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Code-Switching or Code-Mixing? Tiwi Children's Use of Language Resources in a Multilingual Environment

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Introduction

The ways in which children learn and develop their languages in the multilingual Tiwi Islands off the north coast of Australia do not accord with many of the theories around bilingualism and code-switching. These children use Modern Tiwi as a lingua franca, but both English and Kriol, an English-lexified creole, are also commonly spoken. The children utilise a basic, fairly uniform, grammar alongside a repertoire of language-specific features which they draw upon freely. Such versatility is particularly useful in shaping language for an audience which itself has differing abilities in each of the languages.

The Tiwi Islands consist of two large inhabited islands, Melville and Bathurst, and nine smaller, uninhabited islands. They lie in the Arafura

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Sea, 80 km north of Darwin, the capital of the Northern Territory of Australia. Prior to European settlement, the islands were inhabited by Indigenous Australians, the Tiwi people, who were culturally and linguistically distinct from their nearest neighbours in the north of Australia. Traditional Tiwi, a polysynthetic language isolate, was spoken across the islands, but since their settlement in the early twentieth century, Traditional Tiwi has gradually lost many of its complex, polysynthetic features. What has emerged is a morphologically simplified version of the language called Modern Tiwi (Lee 1987).

Today, the language situation on the islands is complex, as in many places in Indigenous Australia. Indigenous Tiwi children grow up in a linguistic environment in which several languages are spoken. Their family is likely to speak Modern Tiwi at home, but family members will also speak at least one variety of English, either Standard Australian English, Aboriginal English or an English-lexified creole. They may even be proficient in several varieties and switch freely depending on the interlocutor. English is spoken in urban contexts, in the larger townships on Melville and Bathurst, which have relatively large non-Tiwi populations. Thus, by the time Tiwi children begin attending preschool at the age of three, they have already been exposed to a mixture of distinct, although structurally similar, languages.

This language ecology has evolved because, despite their proximity to the mainland, the Tiwi people were almost completely isolated from any other people—Indigenous or otherwise—and hostile to outsiders until the early twentieth century when a Roman Catholic Mission was established. As a result, Traditional Tiwi developed without contact from its closest relatives in mainland Australia, and now cannot be demonstrated to be related to any other Australian language, and is considered an isolate. The last fluent speakers of Traditional Tiwi died in 2012 (Wilson 2013), and the language is no longer in everyday use. The modern version of Tiwi, which is now spoken on the islands, is characterised by a dramatically simplified morphological verb compared with the extremely complex verb exhibited by Traditional Tiwi (Wilson 2013). Its syntactic structure exhibits features similar to English, with an SVO (subject, verb, object) constituent order.

Due to a relatively successful bilingual education programme that ran from the late 1970s until 2008—when the Northern Territory government mandated an English-only education system for the entire territory (see Simpson et al. 2009 for a detailed discussion of this)—almost all Tiwi people of high-school age and above are functionally bilingual in Modern Tiwi and at least one form of English, varying from a basilectal creole variety through to Standard English. The basilectal variety has many features in common with Kriol, the English-lexified creole language spoken in many parts of the mainland Northern Territory, and they may be mutually intelligible, although the Tiwi creole exhibits many local features as a result of its Tiwi substrate influence. Modern Tiwi is the most widely spoken and commonly heard language on the islands. It is the language of most Tiwi households and is the first language of Tiwi children, but is rarely spoken by the non-Indigenous population of the islands, including most doctors, teachers and government employees. Given that most Indigenous Tiwi adults are competent in some variety of English, any interaction involving a non-Tiwi person will take place in English. Tiwi children, therefore, are surrounded by multilingual speakers who have differing competencies in each of these languages.

The extent to which speakers in multilingual contexts integrate their multiple language competencies sits on a continuum. At one extreme is diglossia (Fergusson 1959) where speakers confine different languages to wholly separate domains of use. At the other end are blended languages where speakers can draw freely upon words, morphology and syntax from the different language competencies to which they have access. A degree of code-switching and code-mixing in interaction is inevitable. Definitions of code-switching and code-mixing vary, but code-switching is generally taken to involve speakers using different languages in different conversational turns, while code-mixing occurs when speakers use more than one language within the same turn. Code-mixing itself can vary in degree, ranging from lexical borrowings to, for example, syntactically complete noun phrases (NPs) from two languages, related by a predicate from a third. In general there are practical limitations to the extent that two unrelated languages can mix. For example, although lexical items and, to an extent, morphology from different languages can be used within a

single turn, the blending of syntactically complex expressions—such as the position and formation of embedded subordinate clauses or different relativisation strategies—at the phrasal and clausal levels would quickly become incomprehensible. Various researchers have attempted to develop theories that predict and constrain the nature of code-mixing, but there is some dispute as to what constitutes valid data (e.g., see the discussion below and Jake et al. 2002, 2005; MacSwan 2000, 2005a, b). This same criticism is even more relevant for our own corpus: given the age of the children, we must expect speaker errors, and interpreting their grammatical judgements would be problematic. Nevertheless, there are situations whereby utterances can become so mixed that characterising them as code-mixing might not adequately describe them.

In this chapter we examine a situation that could potentially promote much tighter links between different languages—the speech of young multilingual children. What makes this possible for the children of the Tiwi islands is the relative simplicity of the syntactic structures they use. For example, in the corpus examined in this chapter, a consistent SV(O) word order was observed in nearly all utterances—regardless of the language they used, and there was relatively little bound morphology and only the simplest subordination. We argue that this gives rise to many contexts in which children could draw freely upon the lexicons and morphology of different language stocks to create a blended language—one whose syntactic simplicity and lexical plurality is a virtue as it lends itself to comprehensibility to most hearers, regardless of their proficiency in any one of the source languages.

Background and Methodology

In this chapter, we examine the language used by two 4-year-old Tiwi children in a kindergarten classroom environment. The classroom teacher is a monolingual English speaker, and the assistant teacher is fluent in both Modern Tiwi (hereafter simply "Tiwi") and Kriol and has some competency in English. Tiwi parents also take turns spending time in the classroom.

The children were video-recorded by the first author playing in self-selected groups of between two and five in a corner of the classroom that was fitted with a camera and a microphone. The recording equipment was not hidden, but after some initial interest, the children appeared to forget it was there and began behaving naturally. Intervention from the author was deliberately minimised to ensure naturalistic interaction and language use throughout the data collection. Over ten hours of recordings were collected over a two-month period. Individual interactions within these recordings range from just a few seconds to around ten minutes. The videos were transcribed with the help of Tiwi speakers who are familiar with the children.

In the analysis of code-switching data, researchers can disagree as to what counts as code-switching and what counts as a language error by the speaker. Such judgments assume that the researcher has knowledge of the speaker's linguistic competence—an assumption we cannot maintain given the age of our speakers. As such, we have avoided using grammaticality judgments and elicitation—the data we analyse below is drawn only from the corpus of spontaneous child-driven conversation.

The Children

Of roughly ten children represented in the corpus, several were excluded for reasons such as their reticence to interact with others or their not being long-term members of the community and thus not being representative of Tiwi children. Of the remaining children, two in particular, Shani and Kendra, were selected for our case study as they were highly represented in the corpus in a variety of interpersonal contexts—they interacted with a number of other children—and their linguistic backgrounds make them jointly representative of the entire class.

Shani
Age: 4;1
Sex: Female

Shani is a proficient speaker of both English and Tiwi. Her mother is highly educated, and both Shani and her mother previously lived in Darwin which has contributed to Shani's English proficiency. Her Tiwi is also very good, and she is able to separate her languages with ease. She is a dominant character in the classroom, often telling other children what to do. She also exercises her power over other children frequently by excluding certain children from an activity or reserving a particular toy for her own use. She is the most highly represented child in the corpus.

Kendra
Age: 3;9
Sex: Female

Kendra has only lived in the Tiwi Islands and her language input is almost entirely Modern Tiwi. She is also a very talkative child who communicates with ease in Tiwi, although somewhat less easily in English. Kendra is also very highly represented in the corpus with very high rates of Tiwi in her language.

The Recordings and Analysis

The entire corpus was transcribed, and the language of these two participants was analysed, drawing upon approximately 200 sentences from each child (about a third to a half of the available data). This data was used to develop an understanding of the children's lexicon, morphology and syntax.

One of the methodological difficulties we faced was determining what language a particular word belonged to. For example, in (1) below, the word "shop" is clearly of English origin:

```
(1)  kama   ja    want-im   do-im   ka    shop
     INT    2sg   want-C    do-C    at    shop
     "Why do you want to do it at the shop?"       (Shani-285)
```

However, the word "shop" almost certainly forms part of a child's natural acquisition. As such, calling the word English is overly simplistic. Since Tiwi children are still acquiring language from speakers having differing proficiencies in each of the three languages, and given the lexical

similarities and borrowings between them, our approach was to analyse the data first as it is spoken and only subsequently did we try to determine the language origin of words used.

To determine the language or languages being spoken, we examined word order with respect to the head-word of phrases. For example, if phrases have a different word order when their head verb or noun is a word of Tiwi origin when compared to a word of English origin, we could argue that speakers have access to two different codes. In fact, we found that word order changes very little whatever the apparent source language of the words used. Following work by Myers-Scotton (1993) we also examined functional words or functors to see if we could determine a matrix language. Functional words (such as many determinatives and demonstratives) are "words which essentially serve to mark grammatical properties" (Radford 2007, p. 5). Again we found that the apparent source language of the functional words used had little effect on word order. For example, in the noun phrases below, the word order is always noun-final, whatever the apparent source language of the words:

```
(2)  a.    anginjila     pwaja          ("your money")
     b.    that          money
     c.    your          pwaka          ("your sister")
     d.    nga           baby           ("our baby")
```

In this context we hoped to determine how children integrated their source languages in a naturally occurring language context through an examination of the lexicon, morphology and syntax.

A Syntactic Description of the Children's Language

Lexicon

A review of the data revealed that speakers were not wholly unconstrained in the language they used. For example, verbs were overwhelmingly drawn from English/Kriol (e.g., *swappim*—"swap," *wantim*—"want,"

buyim—"buy," *peepingat*—"peek at," etc.).[1] Likewise count numbers are generally English in their origin. On the other hand, nouns may be drawn from any language (English or Kriol: girl, coin, money; Tiwi: *pwaja*— "coin," *pularti*—"milk," *pwaka*—"sister," etc. See section "Noun Phrases"). Pronouns (see section "Interrogative Pronouns"), both personal and interrogative, are generally drawn from both languages, as are demonstratives (for the most part—see section "Demonstratives") and negators (see section "Negation"). There are few examples of adjectives, but what examples there are suggest they are drawn from both English and Kriol also.

Morphology

In this section we present the findings of our analysis of the morphology used by the two children. We categorise our findings into nominal, pronominal and verbal morphology. Of particular interest is the pronominal morphology where Tiwi pronouns have both bound (and sometimes reduced) and free forms.

Nominal Morphology: -s Plural Morpheme

The *-s* English pluralisation suffix occurs very infrequently in the corpus. In most examples it is used with boy or girl:

```
(3)  ... waya    juwa   girl-s...
         okay    only   girl-pl
     ".... okay, only girls (in here)"          (Shani-561)
```

Note that although *-s* is rare, it is only seen to occur with non-Tiwi nouns. In many situations, the *-s* morpheme is not used, suggesting it is optional:

```
(4)  here   buy-im    two    drin
     here   buy-C
     "Here, buy      two    drinks"             (Kendra-268)
```

Pronominal Morphology

Pronominal forms in Traditional Tiwi are considerably more complex than in Modern Tiwi, both in their form and function. Free pronouns in Traditional Tiwi inflect for four persons (1st, 2nd, 3rd and 1/2) and two numbers (minimal and augmented). They are also further marked for a range of additional meanings (see Wilson 2013 for a fuller description). Modern Tiwi by contrast has a simplified system of free personal pronouns where the entire pronominal system has been refunctionalised from a minimal/augmented system to a singular/plural system (Lee 1987, p. 103; Smith 2008).

The Modern Tiwi pronoun system is therefore structurally more similar to that of English than to Traditional Tiwi. Both English and Modern Tiwi exhibit three persons and a singular/plural number contrast. Additionally, pronouns can be affixed to verbs when functioning as subjects and to nouns when functioning as possessors. Consider the distribution and form of the 1st person pronoun *ngiya* – "I" in (5) and (6) below:

```
(5)  ngiya     laik-im      awungwani
     1sg       like-C       like.that
     "I like (doing) it like that."              (Shani-218)

     negiya-punay
```

```
(6)  1sg-husband ngi-laik-im Justin Bieber ngiya-punayi
     1sg-like-C  Justin Bieber 1sg-husband
     "I like Justin Bieber, my husband!"         (Shani-220)
```

As is clear in (5) and (6), the phonological binding of *ngiya* to the verb is optional, and when bound to a verb or noun, a pronoun's form may be reduced. In (6) we see *ngiya* functioning as a possessor—phonologically bound to the possessee. However, pronouns can also stand apart as in (7):

```
(7)  anginjila    pwaja     palinyini
     2sg.m        coin      sistergirl
     "your money, sistergirl"                    (Shani-215)
```

In section "Possession," we discuss the distribution of these pronouns in possession constructions in more detail.

Verbal Morphology

The verbal morphology used by the children is not complex. The corpus reveals one productive Kriol suffix, *-im*, and two other possibly productive English candidates: *-n't* and *-ing*.

Verbal Suffix -im

Many verbs have the *-im* suffix, a feature of Kriol, which for these speakers acts as either an optional indicator of a complement (usually an object) or alternatively functions pronominally as an object. When a verb has a complement, the *-im* suffix appears to be optional—compare (8) and (9) below:

```
(8)   grab    her     waya
      grab    3sg.f   ok
      "Grab her ok!"                            (Shani-417)

(9)   grab-im    nginja    mwarringa ...
      grab-C     2sg       daughter
      "Grab your daughter!"                     (Shani-542)
```

However, it might be the case that in Kriol the suffix is obligatory, whereas for English, it is omitted. In other words, it is possible in (8) above, that *grab* is English, whereas in (9), *grabim* is Kriol. There is some evidence for this in (10) below where "fight" and "tell" are both transitive verbs with overt objects, but only "fight" carries the *-im* morpheme. This might be indicative of code-mixing within a sentence, as the second clause is closer to Standard English:

```
(10) ajirri  fight-im  ngiya  I    tell  my        brother
     neg     fight-C   1sg    1sg  tell  1sg.poss  brother
     "Don't fight me! I'll tell my brother..."     (Shani-225)
```

However, in (11) below, we could expect (given the context) that both verbs come from the same stock—here it appears likely that the *-im* suffix is optional:

```
(11)   open    clos-im
       open    close-C
       "Open, close (it)"                           (Shani-014)
```

Note that when the *-im* suffix is present, as in (12), an overt object or complement is not required:

```
(12)   aga     put-im    ka     pocket    pocket
       hey     put-C     in     pocket    pocket
       "Hey! put (it) in (the/your) pocket!"        (Shani-097)
```

Possible Verbal Suffix -ing

The *-ing* suffix is very rare in the corpus. Nearly all instances of its use appear to either be frozen (13) or in a fixed expression (14). Note that auxiliary *be* in (14) is optional and is also very rare in the corpus:

```
(13)   … nuwa    peepingat    awungaji    tami
         2pl     peek         there       right
         "You peek there (out the window), right."  (Shani-133)
```

```
(14)   what    (are)    you    doing?
       INT     be       2pl    do-ing
       "What (are) you doing."                      (Shani-024/025)
```

Possible Verbal Suffix -n't

The *-n't* suffix (indicating negation) is very rare and only occurs on the lexemes "don't" and "can't":

```
(15)   ... don't touch                              (Shani-038)
```

```
(16)   can't rip it                                 (Shani-056)
```

There is only one instance of "can" appearing without *-n't* in the corpus suggesting that *-n't* has not been analysed as a bound morpheme by the children.

Syntax

In this section, we investigate whether the speakers make substantial changes to the word order of their utterances depending on the origin of the words they use.

Characterisation of Syntax

In terms of gross word order, the children used SVO word order with head-final NPs. Examples (17) and (18) illustrate a transitive and ditransitive construction:

```
(17)  I       scann-im   bread
      1sg     scan-C     bread
      "I scan the bread"                          (Shani-067)


(18)  give    ngiya      change!
      give    1sg        change
      "Give me change!"                           (Shani-273)
```

Identity (see (19), (20)) and locative (see (21), (22)) constructions are formed, almost uniformly, without the use of a copula:

```
(19)  who     ja-naringa
      INT     2sg-mother
      "Who is your mother?"                       (Shani-028)


(20)  she       my          sister …
      3sg.f     1sg.poss     sister
      "She is my sister"                          (Shani-191)


(21)  here    my      money
      DEM     1sg     money
      "Here is my money"                          (Shani-056)


(22)  arra      naki
      3sg.m     DEM
      "here it is"                                (Shani-214)
```

Subject pronouns can optionally be fused to the front of a verb. Given that the same form of the pronoun is used (though occasionally reduced), and that word order is not substantially changed, the word order might be characterised as SVO or Spro-VO. This difference is contrasted in (23), (24) and (25) below where *ngi-* is a phonologically reduced form of *ngiya* – "I":

```
(23)  … ngi-laik-im    Justin    Bieber …
         1sg-like-C
         "I like Justin Bieber"                  (Shani-220)


(24)  ngiya    laiki  ...
      1sg      like
      "I like (him)..."                          (Shani-222)


(25)  kiyi   ngiya   ringimup   my        sister
      then   1sg     ring.up-C  1sg.poss  sister
      "then I ring up my sister"                 (Shani-190)
```

For the few verbs of clear Tiwi origin, word order remains unchanged. Here, Shani is referring to a shared living space:

```
(26)  arra      payipayi   kapi-nuwa   tami
      3sg.m     sleep      with-2pl    right
      "He's sleeping with you lot, right?"       (Shani-513)
```

The language origin of noun phrases and pronouns has no influence on their position within the clause. Representative sentences are shown below. Note especially the ditransitive examples in (31):

```
(27)  kiyi   ngiya  ringimup   my        sister  Courtney
      then   1sg    ring.up    1sg.poss  sister  Courtney
      "Then I ring up my sister Courtney"        (Shani-190)


(28)  you    want-im    baby
      2sg    want-C     baby
      "You want the baby"                        (Kendra-398)
```

```
(29)  ja     count    ngiya
      2sg    count    1sg
      "You count me (too)"                     (Kendra-245)


(30)  she    bin     takimiji    ngiya ...
      3sg.f  PST     run.over    1sg
      "She ran me over (on her bike)"          (Shani-112)


(31)  a.    Give    her      pularti
            give    3sg.f    milk
            "Give her milk"                    (Shani-543)
      b.    give her that money now            (Shani-007)
      c.    ja     give    ngiya    warra    pwaja
            2sg-   give    1sg      DEM      coin
            "You give me that money"           (Kendra-267)
```

Demonstratives

Demonstratives are mainly from Tiwi, although there are some examples
derived from English:

```
(32)  ja     payipayi    with    naki    pillow
      2sg    sleep       with    DEM     pillow
      "You go to sleep with this pillow"       (Kendra-529)


(33)  kapirra    yinkiti    niki
      INT        food       DEM
      "Whose food is this?"                    (Kendra-123)
```

Although Tiwi *naki/niki* is preferred for proximal demonstratives (as in
(32) and (33)), some examples with English *this* do exist, as in (34):

```
(34)  kapi    this    side
      on      DEM     side
      "on this side"                           (Shani-485)
```

For distal demonstratives, either Tiwi *awarra* or English *that* can be
used. Where English *that* is used, the head N tends to be from English

lexical stock (such as in (36))—although there are rare examples of English *that* co-occurring with a Tiwi head N (e.g., (37)):

```
(35)  a.    Awarra    cubby cubby    house
            DEM.m
            "That cubby house"                  (Shani-075)
      b.    … awarra majatawini
            DEM.m     policeman
            "...  that policeman"               (Kendra-315)

(36)  don't  touch-im   that's   you   baby ...
      NEG    touch-C    DEM-be   2sg   baby
      "Don't touch him! That's your baby..."    (Shani-111)

(37)  what-s    that    jakulani
      INT-be    DEM     turtle
      "What's that turtle?"                     (Kendra-025)
```

Finally, in a few examples where Tiwi demonstratives are used, they can occur after the head noun rather than in the DEM+N word order typically seen in the data. This inverted word order is not observed with English demonstratives:

```
(38)  laik-im    baby    awarra …
      like-C     baby    DEM
      "(he) likes that baby"                    (Kendra-375)
```

Interrogative Pronouns

The interrogatives used by the children provide excellent examples of blended language. Their utterances are rich in interrogatives, both from Tiwi and English. Many of them (see (41)–(43) below) are used inter-changeably with no discernible impact on word order:

```
(39)  a.    Kamini    ngiya    number...
            INT.m     1sg      number
            "What's my number?"                 (Kendra-136)
      b.    What you want?!
            "What do you want?!"                (Kendra-117)
```

```
(40)  a.    Kapirra    want-im    play    holey
            INT        want-C     play    holey
            "Who wants to play holey?"              (Shani-315)
      b.    who        ja-naringa?
            INT        2sg-mother
            "Who is your mother?"                   (Shani-028)


(41)  a.    where you?
            "Where are you?"                        (Kendra-054)
      b.    maka    ju-pwaka,        cry
            INT     2sg-sister       cry
            "Where is your sister? Crying."         (Kendra-008)
```

"When" is rarely used in the corpus—*karri* is preferred:

```
(42)  karri  baby  owl  im   go   mwaliki...
      INT    baby  owl  3sg  go   bathe
      "When the baby owl has a bath..."           (Kendra-110)
```

In the entire corpus, only the Tiwi interrogative, *kama*, was used to question reasons—*why* does not occur:

```
(43)  kama  ja   want-im   do-im   ka    shop
      INT   2sg  want-C    do-C    at    shop
      "Why do you want to do it at the shop?"     (Shani-285)
```

In contrast, to question manner, only *how* was observed. The example below uses *how* functioning as a determiner, but other children used it as a full interrogative pronoun:

```
(44)  how many     ngiy-ab-im-ana?
                   1sg-have-C-question
      "How many do I have?"                       (Shani-146)
```

Finally, there is a Tiwi suffix *-ana* which is derived from a Traditional Tiwi interrogative enclitic (Wilson 2013, p. 62). This suffix can attach to phrase-final nouns or verbs to convert the entire utterance into a question, as in (44) above, and can freely attach to words of any origin:

```
(45)  you     want    that    money-ana?
      2sg     want    DEM     money-question
      "Do you want that money?"              (Kendra-407)
```

In nearly all utterances, the syntactic structure of the clauses is fixed. However, there are a few cases of possible evidence of syntax being blended to accommodate multiple lexemes from different languages. For example, in (46) below, interrogative pronouns from both English and Tiwi are used in a locative construction. Interestingly, the English pronoun is formed with the verb *be*—a rare occurrence for these speakers, whereas the Tiwi locative interrogative pronoun *maka* is fused to a pronoun:

```
(46)  where's  mak-arra     bandaid
      INT'be   INT-3sgm     bandaid
      "Where is the bandaid"                 (Shani-050)
```

Noun Phrases

Complex NPs (those which include more than one word) have a syntactic structure that mirrors the English order of determiner, modifier and head—regardless of the lexical stock being used (although note rare counter examples such as (38) above). The bracketed NPs in (47) and (48) below are exclusively formed from Tiwi and English lexemes, respectively:

```
(47)  ja     give    ngiya    [warra  pwaja]
      2sg    give    1sg      DEM     coin
      "You give me that money"               (Kendra-267)
```

```
(48)  Give   kurijipa   one    [money   chocolate]
      give   Chris      one    money    chocolate
      "Give Chris one chocolate coin"        (Shani-073)
```

Speakers can use words of different stock within NPs as well. In (49) below, *pwaka* "sister" is the head of the NP with the determiner *your*. However, in (50) Shani uses a Tiwi possessor with an English head noun:

```
(49)  ngiya   savim   naki   for  [your    pwaka]
      1.sg    save.C  this   for  2.poss   sister
      "I save this for [your sister]"          (Shani-440)
```

```
(50)  pwaja    [ nga    baby ]
      coin     1pl      baby
      "money (for) [our baby]"                 (Shani-409)
```

Similarly, in (51), Shani uses a Tiwi adjective to modify an English noun:

```
(51)  here   arrikulani   money
      here   big.m        money
      "Here is big/lots of money"              (Shani-072)
```

Sentence (52) is interesting as it shows how two semantically equivalent expressions in different languages (*pwaja*—"coin change" and the equivalent noun in English) are being used to form a new compound noun:

```
(52)  give    me    change pwaja
      give    1sg   change coin
      "Give me change!"                        (Shani-266)
```

Finally, pronouns from either Tiwi or English can be used, apparently interchangeably:

```
(53)  I can't breathe, ja can't breathe
      "I can't breathe, you can't breathe."    (Kendra-051)
```

Possession

Possession constructions are formed by the apposition of two nouns—the possessor and the possessed:

```
(54) awi  nyirra  mind-im  mind-im  nyirra-mpwaka
     hey  3sg.f   mind-C   mind-C   3sg.f – sister
     "Hey!, she minds her sister."             (Shani-436)
```

When Tiwi pronouns occur in possession constructions, they are usually form-identical to their free counterparts (as in (57)). However, they can be reduced and phonologically bound to the possessee as in (58) below:

```
(55)   anjirrayi  ngi-mpwaka
       DEM        1sg-sister
       "That's my sister"                      (Kendra-030)
```

When English possessors are used, both possessive pronouns (such as "my") and regular pronouns are used:

```
(56)   ngiya  ringimup  my        sister  Courtney …
       1sg    ring.up   1sg.poss  sister  Courtney
       "I ring up my sister Courtney"          (Shani-190)
```

```
(57)   checkimat    there   you    pocket
       look         DEM     PRO    pocket
       "Check your pocket there"               (Shani-484)
```

Speakers can use pronouns from either language in possession constructions, as the near minimal pair below, spoken in sequence, demonstrates:

```
(58)   give    me    injila    hand
       give    1sg   2sg       hand
       "Give me your hand"                     (Shani-055)
```

```
(59)   give    me    your      hand    awungwarra
       give    1sg   2sg.poss  hand    here
       "Give me your hand here"                (Shani-056)
```

Verb Sequence

While there is insufficient evidence to support the existence of a syntactic verb phrase consisting of the verb and its complements, there is evidence for the development of a fixed-order grouping of inflectional verb ele-

ments. This sequence, which is similar in order to its English/Kriol counterpart, is schematised in (60):

```
(60)   Verb Sequence:     (NEG) (AUX) Verb
```

The negator element can be either English or Kriol in origin (see section "Negation"), and the auxiliary can be either *raydi*—"allow," *can't* or *should*. All express deontic modality:

```
(61)   awi   nuwa   karluwu   raydi   come   awungwarra
       Hey   2pl    NEG       allow   come   here
       "Hey! You're not allowed to come here!"     (Kendra-332)

(62)   Shani   you   should   grab-im   baby
       PN      you   should   grab-C    baby
       "Shani  you should grab the baby"           (Kendra-389)
```

Negation

Verbal negation is accomplished through the use of either Tiwi *karluwu* or *no/not*:

```
(63)   ja    karluwu   raydi   ask   her
       2sg   NEG       allow   ask   3sg.f
       "You are not allowed to ask her."           (Kendra-407)

(64)   no,   payipay   not   mek-im   noise
       IJ    sleep     NEG   make-C   noise
       "No, (she's) sleeping, don't make noise"    (Kendra-420)

(65)   no-ku    after   school   tami
       NEG-go   after   right    TAG
       "(we) won't go after school right?"         (Kendra-71)
```

As these examples illustrate, the language origin of either the negator or the verb it modifies have no effect on its syntactic position. In (66), the negator *ngajirri* is used in the same position—however it is limited to imperative clauses:

```
(66)   … ngajirri    look       ngiya …
         NEG         look.at     1sg
         "... don't look at me ..."              (Kendra-211)
```

Within an NP, *no* can also function as a determiner:

```
(67)   no     biscuit    today
       NEG    biscuit    today
       "No biscuit today"                        (Shani-126)
```

Discussion

Lexicon

For the most part, the children use Tiwi and English/Kriol words interchangeably. English functional words tend to be associated with other English lexemes, although this is by no means a rule, and there are numerous and widespread counter examples as discussed above. This same tendency of collocating words of the same stock was observed for Tiwi functional words as well. This supports the view that the language the children speak cannot be considered a truly homogeneous blend of their source languages, especially as their choice of verbs is largely constrained to English/Kriol. However, in most other respects, speakers draw upon words from English/Kriol and Tiwi in a largely unconstrained manner, choosing an English/Kriol lexeme or its Tiwi counterpart freely (e.g., see (57) and (58)).

Morphology

As noted above, most verbs used by the children were of English or Kriol origin, but it was not possible to use the *-im* morpheme as a diagnostic to identify a candidate verb as being English or Kriol in most instances. This is because the morpheme may be optional in the children's version of Kriol or because it might be used as a register feature, suffixed to verbs to make them more Kriol-like. Only a limited number of verbs had Tiwi origins, and of these verbs, only *kunyani* "pretend,"

awani "fight" and perhaps *yoyi* "dance" might be expected to be able to take the *-im* suffix because the other verbs used were intransitive. Nevertheless, the fact that these verbs haven't been recorded with the *-im* suffix suggests that speakers can differentiate between Tiwi and non-Tiwi verbs.

It has long been recognised that children as young as two, when raised in a multilingual environment, are able to distinguish between words from different language stocks based upon their phonemic properties (Meisel 1989; Paradis 2001). As such, we would expect our speakers to retain language-specific morphology—and to an extent this is what we observed. For example, Tiwi pronouns in possession constructions were more likely to be bound forms when the word to which they attached was also Tiwi. Given that speakers are aware of the different word stocks, such behaviour is not unexpected. However, the etymological origin of any particular word does not have a profound effect on its associated morphology—and hence its usage. This is because most bound morphemes carrying functional information can also stand freely. That is to say a prefix can also stand unchanged as a pre-head modifier with exactly the same function, and these free morphemes can be used with lexemes from any word stock. This factor, combined with both the scarcity of bound morphemes, and the optionality of those that are used, limits the use of morphology as a means of differentiating the languages.

An analysis of the morphology shows that, to a limited extent, speakers are aware that the different lexemes they use can come from different languages. However, the impact of the ways in which morphology affects how speakers structure their language is almost non-existent, as morphological choice causes no gross changes in either word order or meaning. In other words, morphology does not act as significant motivation for speakers to compartmentalise their languages.

Syntax

While it might be tempting to consider English as the substrate for the children's language given the undeniable influence of English (e.g., in SVO word order, head-final NPs and the development of a fixed order of

verbal elements), there are also very stark syntactic differences between the children's language and English such as zero-copula identity and locative constructions and appositional possession constructions. Interrogative and negated constructions are also formed quite differently from their English counterparts. Some of these features are probably reflective of the young age of the children, and we can expect that as they age, a more fully developed system for expressing tense and other verbal grammatical categories will emerge. However, other features are likely to be more stable; for example, the possession, identity and locative constructions are both expressive and rigid in their formation.

Summary

In understanding how these children use their language, two alternatives present themselves. Firstly, the children could be speaking one language with many borrowings; alternatively the children could be code-mixing—that is, each clause can be assigned a matrix language, but within each clause, there may be borrowings or entire phrases from another language inserted.

These options have been discussed extensively with respect to adult speakers. Code-mixing theories aim to provide limits to what we might expect to see, and not see, in language mixing. MacSwan (2000) critiques many of these in detail and observes that some theories of code-mixing require a "third grammar" (e.g., Poplack 1980, 1981; Joshi 1985). By this he means that the interaction of the source languages is dictated by a third grammar that controls how the languages may be mixed. MacSwan dismisses these theories on the basis of scientific parsimony (in this case, that a theory explaining code-mixing without using "third grammar" is preferred).

Other theories posit a matrix language for a particular sentence which constrains how other languages may be utilised. For example, Di Sciullo et al. (1986) argue that the language of the complements of a phrase must match their syntactic head. Similarly, Myers-Scotton (1993) argues that the matrix language dictates the word order of a sentence/phrase and requires that functional morphemes be drawn from the matrix language while content words can be drawn from any language.

We set out to determine the extent to which these children have integrated their source languages through an examination of the lexicon, morphology and syntax of their language. Overall, a picture has emerged of a language with quite different properties from those discussed above. We found a language with a consistent syntactic structure that borrows lexemes (both lexical and functional) relatively freely from all its source languages. The view we take is that the children's linguistic repertoire draws upon all three languages—conditioned by awareness that some features are more English-like, Tiwi-like and Kriol-like. This view is not incompatible with work by MacSwan (2000) who claims that there is no matrix language (contra Myers-Scotton and Jake 1995, 2000), arguing instead that "Nothing constrains code-switching apart from the requirements of the mixed grammars" (MacSwan 2000, p. 43). That is to say, unless the grammars of the source languages clash with respect to, for example, word order or complementation, any kind of variation may be allowed.

One of the benefits of MacSwan's model of code-mixing is that it does not need to be modified to account for code-mixing used by children acquiring language in a multilingual environment. In fact, it predicts that early in acquisition, code-mixing by children should be more pronounced. As their grammars become more complex, and thus more likely to clash, opportunities for code-mixing should become more limited.

One of our key findings is that the lexical stock of any particular word has little impact on syntax (in the sense that word order is largely insensitive to the origins of the words used). It is not just that words from different languages are used. Rather, speakers can draw upon lexemes carrying functional information such as pronouns (both anaphoric and interrogative), demonstratives, adverbs and prepositions from either Tiwi or English/Kriol almost without limitation, and the source language of the lexeme they choose has virtually no impact on syntax. For example, possession, negation, identity and interrogative constructions are formed identically, regardless of the word stock of the lexemes used in their construction. For children acquiring related languages (such as Kriol and English) or children who employ similar word orders (such as for all three languages) and with limited morphology, we believe that the sort of blending that we have observed supports MacSwan's model.

Conclusion

By drawing upon lexical, morphological and syntactic evidence, our view is that the two children who are the focus of this study use a language with fixed syntactic rules, but one that utilises lexemes from any of the source languages. Speakers are aware that these lexemes come from different lexical stocks. However, in speakers' utterances, lexical choice is mostly free in two senses. Firstly, most lexemes have an equivalent in all the source languages—and aside from verbs, a speaker can choose freely between them. Secondly, their choice of lexeme, whether English/Kriol or Tiwi, has, at most, very minor syntactic and morphological implications (at least at this stage in their language acquisition). If we consider the mixing of codes in a multilingual environment as a continuum, our speakers are unusual in that they are nearer to the extreme of code-blending. That this is possible is due to the relatively simple (although age-appropriate) syntactic structures they have developed and the fact that they have preserved and used equivalent lexemes from multiple languages.

The data we have observed is in line with the work of MacSwan (2000), who argues that code-mixing is constrained only by conflicting requirements of the source languages. Given the syntactic similarity of the languages at this stage of acquisition, the limited morphology and maintenance of key functional lexemes across all three languages, speakers have available to them a range of forms from only partially demarcated languages. This leads to an extensive multilingual repertoire of linguistic strategies. It is predicted that as the grammars differentiate, code-mixing will be more limited and more clearly defined. Note that beyond these syntactic constraints, there will be additional requirements dictating which variant of a word (in terms of word stock) speakers will use at any given moment. Equivalent lexemes and morphology from different languages are best understood as variants speakers can choose from, and their particular choice is likely to be conditioned by social and pragmatic factors such as audience design, context and individual identities.

The two children in this study demonstrate a capability with language which tends not to occur in contexts without community multilingualism. The children whose language we examined draw on their language

resources with competence and confidence and are able to use a wide range of different lexemes and morphology in their conversations. It is clear, then, that the children come into the preschool classroom with access to multiple language resources. However, once they arrive in the classroom, the expectation is, increasingly as they go through the formal school system, that they will learn and use Standard Australian English. Yet as this study has shown, their linguistic repertoire is wide and varied upon arrival. It is important, therefore, that those who work with children who have these language skills understand the extent of the language abilities they already have and build upon this already very strong foundation.

Notes

1. The *-im* ending is a Kriol suffix, usually analysed as a marker of transitivity. See discussion in section "Verbal Suffix -im" below.

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