
**V Transfer of function, structure, distribution
and semantics**

Denise Angelo and Eva Schultze-Berndt

8 Beware *bambai* – lest it be apprehensive¹

Abstract: The aim of this paper is to draw attention to the use of the Kriol particle *bambai* as an apprehensive, i.e. a main clause modal marker indicating that an event will potentially occur but is undesirable, with associated pragmatics of warning or threat. This use is considered an extension from the temporal/sequential function of this particle that is widespread in creole languages of the Pacific, including Kriol. We consider two potential motivations for this functional extension: substrate influence and independent grammaticalisation. The first is plausible insofar as dedicated apprehensive markers are a common trait in Australian languages, including in those that are currently in contact with Kriol and/or have previously been considered potential substrate languages, such as in the account of creolisation for Roper Kriol by Munro (2004). Apprehensive markers are also found in languages which could have influenced the precursor pidgins in New South Wales and Queensland as they expanded northwards towards the Northern Territory. In fact we show that the apprehensive function of *bambai* is more widely distributed in pidgin and creole languages of Australia and the Pacific than previously assumed, which could even point, potentially, to an earlier development in Australia. The possibility of independent grammaticalisation cannot, however, be excluded, since parallel developments of temporal markers to apprehensive markers are attested in a number of geographically distant and unrelated languages. The plausible link between the two functions is the semanticisation of an invited inference from ‘event about to occur’ to ‘event to be avoided’. We conclude that these two motivations are not necessarily mutually exclusive, but that both are consistent with the idea of instantaneous grammaticalisation through substrate influence in creole genesis. This paper thus contributes to our understanding of potential diachronic sources of the cross-linguistic category of apprehensive as well as to an analysis of this function in the Kriol modal system and its origins, and a more nuanced picture of regional variation in Kriol temporal and modal expressions.

¹ As young, green linguists new to the Northern Territory in the beginning of the 1990s, we were both in awe of Patrick’s encyclopaedic knowledge about aspects of Aboriginal languages and cultures. We benefited from Patrick’s many, generous and encouraging conversations as we passed through Darwin. Patrick also convened the Top End Linguistics Circle (TELC) during the 1990s and made it a welcoming venue for all of us who passed through. We hope this paper will be considered by Patrick as a fitting tribute to his long-standing interest in the mechanisms and outcomes of language contact.

1 Introduction

In this paper we will present evidence for a semantic extension of the temporal marker *bambai* ('soon', 'later', 'then') to the function of an apprehensive modal expressing undesirable possibility, in at least some of the varieties of Kriol spoken across northern Australia. An example is (1), where *bambai* occurs in the spontaneous Kriol translation of a Ngarinyman clause featuring a dedicated apprehensive marker; note that both the Ngarinyman and the Kriol clauses have main clause status.

Ngarinyman (Ngumpin-Yapa, Pama-Nyungan; Northern Territory) (line 1) and Kriol (line 2):

- (1) **Ngaja**=ngali bayalan guliyan garraga.
APPR=1DU.INCL bite:PRS dangerous frill-necked.lizard
 It might bite you and me, the dangerous frill-necked lizard.
Bambai hi bait-im mi.
APPR 3SG.S bite-TR 1SG.O
 It might bite me. (Westside/Timber Creek; ER, Ngarinyman field notes
 ESB, 1994)

Kriol is an English-lexified creole language that exists as a chain of dialects ranging from the Kimberleys in the west to the Gulf of Carpentaria in the east. Local varieties of Kriol are recognised by speakers and are described under a variety of geolocational epithets by linguists, such as Roper River/Ngukurr Kriol, Bamyili/Barunga Kriol, Katherine Kriol, Daly River Kriol (or Ngan'giwatyfella), Westside Kriol, Fitzroy Valley Kriol, Kimberley Kriol, Barkly Kriol or Wumpurrarni English (Meakins 2014: 379–380; Schultze-Berndt, Meakins and Angelo 2013).

Our data for this paper come mainly from Westside varieties of Kriol (around Timber Creek, west of the Victoria River) or from Eastern varieties of Kriol recorded in Binjari (an Aboriginal community just to the west of Katherine), further east in Barunga (an Aboriginal community and former government reserve called Bamyili in central Arnhem Land), and nearby Beswick (also known as Wugularr), Jilkminggan (formerly Djembere, an Aboriginal community at the headwaters of the Roper River) and Ngukurr (formerly the Roper River Mission) (see Map). Where not otherwise indicated, examples come from spoken language recorded by one of the authors. The Kriol data consist of audio-recorded spontaneous spoken discourse and some written or planned spoken sources such as school texts (predominantly from the former bilingual Kriol-English program at Barunga), health video voice overs undertaken by a Kriol interpreter from Ngukurr and a

Kriol bible translation,² *Holi Baibul* (Bible Society in Australia 2007). We will also draw on published accounts of other Kriol varieties as well as first-hand or published data from traditional Australian languages including speakers' direct translations from their traditional language into Kriol. It should be kept in mind that our data cover all age groups in non-Westside Kriol data, but on the Westside it is based largely on recordings with older speakers who would have acquired one or more traditional languages before, or alongside, Kriol. Excluding the Kriol bible translation, our examples of *bambai* amount to 75 in total, of which 35 exhibit the apprehensive function.

Our findings are in contrast to those of Munro (2004: 135; 2011: 475) who finds no evidence for the apprehensive category in the Roper Kriol variety, although she does identify it as one of the “semantic features” shared by all local substrate languages present at the Roper River Mission site in their tense/mood systems, and therefore as a likely candidate for transfer into Roper Kriol. In addressing the question of whether the apprehensive use of *bambai* in Kriol is a case of substrate influence, or alternatively the result of independent grammaticalisation processes, we suggest it is most likely a combination of the two.

The paper is structured as follows: In Section 2, we introduce the apprehensive as a cross-linguistic category and its various manifestations in traditional Australian languages, in particular those which could be considered substrate languages for speakers of Kriol or of its pastoral pidgin predecessors. Section 3 provides an overview of the functions attested for *bambai* (and related forms) in historic pidgins and present day creoles of Australia and the Pacific and shows that such reflexes of English *by and by* are used in apprehensive contexts in at least some other Australian and Pacific pidgins and creoles apart from Kriol. In Section 4, we discuss in more detail the distribution and functions (temporal and apprehensive) of *bambai* in Kriol, taking into account potential regional variation. In Section 5 we propose an explicit account of the semantic and pragmatic link between the temporal and apprehensive function, taking into account parallel developments attested in other languages and the role of substrate influence. A conclusion is presented in Section 6.

² The variety of Kriol utilised in the *Holi Baibul* is considered comprehensible across the Kriol-speaking area, but it predominately reflects the speech of Kriol speakers of varieties to the east of Katherine, with most translators hailing from Ngukurr and Minyerri, but also with considerable input from Barunga and Beswick. However, the *Holi Baibul* does also include translation work undertaken by a speaker from the eastern Kimberley and, in addition, various editing, comprehensibility and style considerations have been implemented to optimise its readability and appropriateness as much as possible for a “pan-regional” Kriol readership. Nevertheless, most Kriol speakers themselves would identify the variety in the *Holi Baibul* as aligning most closely to Roper River dialects spoken at Ngukurr and Minyerri (Margaret Mican p.c.).

2 Apprehensive modality

While apprehensive markers are a widespread category cross-linguistically, they have not received much attention in the typological and semantic literature on modality and clause-linkage. As a general characterisation, an apprehensive marker conveys the possibility of a state of affairs that is possible, but undesirable and best avoided, often in conjunction with a sentence specifying the action necessary (or to be avoided) to prevent this state of affairs. The category is amply attested in languages of the Amazon (Vuillermet 2013), Austronesian languages (Lichtenberk 1995) and Australian languages (e.g. Dixon 1980: 380–381; Verstraete 2005: 256–265). Other terms that have been employed to label this category include timitive (Palmer 2001 [1994]: 22), admonitive (e.g. Nordlinger 1998, Meakins and Nordlinger 2013), evitative (e.g. Heath 1984: 346; Merlan 1982: 147; Munro 2004, 2011), ‘lest’ marker (e.g. Austin 1981: 225; Blake 1979: 68–75) and ‘for FEAR’ (Donaldson 1980: 285–6).

Lichtenberk (1995), the only general discussion of the apprehensive category (based on a survey of Oceanic languages), recognises a number of subtypes of apprehensive markers, distinguished by their syntactic status, as shown in Figure 1 below (cf. also Vuillermet 2013).

<p>i. apprehensional-epistemic function LEST clause can function as an independent clause and it expresses both possibility and apprehension.</p>
<p>ii. pre-cautionary function LEST clause appears in a complex sentence and encodes apprehension causing situation, while main clause contains the precaution. Both situations are prominently encoded. Two sub-types are identified, on the grounds of causality:</p> <p>a. negative purpose (causal) If no precaution is taken, then the apprehension causing outcome will occur (if not X, then Y), or precautionary situation averts the apprehension causing one (X so that not Y).</p> <p>b. in case (non-causal) Precaution is taken should an apprehension causing situation arise (X in case Y).</p>
<p>iii. fear function LEST clause is embedded as a complement of a predicate of fearing and encodes an undesirable situation.</p>

Figure 1: Apprehensive subtypes identified by Lichtenberk (1995)

Markers of apprehensional-epistemic modality (subtype i) are compatible with main clauses. They can be characterised as mixed modals with both epistemic and attitudinal components, since they involve the elements of a speaker’s

“degree of certainty about the factual status of a proposition” plus “his or her attitude concerning the desirability of the situation encoded in the clause” (Lichtenberk 1995: 293). In other words, apprehensives can be characterised as bouletic or teleological modals, relating to a participant’s desires or goals, in addition to their epistemic value. For example, the speaker in (1), by employing the markers *ngaja* (in Ngarinyman) and *bambai* (in Kriol), signals that the event of a frill-necked lizard biting them is not only in the realm of possibility, but also undesirable from her (and the addressee’s) perspective.

Adverbial subordinators or ‘lest’ markers (Lichtenberk’s pre-cautionary function, subtype ii in Figure 1 above) indicate that the subject of the main clause is apprehensive of the event encoded by a subordinate clause. Such ‘lest’ markers can be restricted to negative purposive function (‘so that . . . not’) or may have a more general ‘in case’ interpretation which does not depend on the control of the subject over the event that is to be avoided (as in *Take your umbrella in case it rains / so that it does not rain*). Finally, apprehensive markers can be complementisers restricted in their distribution to main verbs of fearing (subtype iii in Figure 1 above). English *lest* is an example of a morpheme with both adverbial subordinating and complementiser functions (López-Couso 2007). A semantically related category is the aversive inflection (also sometimes called avertive) on nominals to indicate an entity to be avoided (2).

Yidiny (Yidinic, Pama-Nyungan; Queensland):

- (2) Yingu waguu-ja garrba-ng bama-**yida**.
 this.ABS man-ABS hide-PRS people-**AVERS**

This man is hiding **for fear of** the [strange] people

(i.e. so he will not be seen). (Dixon 1980: 299; orthography adapted)

In this paper, we will only be concerned with apprehensive modal markers since neither Kriol *bambai* nor the forms in the traditional languages to be considered here appear embedded under predicates of fearing, nor are they restricted to subordinating function. As we will see, the clauses containing these markers do exhibit strong links of pragmatic coherence with their immediate context, which often specifies the precaution to be taken in the form of a directive. Indeed, a cross-linguistic semantic link between the prohibitive and apprehensive modality is discussed in Pakendorf and Schalley (2007). This link is made in many of the language-specific characterisations of the category found in reference grammars of Australian languages, such as “This expresses the undesirability of an event, and the need to avert it. There is usually an implied injunction that the hearer be careful” (Evans 1995: 264–265).

The apprehensive is widespread in Australian languages; however, the manner in which it is realised varies widely (see Dixon 1980: 459, who contrasts the variability of the apprehensive with the purposive “which has similar form in languages from every part of the continent”). Illustrative examples of specialized apprehensive markers in several Australian languages – and of some typical contexts – are presented in (1) above and (3) to (5) below. In Ngarinyman (1) the apprehensive marker is a particle. In Ngalakgan (3), it is a verbal prefix attached to a verb inflected for present tense. Nunggubuyu has both an apprehensive (“evitative”) inflectional suffix and a clitic *-magi* (analysed as a postposition and glossed as ‘lest’ by Heath (1984)), which can be used in combination with the suffix, as shown in (4). The inflectional suffix may also carry the modal meaning on its own, but on the other hand, the apprehensive function can be conveyed by *-magi* alone in combination with a non-past inflectional form (Heath 1984: 346). In Yukulta (5), the only marker is a suffix (or clitic) *-marra*. In all of the examples below, the first clause specifies a precautionary measure that should serve to avoid the outcome described by the apprehensive clause.

Ngalakgan (Gunwinyguan, non-Pama-Nyungan; Northern Territory):

- (3) Wanyba rerre-ngini-gah Ø-rabon-jih ngu-**meleh**-bun.
 NEG camp-POSS-ALL 3SG-come-FUT.NEG 1SG/3SG-**EVIT**-hit:PRS
 He’d better not come to my camp (**or/lest**) I strike him.
 (Merlan 1983: 97; orthography adapted)

Nunggubuyu (Gunwinyguan, non-Pama-Nyungan; Northern Territory):

- (4) “Ngirri-dabali-ny ngawaa-ngaa-**ngun-magi!**”
 2PL/1SG-remove:BEN-FUT 1SG/NC-bring.down-**EVIT-lest**
 (Emu said) “Bring him out for me! **Or else** I will bring down the sky!”
 (Heath 1980: 45; orthography adapted)

Yukulta (Tangkic; Queensland):

- (5) Yararamatya-lati, kunawuna-ntha tyirrmany-**marra**.
 whisper.IND-3PL.PRS child-DAT wake.IND-**LEST**
 They are whispering **so as not to** wake the child.
 (Keen 1983: 247; orthography adapted)

Although apprehensives are a common trait of Australian languages, they are not always encoded by grammatical markers dedicated to this function. In

some languages, a general irrealis category covers a broader range of meanings which may include the apprehensive function (see Verstraete 2005 for an overview of modal categories in non-Pama-Nyungan languages). This is the case, for example, in Wardaman, where the same irrealis prefix can express a judgement of (un)desirability (a deontic or bouletic category) when combined with a present tense suffix, and apprehensive modality (a judgment of undesirable possibility) when used without a suffix (Merlan 1994: 224). Similarly, in neighbouring Jaminjung, one of two irrealis modal categories covers the functions of negative ability, prohibitive (both in combination with negation), and apprehensive; the last two functions are illustrated in (6) (Schultze-Berndt and Caudal in prep).

Jaminjung (Western Mirndi, non-Pama-Nyungan; Northern Territory):

- (6) Gurrany bad **yanj**-inama,
 NEG step **IRR.2SG>3SG**-kick/step
 majani lurr **ya**-niny-gijja.
 maybe pierce **IRR-3SG>2SG**-poke
 Don't step on it, (**otherwise**) it might poke you.
 (Elicitation; IP; ES97_A01_01.317)

In addition to this array of inflectional possibilities, in some languages the apprehensive is also expressed – or differentiated from closely associated meanings – through the use of an invariant temporal marker, which is interesting given the semantic range of *bambai* that we will be examining later. We will discuss relevant examples in the context of the semantic link between temporal succession and apprehensive marking in Section 5.

To summarise, main clause markers belonging to the cross-linguistic category of apprehensive modality – encoding an assessment of a state of affairs as potential and undesirable, and often carrying an illocutionary force of warning – are prominently represented in Australian languages, albeit in a variety of formal manifestations and semantic ranges. Importantly, they are attested in northern languages that are currently in contact with and/or were potential substrate languages for Kriol (as noted by Munro 2004: 135; 2011: 475). We will return to the question of the potential role of the substrate languages in the development of an apprehensive function of *bambai* in Section 5. First, however, we will provide an overview of the reflexes of English *by and by* in Australian and Pacific pidgins and creoles (Section 3) and of the functions of Kriol *bambai* (Section 4).

3 Reflexes of *by and by* in English-lexified Creoles

This section describes historical and contemporaneous uses of *by and by* reflexes in English-lexified pidgins and creoles, including those in and around the present day Kriol-speaking area, but also further afield. This material provides a background for comparison with the present uses of *bambai* in Kriol varieties (in section 4) and presents factors to be taken into account when positing likely mechanisms by which *bambai* has taken on an apprehensive function in Kriol (in section 5).

A reflex of English *by and by*³ is classified as a “world feature” of English-lexified creole languages by Clark (1979: 19–20), along with items such as *along* (comitative), *been, got* ‘have’, *him* ‘transitive suffix’, *piccaninny* ‘child’, *plenty, savvy* ‘know’, and *where* (relativizer). It is therefore to be found with the meaning of ‘later’, ‘eventually’ etc in historical sources as diverse as Mark Twain’s renditions of Gullah from the southern United States (e.g. Twain 1874: 592), to observations of coastal slave trade areas of West Africa (Mathews 1788: 166), and to records of Chinese Pidgin English in south-east Asia and the Pacific, including Australia (e.g. Siegel 2009: 316). Baker (1993: 34) notes that *by and by* is “extensively attested in pidgins and creoles around the world, including the Pacific” and indicates that it occurs with typical temporal meanings in his historical data from the Pacific. In clause-initial/final position, Baker (1993: 18) finds that *by and by* is attested in 22 Pacific locations prior to 1900, with the earliest token from Chinese Pidgin English in 1807, followed in order by Hawaii, New Zealand, New South Wales, California, the Marquesas, Fiji, Loyalty Islands, Tahiti, Queensland, Vanuatu, Solomon Islands, the Carolines, Rotuma, the German colony of New Guinea, New Caledonia, Papua New Guinea, Torres Strait, Kiribati, Samoa and Cook Islands.⁴ Other researchers have also found *by and by* with similar temporal meanings across the Pacific, in a nautical jargon associated with early maritime industries (e.g. whaling, sealing, sandalwood, *bêche-de-mer*)

³ For clarity, the form *by and by* will be used throughout the historical discussion, although readers should not assume this reflects the existence of a single or standard pronunciation, form or meaning.

⁴ Due to ongoing linguistic debates about the development of *by and by* as a future marker in Melanesian creoles, Baker also presents preverbal examples (feature 40) of which he finds only four in his entire historical corpus, and which could all be interpreted with temporal meaning (1993: 40–41).

(Romaine 2004: 460–462), and have considered it to be a Pan-Pacific Pidgin feature (Keesing 1988: 32–33; Siegel 2011: 534).

Most present day English-lexified creole languages spoken throughout the south Pacific basin have a reflex of *by and by* in a variety of related temporal meanings and functions, including in Australian Kriol (Harris 1986: 244; Sandefur 1984: 84), in Yumplatok, also known as Broken and Torres Strait Creole (Shnukal 1988: 113), and its dialect, Cape York Creole (Crowley and Rigsby 1979: 192), and in Yarrie Lingo (Yeatman et al. 2009). Expressions derived from *by and by* are also found in nearby pidgin and creole languages in Melanesia and the Pacific, including Bislama (Meyerhoff 2013: 226), Solomon Islands Pidjin (Keesing 1988: 184), Tok Pisin (Smith and Siegel 2013: 218) and Hawai'i Creole (Siegel 2011: 545; Velupillai 2013: 255).

In contact varieties on the Australian mainland, *by and by* is represented with a temporal meaning in historical records from the convict settlement of NSW established by Britain in 1788. Troy (1994: 711) reconstructs the form *baimbai* from items such as *bye and bye*, *bime bye* etc in various historical written records, and determines that it belongs to the core vocabulary of New South Wales (NSW) Pidgin because it is attested across several sources from different regions. Troy (1994: 434, 711) describes it as an adverb encoding future tense (but glosses it as 'eventually'). Further to the south, *by and by* is attested on Flinders Island in Bass Strait in 1837 and in the colony of South Australia in 1842 (Simpson 1996: 177, 186), with the usual temporal meaning. To the north, Dutton (1983) describes a bifurcated pathway of NSW Pidgin, into present day Queensland. NSW Pidgin was first transported to an area near the present site of Brisbane via a coastal route from around the 1820s, but by the 1840s, the pastoral industry had also made its way into southern Queensland via an inland route, bringing (a variety of) NSW Pidgin with it. In the historical Queensland sources located by Dutton (1983: 102–103), *by and by* has a similar temporal function to what Troy identified in NSW.⁵ On closer inspection, however, the temporal function in such historical sources is not restricted to future time reference; rather, the marker is also used to indicate temporal sequence ('later, after that') in clauses with past

⁵ *by and by* is represented as an English lexical entry, with a temporal meaning 'soon', in finder vocabulary lists in a number of modern day (salvage) grammars of Queensland Aboriginal languages (e.g. Breen 1981: 226; Williams 1980: 197). This is a likely indication that *by and by* has a degree of currency for speakers of those languages and/or Aboriginal people in those areas as a temporal expression. It is also evidence that *by and by* is not (strongly) associated with an apprehensive function by these speakers and/or linguists.

time reference, much like in contemporary Kriol (see Section 4.1). Examples (7) and (8) are representative.

Queensland Pidgin:

- (7) My father said to him [Dalaipi], “You make the rain come and fill the holes again, Dalaipi.” He answered, “**Byamby** me makeim come.”
 [...] He answered, “I’ll make it come **soon**.” (south-east Queensland; mid-nineteenth century; Petrie 1904: 185, quoted in Dutton 1983: 111)

NSW Pidgin:

- (8) His account was “Baal dat pfellar batter (eat). He bin gry, gry, gry all day and eat ‘im grass. Debildebil sit down long a dat pfellar, mine tink it. **By-um-by** put ‘im down gun, pick-um up grass, eat ‘im. Blackfellar come up behind – huh!” – illustrating by a blow of a fist on the back of his own head, and then by a quiver of his limbs, the death agony of poor Cunningham.
 [...] “That man hadn’t eaten (i.e. proper food). He kept on crying and crying and he ate grass. I think a ‘devil’ was in that man. **Then** he put his rifle down, picked some grass and ate it. An Aboriginal came up behind – huh!” [...] (Bogan River district, north-western NSW; reportedly 1870’s; White (1904), quoted in Nash: <http://www.anu.edu.au/linguistics/nash/aust/pidgin.html>)

From NSW and southern Queensland, the English-based pidgin spread via the pastoral industry into northern Queensland, then westwards around the Gulf of Carpentaria, across the Northern Territory (NT) and into the Kimberley. In the early phases of non-Indigenous occupation, Queensland and the NT had a significant Chinese population in contact with Aboriginal groups through their collective involvement with mining and the pastoral industries. Records indicate that Chinese speakers of the NT pidgin, likewise, used *by and by* (Harris 1986: 177–178). Reflexes of *by and by* in temporal function are attested in records of Chinese Pidgin English from outside Australia too (Li and Matthews 2013).

In any case, the records of early NT Pidgin, the precursor of contemporary Kriol varieties, present a similar picture to those for the earlier pidgins in Queensland and NSW. For this variety, too, *by and by* is described as a future tense marker (Harris 1986: 244), but, as shown in the narrated recount in example (9), it also has sequential function in clauses with past-time reference.

NT Pidgin:

- (9) This blackfeller, him away; him play about him all right, **bye and bye** him go cranky longa head. That fire, that mud, that star catch him. Next morning him feel all right. **By and bye** him say “Mee too much cold, want um big feller fire” [...] Then **by and bye** him get bad; no more eat um tucker and him die.

This Aboriginal man, he was away (from his home/family); he was playing around but **then** he went mad in the head. The fire, the ‘mud’ and the star got him. The next morning he felt alright. **Then** he said ‘I’m very cold, I want a big fire’ [...] Then **later** he got bad; he didn’t eat and he died. (Northern Territory; Gee 1926: 35–36, quoted in Harris 1986: 332)

Melanesian Pidgins were influenced early on by NSW Pidgin via maritime activities, with Sydney the major port in the Southern Pacific (Baker 1993; Troy 1994; Romaine 2004; Meakins 2014). In addition, through later extensive use of Pacific Islander (Kanaka) labour on Queensland plantations, Queensland Pidgin influenced the development of Melanesian Pidgin and its descendants, Bislama in Vanuatu, Solomon Islands Pijin in Solomon Islands, Tok Pisin in Papua New Guinea and Yumplatok/Torres Strait Creole in the Torres Strait and Cape York Creole on the tip of Cape York (Crowley and Rigsby 1979; Shnukal 1988; Siegel 2011: 534). As a result, all of these creole languages use a form of *by and by* as a clause-initial or clause-final temporal marker, and *by and by* is attested in nineteenth century sources for all of them except for Yumplatok and Cape York Creole, for which historical data are not yet available.

In three creole languages descendent from Melanesian Pidgins, Bislama, Solomon Islands Pijin and Tok Pisin (but not Yumplatok), *by and by* has followed a trajectory of development into a future/irrealis marker. In Tok Pisin, for instance, *baimbai* is now more common in reduced forms *bai-b*, and may appear in a preverb position (Siegel 2011: 544). The development of etymons of *by and by* from clause-initial to preverbal marker and concomitant grammaticalisation to a future marker is described in detail for Tok Pisin by Sankoff and Laberge (1973) and by Romaine (1995, 1998), who also captures considerable variability in the use of these forms.

In addition to this fairly consistent picture of two related temporal functions (temporal sequence and future marking), descriptions of Australian and Pacific creole and pidgin languages offer tantalising but inconsistent glimpses of additional functions of *by and by*. In Tok Pisin, Romaine (1995: 410) notes that, in Pacific Pidgin data from the nineteenth century, half the tokens encode remote future, while others encode results “or later sequences of events [as in (8) and

(9) above], some of which can be understood as warnings and threats, as they still do in modern Tok Pisin [as in (10)].”

Tok Pisin (Papua New Guinea):

- (10) Bai i go antap tru tumach,
 later 3SG/SRP go on.top really too.much
baimbai em i blek, olem blek.
later (APPR) 3SG 3SG/SRP black like black
 If it goes too far on top, it gets black, like black. (Indagen (rural setting),
 Morobe Province, 1987 fieldwork; Romaine 1995: 410)

Further references to apprehensive uses of *baimbai-bai-b* have not, however, been located at this stage in published accounts of Tok Pisin (Mihailic 1971; Sankoff and Laberge 1973; Verhaar 1995; Smith 2008; Smith and Siegel 2013).

In Yumplatok from the Torres Strait, Shnukal (1988: 113) treats *bambai* as an adverb with a purely future and sequential meaning ‘later (on), someday, eventually, afterwards’. Nevertheless, (11) and the translation provided by Shnukal clearly illustrate an apprehensive meaning, not a temporal one.

Yumplatok (aka Torres Strait Creole, Broken):

- (11) Ai go go deya, **bambai** ai mes-e da plein.
 1SG MOD go there **later (APPR)** 1SG miss-TR DEF plane
 I’d better go there, or else I’ll miss the plane. (Shnukal 1988: 113)

Since *orels* (from English ‘or else’) is also attested in Yumplatok (Shnukal 1988: 77–78), there seems to be a partial functional overlap with *bambai*. In Cape York Creole, the related contact language spoken on the nearby northern tip of Cape York Peninsula, the form *baimbai* is described by Crowley and Rigsby (1979: 192) as one of a number of “pre-sentence modifiers” serving as an indicator of distant future (contrasting with *klosap* for the near future). *Baimbai* is not recorded by Crowley and Rigsby (1979: 205) in apprehensive function in this variety, whereas they find a different temporal marker, *bipo* (< ‘before’), with this role.

By and by is also attested further afield in the Pacific in present day Hawai’i Creole where Siegel (2000: 201) has documented its use as a temporal since 1791, even earlier than Baker found (1993: 18, cited above). The history of Hawai’i Creole has some links with the maritime and plantation activities described above for Australia and Melanesia, but it also involved significantly different multi-

cultural populations and historical processes, including the development and sustained use of a Hawai’ian-lexified pidgin (Roberts 2013) as well as the importation of large populations of foreign labourers (Siegel 2000). Siegel (2011: 545) describes *by and by* in both Hawai’i Creole and Kriol as adverbs meaning not only ‘later’ but also ‘otherwise’, a gloss capturing an apprehensive function. Siegel does not, however, regard such expressions as modals, since he claims that reflexes of *by and by* do not exist as a modal marker in Kriol and Hawai’i Creole (2011: 544). For Hawai’i Creole, Velupillai (2013: 255) analyses *bumbye* solely with a temporal function as a remote future tense marker which contrasts with the more general future tense expressed by *go(i)ng/gonna*. However, in (12) the expression of future possibility has the connotation of a warning, the pragmatics of an apprehensive clause. In addition to a temporal function, Sakoda and Siegel (2008: 536) explicitly assign modern *bambai* (with alternate spellings *bumbye*, *by ‘m by*) the function of “negative conditional” as an “adverbial connector”, as in (13). Note that (13) does not support the analysis of *bambai* as exclusively a marker of remote future.

Hawai’i Creole:

- (12) Evri taim yu smok dis sigaret goin kil yu. Kam ober hea!
 every time 2SG smoke DEM cigarette FUT kill 2SG come over here

Bambai des stik pok yu des stik kil yu.

REM.FUT 3PL sticks poke 2SG 3PL sticks kill 2SG

Every time you smoke those cigarettes (they) will kill you. Come here!

Eventually those sticks will ruin you, those sticks will kill you.

(Velupillai 2013: 255; orthography adapted)

- (13) Yu beta tek yo ambrela. **Bambai** yu get wet.
 2SG better take 2SG umbrella **later (APPR)** 2SG get wet

You’d better take your umbrella. **Otherwise** you’ll get wet.

(Lum 1998: 225, cited in Sakoda and Siegel 2008: 536, example 87a)

A number of on-line dictionary sources further attest apprehensive usages of *bambai~bumbye*. One beginners’ guide to Hawai’i Creole states:

Bambai can also mean ‘**otherwise**’. If your friend is pigging out on junk food and you’re worried for their health, you could say, “*Ho, no eat choke candy yah, bambai you gon get puka teeth*” which means, “Wow, don’t eat too much candy, **otherwise** you’re going to get cavities.” (Riel 2013)

In contrast to the sporadic appearances of apprehensives among the descriptions of the temporal function(s) of *by and by* and its derivatives in Pacific contact varieties, in descriptions of Norf’k from Norfolk Island the local reflex of *by and by*, *bembeya*, is only glossed as ‘lest’ and is listed as heading adverbial clauses, but only to express “purpose and result” with no temporal usage (Mühlhäusler 2010: 356–357, 2013: 238).

Norf’k (Norfolk Island):

- (14) Nau dunt yu tuu gu medl en madl
 now don’t 2PL two go meddle and muddle
 en mitimiti orn d’-wieh t’-cherch **bembeya** yorlye kechet.
 and kiss on DEF-way to-church **APPR** 2PL get.in.trouble
 Now don’t you two go meddling and muddling and *mitimiti* (kiss and
 cuddle repeatedly) on the way to church **in case** you get into trouble.
 (Facebook discussion; Nebauer-Borg n.d.)

There are some caveats that should be kept in mind concerning the data and discussion presented in this section. With regard to the historical data, historical records can be imperfect: The number of preserved historical records is fairly low and these are documented primarily by English speakers, often linguistically naïve, who might have preferentially heard and rendered English temporal meanings of *by and by*. With regard to grammatical descriptions of present day contact languages, the apprehensive function has not received the consistent attention that has been accorded to it in, say, descriptions of traditional Aboriginal languages. In summary, however, we can see that *by and by* and its reflexes are widespread items synchronically and diachronically in English-lexified contact varieties of the Pacific, where they are mostly recorded in temporal function associated with future time and sometimes with indicating a temporal sequence. There is also evidence – albeit of a somewhat sporadic and inconsistent nature – that reflexes of *by and by* have been harnessed to express apprehensive meanings in some of the creole languages of this region, despite assertions that it remains a purely temporal marker in these very languages. In addition to the range of functions just described, *by and by* has been involved in one grammaticalisation pathway in the south-western Pacific region, namely becoming a marker of future/irrealis in three Melanesian creoles/pidgins, but this is not directly associated with the apprehensive. In the next section, we will examine which functions are fulfilled by *bambai* in Kriol.

4 Distribution and function of *bambai* in Kriol

In this section we will examine the functions of *bambai* in varieties of present-day Kriol in northern Australia. In our Kriol data, *bambai* appears clause-initially or clause-finally and has two broad functions, temporal and apprehensive. A clause-final position of *bambai* with temporal meaning is illustrated in (15); while (16) provides an example of *bambai* in clause-initial position with apprehensive meaning.

(15) Ai show yu thad lilgel **bambai**, Denise, yu luk la im.
 1SG show 2SG DEM girl **later** NAME 2SG look LOC/ALL 3SG
 I'll show you (i.e. introduce you to) that girl later, Denise, you'll see her.
 (Eastern/Beswick; spoken conversation [MS: P23–24])

(16) Ai gan lad-i yu insaid. **Bambai** yu dagat mi.
 1SG CAN.NEG let-TR 2SG inside **APPR** 2SG eat 1SG
 [Dog: Little Pig, let me come in or I'll destroy your house.]
 [First Pig:] I won't let you in. You might eat me. (Eastern/Jilkminggan;
 written cartoon)

We will illustrate the temporal function (4.1) of *bambai* before discussing in more depth the apprehensive function in different varieties (4.2).

4.1 Temporal function

In its temporal function, in all varieties that we investigated, *bambai* can be used with future time reference, in two closely related functions:

- i. indefinite future, referring to an event at an unspecified time after speech time, often translated into English as '(sometime) later' or 'soon' (as in (15));
- ii. sequencing of an event with respect to a prior event, and often to be interpreted as a consequence of it (but with no implication of undesirability of that consequence), translatable as 'then' or 'so that' (as in (17));

Most frequently, the clause containing *bambai* has no additional overt temporal marking (i.e. is in present tense); thus the marker on its own conveys future time reference, as in examples (15) and (17).

- (17) “D en M en B, yu-mob breig-a thed-mob bushis
 D and M and B 2-PL break-TR DEM-PL branch
 jeya luk from dat tri” im tok laitha.
 there look from DEM tree 3SG talk thus

“**Bambai** ai bud-a la this kenggurru ba kug-um.”
(so).then I put-VTR LOC/ALL DEM kangaroo PURP cook-TR

“D and M and B, break off those branches, from that tree there, look,”
 he would say, “So then I can put them with this kangaroo to cook it.”
 (ie. for the purpose of flavouring and keeping grit off). (Context: The
 speaker is illustrating how her husband might elicit assistance when
 preparing to cook a kangaroo in a ground oven). (Eastern/Binjari
 (ex Hodgson River); Staged reported speech, [MH: Tr17/9])

Overt future (*garra~gada* and variants) or irrealis markers (*mait*) in combination with *bambai* are quite frequently found in written texts such as the Kriol Bible and may reflect a certain degree of influence from Standard Australian English. Examples of *bambai* from spoken texts with future/irrealis marking are very rare in our data. Example (18), from a Kriol voice over for an information video about hospitals, is illustrative. The first version (a), featuring both *bambai* and the future marker *gada*, is the first written draft of a translation from English into Kriol, the first stage in preparing to record the voice over; while the second version (b) is a transcript of the actual spoken Kriol voice over, with no tense marking co-occurring with *bambai*.

- (18) (a) Wal, Robert im redi bla gu bla im opareishin na.
 well Robert 3SG ready for go for 3SG operation now

Bambai im **gada** gud-bala
soon 3SG **FUT** good-NMZR

en im gada gu-bek then la im kantri.
 and 3SG FUT go-back then LOC/ALL 3SG country

Well, Robert is ready to go for his operation. Soon he will be well
 and he will go back home. (collectively workshopped written (draft)
 translation from English; workshop notes)

- (b) Wal, tudei na, det Robert im gu bla im opareishin.
 well today now DEM Robert 3SG go for 3SG operation

Bambai im nomo sik-bala
soon 3SG NEG sick-NMZR

en im lau bla gu-bek la im komyuniti.
 and 3SG allowed for go-back LOC/ALL 3SG community

Well, Robert is going in for his operation today. Soon he'll be well enough to return home. (English voice over) (Eastern/Ngukurr; planned spoken language; AH. [GTH41(51)])

In the eastern varieties – but not, according to our corpus data, in the Westside variety – *bambai* is also found with the overt past tense marker. In the past tense, *bambai* is only attested in clause-initial position. Two related functions can be distinguished.

- i. sequencing with respect to a prior event, sometimes to be interpreted as a consequence of it, translatable as 'then', as in (19).
- ii. resuming or refocussing on the main thread of a narrative as a discourse particle, often accompanied by additional discourse markers such as *wal* 'well' and *na* (used to mark a shift in topic or temporal frame) in (20) below. This function, more frequently found in written data, is labelled "resumptive" here and could be conveyed by 'so anyway, . . .', 'now, . . .', 'well, . . .' in English. When used resumptively, *bambai* (along with any associated discourse markers) is often in a separate intonation unit from the following clause, which in written texts is commonly rendered with a comma.

- (19) Mela bin ol mub deya naaa, sidan deya naaa,
1PLEX PST all move there now sit/stay there now

bambai elikopta **bin** kam deya na, thad-lot deya na gada kemra.
then helicopter PST come there now DEM-PL there now with camera

(Context: During a flood people, including the speaker, moved to a dry place on a road). We all moved there and stayed there (for quite a while), **then** a helicopter came there, those people with a camera.
(Eastern/Beswick; spoken narrative; [MS. P17])

- (20) Im-bin brabli kleba-wan langa ola naja-lot enimul.
3SG-PST very wily-NMZR LOC/ALL PL other-PL animal

Tharran na im det sneik. **Wal bambai na**, det sneik
DEM:NOM FOC 3SG DEM snake well then FOC DEM snake

bin go langa det wuman, en im-bin tok [...]
PST go LOC/ALL DEM woman and 3SG-PST say

It (i.e. one particularly sly animal) was the wiliest of all the animals. That animal was the snake. **Well**, the snake went to the woman and it said [...] (Kriol Bible Translation; Jenasis 3.1:
<http://aboriginalbibles.org.au/Kriol/Conc/root.htm>)

The degree of regional differentiation in the manifestations of temporal and modal marking more generally remains to be investigated in greater depth. Regarding *bambai*, the following tentative generalisations are offered here and summarised in Table 1. In Westside Kriol, *bambai* is restricted to final position in temporal function (which is moreover attested less frequently than the apprehensive function in the data) and it always has the sense of ‘(some time) later’ with future time reference. In contrast, all temporal functions of *bambai* – future, sequential (with both future and past reference), and past discourse/resumptive marking – are attested in eastern dialects of Kriol, including the *Holi Baibul*, a text associated primarily with eastern Kriol varieties. In these eastern varieties, *bambai* appears clause-initially in all of these temporal functions. In the sense of ‘(sometime) later’, it may also occur clause finally (as in 15 above).

Table 1: *Bambai* in temporal function: Range of meaning and clause position according to dialect

dialect area	indefinite future clause position		sequential clause position		resumptive clause position	
Westside Kriol	✓	FINAL				
eastern Kriol varieties including <i>Holi Baibul</i>	✓	FINAL & INITIAL	✓	INITIAL	✓	INITIAL (EXTERNAL)

4.2 Apprehensive function

As an apprehensive, *bambai* appears in a number of discourse contexts where a speaker is alerting the hearer to the potential occurrence of an undesirable event, and, possibly, to ways of avoiding this consequence. All instances of spoken *bambai* analysed here occur in conversation or within a narrative.

All apprehensive uses of *bambai* are clause-initial in all Kriol varieties examined. Even though apprehensive clauses have future time reference (event time > speech time) or posterior time reference (event time > reference time, as in (24) and (27)), no additional future/modal marker is present, except for one case of co-occurrence with a future/irrealis modal, and one with an ability modal (22). Likewise, even when a narrative is in the past, overtly marked by auxiliary *bin* in the main clause, the *bambai* clause is in present tense (not overtly marked).

One way *bambai* is used in its apprehensive function is in admonitory speech acts, which can fall anywhere along a continuum from suggesting (sensible) precautions through to giving direct warnings or even making threats. In admonitory

usages, *bambai* often (but not necessarily) combines with a directive or prohibitive clause encoding some evasive action which could be undertaken to avoid the unpleasant outcome. Close English equivalents include ‘(do /desist p), or else q’ or ‘watch out, maybe q’, as in (21) to (23). This is probably the most frequent usage of *bambai* in spontaneous spoken language.

- (21) Ey! **Bambai** yundubala breik-im thet motika, liv-im.
Hey! **APPR** 2DU break-TR DEM vehicle leave-TR

Bambai Dadi graul la yu.

APPR Dad scold LOC/ALL 2SG

“Hey! (Watch out or else) you two might damage that car, leave it (alone)! (You’d better watch out or) Dad will tell you off!” (Westside/Timber Creek; DB; ES99_V05_02)

- (22) En yu mait tok: “Nomo pud-a thet beibi feis-dan laithet
and 2SG IRR say PROH put-TR DEM baby face-down thus
la pila. **Bambai** im gin safakeit.”
LOC/ALL pillow **APPR** 3SG can suffocate

And you might say: “Don’t put that baby face down like that on the pillow. Otherwise it might suffocate.” (Eastern/Binjari (ex Hodgson River); staged reported speech. MH. Tr13)

As (21) and (22) show, the admonitory use is attested both in Westside Kriol and eastern varieties of Kriol. It is also amply attested in the *Holi Baibul* (23) (out of 965 tokens of *bambai*, 26 are clearly apprehensive), and is also found in contact varieties spoken in the Gulf of Carpentaria (see further below).

- (23) Wal yu alb-um mi na
well 2SG help-TR 1SG now
bambai main braja Isau kil-im mi ded.
APPR 1SG:POSS brother Esau kill-TR 1SG dead

Well you help me, lest my brother Esau kill me.

(Bible Society in Australia 2007, *Holi Baibul*, Jenasis 32.11)

In another use of *bambai*, the clause beginning with *bambai* encodes an undesirable potential outcome for a protagonist of the discourse (which may of course be the speaker, as in (16) rather than the addressee (or speaker and addressee); consequently, the admonitory illocutionary force is absent. Still,

more often than not, the clause featuring *bambai* in this use is accompanied by a description of a precautionary measure which averts, or could avert, the predicted bad consequence. The cause and effect relationship between the preventative situation and the (lack of) undesirable consequence may require pragmatic reconstruction. For example, in (24), which has past time reference, the averred rising of the hill prevented the group of people potentially drowning on it. In the negative conditional in (25), it is only when a saltwater crocodile avoids taking on a buffalo single-handedly that a predictable negative outcome (from the point of view of the crocodile) is averted. Habitual burying of dead animals which are not eaten prevents an unpleasant smell in (26). In (27), the light does not directly prevent the children crawling into the flood waters, rather it allows the adults to supervise them more closely. English translation equivalents are often ‘otherwise’, ‘in case’ or ‘so that not q’. All these interpretations are however consistent with an analysis of the *bambai* clause as a main clause. The coherence between this clause and (usually) the preceding clause can be established at speech act level (‘do/avoid p, [I’m telling you because otherwise] it may be that q’ or (less frequently) at content level (‘p, [otherwise] q’, as in (24) and (26) (see e.g. Sweetser 1990, Stukker and Sanders 2012 for coherence at different levels). The function of *bambai*, in our analysis, is to flag proposition q as possible and undesirable, not to indicate the semantic link to a preceding context.

- (24) Bat thad hil du bin oldei gow-ap, lift-im-a, laithet,
 but DEM hill also PST HABIT go-up rise-TR-up thus
bambai alabat draund.
APPR 3PL drown

But that hill also kept going up, rising, like this, **otherwise** they all would have drowned. (Eastside/Binjari (ex. Minyerri); Spoken narrative; [BR.Tr2.297])

- (25) Bat nomo wan-bala,
 but NEG one-NMZR
bambai jarran bafalo im dreig-im im atsaid
APPR DEM buffalo 3SG drag-TR 3SG out
 en deig-im langa plein.
 and take-TR LOC/ALL plane

But not (if there’s just) one (crocodile), otherwise that buffalo drags it out and takes it onto dry ground (and kills it). [Context: In this school text about animal behaviour – here, crocodiles and buffalos – the preceding scenario is many crocodiles encountering one buffalo, which favours the crocodiles, unlike this scenario]. (Eastside/Bamyili; Written text; Brennan 1983: 9)

Jaminjung (Western Mirndi, non-Pama-Nyungan; Northern Territory) (line 1–2) and Kriol (line 3):

(26) IP: Nawij bag burr-angga-m, mirrbba burr-arra-m.
neck break 3PL>3SG-get/handle-PRS buried 3PL>3sg-put-PRS

ESB: Mirrbba?
buried

IP: Hm, **bambai** im thingk.
hm **APPR** 3SG stink

[Context: about birds hunted by children]

“They break its neck (by strangling it), (then) they bury it.” (Jaminjung)

“Bury?”

“Hm, **otherwise** it would stink.” (Westside/Kununurra; spoken narrative/
dialogue with linguist; IP, ES97_A01_01.079-083)

(27) Wi bin gada⁶ totj-im-bat ola kid, yuno
1PLEX PST MOD torch-TR-CONT PL children PART

bambai dei krol-in.
APPR 3PL crawl-in

We had to keep shining the torch on the kids, you know, **in case** they
crawled in.’ (Eastern/Beswick; spoken narrative; [MS.P13])

Table 2 summarises the distributional possibilities of *bambai* in its temporal functions and the apprehensive function, according to a coarse-grained division into Westside Kriol or eastern regional varieties. It should be noted that overall our data sets of *bambai* (in any function) are fairly small (see Section 1), which could be the result of many factors, mainly the scarcity of real conversational and interactional speech events. Moreover, apprehensive meaning can also be rendered with a more general modal (*mait* ‘might’), or indeed conveyed entirely pragmatically; thus, *bambai* is also not an obligatory feature of apprehensives. It is also possible that those Kriol expressions which are partially analogous to *bambai*, such as *afta* ‘after’, *abdajad* ‘afterwards’ (<after that), *den* ‘then’ etc, but which are reinforced by corresponding common English items, could through this mechanism be gaining ground at the expense of Kriol-only items such as *bambai* (which seems to have an outmoded feel for modern speakers of Standard Australian English). The apprehensive function seems to be more prevalent in Westside Kriol, but this could be an artefact of the data collection contexts.

⁶ The tense/modal combination *bin gada* is highly unusual, as the only Kriol modals usually attested with *bin* are *labda* and *wanda* (cf Schultze-Berndt et al. 2013: 246).

Table 2: Summary of apprehensive and temporal functions in clause-initial and -final position

dialect area	initial clause position	final clause position
Westside Kriol	all apprehensives	temporal: indefinite future
eastern Kriol varieties including <i>Holi Baibul</i>	all apprehensives	temporal: indefinite future (only some)
	temporal: indefinite future (only some)	
	temporal: sequential	
	temporal: resumptive	

To complete this overview of *bambai* in present day Kriol, it must be pointed out that we have not found *bambai* either in temporal or apprehensive functions attested in any documentation of Kimberley Kriol varieties, such as Fitzroy Valley Kriol described by Hudson (1983), but nor was there mention of apprehensives of any kind in her grammatical description. In the entry for *bambai* (temporal function only) in the *Kriol Diksheneri* (Lee 2004), of the four geolocational source tags referring to Halls Creek, Fitzroy Valley (both in the Kimberley), Barunga and Ngukurr (both in eastern areas), *bambai* is not attested in the Kimberley. That said, it is doubtful that *bambai* would be employed 965 times in the Kriol *Holi Baibul*, including in apprehensive function, if it were not understood at all by a significant proportion of the Kriol-speaking population. The inclusion of *bambai* in the *Holi Baibul* indicates an expectation of a certain familiarity – or at least receptive understanding – on the part of Kriol speakers pan-regionally.

On the other hand, *bambai* in apprehensive function is also present in areas in the Gulf of Carpentaria, Mornington Island (as in (28)) and Kowayama (as in (29)), well to the east of Roper River, and places not, perhaps, archetypically considered part of the Kriol *Sprachraum*.

English-lexified vernacular (Mornington Island, Queensland):

(28) Ay you gut mangarda!

INT 2SG have baby

Bambay you mangarda ga bilmiri you!

APPR 2SG baby FUT cause.trouble.for 2SG

“Hey, you are pregnant! Don’t come down here (to the saltwater) **or else** your baby will cause something bad to happen (i.e. cause you to get ‘mulgry’ sickness by touching the saltwater while pregnant).”

(Mornington Island; Poster; Language Perspectives, Education Queensland)

English-lexified vernacular (Kowanyama, Queensland):

- (29) Yu lib-um. **Bambai** im go kam-at bla yu drim.
 2SG cease-TR **APPR** 3SG go come-out DAT 2SG dream

“Stop it **or else** you’re going to dream of it.” (Literally: ‘It is going to enter your dreams’). (Kowanyama; Poster, (draft); Language Perspectives, Education Queensland)

Significantly, the simplest explanation for their existence would be that *bambai* (in temporal and apprehensive functions) spread there, with the pastoral frontier, on the way – and prior to – entering the Northern Territory. Thus, there is a possibility that *bambai* had already extended to an apprehensive function at some earlier point, perhaps under contact influence from Australian languages further south. It is even conceivable that a “ready made” apprehensive meaning of *bambai* could have spread into the Pacific, possibly accounting for the apprehensive use of *bambai* in Hawai’an Creole and Norf’k (Section 3). We will return to this issue in the next section.

5 Motivations for the apprehensive use of *bambai*

Thus far, this paper has described how *bambai* is used in apprehensive function in varieties of Kriol, perhaps just on a receptive basis in the Kimberley. It has also explained how the apprehensive is a feature common to many Australian Aboriginal languages, which are clearly a potential source of substrate influence on Kriol or a precursor pidgin, even though they realise the apprehensive with a variety of morphosyntactic strategies. In addition, the discussion has shown that reflexes of *by and by* are widespread in temporal function in historical and contemporary English-lexified pidgins and creoles of the Pacific (and beyond), but only in Torres Strait Creole, Hawai’i Creole and Norf’k, in addition to Kriol (plus contact varieties on the Gulf), are they attested in apprehensive function.

In this section we will discuss two likely influences on the development of the apprehensive function of *bambai* in Kriol. The first is substrate influence, the second independent development through grammaticalisation. We will conclude that these two motivations are not mutually exclusive but may have conspired to result in the extension of a temporal to an apprehensive function in a process akin to what has been termed contact-induced grammaticalisation, i.e. re-creation of the categorical distinctions made in the substrate languages with new grammatical means. Before embarking on this discussion, two brief notes are in order

concerning, firstly, the nature of the relationship between Kriol *bambai* and its English etymon *by and by*, and secondly, the uptake of *bambai* in its temporal function in early Australian pidgins and jargons.

Firstly, *by and by* does not appear to be a frequent expression in present day Standard Australian English. Thus the superstrate/standard language is not likely to be playing an ongoing role in the retention of *bambai* in Kriol. We do not have reliable information about the frequency and range of functions of *by and by* that were present in all varieties of English that formed the input to the nascent NSW Pidgin, but there is no indication in the historical record that *by and by* was used apprehensively in English prior to its arrival in Australia (Oxford English Dictionary). We can probably therefore rule out direct lexifier influence on the development of the apprehensive function in Kriol. What does seem clear, moreover, is that *bambai* in Kriol – as the orthographic representation suggests – is an idiomatic chunk which is nowadays not considered by Kriol speakers to be related to the fairly outmoded English expression *by and by*. Across the Kriol speaking area, there is no variation in the pronunciation of *bambai* that we are aware of. Nor do we find a range of pronunciations – from basilectal to more acrolectal – which would possibly indicate that Kriol speakers were aware of a closely corresponding item in the lexifier.

Secondly, the considerable uptake of reflexes of *by and by* in temporal function in many English-lexified contact languages in the Pacific, as well as in some African and North American contexts (as described in section 3), is proof that it has spread easily with this meaning, regardless of the specific language backgrounds and socio-cultural contexts of speakers in each locality. This consistency of meaning even led Baker (1993: 34) in his historical survey to conjecture whether *by and by* in the Pacific “can properly be considered as a significant departure from natively spoken varieties [of contemporary British English of the nineteenth century]”. For the most part *by and by* maintains a relatively consistent temporal meaning across diverse linguistic and socio-cultural contexts involving language contact in the nineteenth century and, for such reasons, its presence as a temporal marker in NSW Pidgin requires no particular explanation.

5.1.1 The substrate influence account

Data from speakers’ own spontaneous translations of their traditional language utterances into Kriol indicate that some speakers themselves equate the apprehensive function of their traditional Australian Aboriginal languages with that of *bambai* in Kriol (see example (1) for Ngarinyman-Kriol, and example (30) for Jaminjung-Kriol code-switching).

Jaminjung (Western Mirndi, non-Pama-Nyungan; Northern Territory) (line 1) and Kriol (line 2)

- (30) Burrb **ya**-rri-minda=burri mangarra.
 finish IRR-2PL>3SG-eat=3PL plant.food
 “You might eat up all the food on them.”

Thet min, **bambai** yu finish-im taka fo MAI femili.
 that mean **APPR** 2SG finish-TR food for my family

“That means, you might finish the food (that was) for MY family.”

(Jaminjung and Westside Kriol; staged conversation; IP, ES96_A08_02.073)

Such “matchings” between substrate languages onto lexifier items form the cornerstone of the mechanism by which substrate influences enter creole languages. Such influences are widely recognised today, although there is some disagreement over the degree of substrate influence that should be assumed and also regarding the processes by which this occurs. Crucially for our discussion of *bambai*, direct relexification, as postulated by Lefebvre (1998, 2001), is not a possible explanation for the structure of many creole languages across the Pacific region, as they do not exhibit the same inflectional morphology as their Austronesian or Australian substrate languages. Here, substrate influence can still be recognised, but in more subtle ways.

An approach that grapples with the structural differences between substrates and creole languages is the Transfer Constraints Approach developed by Siegel (1999, 2008, 2011; Siegel, Sandeman and Corne 2000). This approach predicts that a “match” – or transfer – of a substrate meaning to a lexifier form (akin to relexification) will only occur when a perceptually salient form exists in the lexifier – preferably a free form rather than a bound morpheme – which is recognised by speakers involved in the creolisation as having a function or meaning similar to a morpheme in the substrate (their L1). This is demonstrably the case for some bilingual Kriol speakers, who equate the free form *bambai* with the apprehensive structures in Ngarinyman (1) and Jaminjung (30). An additional prediction is that the transfer will only occur if the two forms are in a congruent syntactic position, which is not the case between the various morpho-syntactic expressions of the apprehensive in Ngarinyman and Jaminjung and the many other possible substrate languages of Kriol when compared to the clause initial position of the apprehensive function of *bambai* in Kriol.

A second pillar of the Transfer Constraint approach is the reinforcement principle. This explicitly takes into account that a “transferred” lexifier item will only become conventionalised, i.e. retained as a feature of a stabilised creole

language, if it occurs with reasonable frequency across individuals during this process of stabilisation and levelling. The high frequency of a transferred feature in the developing creole language can be due to its high frequency in a single substrate language, or – importantly for our purposes – the existence of a similar feature in more than one of the substrate languages involved (Siegel 1999: 27–29). In other words, a shared category across several substrate languages increases the likelihood of speakers finding a means to express this meaning in a pidgin or creole language and recognising it when others express this meaning. Certainly the apprehensive is a common feature of substrate languages in the Kriol-speaking area, and indeed in Australia more generally, and thus likely – according to this model – to exert influence on developing contact languages.

Munro (2004) investigates the Transfer Constraints approach with regard to Roper Kriol and realises the need to broaden the application of the Transfer Constraint model in some respects. For instance, Munro (2004: 119–120) expands the model to encompass the transfer of semantic categories (as opposed to purely structurally defined characteristics) and acknowledges that these ought not be so strictly reliant on structural congruence. Munro (2004: 198–199) also responds to the discussion of Koch (2000) which highlights the likely role of early substrate languages in NSW in influencing the NSW and Queensland pidgins, and she finds that this is a relevant factor when analysing Roper Kriol. As a result of her examination of the substrate languages (taken to be Alawa, Marra, Ngalakgan and Nunggubuyu on the basis of historical demographic data about the Roper River Mission camps), she finds that the (augmented) Transfer Constraint model successfully predicts a number of features of Kriol.

According to Munro (2004: 128–130), the category of apprehensive (Munro uses the term ‘evitative’) – which all four putative substrate languages for Roper Kriol possess – is a likely candidate for transfer into the development of Northern Territory Pidgin at Roper River and thence to Kriol. However, Munro does not find an apprehensive category in Kriol, perhaps because *bambai* does not actually have this function in her Roper Kriol data, or else because its apprehensive/evitative function has not been recognised (a factor in analyses of other creole languages, see section 3). She proposes that the absence of the expected apprehensive/evitative in Kriol is because the perceptually salient and available forms in English that could plausibly be reanalyzed as apprehensives – *lest* and *or else* – occur in structurally different positions from the (inflectional) apprehensives in the substrate languages. The reanalysis of a temporal into an apprehensive was not considered an expected pathway. There is also an issue with the plausibility of *lest* and *or else* as salient features in the communicative repertoire of Aboriginal people learning and using these pidgins at the time, or indeed

in the speech of non-Aboriginal station workers.⁷ In any case, neither of these candidates was taken into (Roper) Kriol to express the apprehensive function, but, like both of them, *bambai* does not exhibit structural congruence with the substrate apprehensives.

The presence of *bambai* as an apprehensive in Kriol, including eastern varieties such as Roper Kriol, shows that a differently positioned structural item can act as a host for transferred substrate meaning, and this host item can already be in place in the precursor pidgin (and therefore not immediately sourced from the lexifier). This meaning transfer need not have occurred in the Roper River region. The occurrence of apprehensive *bambai* outside the core Kriol speaking region (see Section 4), suggests that earlier substrate languages, in Queensland or even New South Wales, are plausible candidates for the transfer of an apprehensive function, although, to date, the available historical records yield evidence only for the temporal, but not for the apprehensive function of *bambai* (see Section 3). The apprehensive as a grammatical category is, however, found in a number of potential substrate languages in the path of the northwards expansion of the pastoral industry out of New South Wales (as mapped by Meakins 2014: 363), including Ngiyambaa (Donaldson 1980: 285–286), Yuwaa-laraay (Giacon 2014: 468), Margany and Gunya (Breen 1981: 317–318, 328, 340), Pitta Pitta dialects (Blake and Breen 1971: 112–114), Yalarnnga (Breen and Blake 2007: 43), Kalkatungu (Blake 1979: 68–75), as well as Yukulta in the Gulf of Carpentaria region (Keen 1983; see example (5)). At any stage of the expansion of NSW Pidgin, the criterion of availability as a salient feature in the input is met: *bambai* in its temporal function clearly existed as an early pidgin feature in Australia, evidenced in a number of localities (see Section 3). Thus, nothing would prevent an association of an inflectional apprehensive with a free marker except a lack of semantic identifiability. Since the time and location of the apprehensive function entering the pidgin or creole has to remain speculation for the time being, it is the semantic link between temporal succession and apprehensive function that we will focus on in the following subsection. In this context, we also address the possibility of a grammaticalisation of *bambai* to apprehensive function independent of substrate language influence.

5.2 The grammaticalisation account

A grammaticalisation account of the apprehensive function of *bambai* would take as its starting point the assumption that originally, *bambai* was transferred

⁷ Note that López-Couso (2007: 14), in historical corpora of English totalling a staggering 3.4 million words, found merely 322 attestations of *lest*.

to NSW Pidgin in a function close to that of its English source, that of temporal succession, and underwent a grammaticalisation process, resulting in an extension of the marker to apprehensive function. Just as in the case of substrate influence, this independent development could have occurred at any stage during the expansion of the pidgin or after stabilisation of the creole, but we lack historical evidence to pinpoint this more precisely.

Two arguments support a grammaticalisation account. First, a grammaticalisation process affecting erstwhile temporal *bambai* is actually attested for Melanesian Creoles such as Tok Pisin (Romaine 1995; see Section 3), albeit resulting in a more general future/modal marker rather than an apprehensive marker. Second, the grammaticalisation (or extended use) of markers of temporal succession to apprehensive markers has occurred in a number of unrelated languages, although this particular semantic change has not received much attention in the literature.⁸ Without claim to exhaustive coverage, we briefly discuss examples from Germanic languages, Pidgin Hawaiian, and Northern Australian languages.

In colloquial German, a connective with a meaning of ‘afterwards, later’, *nachher*, has developed a strongly conventionalized apprehensive use when in clause-initial position and unstressed; both functions are illustrated in (31). For example, a web search for combinations of *nachher* with the verb *gewinnen* ‘win’ – expressing an event which in most cases would be associated with positive value – only yielded examples where the outcome of winning was evaluated as negative for some specific reason.

German:

- (31) (a) **Nachher** gehen wir noch essen.
later go:1PL.PRS we PART eat:INF
- (b) Ich glaube, ich nehme lieber nicht
 1SG think:1SG.PRS 1SG take:1SG.PRS rather NEG
 am Gewinn-spiel teil
 PREP win-game VPRT

⁸ This is not to claim that temporal markers are the only potential sources of apprehensive meaning. While the grammaticalisation of apprehensives remains an under-investigated area, other attested sources include verbs of seeing (Lichtenberk 1995: 303), prohibitives (Pakendorf and Schalley 2007), and connectives such as ‘or else; otherwise; if not’ which explicitly indicate the likely occurrence of an event in the case certain precautions are not taken. Lichtenberk (1995) claims that apprehensives more generally arise as complements of expressions of fear, but in light of the semantic links discussed in this section, such an account would seem too restrictive.

Nachher gewinne ich noch
Later/APPR win:1SG.PRS 1SG PART
 und kann das CL Finale nicht zu Hause schauen.
 and can DEF CL finals NEG at home watch
 I think I'd rather not take part in this lottery. I might win [a trip] and
 would not be able to watch the CL (Champions League [in football])
 finals at home.' (<http://www.hifi-forum.de/viewthread-144-7707-4.html>)

A closely parallel phenomenon in Dutch, involving the temporal adverb *straks* 'very soon, immediately' is described in detail by Boogaart (2009), although with no reference to the cross-linguistic category of apprehensive.

In an unrelated language, Pidgin Hawaiian, a connective meaning 'later', likewise, can have an apprehensive function, as illustrated in (32).

Pidgin Hawaiian:

(32) (a) **Mahope** hele aku maua me Kauiaa.

later go DIR 1DU with Kauiaa
 Later Kauiaa and I left (the house).

(b) Wau olelo iaia noho malie, **mahope** huhu kela kahunapule.
 1SG speak 3SG stay quiet **later (APPR)** angry DET priest

(That woman Auroria returned to the church with some girls [...].)

I told her to be quiet, **or else** the priest would get angry.'

(Pidgin Hawaiian; naturalistic written data; Roberts 2013, APICS online, ex. 71–79)

For our deliberations about *bambai*, we consider it significant that an extension of a marker of temporal succession to apprehensive function can be found in some Northern Australian languages which could be considered substrates for Kriol. In Marra, considered by Dickson (this volume) as perhaps the most important substrate language for Roper Kriol, the apprehensive (in positive polarity) is mostly marked, not by a dedicated inflection (or inflectional series), but by a combination of inflectional features (Heath 1981: 228, 230–247). The category is not distinguished formally in any way in the negative, where the sequential adverbial *wuninggi* 'further, more, additionally' with the future negative inflection conveys this sense (33a); reinforcement by *wuninggi* is also very common – although not obligatory – in positive apprehensive (evitative) clauses (33b) (Heath 1981: 187).

Marra (Marran, non-Pama-Nyungan; Northern Territory):

- (33) (a) Wurla rnariya-yurr, **wuninggi** ngula rninggu-way
 go:IMP DEM.M.SG-ALL **further** NEG 3SG>2SG-give.FUT

Go to him, **or else** he won't give it to you!

- (b) nganangu-wa, **wuninggi** rang-ningg-anjiyi
 2SG>1SG-give.IMP **further** hit/kill-1SG>2SG-AUX.EVIT

Give it to me, **or else** I will hit/kill you!' (Heath 1981: 187; adapted orthography)

It seems quite likely, therefore, that *wuninggi*, while retaining its temporal function, is already in the process of becoming re-analysed as an essential element for conveying the apprehensive/evitative function. Heath (1981: 187) explicitly comments on the parallel with “local creole English, where *baymbay* [i.e. *by and by*] means *later, in a little while* but is also common in ‘lest’ clauses.”

In another language, Mangarrayi, situated at the headwaters of the Roper River, a dedicated particle *barlaga* ‘lest’⁹ which is transparently related to the reduplicative adverb *barlarlaga* ‘right now, today’, marks the apprehensive (evitative anticipatory) function, coupled with an array of non-past verbal marking (Merlan 1982: 146–7). The process of co-opting a temporal to apprehensive function seems to be even further advanced here than in Marra.

Mangarrayi (Marran/Gunwinyguan, non-Pama-Nyungan; Northern Territory):

- (34) (a) Barrgji rnama **barlaga** nya-way-(y)i-n!
 hard 2SG.hold.IMP **APPR** 2SG-fall-MPASS-PRS

Hold on tight **lest** you fall!' (or: Hold on tight, **or else** you **might** fall.)

- (b) Garlaji nganghma **barlaga** Ø-yag.
 quickly 2SG.ask:IMP **APPR** 3SG-go:NPST

Ask him quick **before** he goes. (or: Ask him quickly **or else** he **might** go.)

The semantic link between the temporal and the apprehensive function can be described by invoking the Invited Inferences model of semantic change (e.g.

⁹ Merlan (1982: 147) assigns two glosses and related functions, ‘lest’ and ‘before’, to this marker; the latter is applied e.g. to example (36b). We suggest that both can be reduced to the apprehensive function, especially considering that the related adverb does not convey a sense of anteriority; we have adapted glosses and translations accordingly.

Geis and Zwicky 1971; Traugott and Dasher [2001] 2004: 34–40; Traugott 2004: 552–553). This model is based on the observation that a certain form, in particular contexts, may come with certain inferences, over and beyond their encoded meaning, which can be exploited (“invited”) by the speaker. Such inferences can become semanticised, i.e. become part of the encoded meaning, via a stage of conventionalisation of the inference. Such conventionalized Generalised Invited Inferences arise in contexts where the original and the new meaning are both present in the most likely interpretation and therefore ambiguity is unlikely to arise (Traugott 2004: 552–553).

Temporal markers form a particularly well-described source of semantic changes based on such invited inferences, e.g. from temporal precedence to causation (English *since*), or from temporal simultaneity to condition (German *wenn* ‘when’). In the case of an extension of a marker of temporal succession into an apprehensive function, the invited inference consists of the pragmatic enrichment that an event that may be imminent (temporal) is undesirable and to be avoided (apprehensive). This additional semantic component – the undesirability of an event which is potentially about to occur – is described as “negative rhetorical direction” by Boogaart (2009). As Merlan (1982: 147) notes, a temporal expression expressing imminence, such as Mangarrayi *barlaga* < ‘now’ or Dutch *straks* ‘soon’, seems intuitively suitable to the expression of such an additional component. The conventionalisation of the implicature of undesirability may come about through frequent use of a clausal sequence in which the first clause has the illocutionary force of a directive, and the second is introduced by the temporal marker (see Section 4.2). For example, in (21), the directive ‘leave it alone’ is both preceded and followed by clauses spelling out two potential events, breaking the car, and being scolded by Dad. By the principle of relevance, the most plausible link between these clauses is to construe both potential events as undesirable, since this provides the motivation for the speaker’s directive, which in turn is construed as the instruction of how to best avoid the potential event. Moreover, a causal link has to be construed by the addressee between the two apprehensive clauses which depict breaking the car and being (subsequently) scolded. Of course directives can also be employed to induce the hearer to bring about a desirable consequence, and temporal markers can be employed in this case too, e.g. *Catch some fish for us, then we can eat*. Thus the semantic change to apprehensive function requires for a particular temporal marker (German *nachher*, Dutch *straks*, Kriol *bambai*) to be employed primarily in a context of a directive to avoid an obviously undesirable event. A diagnostic of semanticisation of the apprehensive function of the temporal marker, then, will be its potential to occur outside the directive context

and even without explicit mention of the precautionary measure, and, furthermore, with an unambiguous interpretation of a negative consequence even if the context does not strongly suggest such an interpretation (such as in the German example in (31) above).

In our Kriol data, the precautionary measure is frequently left unspecified or at most indirectly specified, but in most cases, the event described in the clause introduced by *bambai* is unambiguously negative. A less clear case is the following example (35). At first sight, learning one's language should not be considered an undesirable consequence; however the context is that of the speaker working on a cattle station as a young girl where indeed she was discouraged from learning her language, since the station managers, who kept her in their household as a servant, considered this strengthening of her family ties an undesirable event.

Westside Kriol (Timber Creek):

- (35) I neva let-im mindubala go
 3SG NEG.PST let-TR 1DU go
 langa big gel tokin na.
 LOC/ALL big girl talking SEQ
 Im reken "**Bambai** yu len-im yu langgwij".
 3SG think APPR 2SG learn-TR 2SG language

She didn't let us two go to the big girls to talk. She thought "You might learn your language". (Spoken narrative; DB 2006, recorded and transcribed by Jenny Denton and Colleen Moerkerken)

Incipient semanticisation, in this case restriction of the marker to apprehensive function, will also go hand in hand with diversification of distribution in cases where the original function is also retained. Such a diversification seems to have taken place in Westside Kriol. In our data of older Kriol speakers in and around Timber Creek and Kununurra, *bambai* in clause-initial position in untensed clauses always has an apprehensive function, while the temporal function is retained only for postverbal *bambai*. Boogaart's (2009) discussion and examples of the "anticipated negative event" function of Dutch *straks* suggest a similar positional diversification.

To summarise the preceding discussion, an independent development of a temporal marker, *bambai*, going through an independent process of semantic extension or temporal marker undergoing to a marker of undesirable possibility is plausible and is attested elsewhere. On the other hand, it seems absurd to discard

the potential influence of the apprehensive function found encoded – albeit in a large variety of formal manifestations and paradigmatic positions – in the modal systems of the substrate languages and in fact as a wider areal feature, especially given evidence that individual speakers equate it with *bambai* in their traditional languages. As suggested by the Transfer Constraint model discussed in Section 5.1, such a widespread and stable semantic feature would be expected to transfer to a formal expression that is semantically related (or construable as related) in a pidgin or nascent creole language. Thus, the two accounts need not be considered mutually exclusive. The apprehensive function of *bambai* can potentially be accounted for by the concept of instantaneous grammaticalisation (Bruyn 1996), i.e. a “shortcut to grammaticalisation through direct calquing” (Keesing 1991: 331). In this account, the existing model in a substrate language motivates speakers to find means of encoding the same category, not by direct transfer but by recruiting, and extending to a grammatical function, a lexical form from the lexifier, following universally attested grammaticalisation paths (see also Plag 2002; Heine and Kuteva 2005). Of course, in the case of *bambai*, as we have noted elsewhere, it is the pidgin that has provided the “form”, not the lexifier *per se*.

Intriguingly, the availability of temporal markers exhibiting an extension towards apprehensive function in at least two immediate substrate languages of Roper Kriol (*wuninggi* ‘later’ in Marra; *barlaga* related to *barlarlaga* ‘right now, today’ in Mangarrayi) could have facilitated the encoding of an apprehensive function by *bambai* in Roper Kriol. Of course, great care has to be taken in interpreting such material in terms of causality and directionality. It is, for instance, also possible that speakers of Marra and Mangarrayi – who at the time of linguistic documentation all had proficiency in Roper Kriol or its pidgin predecessor (Merlan 1982: xii), and who therefore used *bambai* in apprehensive function as Heath (1981: 181) observed – reinforced the propensity of these temporals to co-occur in apprehensive structures in Marra and Mangarrayi, thus raising them into greater prominence in these languages. Declining speakership in the 1970s (when Heath and Merlan undertook fieldwork) and associated phenomena, such as overregularisation, might have promoted or accelerated the influence of Roper Kriol structures on these traditional languages. Similarly, Hawai’ian Pidgin *mahope* ‘later’ (example (32)) might have developed temporal and apprehensive meanings which then transferred to the convenient candidate *bambai* in Hawai’ian Pidgin English, or it is also possible that the directionality of influence was reversed, and Hawai’ian Pidgin English speakers transferred temporal and apprehensive meanings of *bambai* to the closest available candidate in Hawai’ian Pidgin, *mahope*.

6 Conclusions

Evidence has been presented in this paper that *bambai* expresses apprehensive modality in varieties of Kriol. It is unsurprising that this function of *bambai* has not been identified previously, because, as already noted in Section 2, the category of apprehensive has not received much attention cross-linguistically. What attention *bambai* has drawn in Pacific creolistic writings largely identifies it just as a temporal connective and one of the core/common features of regional contact varieties or concerns its development as an irrealis/future marker in some Melanesian pidgins/creoles, which may well have obscured its apprehensive tendencies elsewhere. What is more, other structures can convey apprehensive meaning, such as more general modals (e.g. Kriol *mait* ‘might’); as a consequence, dedicated apprehensive forms may not necessarily occur in language data and this may disguise the need to seek them more rigorously. Furthermore, Kriol *bambai* has retained its full form and has not developed a reduced form as in the trajectory charted for reflexes of *by and by* in future/irrealis function in some Melanesian pidgins/creoles, thus rendering the extension to a modal function in Kriol less obvious. In Kriol, moreover, *bambai* is positioned (often well) outside the verb phrase, and so is not considered a natural candidate for expressing modality (although other epistemic modals like *maitbi* (< *might be*) also occur outside the verb phrase). Such formal and structural factors may have prevented a description of the apprehensive function of *bambai* in earlier analyses.

It is clear that *bambai* has a long history of being dispersed via jargons and pidgins in its meaning of ‘(sometime) later’, which is common worldwide. Admittedly this temporal meaning might be purely due to what English speakers (and primary historical recorders) were able to note, as it is the meaning close to recorded English usages. In any case, *bambai* is now clearly used in apprehensive function in some modern day English-lexified contact languages of Australia and the Pacific, including several Kriol varieties (but perhaps not in the Kimberley), some Queensland Gulf varieties, Torres Strait Creole (but not Cape York Creole), Hawai’i Creole and Norf’k. In the creoles that use *bambai* apprehensively, *bambai* has not grammaticalised into a future marker. This observation may prove to be robust, and a mutually exclusive distribution may eventually be demonstrated which could indicate a split grammaticalisation pathway for *bambai*, with one branch of semantic extension becoming a future marker, the other, apprehensive. Outside of the Pacific, *bambai* does not seem to have developed as an apprehensive, despite its wide distribution as a temporal connective, so this might lend weight to the possibility that the apprehensive

innovation for *bambai* spread to recipient speech communities in the region, rather than independently grammaticalising in each place, but this is by no means certain: We have seen, for instance, that other neighbouring languages have utilised (unrelated) temporal markers for apprehensive functions (e.g. German, Dutch in Section 5.2). We also showed that the functions of *bambai* have diverged in eastern and western varieties of Kriol: the western varieties show positional diversification between the temporal (clause-final) and the modal function (clause-initial), and do not use the temporal function in combination with tense marking and in a sequential reading (Section 4).

With regard to how *bambai* acquired its apprehensive meaning, in support of substrate influence, we have examples of individual speakers directly equating Kriol *bambai* with the apprehensive structures in Australian Aboriginal languages in codeswitching utterances (Section 5.1). On a larger scale, however, we cannot know for sure where *bambai* took on apprehensive meaning: The northwards path of the pastoral pidgin which carried *bambai* through NSW, Queensland and into the NT passed through the hands (or rather mouths) of speakers of a great number of Australian Aboriginal languages, many with apprehensive structures of various kinds (Sections 2 and 5.1). We tentatively propose that evidence is mounting that *bambai* was gaining its additional apprehensive function before it was carried into the NT, both because of its distribution on the eastern “fringes” of Kriol, as well as its mutually exclusive distribution with the future marker *bambai* in Melanesia.

Although substrate influence is likely to have played an important role in providing pools of speakers familiar with expressing an apprehensive category, harnessing *bambai* as an apprehensive is not predicted by current substratist models due to both meaning and structural mismatches with the substrate languages. The development of a temporal *bambai* into a marker of apprehensive modality therefore also depends on grammaticalisation processes. To this end, we have established a semantic link between temporal and apprehensive meanings, explained how the implicature of undesirability may have become conventionalised and provided examples of just such developments cross-linguistically (Section 5.2). Since the historical record is lacking, the precise grammaticalisation processes involved in how *bambai* accrued apprehensive function may not be proven definitively. On this basis, we have tentatively proposed that “instantaneous grammaticalisation” may be the best approach: It includes a role for substrate influence (motivating speakers to find a means of encoding the same category as expressed in their language(s)), and for grammaticalisation (recruiting a lexical form from the lexifier not by direct transfer but by employing it in a grammatical function following cross-linguistically attested grammaticalisation pathways).

This discussion of *bambai* as an apprehensive highlights some of the conceptual issues of contact linguistics. Both substrate influence and grammaticalisation are likely to have played a part in the *bambai* story, the former process providing a meaning without a likely home, the latter providing the home, by means of a cross-linguistically attested and cognitively plausible pathway. It is likely, due to the very nature of language contact, that this involved recursive processes, with one feeding the other and vice versa, against a backdrop of broader social processes of population movements and new communication needs.

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Abbreviations

ABS	absolutive	M	masculine
ALL	allative	MOD	modal
APPR	apprehensive	MPASS	mediopassive
AVERS	aversive	NC	noun class
BEN	benefactive applicative	NEG	negation
CONT	continous aspect	NMZR	nominaliser
DAT	dative	NPST	nonpast
DEF	definite article	PART	discourse particle
DEM	demonstrative	PL	plural
DET	determiner	POSS	possessor
DIR	directional	PRS	present
DU	dual	PST	past
EVIT	evitative	PURP	purposive
EX	exclusive	REM	remote
FOC	focus	SEQ	sequential
FUT	future	SG	singular
HAB	habitual	SRP	subject-referencing pronoun
IMP	imperative	TR	transitive marker
INCL	inclusive	VPART	verb particle
IND	indicative	1	first person
INF	infinitive	2	second person
INT	interjection	3	third person
IRR	irrealis	–	morpheme break
LOC	locative	=	clitic break

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