Typological constraints on verb integration in two Australian mixed languages¹,²

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Abstract
Gurindji Kriol and Light Warlpiri are two mixed languages spoken in northern Australia by Gurindji and Warlpiri people, respectively. Both languages are the outcome of the fusion of a contact variety of English (Kriol/Aboriginal English) with a traditional Australian Aboriginal language (Gurindji or Warlpiri). The end result is two languages which show remarkable structural similarity. In both mixed languages, pronouns, TMA auxiliaries and word order are derived from Kriol/Aboriginal English, and case-marking and other nominal morphology come from Gurindji or Warlpiri. These structural similarities are not surprising given that the mixed languages are derived from typologically similar languages, Gurindji and Warlpiri (Ngumpin-Yapa, Pama-Nyungan), and share the Kriol/Aboriginal English component. Nonetheless, one of the more striking differences between the languages is the source of verbs. One third of the verbs in Gurindji Kriol is derived from Gurindji, whereas only seven verbs in Light Warlpiri are of Warlpiri origin. Additionally verbs of Gurindji origin in Gurindji Kriol are derived from coverbs, whereas the Warlpiri verbs in Light Warlpiri come from inflecting verbs. In this paper we claim that this difference is due to differences in the complex verb structure of Gurindji and Warlpiri, and the manner in which these complex verbs have interacted with the verb structure of Kriol/English in the formation of the mixed languages.

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Gurindji Kriol; Light Warlpiri; Kriol; mixed languages; verbs; transfer; typological congruence

1. Introduction

In the language contact literature, grammatical constraints on the ability of words or morphemes to transfer\(^3\) from one language to another are attributed to either (i) the absolute transferability of a morpheme, or (ii) the typological congruence between the languages in contact. In the first case, transfer constraints are attributed to the nature of the word or morpheme itself. For example, borrowing hierarchies claim that nouns are the easiest to transfer and inflectional morphology is the hardest (Haugen 1950; Moravcsik 1978; Singh 1982), and similar claims have been made in the code-switching literature (Myers-Scotton 2002; Muysken 2000). These patterns have most often been attributed to ‘boundedness’, either morphological boundedness, i.e. the degree to which morphemes are free or bound, for example Poplack’s (1980) Free Morpheme Constraint; or syntactic boundedness, i.e. the degree to which morphemes interact with the rest of the syntax of a sentence, for example Gardani’s (2008) observation that contextual inflections are more difficult to borrow than inherent inflections. The typological match of languages in contact is also considered a crucial factor in the transferability of particular morphemes. For example, Weinreich (1974 [1953]: 31) considered the borrowability of morphemes to be dependent on typological equivalences between the source and recipient languages. This idea has been reformulated in a number of other works including Poplack (1980), Thomason and Kaufman (1988: 72-74), Myers-Scotton (1993a), Sebba (1998) and Field (2002: 41-44).

These two factors - the relative boundedness of a morpheme and the typological compatibility between languages in contact - have shaped the structure of Gurindji Kriol and Light Warlpiri, two newly formed mixed languages spoken in northern Australia. Both mixed languages are derived from a Ngumpin-Yapa language (Pama-Nyungan), Gurindji and Warlpiri respectively, and a contact English variety which we refer to as Kriol/Aboriginal

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\(^3\) We use the term ‘transfer’ to include phenomena which other people have termed ‘borrowing’, ‘replication’, ‘copying’ and ‘diffusion’. We also include ‘insertional code-switching’ (c.f. Muysken 2000) which occurs intra-sententially and differs from borrowing only by degree.
Both new languages are around 35-40 years old and developed from code-switching practices (McConvell and Meakins 2005; Meakins 2011a; O’Shannessy to appear, 2005). The similarity of the input languages has resulted in two mixed languages which bear a striking resemblance to each other. TMA forms, pronouns and word order are derived from Kriol/Aboriginal English, and case-marking and other nominal morphology come from Gurindji/Warlpiri. Both languages, then, have a split grammatical frame – the verbal structure is from Kriol/Aboriginal English and nominal structure is from Gurindji/Warlpiri. Examples are given in (1). Throughout the text, Gurindji/Warlpiri elements are given in italics and Kriol/Aboriginal English, in plain font.

\[(1) \text{‘The dog bit the child on the leg.’}\]

(a) \textit{warlaku-ngku i bin katurl karu leg-ta} (GK)

\text{dog-ERG 3SG PST bite child leg-LOC}

(b) \textit{jarntu-ng i = m bait-im kurdu wirliya-ngka} (LW)

\text{dog-ERG 3SG = NFUT bite-TR child leg-LOC}

Despite the structural similarities between Gurindji Kriol and Light Warlpiri, differences are apparent. In particular, verbs provide a point of difference. One third of the verbs in Gurindji Kriol come from Gurindji, for example \textit{katurl} ‘bite’ in (1) above, whereas most verbs in Light Warlpiri are derived from Kriol, for example \textit{baitim} ‘bite’. There are only seven verbs of Warlpiri origin occurring in a corpus of approximately 130 hours, in which there are 115 types of transitive verb. In addition, the Gurindji or Warlpiri verbs are derived from different classes of verbs. In the case of Gurindji Kriol, verbs of Gurindji origin are coverbs in Gurindji, whereas, the few verbs from Warlpiri in Light Warlpiri derive from inflecting verbs. An example is given in (2).

\[(2) \text{Nakarra ngula i mait katirn-im yu wirliya} \]

\text{SUBSECT ANAPH 3SG might squash-TR 2SG leg}

‘Nakarra, that one might squeeze your leg.’ (O’Shannessy 2006: 71)

The aim of this paper is to determine (i) why so many coverbs have been integrated with apparent ease into Gurindji Kriol and not into Light Warlpiri,

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4 Light Warlpiri shows influences from Kriol, Aboriginal English and Standard Australian English. For ease of reading we use the term Aboriginal English to include varieties of English.
and (ii) why some inflecting verbs are present in Light Warlpiri but not in Gurindji Kriol. An overview of the factors affecting verb transfer cross-linguistically will be given in §2, followed by background information on the structure and formation of the mixed languages §3. The verbs and their sources will then be discussed in turn in §4 (Gurindji Kriol) and §5 (Light Warlpiri), and put into the broader north Australian context §6. We demonstrate that the differences in verb transfer behaviour lie in (i) the relative ‘boundedness’ of the coverb in Gurindji and Warlpiri, and (ii) the typological congruence between Gurindji/Warlpiri co/verbs and Kriol verbs.

The data for this paper are drawn from a number of sources. The Gurindji Kriol data come from Meakins’ corpus of 80 hours of recordings of peer and child-directed conversation, free and picture-prompt narrative and director-matcher tasks. The Gurindji examples come from Meakins’ corpus of 23 hours of procedural and narrative texts. All Light Warlpiri and Warlpiri examples are drawn from O’Shannessy’s 150 hour corpus which consists of recordings of naturalistic interaction and elicited production, for example picture-prompt narratives.

2. Verbs and transferability

Thomason and Kaufman (1988) suggest that the intensity of a contact situation determines the degree of borrowing. Thus, any morpheme can be borrowed given the right level of social disruption. Nonetheless, various properties of morphemes and the respective structures of the languages in contact affect the probability of transfer occurring. Specifically the degree to which morphemes are bound or unbound, and how well they match a functionally equivalent category in the recipient language influences the likelihood of them being borrowed or switched. This section will deal with these two constraints in turn, particularly in relation to verbs.

First, constraints on transfer are often attributed to the nature of the morpheme itself. For example, various borrowing hierarchies place nouns and inflectional morphology at either end of a scale (Haugen 1950; Moravcsik 1978; Singh 1982), and similar observations of switch frequencies are seen in the code-switching literature (see Matras 2009: 133 for a good summary). These patterns are most often attributed to ‘boundedness’. This term is used in the literature in two senses. First, morphological boundedness refers to the degree to which morphemes are free or bound to their stem. Poplack’s (1980: 585) Free Morpheme Constraint is one example of a principle which predicts where code-switches may occur. This principle states that switching may
not occur between stems and bound morphemes. Boundedness also refers to the syntactic function of a morpheme within the clause, and in particular, the degree to which morphemes interact with the rest of the syntax of a sentence. For example, Gardani (2008) observes that contextual inflections, such as case-marking and agreement markers, are more difficult to borrow than inherent inflections, such as number and gender marking on nouns or TMA morphology on verbs. This difference relates to how tightly morphemes are bound to the larger clausal structure. For instance, case-marking relies on the verb for its assignment, making it more difficult to borrow. A similar intuition lies behind Myers-Scotton’s (1993a: 83) System Morpheme Principle in her formal theory of code-switching.

Despite the predictions made by various theories of borrowing and code-switching, the transfer of bound morphemes does occur in some circumstances (see Meakins 2011a: 63-64 for a discussion; and Gardani 2008 for a cross-linguistic survey of inflectional borrowings). In these cases, boundedness is trumped by structural congruence, as a predictor. Thus where morphological structures in the source and recipient languages are highly similar, transfer can occur. For example, Heath (1978: 110 onwards) gives many examples of borrowings from Ritharrngu into Ngandi which involve the replacement of older native suffixes with borrowed suffixes in a process facilitated by similar morphological templates in the two languages.

The structural congruence between the languages in contact has been considered a crucial factor in the transferability of morphemes for some time. For example, Weinreich (1974 [1953]: 31) considered the transferability of morphemes to be dependent on typological equivalences between the source and recipient languages. This idea has been reformulated in the borrowing literature, for example Thomason and Kaufman (1988: 72-74) and Field (2002: 41-44) as the Principle of System In/compatibility. Areas where typological equivalences between the source and recipient languages are considered relevant include word and morpheme order, the existence of a particular linguistic category in both languages, and matches in terms of the expression of that category e.g. whether negation is expressed by a particle, auxiliary, clitic, or morpheme in both languages. Similar claims have been made in the code-switching literature. For example, Poplack’s (1980: 586) Equivalence Constraint suggests that speakers avoid violating the word order constraints of both interacting languages. Myers-Scotton’s (1993a: 120 onwards) Blocking Hypothesis also evokes the importance of the typological match between languages in contact, suggesting that insertions from the source language can only occur where the thematic role, morphological structure and discursive function of the equivalent category are congruent with the recipient.
language. Later Sebba (1998) proposed a more general principle predicting switch sites called Categorial Congruence. Again the typological compatibility or the match of functionally equivalent elements from interacting languages is the major factor affecting what can be transferred.

Verbs and their susceptibility to borrowing and switching have received a lot of attention in the contact literature due to their predicative function. Cross-linguistically verb inflection is rarely borrowed, with the exception of a few cases including the mixed language Mednyj Aleut, which combines Aleut verb stems with Russian finite verb inflections (Golovko 1994); and Even (Northern Tungusic, Siberia) which has borrowed the assertive-presumptive paradigm from the Turkic language Sakha (Yakut) (Pakendorf 2009). Verbs themselves are found borrowed, but are universally less likely to transfer than nouns (Whitney 1881; Haugen 1950; Muysken 1981). Moravcsik (1975) claims that where verbs are borrowed, they are not borrowed as ‘verbs’ but require verbalising in the recipient language using either derivational morphology or a light verb construction. In an extensive survey of 553 language pairs, Wohlgemuth (2009) also finds that verbs are often integrated into a recipient language using a verbalising affix, or ‘do’, ‘make’ auxiliaries in complex constructions. Unlike Moravcsik, however, he finds many instances of verb borrowings where the stem is treated like a native stem. In the code-switching literature, similar strategies apply when verbs are inserted into a recipient language. Muysken (2000: 184-220) observes that verbs may be inserted with no modifications, or the verb stem may receive native inflections, or a verb may be derived before receiving native inflections, or combined in a light verb construction. The choice of strategy largely depends on the structural congruence of the verbs in contact, specifically how well verb stems and their accompanying morphology and expressed TMA categories in the source language align with the structure of verbs in the recipient language. Examples of the transfer of Warlpiri verb stems into the Kriol/English verb frame used in Light Warlpiri are discussed in §5.1 and §5.4.

Some types of verbs are more susceptible to borrowing than other types. For instance, Myers-Scotton (2002: 93-95) finds that non-finite verb forms (infinitives and participles) are more susceptible to transfer than finite verb forms because finite verbs are more syntactically bound by their morphology, for example person agreement markers relate to clausal arguments, and non-finite verb forms are more likely to have their inflections treated holistically as a part of the stem. Thus ‘boundedness’ is the relevant factor in these cases. Of particular relevance to this paper is the transferability of a particular type of verb referred to as a coverb (also ‘preverb’). Coverbs combine with inflecting verbs to form complex predicates. In northern Australia, one linguistic
area where they are found commonly, coverbs are an open class verb which is largely uninflected but carries the semantic weight of the complex predicate. Light verbs are derived from a closed class of verbs, which are semantically bleached and provide the TMA information (Schultze-Berndt 2003; McGregor 2002). It is not uncommon to find coverbs borrowed between languages across northern Australia, for example Gurindji derives many of its coverbs from Jaminjung, an unrelated but neighbouring language (McConvell 2009). On the other hand, it is rare for inflecting verbs to be borrowed. McConvell and Bowern (submitted) suggest that coverbs are more or less susceptible to borrowing depending on how tightly or loosely bound they are to the inflecting verb. Tight nexus coverbs form a single phonological word with their accompanying inflecting verb, whereas loose nexus coverbs are independent words with different distributional properties. McConvell and Bowern (submitted) find that loose nexus coverbs are more likely to be borrowed and transferred than tight nexus coverbs. This point of difference is illustrated by Gurindji Kriol and Light Warlpiri verb structure in §4.2 and §5.2.

Structural congruence also plays a role in the high number of coverbs which are borrowed. The complex predicate structure is an areal feature of north Australian languages. In this respect, the category of coverb already exists in these languages, making coverbs easier to transfer between languages. Structural congruence also plays a role in the transfer of Kriol verbs into Australian languages which exhibit complex predicates. As will be discussed in §4.3, Kriol verbs also consist of two parts, a TMA auxiliary and a main lexical verb. The main verb is often found switched with coverbs in north Australian languages. Hudson (1978: 55) gives a number of examples of Kriol coverbs complete with transitive marking which are found in the Walmajarri coverb slot of the complex verb, for example *warrkam-many* ‘work.TR K-speakW’, *juwum-yung* ‘show.TRK-giveW’ and *lukarti-karr* ‘look.afterK-placeW’. Similarly the Kriol verb *wajim* ‘wash’ has replaced a Bardi coverb in (3), and the Kriol verb *skretjimbat* ‘digging’ has been inserted in the place where a Jaminjung coverb would be found in a monolingual clause, in (4).

(3) **wajim**  
*i-na-ma-na*  
wash.TR 3SG-TR.PST-make-PST  
’S/he washed it.’ (Bowern per. comm. cited in Wohlgemuth 2009: 6)

(4) **wardany-ni** = *ma*  
**skretjimbat**  
yirra-ngu,  
nathing  
hand-ERG = SUBORD dig.TR.CONT 1PL.EX:3SG-get.PST no.avail  
‘We were digging with our hands to no avail.’ (Schultze-Berndt 2007: 377)
What has not been examined in any detail is the transfer of coverbs from traditional Australian languages into Kriol, and the factors affecting the probability of transfer. The rest of this paper considers the transfer of coverbs from Gurindji and Warlpiri into a Kriol verbal frame in the mixed languages, Gurindji Kriol and Light Warlpiri. We will demonstrate that two factors predict the presence of Gurindji or Warlpiri coverbs in the mixed languages: the relative boundedness of the coverbs and the presence of a typologically equivalent category in Kriol, the uninflected main verb. These two factors are responsible for one of the main differences between the mixed languages, the origin of their verbs. These two factors are also shown to affect the transfer of coverbs into other Kriol varieties found in northern Australia ($6$).

3. Background to Gurindji Kriol and Light Warlpiri

Gurindji Kriol and Light Warlpiri are recently emerged mixed languages spoken in the Victoria River District of northern Australia. Gurindji Kriol is spoken by Gurindji people in the Aboriginal communities$^5$ of Daguragu and Kalkaringi which are located 470 kilometres from the nearest town of Katherine. Gurindji Kriol is also spoken by Bilinarra and Ngarinyman people in two communities north of Kalkaringi - Pigeon Hole and Yarralin. Light Warlpiri is spoken by Warlpiri people who live in Lajamanu, a community located 120km from Kalkaringi.

The main places where Gurindji Kriol and Light Warlpiri are spoken, Kalkaringi$^6$ and Lajamanu, are large communities of around 500-600 people each. The majority of people living at Kalkaringi and Lajamanu are Gurindji and Warlpiri people, respectively. Both communities have few non-Aboriginal residents who generally work in the areas of health, government, small business or education. Some Gurindji and Warlpiri people also work in local health, government, education and the local shop, however very little paid work exists, with most people receiving welfare payments (Meakins 2011b: 78-79; O’Shannessy 2011: 134-35). Life at Kalkaringi and Lajamanu is a mix of traditional practice and modern Australian life. For example traditional medicines continue to be used in conjunction with regular visits to the health

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$^5$ Aboriginal communities in Australia are similar to Indian reservations in the United States in that the majority of residents are indigenous.

$^6$ When we refer to Kalkaringi, we include Daguragu. These communities were set up separately historically, however they operate as a single entity in terms of kin relations and administration.
Figure 1  Traditional languages and Aboriginal communities of the Victoria River District (Meakins and Nordlinger to appear).
clinic, and food is mostly bought at the shop but also sourced from the local
surrounds. Similarly everyday life revolves around a modern house with
plumbing and electricity, yet most interactions, including cooking, eating and
socialising, are conducted outside the house around camp fires.

This mix of the modern and traditional is reflected linguistically in the
mixed languages, which fuse modern and traditional Aboriginal languages.
Specifically Gurindji Kriol and Light Warlpiri show a structural split between
the noun phrase system and the verb phrase system. In both mixed languages,
Kriol/Aboriginal English contributes much of the verb phrase structure
including the TMA systems, and the traditional languages, Warlpiri and
Gurindji, supply the nominal structure, including case and derivational mor-
phology. The structural split of both mixed languages has been described in
more detail elsewhere (O’Shannessy 2005; McConvell and Meakins 2005;
Meakins 2011a, 2011b). The examples below demonstrate the structural split
schematically for Gurindji Kriol (5) and Light Warlpiri (6).

(5) (Meakins and O’Shannessy 2010: 1697)

\[
\begin{array}{cccc}
det & man & \text{im = in} & \text{spiya-im} & \text{im} & \text{det} & guana & \text{gar} & \text{stik} \ (K) \\
\text{the man} & 3SG = PST & \text{spear-TR} & 3SG & \text{the goanna} & \text{PROP} & \text{stick} \\
\end{array}
\]

\[
\begin{array}{cccc}
\text{man-\text{erg}} & \text{i} & \text{bin} & \text{jarrawaj} & \text{im} & \text{det} & \text{guana} & \text{karnti-yawung} \ (GK) \\
3SG & PST & 3SG & \text{the goanna} & \text{stick-PROP} \\
\end{array}
\]

\[
\begin{array}{cccc}
\text{ngumpit-tu} & \text{ngu} & = & \text{ngu} & = & \text{ngu} & \text{jarr waj} & \text{pa-ni} & \text{kirrawa} & \text{karnti-yawung} \ (G) \\
\text{man-\text{erg}} & \text{cat} = 3SG & \text{cat} = 3SG & \text{spear} & \text{hit-PST} & \text{goanna} & \text{spear-\text{com}} \\
\end{array}
\]

‘The man speared the goanna with a stick.’

(6) (Meakins and O’Shannessy 2010: 1697)

\[
\begin{array}{cccc}
det & monsta & \text{im} & \text{ged-im} & \text{det} & \text{dog} \ (AE/Kriol) \\
\text{the monster} & 3SG & \text{get-TR} & \text{the dog} \\
\end{array}
\]

\[
\begin{array}{cccc}
\text{kuuku-ng} & \text{i = m} & \text{ged-im} & \text{jarntu} \ (\text{Light Warlpiri}) \\
\text{monster-\text{erg}} & 3SG = \text{NFUT} & \text{get-TR} & \text{dog} \\
\end{array}
\]

\[
\begin{array}{cccc}
\text{kuuku-rlu} & \text{ka} & = & \text{ka} & = & \text{ka} & \text{ma-ni} & \text{jarntu} \ (\text{Warlpiri}) \\
\text{monster-\text{erg}} & \text{IMPF} = 3SG & \text{IMPF} = 3SG & \text{get-NPST} & \text{dog} \\
\end{array}
\]

‘The monster is getting the dog.’

These mixed languages are spoken in highly multilingual communities
where language mixing is the norm, and boundaries between the languages
are difficult to discern. Gurindji Kriol and Light Warlpiri are now the main
everyday languages of Gurindji and Warlpiri people and the first language of people under the age of 35 years. Both continue to be spoken alongside their source languages. Their traditional sources, Gurindji and Warlpiri, are now both endangered, though to differing extents. While all Gurindji speakers are now over the age of 45 years, in contrast, children still learn Warlpiri in Lajamanu. Kriol has become the main language of most Aboriginal people in north Australia, but at Kalkaringi and Lajamanu it is generally only spoken monolingually by Aboriginal visitors from different areas. Finally, Standard Australian English is the language of education, media and interactions with non-Aboriginal people in the communities (Meakins 2008; O’Shannessy 2009). In general, Kriol and English are rarely spoken monolingually. Language mixing, either in the form of code-switching or the mixed languages, is common. Code-switching between Gurindji or Warlpiri and Kriol/Aboriginal English is a common-place linguistic practice among speakers 40 years and older, and Gurindji Kriol and Light Warlpiri find their origins in these code-switching practices (McConvell and Meakins 2005; Meakins 2011b; O’Shannessy to appear).7

The following sections focus on the verb structure of Gurindji Kriol (§4.1) and Light Warlpiri (§5.1) and their traditional source languages, Gurindji (§4.2) and Warlpiri (§5.2). The behaviour of verbs in code-switching between Gurindji and Kriol/Aboriginal English (§4.3) and Warlpiri and Kriol/Aboriginal English (§5.3) is also discussed in order to demonstrate the path by which verbs were absorbed into the mixed languages, or blocked from them.

4. Gurindji Kriol

4.1 Verbs in Gurindji Kriol

Two thirds of all verbs in Gurindji Kriol are derived from Kriol verbs. The Kriol-derived verbs are found with Kriol continuative suffixes -bat (transitive

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7 Despite deriving from code-switching practices and bearing a strong resemblance to patterns found in the code-switching, Gurindji Kriol and Light Warlpiri can be distinguished from their code-switching counterparts in a number of ways: (i) the mixing patterns in the mixed languages are very consistent between speakers, (ii) the mixed languages are the main language of acquisition despite the fact that children still receive monolingual Gurindji/Warlpiri input and hear code-switching, and Warlpiri children still learn to speak Warlpiri (O’Shannessy 2008, 2009), and (iii) the mixed languages use forms from Gurindji, Warlpiri and Kriol to function in unique ways in the mixed language (Meakins 2012; O’Shannessy 2005).
verbs), -in (semi-transitive verbs) and adverbial suffixes such as -at ‘out’, which often have aspectual functions related to telicity. The Gurindji continuative suffix -karra also marks some Kriol verbs. The Kriol transitive marker -im is also found, but it is not productive in Gurindji Kriol. It simply marks transitive verbs, but cannot derive transitive verbs, which is a property of this suffix in Kriol. All Kriol-derived verbs are also found in conjunction with Kriol TMA auxiliaries and clitics, for example bin ‘past’ in (8) and ∅ or = m ‘present’ in (7), (9) and (10).

(7) marluka nyila warlaku-ngku ∅ baitim im leg-ta old.man that dog-ERG PRS bite.TR 3SG.OBJ leg-LOC
‘The dog bit the old man on the leg.’ (LS: FHM066: Picture elicitation)

(8) dat karu-ngku i bin maindim-bat nyanuny kapuku the child-ERG 3SG PST mind.TR-CONT 3SG.DAT sister
‘The child was minding his sister.’ (AC: FHM007: Picture Elicitation)

(9) nyila kirri i = m jing-in-at nyanuny karu-yu that woman 3SG = PRS call-CONT-TEL 3SG.DAT child-DAT
‘The woman is calling out to her child.’ (RS: FHM124: Picture elicitation)

(10) ngumpin-tu i = m teikim-at-karra kura man-ERG 3SG = PRS take.TR-TEL-CONT faeces
‘The man takes the bowels (out of the animal).’ (RR: FHM064: Picture elicitation)

One third of Gurindji Kriol verbs are derived from Gurindji coverbs. They are never found with Kriol suffixes, and are only inflected with the Gurindji continuative suffix -karra. Nonetheless Gurindji-origin verbs are found in conjunction with the full range of Kriol TMA auxiliaries and clitics. See Meakins (to appear) for an inventory of TMA auxiliaries, clitics and suffixes in Gurindji Kriol:

(11) karu-ngku i = m jarrwaj im kengkaru child-ERG 3SG = PRS spear 3SG.OBJ kangaroo
‘The child spears the kangaroo.’ (CR: FHM073: Picture elicitation)

(12) dat kamel-tu i bin ngalyakap-karra kengkaru the camel-ERG 3SG PST lick-CONT kangaroo
‘The camel licked the kangaroo.’ (SE: FHM097: Picture elicitation)

The Gurindji coverbs which have been adopted in Gurindji Kriol are derived from a Gurindji complex predicate structure which is described in the following section, along with the general properties of coverbs in Gurindji.
4.2 Gurindji coverbs and 'boundedness'

Gurindji is a member of the Ngumpin subgroup which forms a part of the Ngumpin-Yapa family (Pama-Nyungan) (McConvell and Laughren 2004). This language family includes Warlpiri, which is described in §5.2. Like most Australian languages, word order in Gurindji is not determined by grammatical relations but is governed by complex discourse cues. Argument relations are instead marked on non-obligatory nominals in the form of case-marking and these nominals are cross-referenced by obligatory pronominal clitics which generally attach to a catalyst⁸ or to the first element of the clause. Third person singular pronouns are unexpressed, and non-human arguments are generally not cross-referenced by pronouns. The pronominal clitics pattern according to an accusative system, with nominals patterning according to an ergative system (McConvell 1996). In this respect, Gurindji can be described as a split ergative language. The following examples demonstrate the argument structure of Gurindji.

(13) marluka-ngku ngu =∅ =∅ jarrwaj pu-nya karu
old.man-ERG CAT = 3SG.NOM = 3SG.ACC spear pierce-PST child(ABS)
‘The old man speared the child.’ (ES: FHM110: Picture elicitation)

(14) jarrwaj-karra ngu = rna = rla pu-nga-ni nyila = ma
spear-CONT CAT = 1SG.NOM = 3OBL pierce-IMPF-PST that = TOP
‘There I was prodding at it.’ (VD: FM09_a127: Description)

Of interest to this paper is the verb structure of Gurindji. Gurindji has a complex verb consisting of an inflecting verb (closed class) plus a coverb (open class). There are 31 inflecting verbs which encode basic meanings such as do, take, hit, see, talk, go, fall and cook and provide TMA information to the clause. They consist of a bound stem plus suffixes marking imperfective aspect and past/present tense or potential and imperative mood, for example pu-nga-ni ‘pierce-IMPF-PST’ in (14). These verbs are grammatically obligatory. On the other hand, coverbs are not obligatory, and often clauses in Gurindji consist only of an inflecting verb. The main contribution of coverbs to the complex verb is in providing the lexical semantics. Hundreds exist and they are uninflected except for a continuative suffix. Examples of the complex verb jarrwajCV pu-IV ‘spear’ are given in (13) and (14) above.

⁸ The catalyst ngu is a meaningless stem to which bound pronouns attach. Pronouns also attach to complementisers such as ngaja ‘ADMON’ or nyamu ‘REL’ and particles such as kula ‘NEG’ or jupu ‘just’ which are often the first element of a clause.
The coverb *jarrwaj* 'spear' has been adopted into Gurindji Kriol, as demonstrated in (11) above, along with many other coverbs. As was discussed in §2, the ‘boundedness’ of a morpheme affects its ability to transfer to another language. Indeed McConvell and Bowern (submitted) suggest that how readily coverbs are transferred in situations of language contact depends on how closely integrated the coverb is with the inflecting verb morphologically and syntactically. Coverbs across northern Australia vary in terms of how closely bound they are to the inflecting verb. McConvell and Bowern (submitted) class coverbs as either loose nexus verbs or tight nexus verbs based on two criteria: (i) whether the coverb and inflecting verb can be separated, and (ii) whether the coverb can occur after the inflecting verb.

Under McConvell and Bowern’s criteria, most Gurindji coverbs can be classified as loose nexus verbs. To begin with, Gurindji coverbs do not form a single phonological word with the inflecting verb. For example, although coverbs and inflecting verbs are generally apposed, as shown in (13), they are also found with other constituents intervening between them, as demonstrated in (14). In addition, although coverbs generally occur before the inflecting verb, as shown in (13), they can also occur after the inflecting verb, as demonstrated in (15). Different discourse structures, which will not be discussed here, are largely responsible for these different permutations.

(15) *mirlarrang-kulu ngu = rla pu-nya jarrwaj*
    spear-ERG CAT = 3OBL pierce-PST spear
    *He threw a spear at it.* (VD: FM10_30_2a: Narrative)

Coverbs can also occur independently of the inflecting verb in a small number of clauses including imperative clauses and reduced subordinate clauses. For example (16) shows the use of the coverb *pirrkap* 'make' in a main clause in conjunction with the inflecting verb *ma-* ‘do’, and independently in a reduced subordinate clause in (17) where the allative case suffix functions as a different subject marker.

(16) *ngu = rna pirrkap ma-nku wirriji*
    CAT = 1SG.NOM make do-POT hair.string
    ‘I want to make hair string.’ (VD: FM08_a08_1a: Conversation)

(17) *karrap ngu = rna yina nya-nga-ni pirrkap-jirri = ma*
    watch CAT = 1SG.NOM = 3PL.ACC intake-IMPF-PST make-ALL = TOP
    ‘I watched them while they made it.’ (VD: FM07_a05_1a: Narrative)

A small number of coverbs are found to be more closely associated with the inflecting verb. These coverbs must occur before the inflecting verb and are
generally juxtaposed to it, as shown in (18), however they can be separated from the inflecting verb by coverb morphology or the catalyst + pronoun, as shown in (19). Despite these restrictions, these coverbs have been adopted in Gurindji Kriol, as in (20).

(18) ngu = rnalu     paraj pu-nya   kinyjirrka = warla
       CAT = 1PL.EXC.NOM find pierce-PST kurrajong = FOC
‘We found some kurrajongs instead.’ (SO: FM10_29_3a: Narrative)

(19) paraj    ngu = lu     pu-nya nyantu na ngarlaka = ma jik
       find CAT = 3PL.NOM pierce 3SG SEQ head = TOP
       jik
       emerge
‘Then they saw a head pop up (out of the water).’ (VD: FM10_23_4: Narrative)

(20) yala-nginyi=ma dei bin paraj marlimarli-uwalja
       that-ABL=TOP 3PL.SBJ PST find butterfly-PAUC
       tiwu-ngka kankulu-pal
       fly-LOC up-LOC
‘Then they found some butterflies flying overhead.’ (CE: FM07_a047: Narrative)

To summarise, most Gurindji coverbs demonstrate a low level of ‘boundedness’, in that they are relatively independent of their accompanying inflecting verb. These properties make them more susceptible to transfer, and help explain their presence in Gurindji Kriol. As will be shown in §5.2, Gurindji coverbs contrast with Warlpiri coverbs, which are more tightly bound to the inflecting verb.

4.3 Typological match between Gurindji coverbs and Kriol verbs

As was discussed in §2, the typological congruence of functionally equivalent categories of languages in contact also plays a role in how easily forms transfer between languages. In the case of Gurindji coverbs and Kriol verbs, the typological match between these verb types can be demonstrated through the code-switching practices of older generations of Gurindji people (Meakins 2010: 26-29). In code-switched clauses, Gurindji coverbs and Kriol verbs are treated as equivalent categories and are commonly found switched. Given that code-switching preceded the formation of Gurindji Kriol (§3), this methodology has the advantage of demonstrating the historical process by which Gurindji coverbs integrated into the mixed language.
Older Gurindji people use both Gurindji and Kriol as the grammatical frame, that is the matrix language, in code-switching. Here the matrix language is identified on the basis of verb inflection (cf. Muysken 2000; Treffers-Daller 1994; Klavans 1983; Matras 2009). In the case of Gurindji, this is the inflecting verb and in the case of Kriol these are the TMA auxiliaries or clitics. Code-switching occurs when elements from the other language insert into the matrix language. Regardless of whether the matrix language is Gurindji or Kriol, commonly inserted elements include nominals (arguments and locative complements), tag questions, discourse markers and verbs (Meakins 2011b: 112-22). Of interest here is the behaviour of verbs within the code-switching. Where Gurindji provides the matrix clause, Kriol verbs (complete with transitive marking) are found inserted into the position of the Gurindji coverb. For example, in the first clause in (21), the speaker uses the Gurindji coverb *kirlkak* ‘clean’ and then repeats the clause using the Kriol equivalent, *klinim*.

(21) *kirlkak* ngu = rnalu ma-na-na, *kuya-ngku*  
clean CAT = 1PL.EX.NOM do-IMPF-PRS thus-ERG  

*kuya-ngku* na ngu = rnalu ma-na-na *klinim*  
thus-ERG FOC CAT = 1PL.EX.NOM do-IMPF-PRS clean.TR  

‘We *clean* it off like this … This is how we *clean* (off the bark).. ’

(VD: FM07_a058: Procedural) (Meakins 2010: 28)

Conversely, where Kriol provides the grammatical frame for switching then Gurindji coverbs can be found inserted in the Kriol major verb slot. (22) consists of two clauses where Kriol is the matrix language. In the first clause the Kriol verb *meikim* ‘make’ is used and in the second clause the Gurindji coverb *pirrkap* is inserted in its place. This sentence again demonstrates congruence between the major verb and coverb categories from Kriol and Gurindji respectively.

(22) maiti wi *meikim* warlu, faya wi *pirrkap* jeya  
might 1PL.SBJ make.TR fire fire 1PL.SBJ make there  

‘Then we might *make* a fire, a fire we *make* there.’

(VD: FM07_a01_1c: Procedural) (Meakins 2010: 28)

These code-switched clauses demonstrate that Gurindji coverbs and Kriol verbs are treated as functional equivalents, and suggest a potential path for the adoption of Gurindji coverbs into the mixed language. McConvell (1988, 1985) observed that code-switching between Kriol and Gurindji was the dominant language practice of Gurindji people in the 1970s, and McConvell and Meakins (2005) argue that Gurindji Kriol found its origins in this
code-switching. In this respect the verb structures of Gurindji and Kriol first came into contact through code-switching. In the 1970s, the use of Kriol as the matrix language rather than Gurindji was more dominant. McConvell and Meakins (2005: 19) show that 60% of mixed utterances used Kriol as the matrix language. This type of structure was shown in (22). Even in the 1970s, examples of coverb insertions were apparent, as shown in (23) and (24).

(23) wi garra *tarukap* na
    3SG.SBJ  POT  bathe  FOC
    ‘We’ll go and wash off now.’ (McConvell data: 1970s code-switching)

(24) *lupu wulyjup-kaji*  weya dei *wulyjup*
    guts inside.out-AGENT  REL  3PL.SBJ inside.out
    ‘Guts which turn inside out’ (McConvell data: 1970s code-switching)

Later Kriol became the basis of the VP in the mixed language, but the use of the Kriol VP in Gurindji Kriol did not preclude the use of Gurindji coverbs, as was shown in (1)(a), (11) and (12). Clearly the properties of coverbs, described in §4.2 in terms of ‘boundedness’, facilitated the wholesale adoption of Gurindji coverbs. The behaviour of Gurindji coverbs in code-switching contrasts with Warlpiri coverbs. Warlpiri coverbs are not found switched into Kriol clauses, as will be shown in §5.3. Indeed the use of the Gurindji coverb *kirlka* in (21) is quite telling in comparison with the equivalent Warlpiri coverb which has the same form. In Warlpiri, the same coverb *kirlka* combines with the inflecting verb *mani* to form a tight nexus verb *kirlka-ma-ni*. Unlike in Gurindji, the equivalent auxiliary + pronoun *ka-rnalu* can not intervene between the coverb and inflecting verb: *kirlka ka-rnalu ma-ni*. In Gurindji the same complex verb is a loose nexus verb *kirlka mani*, hence the coverb is able to be switched with a Kriol verb.9 This difference between Gurindji and Warlpiri coverb structures will be discussed in more detail in §5.2.

5. Light Warlpiri

5.1 Verbs in Light Warlpiri

Most verbs in Light Warlpiri are derived from Kriol/Aboriginal English complete with accompanying morphology. The transitive suffix is productive in Light Warlpiri (unlike in Gurindji Kriol), in that it is used to create transitive

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9 Thank you to an anonymous reviewer for pointing out this comparison.
verbs from intransitive verbs. The transitive marker usually does not occur in irrealis mood. The Kriol continuative marker -bat is found rarely, with English -ing found more commonly, as in (26). The Kriol adverbial suffixes such as -ap 'telic, < up' are also used, and often have aspectual functions, as in (27). TMA information is marked in clitics which attach to subject pronouns, for example =m 'non-future', as shown in (25) and (27).

(25) jarntu-ng i = m bait-im rdaka
    dog-ERG 3SG = NFUT bite-TR hand
    'The dog bit the [child's] hand.' (C03_6_3)

(26) dei jeis-ing it jurlpu nyampu-rra-ngku
    3PL chase-CONT 3SG bird this-PL-ERG
    'They are chasing the bird, these (boys) are.' (C01_4_3)

(27) de = m t'ai-im-ap na rarralykaji jinta-kari
    3PL = NFUT tie-TR-TEL FOC car one-OTHER
    'They tied it [on] the other car.' (ERGstoryLA35)

In addition to the Kriol/English verbs, seven verbs in Light Warlpiri are derived from Warlpiri inflecting verbs: panti- ‘pierce’, kati- ‘press’, punta- ‘steal/take from’, paka- ‘hit’, kiji- ‘throw, kick’, winji- ‘pour, spill’, and pali- ‘die’. The verb pali- ‘die’ is in the first verb class, and the others are all in the second verb class. With the exception of pali- ‘die’, the verb stems insert directly into the Kriol verb matrix, combining with the Kriol transitive marker (see §5.4 for further discussion).

(28) ah jinta-ju watiya-ng i = m pantirn-im wirliya
    ah one-T OP thorn-ERG 3SG = NFUT pierce-TR foot
    'Ah! A thorn pierced [his] foot!' (C03_6_3)

(29) katirn-im uuju gait-i-ng
    'The fence pressed down on the horse.' (ERGstoryLC10)

No Warlpiri coverbs are found in Light Warlpiri, which contrasts with the wholesale adoption of Gurindji coverbs found in Gurindji Kriol.

5.2 Warlpiri coverbs and ‘boundedness’

Warlpiri is a Ngumpin-Yapa (Pama-Nyungan) language of the Yapa subgroup (as opposed to Gurindji which is in the Ngumpin subgroup) (McConvell and
Laughren 2004). As in Gurindji, grammatical relations in Warlpiri are indicated through case-marked nominals which pattern according to an ergative-absolutive system. Case is generally edge-marked i.e. it must be marked on the final word in a phrase, but may be found on other elements in the phrase as well. Grammatical relations are also indicated through a nominative-accusative system of bound pronouns. In Warlpiri, these pronouns form a part of the verbal auxiliary complex which typically occurs after the first constituent of the clause. As in other Australian languages including Gurindji, word order plays a pragmatic, but not syntactic, role; and argument nominals are commonly elided (Hale 1992; Simpson 2007; Swartz 1991). An example of a typical transitive sentence is given in (30).

(30) \textit{kati-rni ka = \varnothing tarnnga-ngku-juku jarntu-ju kuuku-rlu-ju}  
press-PST IMPF = 3SG long.time-ERG-still dog-TOP monster-ERG-TOP  
‘The monster continued to squeeze the dog tightly for a long time.’ (ERGstoryWA12)

Complex verbs in Warlpiri consist of an inflecting verb plus a coverb, but where there are only 31 inflecting verbs in Gurindji, there are around 120 in Warlpiri. The Warlpiri inflecting verbs are also semantically richer than Gurindji inflecting verbs, in that many meanings which require a complex verb in Gurindji can be expressed by a single inflecting verb in Warlpiri. The Warlpiri verb \textit{paka-} ‘hit’ is shown in (31) as a simple verb and in (32) as a complex verb in combination with a coverb. Similarly the verb \textit{panti-} ‘pierce/poke’ is shown in (33) as a simple verb and in (34) with a coverb in a complex verb.

(31) \textit{kurdu-jarra-rlu ka = pala = nyanu paka-rni kuurlu-rla}  
child-DU-ERG IMPF = DU = RR hit-NPST school-LOC  
‘Two children are hitting each other at school.’ (ERGstoryWA20)

(32) \textit{pulurr-paka-rnu karnta nyanungu parnta}  
don:down-hit-PST woman 3SG spouse  
‘(He) hit his wife (and she) fell down.’ (LSC_WA41A13)

(33) \textit{kurdu-jarra-rlu ka = pala uatiya-kurlu-rlu panti-rni yinarlingi}  
child-DU-ERG IMPF = DU stick-COM-ERG poke-NPST echidna  
‘Two children are poking an echidna with a stick.’ (emuWA20)

\footnote{In the Warlpiri literature, coverbs are referred to as ‘preverbs’. Here we use the term ‘coverb’ for consistency.}
Aspectual inflecting verbs are light verbs which have homophonous heavy counterparts, for example *ya-* 'PATH' (light) and *ya-* 'go' (heavy).

The ability of the co-verb to separate from the inflecting verb in semi-productive complex verbs is partly phonologically-driven. Consonant-final coverbs must be immediately followed by the next morpheme.

As shown in (32) and (34), most Warlpiri coverbs are not independent words, as is the case in Gurindji. Rather most Warlpiri coverbs form a single constituent with an inflected verb, evidenced by the coverb not taking verbal or nominal inflections, and the combined verbal unit being able to occur in clause-initial position, where only single constituents can occur (Nash 1982: 175-182). Coverbs such as these can be classified as ‘tight nexus verbs’. Recall in §4.2 that McConvell and Bowern (submitted) categorise coverbs as ‘loose nexus’ and ‘tight nexus’ according to the degree of ‘boundedness’ they show with inflecting verbs i.e. how separable the coverb and inflecting verb are and how variable their order is. In Warlpiri, unlike Gurindji, most coverbs are strong nexus verbs because they form a single phonological phrase with the accompanying inflecting verb (c.f. Pentland and Laughren 2004). Some coverbs, termed ‘lexical’ coverbs by Nash (1982: 174), occur with only one inflecting verb and are part of the lexical entry of that verb. No other element can intervene between the two components and they are only found positioned immediately prior to the inflecting verb. (35) shows a tight nexus verb, *jaa-* ‘open’ which occurs with only a few inflected verbs. Coverbs of this type are not found in Gurindji.

Other coverbs show more flexibility with respect to the inflecting verb, for example semi-productive coverbs and coverbs which combine with aspectual inflecting verbs can be separated from an inflecting verb by a directional suffix or the auxiliary. Examples of the latter are given in (36) and (37). The coverb, which is derived from a non-finite inflecting verb, is separated from the inflecting verb *yani* with -*rra* ‘thither’ or *ka* ‘present imperfective’. Similar patterns are found with semi-productive coverbs which occur with many different inflecting verbs (dependant on semantic compatibility) (Nash 1982: 174). Examples were given in (32) and (34) where the coverbs are bound to the inflecting verb.

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11 Aspectual inflecting verbs are light verbs which have homophonous heavy counterparts, for example *ya-* ‘PATH’ (light) and *ya-* ‘go’ (heavy).

12 The ability of the coverb to separate from the inflecting verb in semi-productive complex verbs is partly phonologically-driven. Consonant-final coverbs must be immediately followed...
by the inflecting verb – although when converted into vowel-final stem by the addition of –pa or –ku they can be separated from the verb by the auxiliary complex. Thanks to an anonymous reviewer for pointing this out.
Warlpiri coverbs, including adverbial and dative adjunct coverbs, have not been integrated into Light Warlpiri. The degree of ‘boundedness’ is the crucial factor here. When compared to Gurindji coverbs, most Warlpiri coverbs (which are tight nexus) are more closely tied to the inflected verbs with which they occur. They do not occur independently of an inflected verb, are positioned immediately left of an inflecting verb, and the two-part verb may have a single lexical entry. These features conspire against their integration into the Light Warlpiri verb inventory. Given the higher degree of separability of the adverbial and dative adjunct coverbs, it would have been predicted that these coverbs would have appeared in Light Warlpiri. Nonetheless none are found in the corpus. It may be the case that these coverbs are simply following the pattern of the tight-nexus coverbs in their non-integration.

5.3 Typological match between Warlpiri coverbs and Kriol verbs

In Lajamanu, code-switching between Warlpiri and Kriol/Aboriginal English is common, and both Warlpiri and Kriol/Aboriginal English can provide the matrix language for the code-switched clauses. Unlike in the case of Gurindji-Kriol code-switching, Warlpiri and Kriol/English verb components are not interchangeable in code-switched speech (O’Shannessy 2006: 67-68). When code-switching, if the matrix language is Warlpiri, the only productive method of incorporating Kriol/English verbs is to insert a Kriol/English verb into the coverb slot of the derived coverb construction, as in (41) and (42). The inflecting verb -jarrimi ‘inchoative’ is used to integrate intransitive verbs and -mani ‘causative’ integrates transitive verbs (Bavin and Shopen 1985: 82; Nash 1986: 42; O’Shannessy 2006: 67).

(41) yama-ngka ka slip-jarri-mi
shade-LOC IMPF sleep-INCHO-NPST
‘He is sleeping in the shade.’ (intransitive) (A10:ergstoryWA10.3)

(42) marda-rni ka-npa wati kuja ka puj-i-ma-ni toyota
hold-NPST IMPF-2SG.NOM man REL IMPF push-EP-CAUS-NPST car
‘Have you got a man who is pushing a car?’ (transitive) (A40:ergcardWA40A37)
When the matrix language is Kriol/English, only Kriol/English verbs occur in the data set. Warlpiri coverbs are never found switched with Kriol/English verbs, regardless of whether they are tight or loose-nexus coverbs. The restricted method of insertion suggests that Kriol/English verbs and Warlpiri coverbs are not considered equivalent word classes by speakers. We suggest that the reason for the lack of equivalence between Kriol/English and Warlpiri verbs is that coverbs are more bound to inflecting verbs in Warlpiri than they are in Gurindji. Interestingly, loose-nexus coverbs which do not show the same combinatorial restrictions exhibited by tight-nexus coverbs are still not found switched with Kriol/English verbs. It might have been expected that these coverbs would have been found in a Kriol clause. It is possible that loose-nexus coverbs have merely been treated by speakers in the same manner as tight-nexus coverbs, hence the lack of integration.

5.4 Warlpiri inflecting verbs in Light Warlpiri

The reason that some Warlpiri inflecting verbs have been integrated into Light Warlpiri is not so transparent. The stems of the inflecting verbs have been reanalysed in Light Warlpiri so that only part of the tense inflection is retained, and the truncated inflected form is interpreted as the verb root. For example, *panti-rni* ‘pierce-NPST’ is reanalysed as *pantirn-* and a Kriol transitive suffix is added, giving *pantirn-im* ‘pierce-TR’. The re-analysis suggests that separability of properties may be identified along with re-analysis of a structure. The focus properties here are: (i) a change in Warlpiri phonotactics in some words, probably under the influence of English, (ii) the productivity of the Kriol transitive morpheme –*im*, and (iii) a preference for multisyllable verb stems, under the influence of Warlpiri.

First, sometimes two-syllable Warlpiri verb stems are pronounced without a final vowel, resulting in a consonant-final word, which retains part of the tense inflection, for example *pantu-rnu* ‘pierce-PST’ may be pronounced in Warlpiri as *panturn* ‘pierce-PST’. These verbs are then sometimes heard as consonant-final, without the full phonological realisation of tense inflections. As a result, the new consonant-final words appear to have been reanalysed by Light Warlpiri speakers as stems, rather than as fully inflected verbs. In addition, the productivity of the Kriol transitive morpheme in Light Warlpiri allows it to attach to any verb stem, including stems from Warlpiri, and in doing so creates a regular paradigm of transitive verbs taking the transitive marker, regardless of their language of origin. These two properties combined provide a motivation for the reanalysis of Warlpiri inflecting verbs as verb stems with a Kriol transitive suffix.
Why is the process restricted to a subset of Warlpiri inflecting verbs? The reason is probably the result of the phonological properties and word length of the potential verbs. Warlpiri phonological words are a minimum of two syllables or morae in length. Verbs in Classes 3, 4 and 5 have single syllable stems, and the tense inflections provide a second syllable in inflected verbs. Examples are *nga-rni ‘eat-NPST’ (Class 3), *nya-nyi ‘see-NPST’ (Class 4), and *ma-ni ‘get-NPST’ (Class 5). If these verbs lost their final vowels and were reanalysed on analogy with the Class 2 verbs, they would be single syllable stems. It may be that when incorporating transitive Warlpiri verbs there is a preference for two-syllable stems. This analysis precludes the integration of Warlpiri verbs from Classes 3, 4 and 5 into Light Warlpiri, at least by the same process through which the existing verbs were integrated.

The question of why only some verbs from Class 2 have been integrated into Light Warlpiri, and not others, does not have a satisfactory explanation as yet. All of the non-integrated verbs in Class 2 are two-syllable transitive verbs. Both integrated and non-integrated verbs vary in degree of transitivity, for instance in terms of affectedness of the patient, telicity, boundedness, and so on (cf. Hopper & Thompson 1980). There do not appear to be clear phonological distinctions between the two groups of verbs. It is possible that the Light Warlpiri system is still stabilising and some patterns are not yet clear.

One intransitive Warlpiri inflecting verb occurs in Light Warlpiri and shows the priority of phonological shape when incorporating Warlpiri verbs into Light Warlpiri. The non-past inflection for class one Warlpiri verbs is –mi, as in *pali-mi ‘die-NPST’, and both transitive and intransitive verbs occur in this class. The only intransitive Warlpiri verb found in the Light Warlpiri corpus is from this class, *pali-mi ‘die-NPST’, and it is incorporated into Light Warlpiri as *palim ‘die’. When *pali-mi ‘die-NPST’ is truncated, the final syllable of the consonant-final word *palim is –im. Even though the verb has only two syllables, it is incorporated as is. The intransitive verb is not being treated exactly as a transitive verb, since another suffix is not added, that is, *palim-im does not occur in the data, and the whole word has only two syllables, not three, as transitive verbs do. It appears that a verb form of one or two syllables plus –im makes a verb acceptable in Light Warlpiri, regardless of whether –im is a transitive marker or simply the final syllable of an intransitive verb. It may be that transitive verbs with Warlpiri stems must have two-syllable stems, and intransitive verb stems can be a single syllable. Other intransitive verbs of similar phonological shape to *pali-mi ‘die-NPST’ do not yet appear to have been incorporated into Light Warlpiri. It will be interesting to see whether more are incorporated as Light Warlpiri develops and stabilises.
6. (Co)verbs and transferability in the broader Australian context

One of the predictions which can be made from the previous two sections is that the more bound a coverb is to an inflecting verb, the less likely it will be borrowed or switched into the local variety of Kriol. This pattern is partly related to restrictions on borrowing bound morphemes and partly a result of a typological mismatch with the Kriol VP where the verb and inflecting elements are separated. Yet, bound coverbs are found in different varieties of north Australian Kriol. These coverbs are derived from local Aboriginal languages which are substrates of the Kriol varieties. Nonetheless, while some coverbs are found, far fewer exist than are found in Gurindji Kriol. In this respect, the prediction about coverb transfer is meant as a probabilistic statement, rather than an absolute rule.

Although little information exists in the literature on north Australian Kriol, coverb borrowings from local substrate languages are mentioned for four Kriol varieties: Barkly Kriol (spoken around Elliot) (Pensalfini 2003), Wumpurrarni English (Tennant Creek) (Disbray 2009), Roper River Kriol (Ngukurr) (Nicholls 2010) and Kimberley Kriol (Halls Creek) (Hudson 1977). See Figure 1 for the location of these varieties with respect to Kalkaringi and Lajamanu. In all cases, the coverbs are found prefixed to an inflecting verb in the substrate languages, showing little congruence with the Kriol VP. In this respect, these structures are more similar to that found in Warlpiri, rather than Gurindji.

To begin with, in the Kriol variety spoken around Elliot, Jingulu coverbs can appear in place of Kriol verbs (Pensalfini 2003: 9). In Jingulu the complex verb consists of a single phonological word with four morphemes: coverb + SUBJ + OBJ + verb + TMA. Jingulu has the smallest inventory of inflecting verbs found in north Australian languages with complex predicates. Only three inflecting verbs exist: do, go, come (Pensalfini 2003: 208). Despite the bound nature of the coverb, they are sometimes found switched with Kriol verbs, as shown in the following example of Jingulu-Kriol code-switching. Like the Gurindji coverbs in Gurindji Kriol, they do not combine with the Kriol verb morphology such as transitive marker -im. It is unclear whether the use of Jingulu coverbs is a common phenomenon or quite rare.

(43) yu **dirndi** garra **kurrubardi missim** nya-ardi 2SG shoot COM boomerang miss.TR 2SG-HAB
If you throw a boomerang at it, you’ll miss it. (Pensalfini 2003: 9)

Roper River Kriol spoken in Ngukurr presents a similar story. One of the most influential substrate languages is Marra which has also contributed a number
of coverbs to Kriol. In Marra, the coverb is also bound to the root: coverb + Prop + verb + TMA (Munro 2005). Nonetheless, Greg Dickson (per. comm.) has documented the existence of at least 25 Marra coverbs in Roper River Kriol including *balbal* ‘pound’, *bilg* ‘tired’, *birrij* ‘dodge’ *dinggaldinggal* ‘limp’, *dirr* ‘fart’, *dirrwu* ‘submerge’, *gardaj* ‘scoop’, *jalk* ‘poke’, *mangumangu* ‘elope’, *ngayab* ‘behave, be quiet’, *gula* ‘yell’ and *gubarlgubarl* ‘scrounge’. None of these coverbs is found inflected with Kriol verbal morphology, i.e. transitive marking -im, continuative suffix -bat or adverbial suffixes. Nonetheless they insert into the Kriol VP, for example *gula* ‘yell’ in (44) combines with the Kriol past tense auxiliary and *gubarlgubarl* ‘scrounge’ in (45) participates in a Kriol motion serial verb construction.

(44) det ampaya bin *gula* la alabat  
the umpire PST yell LOC 3PL  
The umpire yelled at them. (Nicholls 2010: 98)

(45) ola Binloni-mob bin go *gubarlgubarl* detmob tjeya  
all [place.name]-GROUP PST go scrounge those chair  
The Binloni people went scrounging (around for) those chairs. (Nicholls 2010: 55)

Similarly Kimberley Kriol contains some coverbs from its main substrate language, Walmajarri (Hudson 1977: 133). Walmajarri contains a complex verb consisting of a coverb and inflecting verb: coverb + stem + TMA (Hudson 1978: 46 onwards). Like Warlpiri, both tight nexus and loose nexus coverbs exist, i.e. some coverbs are bound to the inflecting verb as prefixes such as *wirl-ma-rni* ‘disappear-talk-PST’ or *tirlaj-ba-rni* ‘pester-hit-PST’, and others are found as free words. It appears that in Kimberley Kriol, examples of tight nexus coverbs acting in place of Kriol verbs can be found. They are not inflected for the transitive marker but can combine with the Kriol continuative suffix -bat, as shown in (47).

(46) en wen i bin ten, i bin *wirl*  
and when 3SG.SBJ PST turn 3SG.SBJ PST disappear  
And when it turned, it disappeared. (Hudson 1977: 133)

(47) wan boi bin *tirlaj*-bat langa is mami  
a boy PST pester-CONT LOC his mother  
A boy pestered his mother. (Hudson 1977: 133)

It is not clear from these sources the extent of coverb integration into the Kriol varieties. Dickson counts 25 for Roper River Kriol, and only a few examples are given for the other varieties. Nonetheless, it appears that the frequency of
coverb borrowing is quite low, compared with Gurindji Kriol where a third of the Gurindji coverb inventory is now found in the mixed language. Thus, the two properties of these coverbs - boundedness and typological congruence - do not preclude them from being borrowed, however the likelihood of borrowing is far less.

Finally, it appears that there is at least one case of inflecting verbs rather than coverbs being borrowed into a local Kriol, which was the pattern found for Light Warlpiri. Wumpurrarni English is spoken in Tennant Creek and has a strong substrate influence from Warumungu (Warumungic, Pama-Nyungan), which has a similar complex verb structure to Warlpiri, though is not closely related (O’Grady, Voegelin and Voegelin 1966: 41). Wumpurrarni English also has some direct Warumungu borrowings from nouns to inflectional morphology, most notably a possessive and allative suffix (Disbray 2006; Disbray and Simpson 2005). No Warumungu covers are found in Wumpurrarni English, however, a few Warumungu inflecting verbs have also been borrowed into Wumpurrarni English including warlanjayi ‘dance’, turtu ‘sleep’ and kulanta ‘call out’ (Disbray 2009: 256 and per. comm.). These are intransitive verbs, so do not receive the Kriol transitive -im, although they can be found with the Kriol continuative suffix -nabat, in this variety.

(48) wat yu-rra turtu-nabat na deya
    what 2SG-POT sleep-CONT FOC there
    What?! Are you going to sleep in there? (Disbray per. comm.)

(49) wulkuman bin warlanjayi-nabat iya
    woman PST dance-CONT here
    The women were dancing here. (Disbray per. comm.)

(50) dei bin kulanta na
    3PL.SBJ PST call.out FOC
    They called out. (Disbray 2009: 145)

The exact process of the integration of these few Warumungu inflecting verbs into Wumpurrarni English is not clear, but it demonstrates that the borrowing of Warlpiri inflecting verbs into Light Warlpiri is not an isolated phenomenon.

7. Conclusion

Gurindji Kriol and Light Warlpiri show considerable structural similarity, and are both the result of code-switching practices between a Pama-Nyungan language – Gurindji and Warlpiri, respectively – and Kriol/English. They have
drawn most of their verbal structure from Kriol/English and most of their nominal structure from Gurindji or Warlpiri. But one structural difference is that about one third of verbs in Gurindji Kriol are from Gurindji coverbs, whereas only seven verbs in Light Warlpiri are from Warlpiri, and these are originally inflecting verbs. This paper has shown that the different levels of verb integration from each source in each mixed language is due to typological differences in Gurindji and Warlpiri. Gurindji coverbs are more separable from the inflecting verbs with which they occur than are Warlpiri coverbs. Gurindji coverbs were interchanged with Kriol verbs in code-switched speech, the speech style which was a predecessor of Gurindji Kriol, and the pattern continued into Gurindji Kriol. In contrast, most Warlpiri coverbs are much less separable from inflecting verbs, and are not interchanged with Kriol verbs in code-switched speech. Accordingly, Warlpiri coverbs do not generally appear in Light Warlpiri. Some inflecting Warlpiri verbs do appear in Light Warlpiri, with the boundaries between verb stems and inflections having been reanalysed. The re-analysis created a point at which Kriol transitive morphemes could be attached, creating innovative verbal forms. The innovation process only applies to transitive verbs where the final form contains two or more syllables, under the influence of Warlpiri, which has no single-syllable words. The question of why not all two-syllable transitive verbs have undergone this process cannot be answered yet, and may be due to the fact that the new language is still developing and stabilising.

References


Hudson, Joyce. 1977. Some common features in Fitzroy Valley Kriol.


McConvell, Patrick, and Claire Bowern. submitted. Types of complex verbs in Australian languages and the relationship to coverb borrowing.


### 9. List of Abbreviations

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