



PROJECT MUSE[®]

THE ROLE OF MULTIPLE SOURCES IN THE FORMATION OF AN
INNOVATIVE AUXILIARY CATEGORY IN LIGHT WARLPIRI,
A NEW AUSTRALIAN MIXED LANGUAGE

CARMEL O'SHANNESSY

University of Michigan

Light Warlpiri, a new Australian mixed language combining Warlpiri (Pama-Nyungan) with varieties of English and/or Kriol that has emerged within approximately the last thirty-five years, shows radical restructuring of the verbal auxiliary system, including modal categories that differ from those in the source languages. The structure of Light Warlpiri overall is that of a mixed language, in that most verbs and some verbal morphology are drawn from English and/or Kriol, and most nominal morphology is from Warlpiri. Nouns are drawn from both Warlpiri-lexicon and English-lexicon sources. The restructuring of the auxiliary system draws selectively on elements from Warlpiri and several varieties and styles of English and/or Kriol, combined in such a way as to produce novel constructions. It may be that when multiple sources provide input to a rapidly emerging new system, innovative categories are likely to appear.*

Keywords: Light Warlpiri, Warlpiri, Kriol, mixed language, pidgins, creoles, innovation

1. INTRODUCTION. In contact-induced language change, structural, lexical, or conceptual material is transferred from one or more source languages to one or more receiving languages. In contexts of stable bilingualism or multilingualism, if language A has a structural category that does not exist in language B, the category from language A may be transferred to language B, creating a new structural category in that language (Weinreich 1953:32, Thomason & Kaufman 1988, Thomason 2001). Language B may make use of its own phonological material, but the category is usually an echo of that in language A. Not all contact-induced change results in replication of a structure, however, and not all levels of a structure are always transferred; for instance, (morpho)syntactic, phonological, or semantic elements can be transferred independently of other levels. In contexts of pidgin development and, in some instances, creole development, a new structural category can be created that does not occur in any of the source languages. This process can be illustrated with the Australian Pidgin English past-tense *bin*, and the same process occurred in the development of other English-lexified pidgins in which *bin* is a past-tense marker. Pidgin *bin* was derived from the English participial verb form *been*, with a change in function so that the new form indicated past tense, even though neither English nor the other contributing languages had a phonological word dedicated to that function. English, the lexifier, indicates past time through verbal inflections. The fact that many creoles also have structures that differ from their sources is the basis for continued debate over the roles of substrates, language universals, and second language learning processes in creole formation (e.g. Bickerton 1984, Mufwene 1986, 2001, Muysken & Smith 1986, 1995, Holm 1988, Siegel 2000, 2008, Plag 2002, 2005, 2008).

However, the development of a new structural category is not usually seen in mixed languages, in which elements from two different source languages are systematically

* I thank members of Lajamanu Community for their patience and participation, especially Tanya Hargraves, Leah and Elaine Johnson, Geraldine Gallagher, Roseanne Dixon, Noressa White, Matrina Robertson, Sabrina Nelson, Valerie Patterson, Agnes Donnelly, and families. I also thank Sarah Thomason, Mary Laughren, Jane Simpson, David Nash, Pieter Muysken, Robin Queen, Marlyse Baptista, anonymous referees, and members of the Linguistics Department at the University of Michigan for discussions of the data. Funding was provided by the Max Planck Institute for Psycholinguistics, Nijmegen, the University of Sydney, and the University of Michigan.

combined, such that the resulting code cannot be categorized unambiguously as a daughter language of either source, but must be thought of as having two sources (Thomason & Kaufman 1988, Matras & Bakker 2003a:12). In a mixed language, elements from the source languages are typically transferred with their structures mostly intact (Thomason 1997b, 2003, Matras 2003, Matras & Bakker 2003a), although there may be regularization and adaptation of forms from one language to the other (e.g. Muysken 1988). For instance, in Michif, which combines Cree verbs and verbal morphology with French nouns and nominal morphology, most of the Cree and French elements come into the mixed language without change (Bakker 1994). In *Media Lengua* (Muysken 1994, 1997), Quechua morphology appears largely as it does in Quechua, with Spanish wordshapes. In *Mednij Aleut* (Golovko 1994, Thomason 1997a, Vakhtin 1998), the Russian finite verbal inflection system is combined with Aleut nominal and verbal derivational morphology. In *Sri Lanka Malay* (Slomanson 2006, Smith & Paauw 2006, Ansaldo 2008), Tamil nominal morphological categories occur, with phonological forms from Malay. While each of these mixed languages has some morphosyntactic structures that differ from those of the source languages, they closely echo structures in those sources.

In contrast, *Light Warlpiri*, a new mixed language spoken in a Warlpiri community in northern Australia, shows radical restructuring of source elements within the verbal auxiliary system, where a formal modal distinction is made that is not found in the source languages. *Light Warlpiri* combines Warlpiri (Pama-Nyungan) with varieties of English and/or Kriol (an English-lexified creole), and has emerged within approximately the last thirty-five years (O'Shannessy 2005, 2012).¹ The structure of *Light Warlpiri* overall is that of a mixed language, in that most verbs and verbal morphology are drawn from English and/or Kriol, with the exception of the auxiliary system, and most nominal morphology is from Warlpiri. Nouns are drawn from both sources. But *Light Warlpiri* shows an innovation in the auxiliary component that resembles the creation of a novel structural category not found in any of the source languages such as is most commonly found in pidgins and creoles. Specifically, the *Light Warlpiri* tense-mood-aspect (TMA) system has a formal modal distinction of realis-irrealis (corresponding temporally to nonfuture-future), which, while present semantically in Warlpiri (Laughren 2012), is not a formal distinction in Warlpiri, English, or Kriol. This means that the development of *Light Warlpiri* mostly shows processes commonly seen in mixed languages—wholesale retention of structures from its sources—but also a process normally seen in pidgin (and to a lesser extent creole) development. In this article I show that the restructuring of the auxiliary system in *Light Warlpiri* draws selectively from elements from Warlpiri and several varieties and styles of English and/or Kriol, combined in such a way as to produce novel constructions.

The source languages of *Light Warlpiri* are of several types—Warlpiri, varieties of English, and Kriol—but they can be categorized by their type of lexicon, that is, Warlpiri lexicon or English-derived lexicon (varieties of English, and Kriol). It is important to note that there were several varieties and styles of the English-lexicon languages spoken at the time that *Light Warlpiri* was developed: Standard Australian English with colloquial styles, Aboriginal English, and an English-based creole (Kriol), and the boundaries between these varieties are blurred (see §3.2). The fact that the innovators of *Light Warlpiri* drew selectively on elements from within each variety, as discussed below, shows that they were sensitive to the presence of multiple sources.

¹ The label 'English and/or Kriol' is discussed in detail in §3.2, but briefly, acrolectal Kriol and Aboriginal English (Malcolm & Kaldor 1991, Harkins 1994) share some properties, so there is not a categorical distinction between them.

The example from Light Warlpiri given in 1a, with constructed sentences from Warlpiri in 1b and Aboriginal English and/or Kriol in 1c, shows how elements of the sources combine in Light Warlpiri. In Light Warlpiri examples throughout the article, forms from Warlpiri are given in italics, and forms from varieties of English and/or Kriol are given in plain font. The verbs and auxiliaries are bolded.²

- (1) a. *Junga mayi nyuntu* **yu-m** **go** wati-kari-kirli mayi?
 true Q 2SG 2SG.S-NFUT go man-other-COM Q
 (FamLA53_LA54; Light Warlpiri)
- b. Junga mayi nyuntu-**Ø-*npa*** **ya-nu** wati-kari-kirli mayi?
 true Q 2SG-PST-2SG.S go-PST man-other-COM Q (Warlpiri)
- c. Tru indit yu **bin go** la otha-wan man?
 true Q.TAG 2SG.S PST go PREP other-one man
 ‘Is it true that you went with another man?’ (Aboriginal English and/or Kriol)

In 1a, elements other than the verb and auxiliary are from Warlpiri, including nominal morphology, while the verbal forms are from English and/or Kriol. The novel auxiliary construction *yu-m* ‘2SG-NFUT/REALIS’ consists of *yu* ‘2SG’ from English and/or Kriol and an innovative form *-m* ‘NFUT/REALIS’, explained in §4.

As seen in 1a, Light Warlpiri combines the nominal structure of Warlpiri with verbal structures drawn from Kriol and varieties of English and Warlpiri. Lexical items are drawn from all sources, with most verbs being from Kriol and Aboriginal English. A subset of verbs are derived from Warlpiri, and their structure is explained in §4.2. In addition, in the innovative auxiliary paradigm that is the focus here, elements that were drawn selectively from particular varieties and styles of English were mapped onto a predominantly Warlpiri syntactic and semantic frame.

In addition to pidgins, creoles, and Light Warlpiri, another context in which the development of a new structural category can be seen is the Balkan linguistic area, a context of stable multilingualism, in which several languages have a postposed article, a structure that is not found in their ancestor languages (Lindstedt 2000:238). In a linguistic area, where multiple languages are in contact for long periods and speakers are multilingual, structures are often transferred between several languages. Typically, a novel structure that appears in one language is a copy of a structure in one or more of the other languages in the area, although it might use a phonological form from the recipient language. Yet in the Balkan linguistic area, structural convergence and innovation were combined such that the postposed article has come to be shared by several languages, although it is not a replica of a single structure in any ancestor language (Lindstedt 2000:238). It may have developed from postposition elements that linked NPs and modifiers in several of the languages, with different structural realizations in each. Very little is known of the sociolinguistic situation at the time of development of the postposed article, but this case is relevant here in that it provides another example of a structural innovation that appears not to reproduce a source language structure in a situation involving multiple sources.

² Abbreviations used in the examples are as follows: ABL: ablative, ALL: allative, ANAPH: anaphoric, CAUS: causative, COM: comitative, COMP: complementizer, DAT: dative, DEF: definite, DIM: diminutive, DU: dual, EMPH: emphasis, EPEN: epenthetic vowel, ERG: ergative, EXCL: exclusive, FUT: future, IMPF: imperfective, INCHO: inchoative, INCL: inclusive, INF: infinitive, LOC: locative, NEG: negative, NFCT: nonfactual, NFUT: nonfuture, NPST: nonpast, O: object, OBL: obligation, PL: plural, POSS: possessive, PREP: preposition, PROG: progressive, PRS: present, PST: past, Q: question marker, Q.TAG: tag question marker, RDP: reduplication, REL: relative, S: subject, SG: singular, TOP: topic, TR: transitive. Example labels refer to the author’s fieldwork data, archived in The Language Archive at the Max Planck Institute for Psycholinguistics, Nijmegen (<http://www.mpi.nl/departments/other-research/research-projects/the-language-archive>).

Multiple source systems is, in fact, the factor common to Light Warlpiri, pidgin and creole development, and linguistic areas. I hypothesize that this is the main contributor to the development of a new structural category in a newly emerged language, where the new category is not a structural transfer from one of the sources. I show below that the radical restructuring in Light Warlpiri was performed by young speakers, before their late teens. I note that restructuring by children is not shared by all pidgins and creoles, since the role of children is often that of regularizing paradigms rather than creating them (Shnukal & Marchese 1983, Jourdan 1989, Roberts 2000, Siegel 2008).

In the following sections I first briefly review the literature on mixed-language genesis, the role of children in nativizing developing codes, and grammaticalization. I then provide information on the source languages of Light Warlpiri—Warlpiri, Kriol, Standard Australian English, and Aboriginal English—before providing background on Light Warlpiri and explaining how the auxiliary paradigm draws selectively on the source languages and adds reanalyses to create an innovative system. Finally, I discuss the implications of these processes and the result of new formal categories.

2. MIXED-LANGUAGE GENESIS, NATIVIZATION, AND GRAMMATICALIZATION.

2.1. MIXED-LANGUAGE GENESIS. New mixed languages can emerge rapidly; for instance, Michif (Bakker 1994, 1997), Mednij Aleut (Golovko 1994, Vakhtin 1998), Media Lengua (Muysken 1994, 1997), and Gurindji Kriol (McConvell & Meakins 2005) probably emerged within one or two generations. There has been no direct observation of the genesis of a mixed language, but recent diachronic evidence on the origin of Gurindji Kriol shows that it emerged from conventionalization of code-switching practices (McConvell & Meakins 2005), and synchronic evidence from Light Warlpiri suggests that it did also (O'Shannessy 2012).

In mixed languages the grammar of each source component is transferred to the new language fairly intact. The intact nature of source elements in the new mixed codes suggests that they are created by bilinguals, who are already proficient in the two sources before they combine them into a third code (e.g. Thomason 2003:32). The age of the speakers when this process takes place appears to vary, but they are usually thought to be older than the age of initial language acquisition, that is, old enough to have acquired robust independent grammars (Thomason 2003:32). There is evidence that children probably around five years old played a large role in the creation of new mixed codes in the former Dutch East Indies (now Indonesia), Petjo (van Rheedeen 1994) and Javindo (de Gruiter 1994). These mixed languages emerged through interactions of children of Dutch-speaking fathers and Malay- and Javanese-speaking mothers, respectively. The children were spoken to by their mothers in the mothers' languages, and also learned Dutch, sometimes in school. The children, usually boys, played together and, from about age five or six, created conventionalized, mixed codes (de Gruiter 1994, van Rheedeen 1994). Whether there was some influence from adults in the creation of Petjo or Javindo is not clear. Neither of these languages appears to have the kind of innovation that occurs in Light Warlpiri.

Where a new mixed code has been transmitted to the next generation, the first generation of first language speakers has usually reproduced the combined, or code-switched, input in such a way that the source structures in the verbal core remain relatively unchanged. For instance, Michif reproduces the verbal system of Cree (Bakker 1994, 1997), Mednij Aleut attaches the Russian finite verb system to Aleut verb stems (Golovko 1994, Thomason 1997a, Vakhtin 1998) but with each system intact, and Gurindji Kriol reproduces verbal patterns seen in code-switching between Gurindji and Kriol (McConvell & Meakins 2005, Meakins 2007, 2012). Nevertheless, not all morphosyn-

tactic properties of mixed languages are replicas of the sources; some show ‘compromise restructuring’ (Muysken 1997:391–92). For example, in Light Warlpiri and Gurindji Kriol, ergative case marking is optional, whereas in the sources it is obligatory or near obligatory (Meakins & O’Shannessy 2010), and it is taking on a discourse function in addition to its grammatical function of indicating transitive subjects. In Gurindji Kriol, Gurindji dative case structures indicating animate goals and indirect objects have Kriol forms (Meakins 2011a). In Michif, some French verb forms occur, and the mood system shows some innovative structure (Bakker & Papen 1997:321). In Media Lengua (Muysken 1997:389–90), verbs that express ‘wishing’ and ‘wanting’ have a structure that differs from both Quechua and Spanish, deictic pronouns differ from both sources in semantics and distribution, and embedded *WH*-questions and complementizers differ from Quechua structure, with signs of some influence from Spanish. In Sri Lanka Malay (Slomanson 2006:143), a Malay progressive-aspect marker has been reanalyzed as a preverbal present-tense marker, even though tense is marked postverbally in Tamil and Sinhala, which are other sources of Sri Lanka Malay. But the kind of radical restructuring of core syntax that occurs in Light Warlpiri is unusual for a mixed language.

The creation of Light Warlpiri shows a two-step process (O’Shannessy 2012). In the first step, within a context of considerable code-switching in the community, bilingual adults directed code-switched speech to young children from birth, as part of a baby-talk register. In the second step, the children nativized that input and added radical innovations to the core syntax, specifically, the verbal auxiliary system, with the creation of temporal and modal structural categories that are not present in either type of source language. The innovations are reanalyses of elements from different varieties and styles of English and/or Kriol that were present in the community at the time Light Warlpiri emerged, as explained in §3 below.

The innovating generation, now aged up to thirty-five years, can be identified through their use of the innovative auxiliary paradigm and conventionalized novel verb forms, since the older generation does not use the auxiliary paradigm and novel verb forms, and the younger generations do. The innovators must have been using the full Light Warlpiri verbal system by the time they had children, since all of the children in the next cohort use it consistently. Typically, women in the community have children in their mid to late teenage years, so I conclude that the new paradigm was established by the innovating group before then (O’Shannessy 2012). The new code was therefore conventionalized, and innovations created, by children before their late teen years.

There are no data that pinpoint a specific age range between birth and late teens for the innovations to have occurred, but the interactional styles of adults with children can throw some light on the kinds of input that infants and young children would have received, and accordingly on the speech they might have produced. Adults and older children give a lot of attention to babies, and interact verbally with young children from infancy. Infants and young children are held, talked to, played with, and actively taught kinship relationships and hand signs (O’Shannessy 2011:141–43). Much of this is in a baby-talk register, so if adults were code-switching as part of this register, the children would have regularly received code-switched input since birth. When children are old enough to walk well independently, they spend much of their time playing with other children in mixed-age groups, so much of their language input from that point on is from other children (O’Shannessy 2011:137). In 1979 it was reported that children in Lajamanu Community mixed Warlpiri and English (Leeding & Laughren 1979), so it can be assumed that older children provided further code-switched input to younger children when playing. Based on these observations of the interactions of adults and older children with infants and young children, it seems likely that children received a

lot of code-switched input from infancy. I suggest, then, that the innovating group of Light Warlpiri speakers analyzed the code-switched input they received as a single system and created the new structures from a very early age, in their first few years of speaking.

Note that it is not the case that the innovating group of children received limited or insufficient input. Rather, it seems that they received most input in a code that combined elements of Warlpiri and English-lexicon varieties, along with some input in Warlpiri. It appears that the code-switched input, consisting of a verbal component from English and/or Kriol and other elements from Warlpiri, was already systematic and fairly conventionalized, as part of a baby-talk register (O'Shannessy 2012). The innovating cohort nativized the input, and in so doing, added structural innovations.

2.2. LANGUAGE NATIVIZATION. Other situations of code nativization by children up to their teenage years also show morphosyntactic restructuring. By nativization I mean that a linguistic system that was not initially the first language of any speakers, regardless of whether it was considered to be a pidgin, a creole, or a system of code-switching at that point, is learned by the next generation of children as their first language, or as one of their first languages. The notion that pidgins are expanded to creoles by young children is expressed in Bickerton's (1981, 1984) LANGUAGE BIOPROGRAM HYPOTHESIS. In this hypothesis, children receiving limited input in a pidgin draw on innate linguistic universals to expand the input into a full language, a creole. Bickerton hypothesizes that the expansion takes place in one or two generations, with each generation producing the expansions before the end of the critical period for first language acquisition, believed to be around seven years of age. Against this hypothesis, many features that had been posited as examples of universals can be traced to substrate languages (e.g. Alleyne 1986, Holm 1988, Boretzky 1993, Siegel 2000) and many to second language acquisition processes (Siegel 2004, 2008, Plag 2005, 2008, 2009), and some creoles may have developed over a long time period (Arends & Bruyn 1995). In cases where there is a transition from a pidgin to a creole, the time of transition cannot necessarily be pinpointed, and many researchers advocate viewing creolization as a dynamic process, in which the code is constantly changing (e.g. Mühlhäusler 1986, Holm 1988, Mufwene 2001).

At some stage a new code may be nativized by children, and the role of children versus adults in the morphosyntactic expansion of a nativized code appears to vary according to sociolinguistic context. In some contexts, creoles appear to have been developed mostly by adults, then learned and regularized further by children (Shnukal & Marchese 1983, Jourdan 1989, Roberts 2000, Siegel 2000). In this view young children do not play a strong creative role in the expansion of the creole, but they are seen to regularize and/or complete paradigms that were created by adults (Cazden 1968, Shnukal & Marchese 1983, Jourdan 1989, Siegel 2000). Jourdan (1989:28, 1991:195) shows that in Solomon Islands Pijin children regularized existing paradigms, but did not create entirely new grammatical categories. Shnukal and Marchese (1983:23) describe children's regularization of Nigerian Pidgin English phonotactics, tone, and intonation. Hawai'i Pidgin English and later Hawai'i Creole English were strongly influenced by children interacting with their peers at elementary schools (Siegel 2000), but the precise contributions of children versus adults is not clear.

But in other contexts the influence of children in language nativization extends further than this. Elementary school-aged child signers developed Nicaraguan Sign Language from multiple home sign systems, and subsequent age cohorts have shown further grammaticalization of structures (Senghas et al. 1997, Kegl et al. 2001, Senghas et al. 2004). Some child home signers, by age five, create more morphology than their

mothers direct to them (Goldin-Meadow et al. 2007). These cases show that in some contexts children do not simply regularize variable input and complete existing paradigms, but can create novel structure from the input through grammaticalization or morphological expansion.

2.3. GRAMMATICALIZATION. Grammaticalization is a process in which over time, perhaps centuries, lexical items take on grammatical functions, or grammatical words become bound grammatical morphemes (Hopper & Traugott 1993). A typical path is content item > grammatical word > clitic > inflectional affix (Hopper & Traugott 1993). Because the grammaticalization process is usually very slow, some authors prefer to think of morphology creation in pidgins and creoles, which can occur more quickly, as morphological expansion (Siegel 2008), but others refer to it as a process of ‘instantaneous grammaticalization’ (Bruyn 1996:39).

The development of Light Warlpiri was very rapid, yet the formation of the auxiliary involves the processes described for grammaticalization. These processes have been outlined as (i) extension, in which novel grammatical meanings arise, (ii) desemantization, (iii) decategorization, and (iv) erosion of phonetic substance (Heine & Kuteva 2005:220). In the genesis of Light Warlpiri, there was no preexisting language into which elements or structures from a model language were transferred. Light Warlpiri developed from retention of structures and forms from the sources, combined into a new system, and additional reanalysis of some of those structures and forms. In §4 I show that contact-induced grammaticalization processes found in other contact situations have taken place in Light Warlpiri, only much more rapidly. I argue that novel structures resulted because these grammaticalization processes operated on selective elements from multiple sources.

3. DESCRIPTION OF SOURCE-LANGUAGE SUBSYSTEMS. Most mixed languages have two source languages. In the case of Light Warlpiri, the situation is more complex. Warlpiri, English, and Kriol are each of a different linguistic type. Yet English and Kriol both contrast with Warlpiri in terms of source of lexicon and morphosyntactic patterning. Kriol lexicon is largely drawn from English, both Kriol and English use SVO word order to indicate grammatical relations in a nominative-accusative pattern, and both indicate peripheral cases with prepositions. In contrast, Warlpiri has variable word order, indicates grammatical relations with case marking in an ergative-absolutive pattern, and all peripheral cases are indicated by suffixes (i.e. case markers). But even though English and Kriol can jointly be contrasted with Warlpiri, there are several varieties and styles within English and Kriol, and each of these contributes a component to the innovative auxiliary structure. In this section I provide a brief overview of the verbal structures of the relevant varieties and styles of the sources, which is necessary for understanding the grammaticalization processes that have resulted in the innovative verbal auxiliary system in Light Warlpiri.

3.1. PREDICATION IN WARLPIRI: VERBAL PREDICATION. A fundamental distinction in Warlpiri clauses is between verbal and nominal predication (Hale 1982:217–20), both of which are relevant to Light Warlpiri. I first discuss verbal predication, then nominal predication. A typical finite Warlpiri verbal clause consists of an inflected verb, one or more arguments, and an auxiliary cluster. Verbs are categorized into five classes based on the forms of their inflections. The auxiliary cluster consists of COMPLEMENTIZER + BASE + PRONOMINAL CLITICS, which occur in that order (see Laughren 2002), but not all elements are obligatory in every type of clause; for instance, the complementizer and base are not present in some clauses expressing unactualized events (Laughren 2012).

Elements of the auxiliary complex may be realized as null forms depending on tense, mood, and aspect interpretations of the clause. For instance, the base is realized as null in past perfective clauses (as in example 7 below), and third singular pronominal clitics are always realized as null (as in example 11). The base carries TMA information, and temporal and modal readings are given by combinations of the complementizer and base with verbal inflections. (See *Granites & Laughren 2001* for TMA interpretations from interactions of verbal inflections and auxiliary elements.) The pronominal clitics mark person and number of subject and some nonsubject arguments in a nominative-accusative pattern. Unless the initial element is a complementizer, the auxiliary cluster typically occurs in second position in the clause, as in examples 2 to 5 (but see *Legate 2002* for variation of auxiliary cluster position). The first constituent may be any type of phrase, and apart from the position of the auxiliary cluster, word order is variable, and pragmatically ordered (*Swartz 1991, Hale 1992, Simpson & Mushin 2005*).

Core arguments are typically elided if their referents can be recovered anaphorically from the discourse; in other words, Warlpiri is a pro-drop language. Overt core arguments are marked with an ergative-absolutive system of case marking, in which the A argument takes an ergative marker, and S and O argument marking is null.³ The following constructed examples show transitive and intransitive Warlpiri clauses, with and without overt arguments. In 2–5 there are no complementizers, and the base is the present auxiliary *ka*, which is followed by the pronominal clitics *-lu* ‘3PL.S’ and *-jana* ‘3PL.O’. When the base is not null, as in 2–5, it is written as a word separate from the first element of the clause. Example 3 shows that a sentence need only have a verb and an auxiliary, with no overt arguments.

- (2) Yapa-patu **ka-lu** **ya-ni**.
 person-PL PRS-3PL.S go-NPST
 ‘The people go/are going.’
- (3) **Ya-ni** **ka-lu**.
 go-NPST PRS-3PL.S
 ‘They go/they are going.’
- (4) Yapa-patu-rlu **ka-lu-jana** **nya-nyi** kurdu-kurdu.
 person-PL-ERG PRS-3PL.S-3PL.O see-NPST child-RDP
 ‘The people see the children.’
- (5) Kurdu-kurdu **ka-lu-jana** **nya-nyi**.
 child-RDP PRS-3PL.S-3PL.O see-NPST
 ‘They see the children.’

In 2 to 5 the present auxiliary base *ka* and nonpast inflection on the verbs give a present-tense reading. In example 4 the ergative marker *-rlu* indicates the A argument, and in 5 the lack of ergative marking on *kurdu-kurdu* ‘children’ indicates that *kurdu-kurdu* must be the O argument, and the A argument is elided.

Examples 6 and 7 are sentences with complementizers.

- (6) **Kaji** **ka-lu-jana** **nya-nyi** kurdu-kurdu karnta-patu-rlu
 NFCT.COMP PRS-3PL.S-3PL.O see-NPST child-RDP woman-PL-ERG
yi-nyi **ka-lu-jana** mangarri.
 give-NPST PRS-3PL.S-3PL.O food
 ‘If/when the women see the children, they will give them food.’

³ In my discussion I use Dixon’s (1979) labels of A for the subject of a transitive verb, S for the subject of an intransitive verb, and O for the object of a transitive verb, but S is used in the examples for subjects of both transitive and intransitive verbs.

- (7) **Kula ka-lu-jana nya-nyi** kurdu-kurdu karnta-patu-rlu.
 NEG.COMP PRS-3PL.S-3PL.O see-NPST child-RDP woman-PL-ERG
 ‘The women don’t see the children.’

Although the complementizers are part of the auxiliary cluster, when two-syllable complementizers are followed by the base they are written as separate words.

The following examples show how other combinations of verbal inflections and auxiliary elements provide different TMA readings. In 8 the combination of a zero auxiliary base and past-tense inflection on the verb indicates past tense and perfective aspect. When, as in 8, the base is null and there is no complementizer, the pronominal elements attach to the first constituent of the clause, including when the first constituent also takes a case marker.

- (8) **Yapa-patu-rlu-∅-lu-jana nya-ngu** kurdu-kurdu.
 person-PL-ERG-PST-3PL.S-3PL.O see-PST child-RDP
 ‘The people saw the children.’

In 9 the auxiliary base *-lpa* indicates past imperfective and the verbal inflection is also past, giving a reading of past imperfective.

- (9) **Yapa-patu-rlu-lpa-lu-jana nya-ngu** kurdu-kurdu.
 person-PL-ERG-PST.IMPV-3PL.S-3PL.O see-PST child-RDP
 ‘The people were looking at the children.’

In 10 the future auxiliary complementizer and nonpast verbal inflection give a future-tense reading.

- (10) **Yapa-patu-rlu kapu-lu-jana nya-nyi** kurdu-kurdu.
 person-PL-ERG FUT.COMP-3PL.S-3PL.O see-NPST child-RDP
 ‘The people will see the children.’

Desiderative mood is realized in several ways in Warlpiri. It can be indicated by a complementizer form in the auxiliary complex, as in 11.

- (11) **Kurdu jinta ka-∅ warrka-rni watiya-nga yungu-∅ ma-ni**
 child one PRS-3SG.S climb-NPST tree-LOC REL.COMP-3SG.S get-NPST
 kanta.
 bush.coconut
 ‘A child is climbing a tree to get a bush coconut.’ (ERGStoryNWA05)

Desiderative mood can also be indicated through the use of the nominal *ngampurrpa* ‘want, desiring’, as in 12, where it has a predicative function (see also the discussion of nonverbal predication below).

- (12) **Ngaju-rna ngampurrpa nalija-ku.**
 1SG-1SG.S wanting tea-DAT
 ‘I want some tea.’ (Hale et al. 1995:1430)

Although SVO order is given in several examples here, the case-marking system allows variable word order, as indicated above, and sentence-initial elements are those that are in focus or are prominent (Swartz 1991, Hale 1992, Simpson & Mushin 2005).

Warlpiri simplex verbs are inflected for tense and the inflections combine with elements in the auxiliary to give modal and temporal readings, as shown above. Complex verbs, by contrast, have a main verb preceded by a preverb (Nash 1982), as in *yaalpa-wanti-ja* ‘flush.with.ground-fall-PST’ in 13. In 13, the interpretation of the null realization of the base and the third singular subject pronoun is clear because the base and pronominal elements are expected to occur in that order in the position following the first constituent, making null realizations in that position meaningful. The null form of the

base in second position combined with a past verb inflection can only mean past perfective, and a null pronoun within the auxiliary complex can only mean third singular.

- (13) *Jurru-kurra-Ø-Ø yaalypa-wanti-ja kanta-ju.*
 head-ALL-PST-3SG.S flush.with.ground-fall-PST bush.coconut-TOP
 ‘The bush coconut fell to the ground near her head.’ (ERGstoryWA02)

A common verb-formation process is to place a nominal in the preverb slot, with either of two main verbs, the inchoative *-jarri* as in 14, or the causative *-ma* as in 15.

- (14) *Wirliya-Ø-Ø rarralykaji-kirlangu wapulya-jarri-ja.*
 foot-PST-3SG.S car-POSS saggy-INCHO-PST
 ‘The wheel of the car went flat.’ (ERGstoryWA32)

- (15) *Ngula ka-Ø-palangu yakarra-ma-ni.*
 ANAPH PRS-3SG.S-3DU.O wake.up-CAUS-NPST
 ‘She wakes the two of them up.’ (ERGstoryWA10)

Elements from other languages can be placed in this preverb slot, so this verb-formation process is commonly used with borrowed words, as in 16 and 17.

- (16) *Wirriya ka-Ø try-jarri-mi warrka-njaku kanta-ku.*
 boy PRS-3SG.S try-INCHO-NPST climb-INF bush.coconut-DAT
 ‘A boy is trying to climb to get a bush coconut.’ (ERGstoryNyWA03)

- (17) *Karnta-ngu ka-Ø-Ø wirriya-pardu swing-swing-rla*
 woman-ERG PRS-3SG.S-3SG.O boy-DIM swing-swing-LOC
push-i-ma-ni.
 push-EPEN-CAUS-NPST
 ‘The woman is pushing the little boy on the swing.’ (ERGstoryWA31_1)

Some lexical and morphological changes in Warlpiri due to contact with English were documented in the 1980s (Bavin & Shopen 1985). They include an increased number of English borrowings into Warlpiri verbs, such as *plei-jarri-mi* ‘play’ (lit. ‘play-INCHO-NPST’) when Warlpiri also has *manyu-karri-mi* ‘play, have fun’ (lit. ‘play-be-NPST’). A change to the pronominal clitic forms in the auxiliary cluster was also noted, in which the inclusive-exclusive distinction was not always maintained, such that a more transparent form of the first-person dual *-rna-pala* ‘1SG-1DU’ was being used in place of *-rli* ‘1DU.INCL’ and *-rli-jarra* ‘1DU.EXCL’ (Bavin & Shopen 1985). A more recent contact-induced change is that words are not always vowel-final as used to be the case. For instance, verbs are sometimes pronounced with a devoiced or omitted final vowel, as in *wanti-m* ‘fall-NPST’ instead of *wanti-mi*.

PREDICATION IN WARLPIRI: NONVERBAL PREDICATION. Main clauses in Warlpiri can also consist of a nominal predicator and a nominal or free pronoun with the subject pronominal element of the auxiliary optionally attached, as in 18 and 19.

- (18) *Ngaju(-rna) mata.*
 1SG-1SG.S tired
 ‘I’m tired.’ (Hale 1982:218)

- (19) *Kurdu mata.*
 child tired
 ‘The child is tired.’ (Hale 1982:218)

Nominal predicators have the range of meanings of adjectives, nouns, and stative verbs in many other languages (Hale 1982:218). These predicators do not cooccur with complementizers or with an overt auxiliary base. Light Warlpiri also has nominal predicators, discussed in §4.4.

3.2. VERBAL SYSTEMS IN KRIOL, ABORIGINAL ENGLISH, AND STANDARD AUSTRALIAN ENGLISH. The non-Warlpiri speech of Warlpiri in Lajamanu consistently shows elements from a continuum of varieties ranging from Standard Australian English (SAE) to Aboriginal English (AE) and possibly to acrolectal Kriol. There are more features from varieties of English than from Kriol, but some features are common to both, so clear distinctions are difficult to make. I present here some of the features of Kriol, Aboriginal English, and Standard Australian English, and then show how they are present in non-Warlpiri speech of Warlpiri in Lajamanu.

KRIOL. Kriol is an English-lexified creole spoken by Indigenous people across northern Australia as a first or subsequent language. It has considerable variation along the lines of region, age, and the degree to which more features of Indigenous languages are present—known as basilectal styles—or more features of English are present—known as acrolectal styles. Individuals show a range of personal styles in terms of these factors.

A basic finite Kriol verbal clause consists of a verb, verbal argument(s), and optionally an auxiliary verb, with SVO word order. Lexical items are usually from English. Transitive verbs take a transitive marker *-im*, which shows allomorphic variation. The origin of the transitive marker is the reanalysis of English third-person accusative pronouns (*him*, *them*) as transitive markers in Australian Pidgin (Koch 2000). Verbs are not inflected for tense, person, or number, but may take affixes to indicate direction or completion (*-ap*), progression (*-ng/-in*), repetition (*-bat*) (Sandefur 1979, Hudson 1983a,b), or emphasis *-na* (Munro 2004). There is an English-derived determiner system (e.g. *det* ‘definite/specific’, from *that*). The phonetic inventory is drawn from English and Indigenous languages, and often phonemes from Indigenous languages replace phonemes from English—for example, stops may replace fricatives, which are not part of the Warlpiri phonemic inventory, as in the definite marker *det* < *that*. Temporal properties are encoded in auxiliary verbs, which are separate words. In contrast to Warlpiri, the auxiliary system does not carry information about person or number.

(20) Det dog **bin bait-im** mi.

DEF dog PST bite-TR 1SG.O

‘The dog bit me.’

(Hudson 1983a:34)

Example 20 shows a transitive verb, determiner, and past-tense auxiliary *bin*. Past tense can also be indicated by *imin* < *im bin* ‘3SG PST’. The auxiliary *garra/gada* can give a future-tense or obligatory-mood reading depending on the context, as in 21 (Sandefur 1979, Hudson 1983a, Munro 2004).

(21) Mela **garra weit-na** bla olgamen.

1PL.EXCL.S FUT/OBL wait-EMPH PREP respected.lady

‘We have to wait for the old lady.’

(Munro 2004:105)

(22) Mela **bin kam-ap** from Junjuwa.

1PL.EXCL.S PST come-up from Junjuwa

‘We arrived from Junjuwa.’

(Hudson 1983a:37)

The completive suffix *-ap* ‘up’ is shown on the verb in 22. Negation is indicated by *neva* or *nomo*.

Linguists working in some communities where Kriol is spoken have said that auxiliary contractions occur in Kriol, specifically *-rra/-da* as a contracted form of *garra/gada* ‘FUT/OBL’ (< English *got to/gotta*) and *-na* as a contracted form of colloquial and Aboriginal English *wana* < *I want to* (S. Cutfield and G. Dixon, p.c.). Many English-derived lexical items have been relexified (Muysken 1981, Lefebvre 1986) so that they have the semantics of Indigenous languages; for example, *kil* in Kriol means both ‘hit’ and ‘kill’.

Kriol has a pronoun system that combines English-derived pronominal forms with person and number distinctions from Indigenous languages, distinguishing singular, dual, and plural number, and inclusive and exclusive in the first person. But acrolectal forms are also used, which have English-like distinctions of subject versus object—for example, *wi* ‘1PL.S’, *as* ‘1PL.O’—rather than the basilectal Kriol distinctions (Sandefur 1979:85–89, Hudson 1983a:43–44). Table 1 summarizes relevant distinctions in the Kriol auxiliary verb system.

| CATEGORY | SUBCATEGORY | KRIOL FORM | ENGLISH GLOSS |
|----------|------------------------|----------------------|-----------------|
| Negation | simple | no, nomo | ‘not’ |
| | emphatic | nat | ‘not’ |
| | | neba | ‘past negative’ |
| Tense | past | bin | ‘past’ |
| Mode | necessity/advisability | garra/gada, -da/-rra | ‘will, should’ |
| | attempt | traï | ‘try’ |

TABLE 1. Relevant distinctions in the Kriol auxiliary paradigm.

ABORIGINAL ENGLISH. Aboriginal English is the term for varieties of English spoken as a first or subsequent language by Indigenous people across most of Australia (in contrast to Kriol, which is spoken mainly in the north), which have features from Kriol, Australian Pidgin, and/or Indigenous languages (Malcolm & Kaldor 1991, Harkins 1994, Koch 2000, Butcher 2008). A speaker’s repertoire typically includes a continuum of styles, some of which could be categorized as either acrolectal Kriol or Aboriginal English (Butcher 2008), so that at some points there is no transparent distinction between the two. Individuals may speak Aboriginal English to both Indigenous and non-Indigenous people. Grammatical structures of Aboriginal English vary considerably according to the geographical region in which varieties are spoken, because of their differing histories and the languages with which they are in contact, as well as the socio-linguistic situations of the speakers. Of relevance to this article are the varieties spoken in northern Australia, where varieties of Kriol are also spoken.

Transitive verbs in northern varieties of Aboriginal English share with Kriol the transitive marker *-im*, with allomorphic variation. Regular verbs are not usually inflected for tense, person, or number, but irregular verbs may be inflected for tense (Butcher 2008). There is usually no copula ‘be’. Temporal and modal information is conveyed through an auxiliary system similar to that of Kriol. A past-tense marker *bin* operates as in Kriol, and *gada/gotta* ‘will/have to’ occur to indicate irrealis and obligatory moods. Contracted affixal auxiliary forms, such as English *we’re*, are not usually described for Aboriginal English. The form [i] ‘3SG’, from English *he*, is used for third singular, regardless of gender or animacy. Negation may be indicated by *neva* or *nomo*, as in Kriol. The affix *-bala* (from English ‘fellow’ via Australian Pidgin (Hall 1943:264)) may occur in pronouns as in *tu-bala* ‘3DU’, and on numerals and adjectives as in *sam-bala* ‘some’ (Hudson 1983a:84). The affix *-wan* (from the English numeral ‘one’) may occur on adjectives as a nominalizer or pronoun form, as in *big-wan tri* ‘big tree’ (Butcher 2008:635). Aboriginal English may use English or Kriol kin-term forms, with the semantics of kin terms in Indigenous languages; for example, *matha* ‘mother’ may refer to a biological mother and also to her sisters. In addition, the meanings of many lexical items are shared with Kriol, including, for example, *humbug* ‘be a nuisance’, *business* ‘traditional ceremony’, *sorry* ‘ritual mourning’, *camp* ‘home’. Aboriginal English words can have a Kriol meaning, an English meaning, or possibly both meanings.

STANDARD AUSTRALIAN ENGLISH. Australian English can be thought of as spanning a continuum of varieties from cultivated (with more features of British Received Pro-

nunciation) to general (here called SAE) to broad varieties, distinguished mostly by vowel pronunciations (Burrige & Mulder 1998:12), in addition to ethnically based varieties, that is, varieties spoken by immigrants as well as Indigenous speakers. The general variety is thought of as the standard, and of course shows internal variation. Teachers in remote schools in the Northern Territory typically speak standard or broad varieties, or use colloquial styles that share features of SAE and broad varieties, such as the alveolar nasal variant [ɪn] of the progressive ending of verbs [ɪŋ], absence of [h] word-initially, and contractions, for example, *wana* for *want to*. Note that all varieties of Australian English are nonrhotic; that is, postvocalic /r/ is not pronounced, except intervocalically across word boundaries—for instance, *car* is pronounced [ka:], but *far away* is pronounced [faɪlwei]. This has resulted in some SAE grammatical structures being indicated by new morphemes; for instance *we're*, the contraction of *we are*, is pronounced [we:] or [wejɹ], and similarly *you're* and *they're* are pronounced [jɔ:] and [ðe:]. The phonological realizations of these forms are therefore not segmented as 'pronoun + auxiliary' (e.g. [we + ɹ]), but instead must be analyzed as a single suppletive morpheme.

THE ENGLISH–KRIOL CONTINUUM IN LAJAMANU. Many of the elements that occur in the non-Warlpiri speech of Warlpiri in Lajamanu are those that are common to both acrolectal Kriol and Aboriginal English, but not all are common to both. In addition, when speaking English, Warlpiri speakers in Lajamanu might produce few or no features of Aboriginal English, and more features of SAE. English pronominal forms are used, with the semantics as described for Aboriginal English above. An English prepositional system is used, with some prepositions taking a Warlpiri case function; for example, *fo/bo*, from English *for*, functions like a Warlpiri dative case suffix. Transitive verbs take a transitive marker, and verbs take affixes for direction and progression, as described for Kriol above. There is often no copula 'be', and verbs are often not inflected for tense, person, or number. TMA information is encoded in Kriol/Aboriginal English auxiliary verbs as separate words, with some contractions. Past tense is indicated by *bin*. The Kriol iterative verbal suffix *-bat* occasionally occurs. Lexical items often carry the semantics of Kriol/Aboriginal English words described above. The first syllable of a word is often stressed, as in Warlpiri.

As elsewhere, the SAE spoken in Lajamanu by non-Warlpiri people is often colloquial in style and contracted forms are common, as in *wana* from *want to*. Colloquial styles of English that share features of general and broad varieties are more common than formal styles. It should not be assumed that the oral English heard at the school is in formal styles, since teachers often speak to children in colloquial styles. These days there is also input from music, films, internet, and television programs in British, American, and Australian varieties of English, although there was little of this input at the time of Light Warlpiri genesis in the late 1970s to early 1980s. At that time government institutions such as the school, health clinic, and police station had radio telephones, but there were no radios or televisions in people's homes.

The Warlpiri have a strong tradition of oral practices, while literacy practices play a relatively small part in their daily lives. We could expect that at the time of the genesis of Light Warlpiri literacy played an even smaller role. Grammatical structures with formal realizations such as *want to*, and written expression of forms such as *we're*, were therefore not reinforced through reading and writing, except in school activities; speakers processed the oral input with little or no influence from written forms.

In this article I use the composite term English and/or Kriol for non-Warlpiri speech of Warlpiri in Lajamanu, because a categorization of it as either Kriol, Aboriginal English, or SAE would not capture the variation that exists. If distinctions between varieties are

relevant, I use Aboriginal English or SAE as needed. It is important to understand the variation within English and Kriol that was part of the input to the innovators of Light Warlpiri, as elements of the innovative auxiliary system can be traced separately to SAE and AE and/or Kriol as input varieties, and the multiple input varieties may be part of the motivation for the dramatic and rapid grammaticalization that took place.

CODE-SWITCHING BETWEEN WARLPIRI AND ENGLISH-KRIOL. Code-switching between Warlpiri and English and/or Kriol is common in the community, and can be divided into two types: (i) adult-adult switching, with variable switching patterns, and (ii) switching in child-directed speech, with switching patterns that resemble the language division in Light Warlpiri: that is, verbal structure from English and/or Kriol, and other elements from Warlpiri (O'Shannessy 2012). When adults who are not Light Warlpiri speakers code-switch, they do not use the full Light Warlpiri auxiliary paradigm, or Light Warlpiri conventionalized verb forms in which Warlpiri verb stems take AE/Kriol affixes. They do sometimes use the irrealis *-rra* 'FUT/OBL' part of the Light Warlpiri paradigm, but so far there are no examples of the nonfuture *yu-m* and *wi-m* forms in the data. When these speakers use AE/Kriol verbs, they typically also use AE/Kriol auxiliaries such as the past-tense *bin* and the future/obligation *garra/gada*. In sentences with Warlpiri verbs, they may use English insertions as preverbs combined with inflecting verbs, most often the inchoative *-jarrimi* and causative *-mani*. They also insert nouns and noun phrases, and switch languages both intra- and intersententially. Example 23, consecutive clauses from one speaker, shows code-switching. Elements from Warlpiri are in italics.

- (23) a. *Yuwayi ngula-rna ngula-janga maridi nyina-ja* 1983
 yes ANAPH-1SG.S ANAPH-ABL married be-PST 1983
 b. an a **bin hab-im** first son Anthony.
 and 1SG.S PST have-TR first son Anthony
 'Yes, then I was married in 1983, and I had my first son, Anthony.'⁴
 (SponWA56_LA55)

The speaker switches from Warlpiri to Aboriginal English between clauses 23a and 23b. In 23a an English word *married* and an English date *1983* are inserted into a Warlpiri sentence. In 23b, the AE/Kriol past auxiliary *bin* occurs with an AE/Kriol verb.

Speakers older than the Light Warlpiri-speaking cohorts also use code-switching patterns that resemble Light Warlpiri in that the verbal component is from English and/or Kriol, as in 24, and most other elements are from Warlpiri, but this pattern is used more often in child-directed speech than in adult-adult speech (O'Shannessy 2012).

- (24) *Marda-rni ka-npa wirriya kuja tak-ing-it yartiwaji camera-kurl.*
 have-NPST PRS-2SG.S boy REL take-PROG-TR picture camera-COM
 'You have a boy who is taking a picture with a camera.' (ERGcardWA40)

In 24 an AE/Kriol verb is inserted into a Warlpiri sentence.

Light Warlpiri was conventionalized when children processed code-switched input with AE/Kriol verbs and auxiliaries in a Warlpiri string as a single system (O'Shannessy 2012). At the same time they grammaticalized elements of the competing input structures to form the new Light Warlpiri auxiliary system.

4. LIGHT WARLPIRI.

4.1. SOCIOLINGUISTIC BACKGROUND. Non-Indigenous people were drawn to the Tanami Desert and Victoria River areas of the Northern Territory to establish cattle stations and to mine for gold. Lajamanu Community, at first called Hooker Creek, was

⁴ Personal names in the examples have been changed for the sake of anonymity.

settled in 1948 (Rowse 1998:147) or 1949 (Berndt & Berndt 1987:264) as part of a government-administrated Aboriginal reserve, by a small group of Warlpiri and some non-Warlpiri administrators (Rowse 1998). In the next few years more Warlpiri came to live there (Meggitt 1962), mostly through forced relocation by the government (Berndt & Berndt 1987). The government imposed centralized communal food preparation and distribution, and the lives of the Warlpiri changed irrevocably (Rowse 1998:161). In the 1950s–1980s, Warlpiri adults worked on surrounding cattle stations, where they mixed with Indigenous people speaking many Australian languages (Berndt & Berndt 1987:264), and Kriol was their common language. Living conditions for Indigenous people on the stations were very poor, and the people were not able to exercise any basic rights (Berndt & Berndt 1987, Rowse 1998). A school was opened in Hooker Creek in 1952 but closed down and reopened in 1956 (Rowse 1998:161). The community is approximately 600 km from the nearest town, Katherine, and has always had minimal access to modern resources. For instance, as noted above, even in the 1980s the Warlpiri in the community did not have telephones, radios, or televisions, and only government institutions had radio-telephones.

The community now has approximately 600 residents, almost all Warlpiri. There are always some non-Indigenous transient residents, such as school teachers, police, health workers, and shop workers. Some Warlpiri adults also work in each of these areas. Very few people now work on cattle stations, and few of those who worked on them earlier are still alive, so Kriol is spoken less often now than it was at the time when Light Warlpiri was formed (M. Laughren, p.c.). There is a local government-run school that has had bilingual education in Warlpiri and English for two periods of several years, but conflicting ideologies about language and education ensure that the Warlpiri continually struggle to be permitted to teach Warlpiri, or to teach in Warlpiri, in the school. In the last few years access to technology in the community has increased, and most families now have cell phones with internet connection, televisions, CD and DVD players, and some have computers. There is access to computers in the school and in the community library.

4.2. STRUCTURE OF LIGHT WARLPIRI. The Light Warlpiri data were collected by me between 2002 and 2010 in Lajamanu Community. The data are approximately 150 hours of naturalistic interactions and elicited production data. Spontaneous interactions between children with other children and their caretakers, and adult-to-adult interactions, were audio- and/or videotaped. The children were aged between approximately two and eleven years. The adult conversations consisted of a local female research assistant talking with other female adults about their personal histories and everyday lives. Elicited production data are stories told by adults and children from picture stimuli (e.g. Mayer 1969, Egan 1986, O'Shannessy 2004).

4.3. PREDICATION IN LIGHT WARLPIRI: VERBAL PREDICATION. The Light Warlpiri verbal system draws on Warlpiri, SAE, and AE/Kriol.

- (25) **I-m** **puk-um** *jilkarla-ng wiyarrpa*.
 3SG.S-NFUT poke-TR thorn-ERG dear.one
 'The thorn poked it, poor thing.' (C01_4_4)
- (26) **Yu-m** **winjirn-im** *hap-wan kuja-ng*.
 2SG.S-NFUT pour/spill-TR half-one thus-ERG
 'You've spilled some of it, like this.' (C03_17)
- (27) *Karlarnjirri* **wi-m** **faind-im** *wita-pawu*.
 long-nosed.dragon 1PL.S-NFUT find-TR small-DIM
 'We found a small long-nosed dragon.' (C04_7)

In 25, the transitive verb has the form and structure of AE/Kriol, with the transitive suffix *-im*. The transitive marker has allomorphs according to vowel harmony with the stem, but the vowel is most often pronounced as a schwa. The word order in 25 is VS, in 26 is VO, and in 27 is OV, and word order in general is variable, and pragmatically ordered (O'Shannessy 2009). Noncontiguous elements of the constituent *karlarnjirri wita-pawu* 'long-nosed.dragon small-DIM' are a property from Warlpiri. (The use of the specific term *karlarnjirri* 'long-nosed dragon' (*Lophognathus longirostris*) rather than a label such as *lizard* shows continuation of Warlpiri ethnobiological knowledge.) In Light Warlpiri the ergative case marker occurs on approximately 60% of overt transitive subjects, most often when there is VO order, and is also taking on a discourse function of highlighting the salience of the agent (Meakins & O'Shannessy 2010). In 25 the ergative marker occurs on a postverbal transitive subject, and probably also highlights the affectedness of the patient. Example 26 shows a transitive verb stem from Warlpiri with an AE/Kriol transitive suffix, and ergative marking on the adverb *kuja* 'thus', as in Warlpiri. The nonfuture/realis verbal auxiliaries *yu-m*, in 26, and *wi-m*, in 27, are the most innovative forms, and are explained in detail below. Lexical items are from both Warlpiri and English and/or Kriol.

As illustrated in 26, a small subset of transitive verb stems in Light Warlpiri are from Warlpiri, with the Kriol transitive marker attached. When these forms were created, the Kriol-like pattern of a transitive affix occurring on transitive verbs was maintained, and the Warlpiri forms were reanalyzed. Recall that sometimes final vowels are omitted from Warlpiri words. Omission of a final vowel from the inflected verb *winji-rni* 'pour/spill-NPST' leaves *winjirn*. The whole consonant-final inflected word was reanalyzed as a stem, *winjirn*, and the transitive affix *-im* attached, to create *winjirn-im* 'pour/spill-TR'. Most verbs in this set do not show any tense distinction, but one verb, *pantirn-im* 'pierce-TR', does sometimes show a vowel change to *panturn-um* 'pierce-TR', which reflects a residue of regressive vowel harmony in Warlpiri inflected verbs (cf. Nash 1986, Harvey & Baker 2005). The verb form with a Kriol transitive marker does not occur in Warlpiri.

The innovative auxiliary system, shown in Table 2, makes use of English and/or Kriol forms and draws on the structures of all of the sources, but shows reanalysis of selected source elements to create a new system (O'Shannessy 2005). The new system shows modal distinctions that are not simply replicas of those in Warlpiri or English and/or Kriol. In addition, the innovators of Light Warlpiri drew some forms and structures from SAE and AE/Kriol, and some semantics and structure from Warlpiri. Within the elements drawn from SAE, one, the desiderative *-na*, is specifically from a colloquial style. This suggests that multiple varieties and styles were present in the sources, and that the innovators were sensitive to distinctions between them.

| FORMS | 1SG | 1PL | 2SG | 3SG | 3PL |
|--------------|-------|--------|--------|-------|--------|
| Nonfuture | a-m | wi-m | yu-m | i-m | de-m |
| Future | a-rra | wi-rra | yu-rra | i-rra | de-rra |
| | a-l | wi-l | — | i-l | — |
| Desiderative | a-na | wi-na | yu-na | i-na | de-na |

TABLE 2. Light Warlpiri auxiliary paradigm.

The grammatical structure of the auxiliary template shows influence from Warlpiri, SAE, and Kriol, in that a pronominal element adjoins a temporal element, with the order pronoun-TMA, as in English *I'm*. In Warlpiri the order of the components is TMA-pronoun, and in nonpast clauses is phonologically realized as two cliticized com-

ponents, for example, *ka-rna* 'PRES-1SG' (except third singular forms that are null). The pronominal elements function in a similar way to Warlpiri subject pronoun clitics, in that they are affixed to a TMA element and show agreement with subjects, whether overt or not. They are unlike the Warlpiri subject clitics in that in Light Warlpiri the pronominal elements can occur without the TMA elements.

In SAE, the pronoun-TMA template is phonologically distinguished only in the contracted first and third singular present constructions, *I'm*, *he's*, *she's*, and *it's*. As discussed above, phonologically, a single suppletive morpheme is present in other contracted present-tense constructions [jɔ:] 'you're', [wɛ:] 'we're', [ðe:] 'they're'. In Aboriginal English and Kriol, the verb 'be' does not usually occur, and accordingly, contracted forms do not occur. Third singular forms such as 'she's going' are therefore realized as *i goli going*. In the Light Warlpiri auxiliary, pronominal forms from English and/or Kriol combine with a modal form, partly from English and/or Kriol, and with some innovations, on a template probably influenced by Warlpiri, SAE, and Kriol, to form the new paradigm.

In Light Warlpiri, the English-derived first-person singular pronoun is pronounced /a/, not /aɪ/. (Warlpiri free pronouns can additionally occur, for emphasis.) The /a/ pronunciation also occurs in Fitzroy Valley Kriol (Hudson 1983a). The *-l* form is a replica of the English contraction *I'll* 'I will'. The *-rral-da* forms occur at least to some extent in Kriol (S. Cutfield, G. Dixon, p.c.) and are derived from the future/obligation auxiliaries *garra/gada* 'will/have to', which in turn are from English *gotta* 'have got to'. When the forms are contracted so that the first syllable *ga* is omitted, the final syllable can be attached to a pronoun, resulting in *a-rra/a-da*. A form *ada* is documented for one variety of Kriol (Sandefur 1979), and presumably it refers to the same *a-rra/a-da* form described here. The desiderative *-na* forms also occur in Kriol (S. Cutfield, p.c.), with reanalysis of *wana* 'want to' and omission of the first syllable, resulting in *-na*. The elements of the future subparadigm *-rral-da* and the desiderative *-na* are attested outside of Light Warlpiri, in some Kriol-speaking communities, but the extent to which they are used, or comprise a subparadigm, is not clear. No systematic study of their use has been conducted to date, and they are not documented in descriptions of Kriol or Aboriginal English varieties, presumably because they are recent regularizations. To my knowledge they were first documented in O'Shannessy 2005 in a discussion of the sources of Light Warlpiri. The contracted future and desiderative forms do occur in a mixed language spoken in a community approximately 110 kilometers from Lajamanu Community, Gurindji Kriol (Meakins 2011b:106), yet recent works on Kriol (Munro 2004, Nicholls 2009) do not include documentation of these contractions. Grammaticalization from a function word to a grammatical affix is a regularly occurring linguistic process (Hopper & Traugott 1993), so it is possible that the contractions arose in several communities of speakers independently, or that they spread through contact between Kriol speakers, or a combination of the two processes.

The irrealis/future constructions in Light Warlpiri appear to have multiple motivations. First, they appear to have entered Light Warlpiri at least partially through contact with Kriol speakers. Second, they may have also undergone processes of grammaticalization within Light Warlpiri. Third, they show structural influence from Warlpiri. Recall that the Warlpiri auxiliary has a TMA-pronoun structure. The contracted Light Warlpiri forms fit neatly over a Warlpiri-influenced structural template in which TMA and pronominal elements are affixed together. Fourth, the realis-irrealis distinction in Light Warlpiri is influenced by the same semantic distinction in Warlpiri, but in Warlpiri there is no one-to-one correlation with forms (Laughren 2012). In Warlpiri, in-

teractions of TMA elements in the auxiliary cluster and verbal inflections show a semantic distinction of actualized versus unactualized events, with the unactualized category further divided into future/potential and irrealis (present and past). The actualized category corresponds to the nonfuture/realis category in Light Warlpiri that is indicated by *-m*, and the two unactualized categories in Warlpiri correspond to the Light Warlpiri categories of future/potential, marked with *-rra*, and desiderative, marked with *-na* (Laughren 2012). Table 3 summarizes the mapping of Warlpiri semantic verbal distinctions onto Light Warlpiri.

| AUXILIARY BASE | VERB FORM | MEANING | FACTIVITY | LW AUXILIARY BASE |
|-------------------|--------------|-----------------------------------------------------------------------|--------------------------------------------|--------------------|
| lpa | past | past imperfective | actualized (factive) | -m 'nonfuture' |
| ∅ | past | past perfective | | |
| ka | nonpast | nonpast | | |
| ∅ | nonpast | permissive/directive; future prediction under negative operator | unactualized (future/potential) | -rra 'future' |
| lpa | irrealis | unrealized in present | unactualized (irrealis) | -na 'desiderative' |
| ∅ | irrealis | unrealized in past | | |

TABLE 3. Auxiliary-inflecting verb combinations in Warlpiri with Light Warlpiri equivalent (Laughren 2012).

The nonfuture/realis *-m* subparadigm shows radical reanalysis that, through incremental changes, results in a categorial dichotomy that is not found in Warlpiri, English, or Kriol structure, though it is present semantically in Warlpiri. The phonological form exists in SAE, in *I'm* (but pronounced [am] in Light Warlpiri), but there is no equivalent form, or formal realis-irrealis distinction, in either AE/Kriol or Warlpiri. The new modal distinction can be traced to elements in the multiple source varieties, which were recombined and reanalyzed. Surface forms with a phonological structure similar to [am] are found in the AE/Kriol pronominal forms *im* '3SG' (from English *him* and *them*) and *dem* '3PL' (from English *them*). These are pronouns, and do not provide any temporal or modal information. Another form with similar structure comes from rapid articulation of an AE/Kriol pronoun followed by the AE/Kriol simple past-tense auxiliary, *bin*: when *a bin* '1SG PST' is pronounced very quickly, the vowel in *bin* and the initial stop consonant are lost, the place of the alveolar nasal assimilates to the bilabial stop, and [am] results. A phonological similarity can thus be seen in the surface forms of *am*, *im*, and *dem*. The *am*, *im*, and *dem* surface forms are reanalyzed on analogy with the structural template of Warlpiri bound pronouns, SAE *I'm*, possibly the Kriol contractions *a-rra* and *a-na*, and possibly the contraction of *a bin* to [a-m], so that they have the structure *a-m* '1SG', *i-m* '3SG', and *de-m* '3PL'. Now there is a partial paradigm, and once it is regularized such that *yu* '2SG' and *wi* '1PL' are added on analogy with the previously existing forms, to create *yu-m* and *wi-m*, a new subsystem exists. At this point we can see how the surface forms were selected from several source varieties, SAE and AE/Kriol, and combined with the structures of Warlpiri, SAE, and Kriol.

Now the question is, how did the *-m* form take on the meaning of nonfuture/realis, when there is not a similar structural category in SAE, AE/Kriol, or Warlpiri? Another question is why the AE/Kriol dedicated past-tense form *bin* was not taken up in Light Warlpiri as a past-tense marker, when it was available in the input. The new distinction can be traced to reanalysis of source elements, structural influence from the sources, and semantic influence from Warlpiri. In Warlpiri past-tense clauses, the TMA element

of the auxiliary form is phonologically null, and this could have been an influence on Light Warlpiri, in that Light Warlpiri speakers rarely use a phonologically realized past-tense marker. In SAE, *-m* (in *I'm*) indicates present tense, and in AE/Kriol *bin* and *imin* indicate past tense. The innovators of Light Warlpiri selected the present temporal component of *-m* from SAE, and the past temporal component of *bin* from AE/Kriol, along with no overt form for past on analogy with Warlpiri, and combined these, creating a nonfuture/realis category that complements the future/irrealis and desiderative categories indicated by the *-rra/-da* and *-na* subsystems. Additionally, the realis-irrealis distinction, with irrealis divided into future/potential and irrealis, echoes that of the actualized/unactualized semantic distinction found in Warlpiri, with unactualized divided into future/potential and irrealis (Laughren 2012).

One might ask why, in Light Warlpiri, only the SAE first singular present auxiliary contraction [m] was selected, and not other contracted forms from SAE, such as second- or third-person forms. There are several motivations. First, as discussed earlier, the phonological realization of SAE first-, second-, and third-person plural pronouns plus contracted auxiliary structure is a single suppletive morpheme, since the nonrealization of the [ɹ] of the auxiliary means that phonologically distinctive pronominal and TMA forms are no longer represented. Third-person singular forms, *he's*, *she's*, and *it's*, do have a phonologically realized auxiliary component in SAE, but third-person singular morphemes are not typically realized in Aboriginal English and Kriol, and there is no copula verb. Additionally, the Warlpiri phonemic inventory excludes fricatives, and the third-person pronouns in Aboriginal English and Kriol are *i* '3SG.S' and *im* '3SG.O', with the fricatives deleted, which might together have biased the speakers against fricative forms in Light Warlpiri. Second, English first-person pronoun and contracted auxiliary forms occur more frequently than second- and third-person forms do. For example, a frequency count taken from spoken texts in the online Corpus of Contemporary American English shows that *I'm* occurs far more frequently than the other contractions, and far more frequently than the uncontracted *I am*.⁵ For these reasons, the [m] form may have been salient to the speakers in a way that the other contracted forms were not.

The new system has not completely replaced the AE/Kriol past and future/obligation auxiliaries *bin* and *garra/gada*. These full forms do sometimes occur in the speech of Light Warlpiri speakers. In the data there are 3,555 Light Warlpiri *-m* auxiliary forms (*a-m*, *yu-m*, *wi-m*, *i-m*, *de-m*), versus forty-three occurrences of *bin*, and 1,107 *-rra* forms (*a-rra*, *yu-rra*, *wi-rra*, *i-rra*, *de-rra*), versus eighty-eight occurrences of *garra/gada*. The high number of *-m* forms is because the morpheme encodes present as well as past tense. It is unclear at this stage whether the older forms indicate code-switches to AE/Kriol, or residue from the AE/Kriol system still present in Light Warlpiri, or a reading of past excluding present. When grammaticalization occurs, older forms usually remain in use alongside the new forms for some time (Hopper & Traugott 1993).

⁵ The relative frequencies of English contracted and uncontracted pronoun + auxiliary tokens in the Corpus of Contemporary American English (spoken) (<http://corpus.byu.edu/coca/>) are given in (i). The total number of tokens is 844,685, and each form is given with the percentage it represents of the total tokens.

| (i) | CONTRACTED | % | UNCONTRACTED | % |
|-----|----------------|----|-----------------|---|
| | <i>I'm</i> | 22 | <i>I am</i> | 3 |
| | <i>we're</i> | 16 | <i>we are</i> | 3 |
| | <i>you're</i> | 14 | <i>you are</i> | 3 |
| | <i>he's</i> | 13 | <i>he is</i> | 3 |
| | <i>they're</i> | 12 | <i>they are</i> | 5 |
| | <i>she's</i> | 5 | <i>she is</i> | 1 |

4.4. PREDICATION IN LIGHT WARLPIRI: NOMINAL PREDICATION. Light Warlpiri is also like Warlpiri in having nonverbal predicators (nominals in Warlpiri). A Light Warlpiri nonverbal clause consists of an auxiliary cluster and a nonverbal element, as in 28.

- (28) Yu-**m** pina.
 2SG.S-NFUT knowledgeable
 ‘You are knowledgeable./You know it.’ (C02_13)

An analogous Warlpiri nominal clause consists of a free pronoun with the pronominal element of the auxiliary optionally affixed to it, plus the nominal, as in 29.

- (29) Nyuntu(-**npa**) pina.
 2SG-2SG.S pina
 ‘You are knowledgeable.’

In the Light Warlpiri construction the TMA element of the auxiliary attaches to an English pronoun from within the auxiliary system, not to a Warlpiri free pronoun. The similarities are that both are nominal clauses and contain an auxiliary element.

5. DISCUSSION. The grammaticalization processes that took place in the genesis of Light Warlpiri are those involved in ordinary contact-induced grammaticalization—extension, desemanticization, decategorization, and erosion (Heine & Kuteva 2005:80). Extension is present in the use of the English present-tense auxiliary contraction *-m* (from *I'm*) for the novel temporal meaning of nonfuture. This is also desemanticization, because *-m* no longer has the specific meaning ‘1SG present tense’ that it has in English. Decategorization occurs when present- and past-tense categories are collapsed to form a nonfuture category. There is erosion of forms—AE/Kriol *bin* eroded through the process of *a bin > abn > am*. This grammaticalization is categorized as contact-induced, rather than as internal to a single linguistic system, because the influences of form and structure are from multiple languages. As shown above, the phonological forms are from varieties of English and/or Kriol, and the resultant structure is influenced by Abo-ri- ginal English and/or Kriol, as well as Warlpiri clitic structure.

In addition to these ordinary contact-induced grammaticalization processes, however, novel forms and structures not seen in any of the sources also very quickly emerged. The innovators saw congruence across different parts of speech and different varieties and styles in the sources, and combined them to produce a new system. The structures and distinctions that emerged are traceable to the source languages, but not all are transparent replicas of source structures. The equivalences across the varieties and styles in the input seen by the innovators motivated the innovations, and in turn, the frequency of occurrence and phonological salience of certain forms could have motivated that congruence. The sociolinguistic context in which oral input plays a major role, with little to no influence of written forms, is also significant here.

The rapid and dramatic innovation in the new system may be partly due to grammaticalization by young children in a complex multilingual context. The process of completing a paradigm is not unusual behavior for young children acquiring a language: children regularize irregular paradigms in nontarget ways in first language acquisition, then later learn the irregularities. For instance, children learning English overgeneralize regular past-tense verb endings to irregular verbs, before later learning the irregular forms (Cazden 1968), and paradigms in other instances of language nativization have also been completed by children (Shnukal & Marchese 1983, Jourdan 1989, 2009). But the innovators of the Light Warlpiri auxiliary system did much more than complete or regularize a partially existing or irregular paradigm—they created a new formal modal

distinction that did not exist in the sources. The congruence seen across different styles and varieties in the input structures led to the children's creating new categories, of which the realis subsystem then required completion. Other documented cases of children completing paradigms have not involved the creation of new temporal or modal distinctions, or entirely new paradigms not seen in the sources. In the genesis of Light Warlpiri, the children had to first reanalyze the input and create a new partial paradigm, then regularize it. Regularization could only take place once reanalysis of the meaning of the *-m* form had taken place.

The kind of innovation in the Light Warlpiri auxiliary paradigm is similar to that seen in the development of pidgins and creoles, in that a part of an existing category was re-analyzed as a structural category of its own. In Light Warlpiri the *-m* element of English *I'm*, combined with the semantics of Aboriginal English and/or Kriol *bin*, creates a novel structural category of realis mood. This appears to be somewhat similar to the processes that resulted in the Balkan languages' postposed article. In the Balkan situation it seems that part of the function of a category of linking article was altered, so that rather than being restricted to linking an NP to its modifiers, it became an article (Lindstedt 2000:238). The similarity with the innovation in Light Warlpiri is that the function of a structure changed in a way that did not have a direct correlate in the sources. In addition, in both situations the new structure combines elements of structures that are found in the sources.

It has been proposed that in mixed languages there is prototypically a split between the source languages such that one is the INFL-language, providing finite verb inflection, word order within the verb phrase, and the typology of clause combining, while the other provides 'unbound, potentially autonomous content' elements, such as negators and deictics (Matras 2003:154–55). This prototype does not allow for the verb phrase to contain core structural elements from more than one source, or radical reanalysis, as seen in the auxiliary component of Light Warlpiri. The Light Warlpiri data show that generalizations about the structures of mixed languages need to be revisited.

Since a new structural category is a result that occurs in pidgins, some creoles, languages in a linguistic area, and in Light Warlpiri, we should ask: what is common to the origins of these situations? The only clear common factor found in all four types of innovative scenario is that of multiple sources in the input. Light Warlpiri, pidgins, and some creoles also share the processes of rapid contact-induced reanalysis, and in the case of some pidgins and creoles, the role of children as nativizers. But convergence in the Balkan linguistic area took place over centuries, at least, and it is not known whether children or adults were the innovators, and child innovation is not a constant factor in pidgin and creole development, since there is unambiguous evidence for it only in some, such as Nicaraguan Sign Language. This leaves multiple source languages, varieties, or styles as the single common factor in the development of a new structural category not found in the sources for which there is evidence. Rapid contact-induced change is an additional factor common to Light Warlpiri and to some pidgins and creoles, but not linguistic areas.

It must be noted that Light Warlpiri differs from pidgins and creoles in several ways. It was formed from within a community of speakers who did not need a new code for communicative purposes. The speakers could have continued to speak Warlpiri and/or English and/or Kriol. A pidgin, by contrast, is formed when there is an immediate communicative need, and is spoken with people who do not speak one's own language. Additionally, Light Warlpiri is not a simplified grammatical system; it is a merging of systems, with innovations. Warlpiri nominal morphology is fairly intact, and where Warlpiri morphology is absent, English and/or Kriol prepositions occur. Pidgins show

less morphology than their sources, when the sources are morphologically rich. Finally, Light Warlpiri has lexical elements from both Warlpiri and English and/or Kriol. Most nominal structure is drawn from Warlpiri, and most verbal structure from English and/or Kriol, while the innovative auxiliary draws on both types of source at every level. In pidgins, by contrast, typically the socially dominant language supplies the bulk of the lexicon, and grammatical structures are supplied by all contributing languages, along with innovations and grammaticalizations (Bakker 2003, Siegel 2004, Roberts & Bresnan 2008). Creoles, which are also not simplified, have the bulk of the lexicon from a lexifier, and grammatical structures from several contributing languages, as well as innovations and grammaticalizations, which may also involve more than one source (Bakker 2003, Siegel 2004, Plag 2005). It is therefore clear that Light Warlpiri is properly placed in the category of mixed language.

This formation of a new structural category in a mixed language, similar to what is seen in pidgins and creoles, suggests that the formation processes of each type of language need not always be completely distinct. While Light Warlpiri is clearly a mixed language, not a pidgin or creole, the fact that the processes involved and the result seen here overlap with those found in pidgins and creoles shows that there are points of intersection between the language types.

In summary, the verbal auxiliary system of Light Warlpiri shows radical restructuring of its source language elements—it has formal modal categories that do not occur in the source languages. Light Warlpiri has the properties of a mixed language, yet the innovation in the auxiliary component resembles that seen in pidgin and creole development, and in a linguistic area. The common factor of origin with pidgins, creoles, and linguistic areas is multiple sources. It may be that when elements of multiple sources combine in the genesis of a newly emerging system, the outcome of a new structural category is likely.

REFERENCES

- ALLEYNE, MERVYN C. 1986. Substratum influences—Guilty until proven innocent. In Muysken & Smith 1986, 301–15.
- ANSALDO, UMBERTO. 2008. Sri Lanka Malay revisited: Genesis and classification. *A world of many voices: Lessons from documented endangered languages*, ed. by Arianne Dwyer, David Harrison, and David S. Rood, 13–42. Amsterdam: John Benjamins.
- ARENDS, JACQUES, and ADRIENNE BRUYN. 1995. Gradualist and developmental hypotheses. *Pidgins and creoles: An introduction*, ed. by Jacques Arends, Pieter Muysken, and Norval Smith, 111–20. Amsterdam: John Benjamins.
- BAKKER, PETER. 1994. Michif, the Cree-French mixed language of the Metis buffalo hunters in Canada. In Bakker & Mous, 13–33.
- BAKKER, PETER. 1997. *A language of our own: The genesis of Michif, the mixed Cree-French language of the Canadian Métis*. Oxford: Oxford University Press.
- BAKKER, PETER. 2003. Pidgin inflectional morphology and its implications for creole morphology. *Yearbook of Morphology* 2002.3–34.
- BAKKER, PETER, and MAARTEN MOUS (eds.) 1994. *Mixed languages: 15 case studies in language intertwining*. Amsterdam: IFOTT.
- BAKKER, PETER, and ROBERT A. PAPEN. 1997. Michif: A mixed language based on Cree and French. In Thomason 1997c, 295–363.
- BAVIN, EDITH L., and TIM SHOPEN. 1985. Warlpiri and English: Languages in contact. *Australia, meeting place of languages* (Pacific linguistics C-92), ed. by Michael Clyne, 81–94. Canberra: Australian National University.
- BERNDT, RONALD MURRAY, and CATHERINE H. BERNDT. 1987. *End of an era—Aboriginal labour in the Northern Territory*. Canberra: Australian Institute of Aboriginal Studies.
- BICKERTON, DEREK. 1981. *Roots of language*. Ann Arbor: Karoma.

- BICKERTON, DEREK. 1984. The language bioprogram hypothesis. *Behavioral and Brain Sciences* 7.173–221.
- BORETZKY, NORBERT. 1993. The concept of rule, rule borrowing, and substrate influence in creole languages. *Africanisms in Afro-American language varieties*, ed. by Salikoko S. Mufwene, 74–92. Athens: University of Georgia Press.
- BRUYN, ADRIENNE. 1996. On identifying instances of grammaticalization in creole languages. *Changing meanings, changing functions: Papers relating to grammaticalization in contact languages*, ed. by Philip Baker and Anand Syya, 29–46. London: University of Westminster Press.
- BURRIDGE, KATE, and JEAN MULDER. 1998. *English in Australia and New Zealand: An introduction to its history, structure and use*. Melbourne: Oxford University Press.
- BUTCHER, ANDREW. 2008. Linguistic aspects of Australian Aboriginal English. *Clinical Linguistics and Phonetics* 22.8.625–42.
- CAZDEN, COURTNEY. 1968. The acquisition of noun and verb inflections. *Child Development* 39.433–48.
- DE GRUITER, MIEL. 1994. Javindo, a contact language in pre-war Semarang. In Bakker & Mous, 151–59.
- DIXON, R. M. W. 1979. Ergativity. *Language* 55.1.59–138.
- EGAN, A. 1986. *Pintaru-kurlu (The quail)*. Yuendumu: Bilingual Resources Development Unit.
- GOLDIN-MEADOW, SUSAN; CAROLYN MYLANDER; and AMY FRANKLIN. 2007. How children make language out of gesture: Morphological structure in gesture systems developed by American and Chinese deaf children. *Cognitive Psychology* 55.87–135.
- GOLOVKO, EVGENIY V. 1994. Mednij Aleut or Copper Island Aleut: An Aleut-Russian mixed language. In Bakker & Mous, 113–21.
- GRANITES, ROBYN JAPANANGKA, and MARY LAUGHREN. 2001. Semantic contrasts in Warlpiri verbal morphology: A Warlpiri's verbal view. *Forty years on: Ken Hale and Australian languages* (Pacific linguistics 512), ed. by Jane Simpson, David Nash, Mary Laughren, Peter Austin, and Barry Alpher, 151–59. Canberra: Australian National University.
- HALE, KENNETH. 1982. Some essential features of Warlpiri verbal clauses. *Papers in Warlpiri grammar: In memory of Lothar Jagst*, ed. by Stephen Swartz, 217–314. Darwin: SIL, Australian Aborigines Branch.
- HALE, KENNETH. 1992. Basic word order in two 'free word order' languages. *Pragmatics of word order flexibility*, ed. by Doris Payne, 63–82. Amsterdam: John Benjamins.
- HALE, KENNETH; MARY LAUGHREN; and JANE SIMPSON. 1995. Warlpiri. *An international handbook of contemporary research*, vol. 2, ed. by Joachim Jacobs, Arnim von Stechow, Wolfgang Sternefeld, and Theo Vennemann, 1430–49. Berlin: Mouton de Gruyter.
- HALL, ROBERT A. 1943. Notes on Australian Pidgin English. *Language* 19.3.263–67.
- HARKINS, JEAN. 1994. *Bridging two worlds: Aboriginal English and crosscultural understanding*. St. Lucia: University of Queensland Press.
- HARVEY, MARK, and BRETT BAKER. 2005. Vowel harmony, directionality and morpheme structure constraints in Warlpiri. *Lingua* 115.1457–74.
- HEINE, BERND, and TANIA KUTEVA. 2005. *Language contact and grammatical change*. Cambridge: Cambridge University Press.
- HOLM, JOHN. 1988. *Pidgins and creoles*, vol. 1. Cambridge: Cambridge University Press.
- HOPPER, PAUL J., and ELIZABETH CLOSS TRAUOGOTT. 1993. *Grammaticalization*. Cambridge: Cambridge University Press.
- HUDSON, JOYCE. 1983a. *Grammatical and semantic aspects of Fitzroy Valley Kriol*. (Work papers of SIL-AAB A-8.) Darwin: SIL, Australian Aborigines and Islanders Branch.
- HUDSON, JOYCE. 1983b. Transitivity and aspect in the Kriol verb. *Papers in Pidgin and Creole Linguistics* (Pacific linguistics A-65) 3.161–76.
- JOURDAN, CHRISTINE. 1989. Nativization and anglicization in Solomon Islands Pijin. *World Englishes* 8.1.25–35.
- JOURDAN, CHRISTINE. 1991. Pidgins and creoles: The blurring of categories. *Annual Review of Anthropology* 20.187–209.
- JOURDAN, CHRISTINE. 2009. Complexification or regularization of paradigms: The case of prepositional verbs in Solomon Islands Pijin. *Complex processes in new languages*, ed. by Enoch Aboh and Norval Smith, 159–70. Amsterdam: John Benjamins.

- KEGL, JUDY; ANN SENGHAS; and MARIE COPPOLA. 2001. Creation through contact: Sign language emergence and sign language change in Nicaragua. *Language creation and language change: Creolization, diachrony and development*, ed. by Michel DeGraff, 179–237. Cambridge, MA: MIT Press.
- KOCH, HAROLD. 2000. The role of Australian Aboriginal languages in the formation of Australian Pidgin grammar: Transitive verbs and adjectives. *Processes of language contact: Studies from Australia and the South Pacific*, ed. by Jeff Siegel, 13–46. Montreal: Les Editions Fides (University of Montreal Press).
- LAUGHREN, MARY. 2002. Syntactic constraints in a ‘free word order’ language. *Language universals and variation*, ed. by Mengistu Amberber and Peter Collins, 83–130. Westport, CT: Praeger.
- LAUGHREN, MARY. 2012. A revised analysis of Warlpiri verb inflections plus auxiliary combinations: Their makeover in ‘Light’ Warlpiri. Paper presented at the annual conference of the Australian Linguistics Society, Perth, Western Australia.
- LEEDING, VELMA, and MARY LAUGHREN. 1979. A report on research of the children’s speech at Hooker Creek (Lajamanu). Northern Territory Education Department.
- LEFEBVRE, CLAIRE. 1986. Relexification in creole genesis revisited: The case of Haitian Creole. In Muysken & Smith 1986, 279–300.
- LEGATE, JULIE ANNE. 2002. *Warlpiri: Theoretical implications*. Cambridge, MA: MIT dissertation.
- LINDSTEDT, JOUKO. 2000. Linguistic Balkanization: Contact-induced change by mutual reinforcement. *Languages in contact* (Studies in Slavic and general linguistics 28), ed. by Dickey Gilbers, John A. Nerbonne, and Jos Schaeken, 231–46. Amsterdam: Rodopi.
- MALCOLM, IAN G., and SUSAN KALDOR. 1991. Aboriginal English: An overview. *Language in Australia*, ed. by Suzanne Romaine, 67–83. Cambridge: Cambridge University Press.
- MATRAS, YARON. 2003. Mixed languages: Re-examining the structural prototype. In Matras & Bakker 2003b, 151–76.
- MATRAS, YARON, and PETER BAKKER. 2003a. The study of mixed languages. In Matras & Bakker 2003b, 1–20.
- MATRAS, YARON, and PETER BAKKER (eds.) 2003b. *The mixed language debate*. Berlin: Mouton de Gruyter.
- MAYER, MERCER. 1969. *Frog, where are you?* New York: Dial Books for Young Readers.
- MC CONVELL, PATRICK, and FELICITY MEAKINS. 2005. Gurindji Kriol: A mixed language emerges from code-switching. *Australian Journal of Linguistics* 25.1.9–30.
- MEAKINS, FELICITY. 2007. *Case-marking in contact: The development and function of case morphology in Gurindji Kriol, an Australian mixed language*. Melbourne: University of Melbourne dissertation.
- MEAKINS, FELICITY. 2011a. Borrowing contextual inflection: Evidence from northern Australia. *Morphology* 21.1.57–87.
- MEAKINS, FELICITY. 2011b. *Case-marking in contact: The development and function of case morphology in Gurindji Kriol*. Amsterdam: John Benjamins.
- MEAKINS, FELICITY. 2012. Which mix?—Code-switching or a mixed language—Gurindji Kriol. *Journal of Pidgin and Creole Languages* 27.1.105–40.
- MEAKINS, FELICITY, and CARMEL O’SHANNESSY. 2010. Ordering arguments about: Word order and discourse motivations in the development and use of the ergative marker in two Australian mixed languages. *Lingua* 20.7.1693–713.
- MEGGITT, MERVYN J. 1962. *Desert people: A study of the Walibiri Aborigines of Central Australia*. London: Angus and Robertson.
- MUFWENE, SALIKOKO S. 1986. The universalist and substrate hypotheses complement one another. In Muysken & Smith 1986, 129–62.
- MUFWENE, SALIKOKO S. 2001. *The ecology of language evolution*. Cambridge: Cambridge University Press.
- MÜHLHÄUSLER, PETER. 1986. Bonnet Blanc et Blanc Bonnet: Adjective-noun order, substratum and language universals. In Muysken & Smith 1986, 41–56.
- MUNRO, JENNIFER. 2004. *Substrate language influence in Kriol: The application of transfer constraints to language contact in northern Australia*. Armidale: University of New England dissertation.

- MUYSKEN, PIETER. 1981. Halfway between Quechua and Spanish: The case for relexification. *Historicity and variation in creole studies*, ed. by Arnold Highfield and Albert Valdman, 52–78. Ann Arbor: Karoma.
- MUYSKEN, PIETER. 1988. Media Lengua and linguistic theory. *Canadian Journal of Linguistics* 33.4.409–22.
- MUYSKEN, PIETER. 1994. Media Lengua. In Bakker & Mous, 201–5.
- MUYSKEN, PIETER. 1997. Media Lengua. In Thomason 1997c, 365–426.
- MUYSKEN, PIETER, and NORVAL SMITH (eds.) 1986. *Substrata versus universals in creole genesis*. Amsterdam: John Benjamins.
- MUYSKEN, PIETER, and NORVAL SMITH. 1995. The study of pidgin and creole languages. *Pidgins and creoles: An introduction*, ed. by Jacques Arends, Pieter Muysken, and Norval Smith, 3–14. Amsterdam: John Benjamins.
- NASH, DAVID. 1982. Warlpiri verb roots and preverbs. *Papers in Warlpiri grammar: In memory of Lothar Jagst*, ed. by Stephen Swartz, 165–216. Darwin: SIL, Australian Aborigines Branch.
- NASH, DAVID. 1986. *Topics in Warlpiri grammar*. New York: Garland.
- NICHOLLS, SOPHIE. 2009. *Referring expressions and referential practice in Roper Kriol (Northern Territory, Australia)*. Armidale: University of New England dissertation.
- O'SHANNESY, CARMEL. 2004. *The monster stories: A set of picture books to elicit overt transitive subjects in oral texts*. (Unpublished series.) Nijmegen: Max Planck Institute for Psycholinguistics.
- O'SHANNESY, CARMEL. 2005. Light Warlpiri—A new language. *Australian Journal of Linguistics* 25.1.31–57.
- O'SHANNESY, CARMEL. 2009. Language variation and change in a north Australian Indigenous community. *Variationist approaches to Indigenous minority languages*, ed. by Dennis Preston and James Stanford, 419–39. Amsterdam: John Benjamins.
- O'SHANNESY, CARMEL. 2011. Young children's social meaning making in a new mixed language. *Growing up in Central Australia: New anthropological studies of Aboriginal childhood and adolescence*, ed. by Ute Eickelkamp, 131–55. Oxford: Bergahn Books.
- O'SHANNESY, CARMEL. 2012. The role of code-switched input to children in the origin of a new mixed language. *Linguistics* 50.2.305–40.
- PLAG, INGO. 2002. On the role of grammaticalization in creolization. *Pidgin and creole linguistics in the twenty-first century*, ed. by Glenn Gilbert, 229–46. New York: Peter Lang.
- PLAG, INGO. 2005. Morphology in pidgins and creoles. *Encyclopedia of language and linguistics*, 2nd edn., ed. by Keith Brown, 304–8. Oxford: Elsevier.
- PLAG, INGO. 2008. Creoles as interlanguages: Inflectional morphology. *Journal of Pidgin and Creole Languages* 23.1.114–35.
- PLAG, INGO. 2009. Creoles as interlanguages: Word formation. *Journal of Pidgin and Creole Languages* 24.2.339–62.
- ROBERTS, SARAH J. 2000. Nativization and the genesis of Hawaiian Creole. *Language change and language contact in pidgins and creoles*, ed. by John McWhorter, 257–300. Amsterdam: John Benjamins.
- ROBERTS, SARAH J., and JOAN BRESNAN. 2008. Retained inflectional morphology in pidgins: A typological study. *Linguistic Typology* 12.269–302.
- ROWSE, TIM. 1998. *White flour, white power*. Cambridge: Cambridge University Press.
- SANDEFUR, JOHN. 1979. *An Australian creole in the Northern Territory: A description of Ngukurr-Bamyili dialects (Part 1)*. (Work papers of SIL-AAB B-3.) Darwin: SIL, Australian Aborigines and Islanders Branch.
- SENGHAS, ANN; MARIE COPPOLA; ELISSA L. NEWPORT; and TED SUPALLA. 1997. Argument structure in Nicaraguan Sign Language: The emergence of grammatical devices. *Proceedings of the Boston University Conference on Language Development* 21.550–61.
- SENGHAS, ANN; SOTARO KITA; and ASLI ÖZYÜREK. 2004. Children creating core properties of language: Evidence from an emerging sign language in Nicaragua. *Science* 305.5691. 1779–82.
- SHNUKAL, ANNA, and LYNELL MARCHESE. 1983. Creolization of Nigerian Pidgin English: A progress report. *English World-Wide* 4.17–26.
- SIEGEL, JEFF. 2000. Substrate influence in Hawai'i Creole English. *Language in Society* 29.197–236.

- SIEGEL, JEFF. 2004. Morphological elaboration. *Journal of Pidgin and Creole Languages* 19.2.333–62.
- SIEGEL, JEFF. 2008. *The emergence of pidgin and creole languages*. Oxford: Oxford University Press.
- SIMPSON, JANE, and ILANA MUSHIN. 2005. Clause-initial position in four Australian languages. *Discourse and grammar in Australian languages*, ed. by Ilana Mushin and Brett Baker, 25–58. Amsterdam: John Benjamins.
- SLOMANSON, PETER. 2006. Sri Lankan Malay morphosyntax: Lankan or Malay? *Structure and variation in language contact*, ed. by Ana Deumert and Stéphanie Durrleman, 135–58. Amsterdam: John Benjamins.
- SMITH, IAN, and SCOTT PAAUW. 2006. Sri Lanka Malay—Creole or convert? *Structure and variation in language contact*, ed. by Ana Deumert and Stéphanie Durrleman, 159–81. Amsterdam: John Benjamins.
- SWARTZ, STEPHEN. 1991. *Constraints on zero anaphora and word order in Warlpiri narrative text*. Darwin: SIL, Australian Aborigines and Islanders Branch.
- THOMASON, SARAH G. 1997a. Mednyj Aleut. In Thomason 1997c, 449–68.
- THOMASON, SARAH G. 1997b. A typology of contact languages. *The structure and status of pidgins and creoles*, ed. by Arthur Spears and Donald Winford, 71–88. Amsterdam: John Benjamins.
- THOMASON, SARAH G. (ed.) 1997c. *Contact languages: A wider perspective*. Amsterdam: John Benjamins.
- THOMASON, SARAH G. 2001. *Language contact: An introduction*. Edinburgh: Edinburgh University Press.
- THOMASON, SARAH G. 2003. Social factors and linguistic processes in the emergence of stable mixed languages. In Matras & Bakker 2003b, 21–40.
- THOMASON, SARAH G., and TERRENCE KAUFMAN. 1988. *Language contact, creolization, and genetic linguistics*. Berkeley: University of California Press.
- VAKHTIN, NIKOLAI. 1998. Copper Island Aleut: A case of language ‘resurrection’. *Endangered languages*, ed. by Lenore A. Grenoble and Lindsay J. Whaley, 317–27. Cambridge: Cambridge University Press.
- VAN RHEEDEN, HADEWYCH. 1994. Petjo: The mixed language of the Indos in Batavia. In Bakker & Mous, 223–37.
- WEINREICH, URIEL. 1953. *Languages in contact*. The Hague: Mouton.

University of Michigan
 440 Lorch Hall
 611 Tappan Street
 Ann Arbor MI 48109-1220
 [carmelos@umich.edu]

[Received 23 April 2012;
 revision invited 23 July 2012;
 revision received 11 February 2013;
 accepted 30 March 2013]