific focal ergative marker signals higher agentivity and unexpectedness, and the non-use of either the focal or general ergative marker defocuses the agent (McGregor, 2006b). Verstraete (2005, 2010) makes quite different observations about OEM in Umpithamu. In Umpithamu ergative marking is conditioned by the degree of animacy of the agent, and whether or not the agent is focal within the discourse. In Umpithamu agents are in focus when they provide information about a presupposition from previous clauses, by indicating a contrast with other argument referents, or providing information in response to a question, or when the agent references a presupposition not explicitly expressed in immediately preceding clauses. The ergative marker indicates that the marked agent is salient in the unfolding discourse. A similar situation is described for Jingulu, where the ergative marker marks an element as bearing focus which is defined as discourse prominence (Pensalfini, 1999).

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[10] There are three examples of ergative marking on S arguments in Light Warlpiri, in a corpus of thousands of intransitive clauses. At this stage we cannot say whether they are performance errors, or signal incipient change. In Light Warlpiri ergative marking does occur on oblique NPs in intransitive clauses, in the role of an ablative marker.

The pragmatic use of the ergative marker in Umpithamu and Jingulu are closest to the pragmatic behaviour of the ergative in Light Warlpiri and Gurindji Kriol. Both Verstraete and Pensalfini use the term 'focus' to mean the attribution of discourse prominence. This follows Lambrecht's (1994:210) notion of focus which he uses in a relative sense as signaling a salience relation between an element of a proposition and the proposition as a whole.[11] In other accounts of information structure, discourse prominence is considered a potential property of both topic and focus. Here we follow Choi's (1999)[12] analysis of focus and topic as being constituted by the features: ±newness and ±prominence. 'Newness' relates to the given-ness of information, and 'prominence' to the speaker's evaluation of the status of the information. Both of these features are relative to the discourse status of other information in the clause. Under this analysis, focus relates specifically to new information, and topic to given information, and both may occupy discourse prominent positions. Thus discourse prominence is not equivalent to focus, though it must be noted that new entities are often accorded such prominence. Discourse prominence relates to the speaker's ranking of information, whether it is new or old information, and the attribution of significance to certain pieces of information.

We suggest that the behaviour of the ergative marker in Light Warlpiri and Gurindji Kriol relates to discourse prominence, and propose that the ergative marker is employed as a specific discourse marker which highlights the agentivity of an agent, where agentivity refers to the degree that an event is carried over or transferred from one participant to another (Hopper and Thompson, 1980). In this respect the ergative marker remains close to its syntactic function as a marker of A arguments. The use of the ergative marker does not change the level of agentivity with respect to either the semantic value of the actor or the expectation of an actor's behaviour in terms of world view or a given context. Rather it focuses on information already present in the discourse, drawing attention to the agentivity of the A argument. This view of discourse prominence cuts across the categories of focus and topic, in the sense of new and given information. The ergative marker is found highlighting the agentivity of A nominals which are the focus of the clause, as shown in the contrastive constructions in Section 6.1. In highlighting the agentivity of one actor, the intended interpretation is to simultaneously emphasise another actor's lack of agency. The ergative marker is also used to accord prominence to particularly agentive topics, as demonstrated in left and right dislocation in Sections 6.2 and 6.3, respectively, which are topicalising strategies, and in subject chaining, where a repeated A nominal is clearly the topic of a sentence, but is also the discourse prominent entity, in Section 6.4. The use of the ergative marker in conjunction with left and right dislocation further illustrates its interaction with word order. When the word order departs from the pragmatically unmarked AVO pattern, the ergative marker is often found in conjunction with these topicalising devices.

As noted above, in Gurindji Kriol, the ergative marker also occurs on intransitive subjects (S). The use of an ergative suffix on S arguments has been reported in other Australian languages which exhibit optional ergativity, for example Warrwa (McGregor, 2006a, 2007), Gooniyandi (McGregor, 1992:305) and Kuuk Thaayorre (Gaby, 2008:117–119) (see also McGregor's and Rumsey's contributions in this volume). In these languages ergative marking is associated with factors beyond the clause level, specifically a highly agentive S argument and/or 'expectedness', that is, an S argument where the identity of the referent is difficult to retrieve. For example, in Warrwa, the ergative marker is found on intransitive subjects which are high in agentivity and are unexpected in the discourse context. Only the property of expectedness applies in Kuuk Thaayorre, where the S argument receives ergative marking when the entity it indicates is unexpected. In Gurindji Kriol, it appears the ergative is used to highlight an S argument with higher than expected agentivity. We will not discuss intransitive subjects any further. The notion of agentivity will be discussed in more detail in the following section in relation to transitive subjects.

6.1. Contrast

The first discourse use of the ergative marker is to contrast the agentivity of two event participants. Givón (2001:262) describes contrastive structures as typical devices used "when a referent is contrasted with another referent of roughly the same semantic class". If the constituent is normally not in initial position in the clause, a change in word order may be involved. If the constituent is normally in initial position, the contrastive element may be marked in some other way, for example morphologically or intonationally. In Light Warlpiri and Gurindji Kriol ergative marking can

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[11] This is one use of 'focus' in the information structure literature (see also Givón, 1993 for a less relative account of focus). The term is also used to refer to the 'newness' of a constituent (Comrie, 1981; Halliday, 1967).
[12] See also Butt and Holloway-King (1996) for a similar treatment of topic and focus.

be used. In this context it indicates a contrast between participants which are semantically similar, and more specifically, it contrasts the degree of agency of the participants.

The following Gurindji Kriol sequence (17) occurred during a discussion amongst 22-year-old women about passing on knowledge about the cattle station days and significant historical events around Kalkaringi. RS begins by saying that their parents recounted the events of this period to them. VB then repeats the semi-transitive clause, repositioning the group of women as the agent. The emphatic pronoun *ngantipa* (1SG.INC) is accompanied by an ergative marker in a left dislocated construction (see Section 6.2). In doing so, VB is not merely contrasting the actors but also their agency. She emphasises that the responsibility for the intergenerational transmission of knowledge now lies with them, as parents of the new generation.

(17)   (Gurindji Kriol)
RS: dei *jartakap   ngantipany*   stori, *yurrk   ngantipany* stori *nyarralu*.
       3PL   talk   1PL.INCL.DAT   story recount   1PLINC.DAT story 3PL
       'They (our parents) tell stories to us, recount stories, they do.'
VB: an *ngantipa-ngku*   wi   tok   bo *ngantipany   karu* na.
       and   1PL.INCL-ERG   1PL talk   PREP 1PL.INC.DAT   child FOC
       'And now we tell these stories to our children.'
RS: yeah *ngantipa-ngku   yurrk   ngantipany-ku   karu-yu*   na.
       yeah 1PL.INC-ERG   recount   1PL.INC.DAT-DAT child-DAT   FOC
       'Yeah we tell the stories to our children now.'

Contrasts in degrees of agentivity often occur in the context of child-directed speech in Gurindji Kriol and Light Warlpiri. A caregiver might imply that a child is not performing to expectations by contrasting his/her lack of agentivity with another actual or potential agent who is behaving more appropriately in the eyes of the caregiver. In doing so, the caregiver attempts to change the child's behaviour. For example, (18) shows consecutive clauses from a Light Warlpiri-speaking adult who is calling a group of children to come and eat some cake they left on the verandah when they went inside the house. The adult calls the children, saying that if the children do not come and eat the cake, the dog might get it. The use of the ergative marker on *jarntu* 'dog' highlights the contrast of the dog's potentially agentive role with that of the children.

(18)   (Light Warlpiri)
(a)   *Nangala   nyurru*   na   kam iya   na   an   Mina
       SUBSECT   finish   FOC come here FOC CONJ NAME
       'Nangala, enough now, come here now, and Mina.'
(b)   *jarntu-ng*   i-rra   iit   dis   keik *yumob*   kan   kam
       dog-ERG   3SG-FUT   eat   this cake 2PL   NEG   come
       'The dog might eat this cake [because] you lot aren't coming.'

6.2. Left-dislocation

In Gurindji Kriol, the ergative marker is also used in conjunction with L-dislocated constructions to highlight the agentivity of a participant whose discourse status is given. These constructions are rare in Light Warlpiri because the pronoun-tense/aspect complex is obligatory, where it is not in Gurindji Kriol.[13] Functionally, it has been suggested that "L-dislocation is typically a device to mark topical referents, most commonly definite and anaphoric ones, that have been out of the focus of attention for a while and are being brought back into the discourse" (Givón, 2001:265). In conversation it may be used to take the floor and re-introduce a topical referent, and in narratives it is often used as a chain initial device (Givón, 2001:266). L-dislocation is also a topicalisation device in Gurindji Kriol. With the addition of an ergative marker, the agentivity of the topical actor is emphasised.

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[13] The Light Warlpiri auxiliary cluster, consisting of a pronominal element and a temporal element, is obligatory and immediately preceeds the verb, so pronominal information about the subject is always present in the clause, whether or not the A argument is overt. Consequently, an overt A argument followed by a pronominal element as part of the auxiliary is not a structural feature of L-dislocation. Prosodic criteria are required for a discussion of Light Warlpiri dislocation, however such an analysis is not within the scope of this paper.

L-dislocations in Gurindji Kriol consist of an ergative-marked A argument accompanied by an anaphoric pronoun. A separate intonation contour is often diagnostic of L-dislocation (see e.g. Givón, 2001:266; Lambrecht, 2001). However, prosody is not always given as a criterion for L-dislocation (see Kim, 1995:276, for English; and Sankoff, 1993:126 for Tok Pisin). In Gurindji Kriol a separate intonation contour is not diagnostic of L-dislocation although it may be found, and more rarely an emphatic Kriol particle *na* (<now) (Graber, 1987) may also be present.

(19) *wartarra*   SS-*ngku*   na,   im   kil-im   im   (GK)
      goodness   NAME-ERG FOC   3SG   hit-TR   3SG.O
      kaya   *watja*   *kuya-nin*.
      monster   hurry.up   thus-hither
      'Oh goodness SS is belting him, hurry up the little monster's going this way.'

In (19), a group of women and their children are sitting next to the river with the idea of going fishing. The children are digging for frogs to use as bait. One of the boys starts throwing sand at a girl who begins crying. His grandmother scolds the boy and tells the girl to get out of the way. Suddenly the boy's mother, SS, gets up and pretends to chase him with a switch. His grandmother exclaims to another woman that SS is chasing her son, affectionately calling him a monster. The whole scene is viewed with much hilarity by all of the adult participants. In this example the speaker brings the agentivity of SS into the foreground, emphasising the vigour and enthusiasm with which SS performs the activity.

6.3. Right dislocation

R-dislocations are the structural mirror of L-dislocations. The subject is found postverbally, and is cross-referenced with a pronoun. If AVO order is the unmarked order for Light Warlpiri and Gurindji Kriol, then VA clauses must serve a pragmatic function. One of the functions of this construction is an afterthought or repair device. Givón (1988:267) summarises the use of R-dislocation as a construction that is used when the referent is firstly considered to be highly accessible but then the speaker "decided that maybe the referent was not quite as accessible, and so was better re-coded as a full NP". In this respect the nominal is a topic, but is given discourse prominence in order to aid the interpretation of a sentence.

In Light Warlpiri and Gurindji Kriol, R-dislocation can be used to repair a broken topic chain, as Givón suggests, but is also used to highlight accessible topics. In general the postverbal agent referent is known from prior discourse, and is the clause topic. The reason for marking it ergatively is probably twofold—to confirm that the NP is an A argument in a non-typical position (as discussed in Section 5), and to emphasise the agentivity of the referent, as was shown in (14) and (15), and further in (20) below.

(20) (Gurindji Kriol)
(a)   *kaya*   bin   *makin*   pikit-abat
      monster   PST   sleep   forget-about
(b)   i   bin   jas   gon   ged-im   *nyanuny*   mami-*ngku-ma*.
      3SG.S PST   just   go   get-TRN   3SG.DAT   mother-ERG-DIS
      'The monster went to sleep and forgot (about the dog). So the dog's mother
      went to get him.'

In (20), the mother is the topic of discourse. In (a) the monster is introduced in the intransitive clause. The following sentence begins with a third singular pronoun which appears to refer to the monster, but in fact refers to the mother character, thereby breaking the topic chain. The post-verbal nominal highlights the agentivity of the mother thereby simultaneously changing the referent of the pronoun, and ensuring that the mother is not interpreted as an object. In this respect the topic chain is repaired, and the ergative marker also helps disambiguate the arguments.

R-dislocation is not only employed to repair broken topics. Accessible topics are also emphasised using this deviation from AVO word order. For example in (22) a child is throwing stones at some horses. Her mother admonishes her by warning that the non-Indigenous manager of the horse yards might see her and disapprove of her behaviour. When the manager is new to the discourse in (a) the name is preverbal and marked ergatively, but when the warning is

repeated in (b) the manager's name appears dislocated postverbally and ergatively marked, according greater prominence to his agentivity. In (b) the manager is easily retrievable information but his agentivity as someone who might act sternly towards the child is highlighted by the ergative.

(21)   (Light Warlpiri)
(a)   *kardiya-kujak*   *nana* Johnny-*ng*   i=rra   luk   yu   *junga*.
        white.person-for.fear.of DIS   NAME-ERG   3SG=NFUT look 2SG   true
        '[Behave properly] lest the white person, Johnny, sees you!'
(b)   mm   i=rra   luk   yu   Johnny-*ng*.
        DIS   3SG=NFUT look 2SG   NAME-ERG
        'Mm Johnny will see you!'

6.4. Emphatic subject chaining

The ergative can also be used in subsequent mentions in subject chains where the subject is not reduced to an anaphoric pronoun, or elided. These types of chains where full nominals are repeated are commonly observed in Aboriginal narratives, but the use of ergative marking in this respect in optional ergative languages has not been examined. In Light Walpiri and Gurindji Kriol, the repetitive use of an ergatively marked A argument intensifies the event, and is used in unexpected and emphatic situations, often the climax of a narrative. In an example from Light Warlpiri, (23), a speaker is telling a story based on picture stimuli. The strategy of repeating the topic as a full nominal and overtly marking it emphasises the event in the narrative and the role of the thorn, an inanimate entity, as a protagonist.

(22)   (Light Warlpiri)
(a)   o   *wiyarrpa   jilkarla-ngu*   i=m   *panturn*-im
        oh   poor.thing thorn-ERG   3SG=NFUT pierce-TR
        'Oh, poor thing, the thorn has pricked him!'
(b)   *jilkarla-ngu*   *wirliya*
        thorn-ERG   foot
        'The thorn, on the foot.'
(c)   an   i=m   krai-ing
        CONJ 3SG=NFUT cry-PROG
        'And he's crying.'
(d)   *panturn-im*   *jilkarla-ngu*   *wiyarrpa*
        pierce-TR   thorn-ERG   poor.thing
        'The thorn pricked him, poor thing.'
(e)   *pantirn*-im *jilkarla-ng* i=m   *pantirn*-im
        pierce-TR   thorn-ERG 3SG=NFUT pierce-TR
        'Pricked him, the thorn pricked him.'

This type of construction is also used during conversation to describe an agent's behaviour during an unexpected event. In the following extract, (24), from Gurindji Kriol, a group of women are sitting about talking when suddenly a tame bird (nick-named 'Cocky'), which is sitting on FM's shoulder, starts screeching. The speaker introduces the bird using an L-dislocated construction and then jokingly describes what the bird is doing to another person in the group, LD. Despite the fact that the cockatoo is the topic and agent throughout this interaction, it is referred to using a full noun phrase and ergative marker in every mention. The ergative marker highlights the unexpectedly high level of agentivity, in terms of the intentionality and sentence which is being attributed to the bird. After this event, the women go back to quiet talking. The whole event is described with heightened energy and interest.[14]

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[14] Note also in line (b), another ergative marked agent is introduced. This agent's activity of swearing is contrasted the cockatoo. See Section 6.1 for a discussion of contrast, agentivity and the use of the ergative marker.

(23)   (Gurindji Kriol)
(a)   Cocky-*ngku*   du   im   ansa-im   ah.
         Cocky-ERG too   3SG   answer-TR ah.
(b)   LD-*tu*   sweya   yu   Cocky.
         NAME-ERG   swear.at   2SG   Cocky
(c)   Cocky-*ngku*   sweya   yu   nogud.
         Cocky-ERG   swear.at   2SG   no.good
(d)   *nyawa*   yu   luk   Cocky-*ngku*   FM-*ngka*.
         this   2SG   look   Cocky-ERG NAME-LOC
(e)   im=in   sweya   yu   *jurlaka-ngku*   *wartiti.*
         3SG=PST   swear.at   2SG   bird-ERG   poor.thing
         'Cocky, he's answering you back. Now Leyton is swearing at Cocky. Now Cocky
         is swearing at you badly. This one see look, Cocky (is sitting) on FM's shoulder.
         He was swearing at you, that bird, oh dear.'

7. Discussion

7.1. The road from case-marking towards discourse-marking

The previous two sections provided a synchronic description of the predictors of ergative marking in Light Warlpiri and Gurindji Kriol. Ergative marking correlates with word order, such that postverbal A arguments are marked more often than preverbal A arguments, and it has a discourse marking function, in that the agentivity of an A argument may be highlighted by the ergative.[15] In both new languages, ergative case-marking and word order are settling into complementary relationships.

As was noted at the beginning of Section 6, the discourse use of the ergative marker has been observed in other OEM languages where language contact does not play a role. But the emerging correlation between ergative marking and word order in Light Warlpiri and Gurindji Kriol suggests that OEM arose as a consequence of language contact. The transformation of ergative marking from a purely syntactic marker in Warlpiri and Gurindji to one that encodes discourse prominence in the mixed languages is related very specifically to the functional competition in the domain of argument marking between case-marking and AVO word order. This form of contact differs from the contact situations described in Section 2. In, for example, Dyirbal and Nyulnyul, AVO word order intrudes or is borrowed into the traditional language, resulting in a changed system of argument marking within the languages. In Dyirbal, this change is described in terms of language death. In the two mixed languages in this study, the contact is less directional or hierarchical. Neither of the new mixed languages has a single dominant source language. The structures of the new languages are the result of competition within particular functional domains. The use of word order to indicate arguments in English and Kriol, and the use of case marking to indicate arguments in Warlpiri and Gurindji, have resulted in both strategies being used to indicate arguments in the new mixed languages. In addition, ergative marking in the new languages has taken on an aspect of the function that word order has in Warlpiri and Gurindji, that of indicating discourse prominence, although this function is more specifically related to the prominence of a subject's agentivity in the new languages. In this respect it remains close to the syntactic function of an ergative marker.

The partial shift in the function of the ergative probably occurred incrementally. The first stage of the process was the mixing of AVO word order with case-marking, which was just one of a suite of changes that occurred during language mixing. As noted in Section 2, the adoption of AVO order has been observed in all language contact situations which have been documented in Australia even where the traditional language is less dramatically affected by the colonising language. For example, in Areyonga Teenage Pitjantjatjara AVO word order is becoming prevalent but corresponding effects on other systems have not been observed. In Lajamanu Warlpiri, AVO order is common and there has been some reduction in the application of ergative marking, which occurs on about 90% of A arguments. These data suggest that the adoption or perhaps rigidification of a particular

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[15] The absence of ergative analysis is also relevant to this analysis, and is discussed in Meakins (2009:84). It downplays the importance of the agentivity of the entity referred by the nominal within these discourse contexts.

word order as the unmarked order is a first step in the reanalysis of the traditional case-marking systems. In Light Warlpiri and Gurindji Kriol, the mixing of both word order and case-marking strategies to indicate arguments means that neither of the systems from the source languages remains intact in the new mixed languages. Similarly, the systems of information structuring from Warlpiri, Gurindji and Kriol were not simply transplanted into the new languages. As noted in Section 4, in the heritage languages, first position is marked as a discourse prominence position. The use of AVO word order in Light Warlpiri and Gurindji Kriol had related effects both on the ergative marker and the function of clause initial position. Some of the functional load of argument marking had shifted from the ergative marker to first position with the result that this position was rendered unmarked in terms of discourse. The clause initial position became more like a syntactic slot rather than a prominence position. In this transitional stage of language change, a hole in information structure encoding existed and the ergative marker had a lighter syntactic load since some of the function of indicating arguments was being carried by word order. This condition has allowed the reanalysis of ergative marking, which began to take on some of the function of indicating prominence, previously the task of initial position in the clause. Of course this function is more specific than just discourse prominence in the new languages, with its role specifically related to the agentivity of subjects. Currently, the ergative marker indicates both syntactic and pragmatic functions. The current patterns may stabilise as the two new languages settle, or they may be a mid-point in a shift towards the ergative marker taking on more general discourse functions.

7.2. Differences between Light Warlpiri and Gurindji Kriol

Despite the similarity of Light Warlpiri and Gurindji Kriol in terms of the structure of their source languages and the resultant patterns of optional ergativity, there are some striking differences between them. The interaction of word order and ergative marking is more stable in Gurindji Kriol than in Light Warlpiri and, in Gurindji Kriol, the ergative marker has been extended to mark some subjects of intransitive verbs.

One explanation for these differences could be that Gurindji Kriol has existed as a stable speech code for longer than Light Warlpiri, such that there has been more time for certain patterns to become entrenched. But both languages appear to have conventionalised into their present forms at about the same time. The main speakers of both Light Warlpiri and Gurindji Kriol are under 35 years old. McConvell (1985, 1988) observed that code-switching between Gurindji and Kriol was the main mode of communication in the mid-1970s. When he returned in the mid-1980s, the code-switching seemed to have conventionalised into an early form of what is now known as Gurindji Kriol (Dalton et al., 1995). Further evidence in favour of the two languages having been conventionalised speech systems for similar lengths of time is that both show results of grammaticalisation processes, although in different domains. In Gurindji Kriol the interaction of word order and ergative marking has become a reliable stable system, while in Light Warlpiri an innovative auxiliary system has evolved which differs considerably from Kriol and Gurindji Kriol (see O'Shannessy, 2005 for more detail). It seems then, that the two languages have existed for similar lengths of time, so time is probably not a reason for differing patterns.

A clearer difference between Light Warlpiri and Gurindji Kriol is the degree of continuing contact with their respective source languages. Both Warlpiri and Gurindji people spend considerable amounts of time in Kriol and Aboriginal English-speaking areas. The nearest commercial centre for both groups, Katherine (500–600 km away), is a meeting place of Aboriginal people from different groups and areas. Kriol is the *lingua franca* for these groups. The inter-group language practices of Warlpiri and Gurindji people have not been systematically investigated, but from observation we suggest that both groups have a large amount of contact with Kriol speakers, even as observers. What distinguishes the Warlpiri from the Gurindji in regard to this issue is the amount of contact they have with their traditional languages. Warlpiri remains a strong language both in Lajamanu and further south. People over the age of 35 continue to speak Warlpiri in Lajamanu (albeit often code-switched with Aboriginal English or Kriol), Light Warlpiri speakers also speak Warlpiri, and people regularly travel south to other Warlpiri communities such as Yuendumu, Nyirrpi and Willowra. Children at Lajamanu continue to acquire Warlpiri, though typically they only begin to produce it from about the age of 4 years (O'Shannessy, 2008). In contrast, at Kalkaringi, Gurindji is only spoken by much older people, also often in code-switched speech. Moreover children are not acquiring Gurindji except where it is preserved in Gurindji Kriol. They have little active knowledge of the Gurindji systems which are not in the mixed language, for example, they cannot produce inflecting verb and bound pronoun structures. They appear to have a reasonable passive understanding of Gurindji, although it is difficult to measure this without rigorous testing

(Meakins, 2008). Unlike for the Warlpiri, there are no other Gurindji-identifying communities or communities where Gurindji is spoken as the main language. To the north of Kalkaringi there are a number of communities where the main identity language is a closely related Eastern Ngumpin language, for example Pigeon Hole (Bilinarra) and Yarralin (Ngarinyman). A lot of traffic exists between these communities due to close kin ties, however it appears that language mixing, similar to that of Gurindji Kriol, is also well established. Again this area requires some further investigation.

In terms of contact with the traditional language, another important difference between Lajamanu and Kalkaringi is the language of instruction in the schools in each community. At the school in Lajamanu a two-way learning program (i.e. learning in and about both Warlpiri and English) has operated since the 1980s (although with some lengthy breaks). Children are taught mostly in Warlpiri in the early years and Warlpiri continues to be a medium of instruction to varying extents for the rest of their time at school. By contrast, Kalkaringi is an English-only school. Small Gurindji language programs have existed from time to time, but the bulk of Gurindji children's schooling is delivered in English.

We suggest that the strong and continuing influence of Warlpiri on Light Warlpiri has meant that there has been less influence of Kriol on Light Warlpiri than on Gurindji Kriol. Consequently there is a weaker correlation between word order and ergative marking in Light Warlpiri than in Gurindji Kriol. Conversely it is likely that Gurindji Kriol speakers have had a more rigid word order reinforced through exposure to similar mixed languages in the north and English-only schooling. The use of word order as the dominant argument marking system in Gurindji Kriol has probably allowed the ergative marker greater freedom to be reinterpreted as a marker of prominence, and to begin marking subjects of intransitive clauses. However given the youth of these languages and the presence of high amounts of variation, we may expect to see further change and shift in the use of the ergative marker in the future.

Acknowledgements

Appendix A

The tables show the output of multilevel logistic regression analysis with a binomial link function (Pinheiro and Bates, 2000). Individual speakers and type of text (narrative or spontaneous speech), called genre, were entered as random effects.

1. Model from analysis of Light Warlpiri and Gurindji Kriol.

Generalized linear mixed model fit using PQL

Groups	Name	Variance	Std. Dev.
Random effects:			
Speaker	(Intercept)	4.4572e−01	6.6762e−01
Genre	(Intercept)	5.0000e−10	2.2361e−05

No. of obs: 912, groups: Speaker, 27; Genre, 2
Estimated scale (compare to 1) 0.9715015

Appendix A (*Continued*)

	Estimate	Std. Error	*z* value	Pr(>|z|)
Fixed effects:				
(Intercept)	0.51285	0.24576	2.0868	0.03691***
Language LW	−0.05496	0.35595	−0.1544	0.87729
VA order	3.11590	0.46926	6.6400	3.137e−11***
Language LW:AV order	−2.48296	0.54228	−4.5787	4.678e−06***

There is a main effect of *word order* (VA order, $z = 6.6400$, $p < 0.001$), that is, in both languages postverbal A arguments are more likely to be ergatively marked than preverbal A arguments. There is an interaction effect between *language and word order* (Light Warlpiri and AV order, $z = −4.5787$, $p < 0.001$), which means that when the language is Light Warlpiri, preverbal A arguments are more likely to be marked. *$p < 0.1$, **$p < 0.01$, ***$p < 0.001$

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