

## ***ALS2019 Celebrating Diversity – Abstracts***

### **Advice-giving strategies by native speakers of Australian English and Saudi Arabic: A cross-cultural comparison**

Mai Abualsamh

#### **Abstract**

This cross-cultural study investigated advice-giving strategies employed by native speakers of Saudi Arabic (SA) and Australian English (AE). Data were collected from 44 native speakers of AE and 60 native speakers of SA using Arabic and English versions of the same discourse completion task (DCT). A mixed-method design was used to analyse data in terms of three selected criteria: (1) the use of advice speech act or opting out; (2) level of directness in advice head act strategies; and (3) internal modifiers. Preliminary results showed that AE participants more frequently avoided offering advice than SA participants. When they choose to give advice, Australians showed a clear preference to use an indirect style with the use of a wide range of internal modifiers to mitigate the face-threatening act (FTA). On the other hand, SA participants preferred the use of direct advice and aggravated the force of advice by using internal upgraders. These results provide valuable insights into the socio-cultural values and norms in both languages and shed light on potential instances of cross-cultural misunderstanding that may prevent successful intercultural communication. The pedagogical implications are discussed.

**Keywords:** Advice giving, Cross-cultural pragmatics, Intercultural communication, Australian English, Saudi Arabic

## Distinctive cultural-linguistic practices in Palembang Malay language in Indonesia

Susi Afriani

This paper explores the distinctive cultural-linguistic practices in Palembang Malay language in Indonesia (hereafter refereed as Palembangnese). Palembangnese is an inter-regional (South Sumatera) language of communication, used especially in Palembang city, Indonesia. It is one of the varieties of Malay language spoken in Indonesia. Palembangnese is still used by the majority of Palembang people in Palembang, and it is a large component of the speaker's identity (Amin, 2010b). Palembangnese is called *Baso Palembang* by Palembang people. It has two levels: *Baso Palembang Alus (BPA)* and *Baso Palembang sari-sari (BPS)*. The first level, *Baso Palembang Alus* is used in conversations with old people, community leaders or respected people, especially in traditional ceremonies, such as marriage, birth and circumcision. The second level, *Baso Palembang sari-sari* is used in conversations with people of the same age or younger than the speaker, both in traditional ceremonies and in daily conversation. The present study focuses on *Baso Palembang sari-sari* (the second level). *Baso Palembang sari-sari* is used as the tool of daily communication by the Palembang community of approximately 3,105,000 people (Simons, 2018). It is also used by populations from other language groups in South Sumatera province as a trade language. This paper argues that Palembangnese are distinctive given its combination of indigineous and Islamic culture.

The study was conducted through Palembangnese media, such as PAL TV, Youtube, radio and newspaper. Data for this study was collected through media from three main sources: *Kelakar Bethook* Palembangnese Humour, *ceramah* (Islamic speeches), and *cerito Mang Juhai* (Mr. Juhai stories). The first data set, *Kelakar Bethook* contains ten videos of Palembangnese humour, downloaded from Youtube. The second data set, *ceramah*, contains ten recordings of Islamic speech from Palembangnese TV and Palembangnese radio, and the third data set consists of ten *cerito Mang Juhai* from the Palembangnese newspaper. A combination of quantitative and qualitative approaches, a mixed-method approach, was used to analyse the data. A simple quantitative measure was used to count the occurrence of important characteristics found in the three different genres. The qualitative analysis offers an explanation of what the utterances are actually saying.

The paper explores to show that this research can (1) document a new topic of the Palembangnese; (2) promote a wider awareness of Palembangnese culture and humour; (3) contribute to distinguishing one facet of Islamic Malay civilization; (4) satisfying the Palembangnese speech community.

**Keywords:** *Distinctive cultural-linguistic practices, Directives, Humour, Palembangnese, Speech communities.*

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## Rohingya's Pronominal System

Rami Alhazmi

I am presenting the pronominal paradigm of Rohingya as spoken by the Rohingya refugees in Saudi Arabia focusing on certain typologically or genetically unusual features with some data. Rohingya has received a very limited amount of attention from linguists, and no grammatical description is available for it except for very short descriptions provided by non-linguist Rohingya volunteers. This talk is based on work from my PhD project, which will provide the first phonological, morphological, and syntactical description of Rohingya based on elicited data and natural videotaped discourse of Rohingya. The preliminary draft of the Rohingya sketch grammar, based on the already collected first set of data, manifests some interesting features of this language. Its list of pronouns, for example, include at least two, as the ones for the first singular person, and up to four, like the ones used for the third singular person, that can be chosen by the speaker based on the social status of him/her and that of his/her interlocutor. In (1a), *Mui* 'I' is chosen by the speaker indicating that the social status of his interlocutor is either higher than his or equal. However, in (1b) the speaker's choice of *ʔāji* 'I' shows that his social status is higher than that of his interlocutor.

- (1) a. *Mui*                      *za-jm*                      b. *ʔāji*                      *za-jum*  
1SG.A.Unmarked    go-Fut.1SG.unmarked                      1SG.A.POL    go-Fut.1SG.POL  
'I will go'                      'I will go'

Rohingya has two polite second person singular pronouns, *tū:i* and *o:ne* and one regular form, *tui*, for the unmarked use. There are verb forms that are usually used with plural subjects; however, they can be used with both Rohingya's polite second person singular pronouns, *tū:i* and *o:ne*. For example, in (2a), *tū:i* is used with the plural verb *leχ-o* 'write', denoting the meaning of 'you [singular] write' despite the verb form to show respect to the interlocutor, which is the same verb form used in (3) in which the plural pronoun *tuāra* is used, denoting the meaning of 'you [plural] write'. In contrary, (2b) shows a usual pronoun-verb agreement in number in which *tui*, the unmarked form of the second person pronoun, is used

- (2) a) *tū:i*                      *leχ-o*                      (3) *tuāra*                      *leχ-o*  
2SG.A.POL    write-PL                      2PL.A.POL    write-PL  
'you [singular] write'                      'you write'  
b) *tui*                      *leχ-os*  
2SG.A.Unmarked    write-2SG  
'you write'

In addition, Rohingya 3rd person pronouns exhibit three levels of spatial proximity identified by the informants as *near*, *not that far*, and *too far* which are similar to the proximal, distal, and unmarked versions of Bengali (David, 2015).

Furthermore, 3rd person singular pronouns inflect gender among which the subject pronouns *ite*, *te*, *u:te*, and *hite* that are masculine and *iba*, *u:iba*, and *hiba* that are both feminine and masculine. The first set, *ite*, *te*, *u:te*, and *hite*, are used with masculine whose social status is lower than the interlocutors whereas the originally female set, *iba*, *u:iba*, and *hiba*, are used for masculine 3rd persons only to show respect or if their social status is higher.

Also, inanimate 3rd singular objects are referred to by four pronouns, *yan*, *iba*, *hyan*, and *hiba*. The inanimate which has a flat or thin shape is referred to using *yan* if located near and *hyan* if located far. However, the inanimate, which has a round shape or electronic and mechanical equipment such as TV screens, even if their shapes are not round, is referred to with *iba* if located near and *hiba* if located far.

**References:** David, A. B. (2015). *Descriptive grammar of bangla* (De Gruyter Mouton, Berlin)

No.	Person	Gen.	Rohingya’s Pronouns				Distance	Politeness
			Subject	Object	Genitive	Reflexive		
Sg	1st	m/f	ʔājji	ʔā:re	ʔā:r	ʔājjinize		POL
			mui	more	mor	muinize		Unmarked
	2nd	m/f	tui	tore	tor	tuinize		Unmarked
			tũ:i	tuāre	tuār	tũ:inize		POL
			o:ne	o:nore	o:nor	o:nenize		POL (highly marked)
	3rd	m	ite	itare	itar	itenize	Unmarked	Unmarked
			te	tare	tar	tenize		
			u:te	u:tare	u:tar	u:tenize	Distal	
			hite	hitare	hitar	hitenize	Proximal	
		m/f	iba	ibare	ibar	ibanize	Unmarked	POL for Masc.
			u:iba	u:ibare	u:ibar	u:ibanize	Distal	
			hiba	hibare	hibar	hibanize	Proximal	Unmarked for Fem
		INAN	yan	yanore	yanor	yannize	Unmarked	
			iba	ibare	ibar	ibanize		
			hyba	hybare	hybar	hybanize	Proximal	
			hiba	hibare	hibar	hibanize		
Pl	1st	m/f	ʔāra	ʔārare	ʔārar	ʔāranize		Unmarked
	2nd	m/f	tuāra	tuārare	tuārar	tuāranize		
	3rd	m/f	itara	itarare	itarar	itaranize	Unmarked	
			tara	tarare	tarar	taranize		
			u:itara	u:itarare	u:itarar	u:itaranize	Distal	
			hitara	hitarare	hitarar	hitaranize	Proximal	
INAN		i:n	i:nore	i:nor	i:nnize	Unmarked		
		u:n	u:nore	u:nor	u:nnize	Proximal/ Distal		

## **VCE English Language: Linguistics and the senior secondary classroom**

Dr Annelise Balsamo, Victorian Curriculum and Assessment Authority (VCAA)

VCE English Language is one of four English studies Victorian senior secondary students can select to fulfil the English component of a VCE sequence. As the current English Curriculum Manager at the Victorian Curriculum and Assessment Authority (VCAA) and a former VCE English Language teacher, I would like to explore the study from a professional and a personal perspective. I'll look at the current Study Design, and its features, and at the story the student statistics tell us about this study. I'll also speak about my own experience teaching VCE English Language and share some of my observations.

## Redfern Now – a corpus linguistic analysis

Monika Bednarek

This talk presents a corpus linguistic study of the television series *Redfern Now*. Television series and movies have traditionally introduced and reinforced negative attitudes about speakers of minority Englishes and nonstandard language varieties, often perpetuating a *standard language ideology* (Lippi-Green 1997). Representations of these varieties of English tend to be selective and inaccurate (Bednarek 2018). However, sociolinguistic research to date has largely examined representations in older (Hollywood) films with a focus on varieties of American English (e.g. Meek 2006, Bucholtz & Lopez 2011). In Australia, there has been a recent turnaround in the amount of Aboriginal and Torres Strait Islander characters on Australian TV (Screen Australia 2016). Australian audiences now encounter a range of TV characters, who vary in their use of Standard Australian English, varieties of Australian Aboriginal English, and Indigenous languages. For many viewers, such characters are an important source for experiencing ‘Aboriginal ways of speaking’ (Eades 2013), especially if they do not regularly interact with Aboriginal and Torres Strait Islander people.

This paper will use a case study of *Redfern Now* to investigate such media representations. The focus will be on forms that are statistically speaking salient in *Redfern Now* when compared to other television series (without Aboriginal or Torres Strait Islander characters). This is an inductive, data-driven approach which automatically identifies word forms that are more frequent than expected given a comparative yardstick. Classification of the identified forms will focus on the extent to which they are likely to mark ‘type indexicality’ (Queen 2015) for the target audience, and on the extent of variation in the data, by using statistical measures to account for dispersion across episodes. The study is located within critical sociolinguistics as well as media linguistics and, through its study of scripted performed material, will contribute new insights into creative and self-conscious, mediated language use in Australian society.

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<https://tinyurl.com/yajvl5t8>.



## Pronominal neutralisation in Marri Ngarr

Katie Bicevskis

In this paper, I will discuss dual neutralisation in Marri Ngarr, a highly endangered non-Pamanyungan language from the Daly region of the Northern Territory, and show that its realisation has typologically interesting properties unattested elsewhere in Australia.

Dual neutralisation is a phenomenon which has been described for several Australian languages (e.g. Warlpiri: Hale 1973; Yukulta: Keen 1983; Gurindji: McConvell 1980; Bilinearra: Meakins & Nordlinger 2013). It occurs when non-singular number categories of pronominal markers are conflated in particular contexts. In some versions of the phenomenon such as that found in Eastern Warlpiri, non-singular subject and object clitics are marked as plural if both arguments in a transitive clause are non-singular (Hale 1973: 330). That is, semantically plural arguments are always matched with their clitic form, but semantically dual arguments are marked by plural clitics if both arguments are non-singular.

1. ŋatjara-[u ka-**ŋalu-njara** njumpala nja-nji  
1DL-ERG PRES-**1PL-2PL** 2DL see-NPST

“We two see you two.”

(Hale 1973: 330, some glosses changed)

Considering that the dual number category is more marked than the plural (Corbett 2000), a more unusual version of neutralisation occurs in Yukulta. Here, when both arguments in an antipassive clause are non-singular, they are marked by dual clitics:

2. bala-tha-**rrawa-rr**-a-yi gilwan-ji burldamurr-i  
hit-IND-**2DU.DAT-3DU.NOM**-PRES-IRR 2PL-OBJ three-LOC

“Those men will hit you three.”

(Keen 1983:215, gloss from Mathie 2014: 7)

In Marri Ngarr, however, the neutralisation environment is more restricted. Dual neutralisation is triggered only when a semantically dual subject is in combination with a non-singular object/oblique argument. In this case, semantically dual and plural object/oblique arguments are both marked as dual, as shown in example (3). The effect of dual neutralisation is seen on the oblique, but not on the subject since subject markers (which form part of the classifier verb stem) generally only distinguish between singular and non-singular.

3. a. nadi ma- jicuk ku nawu- **ŋiŋ** - mazi  
2DL.PRO MASC- two FOC 2NSG.SIT.IRR- **1DL.OBL**- wait  
“You two fellas wait for us two.”

(JoN: IG3-022-A: 56)

- b. nadi nawu- **ŋiŋ** - mazi cer  
2DL.PRO 2NSG.SIT.IRR- **1DL.OBL**- wait 1PL.PRO  
“You two wait for us mob.”

(PT: IG3-022-A: 57)

There are however three classifier verb stems which also contrast dual and plural number categories in the non-singular, and neutralisation can be observed with these forms in the relevant environment. However, in contrast to what we saw for oblique neutralisation in (3) above, subject markers neutralise to the *plural* form not the *dual* form, as shown in (4).

4. kadi **ŋinmel**- didi- pir -ni  
1DL.PRO **1PL.GO.2.IRR**- 2DL.O- leave -FUT  
“Us two will leave you two.”

(PT: IG3-033-B: 38)

Thus, the number category of the target neutralisation target differs depending on the argument type: subject → plural; object/oblique → dual. This results in a reversal of morphological and

semantic number categories when neutralisation occurs on both arguments in a divalent construction, as shown in (5).

5. kadi ner ari **ɲinmeli- didi-** pir -ni  
1DL.PRO 2PL.PRO PROX **1PL.GO.2.IRR- 2DL.O-** leave -FUT  
“Us two will leave you mob.” (PT: IG3-033-B: 39)

This unique manner with which neutralisation is realised in Marri Ngarr has significance for morphosyntactic markedness (Croft 1990: 71 - 2), suggesting that the marked number feature can be dependent on grammatical function. The data presented also expands on our knowledge of possible realisations of dual neutralisation in Australian languages.

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## **Imparting the basics of Murrinhpatha classificatory kinship**

*Joe Blythe, Jeannie Messer and Margaret Chi*

Most research on children's acquisition of kinship terminology has generally involved questionnaires or experiments conducted by developmental psychologists seeking to elucidate developmental stages in kinterm cognition (Piaget 1928; Danziger 1957; Haviland & Clark 1974; Bavin 1992; Greenfield & Childs 1977). Being generally less concerned with kinship per se than with issues of perspective taking, many of these 'Piagetian' studies have been criticised for eliciting meta-conceptual knowledge rather than conceptual knowledge (Hirschfeld 1989) and for ignoring the deictic function of kinterms (Carter 1984). While there are accounts within the language socialisation literature (eg., Guemple 1988; Schieffelin 1990) about how kinship knowledge is imparted to children, there are only a few studies that examine closely *how* kinterms are acquired within video recordings of social interaction (e.g., Ellis, Green & Kral 2017; Howard 2007). Yet it is through language use within interaction that a child's grasp of their place within a network of genealogical relationships incrementally develops as a brother among siblings, as a grandchild among grandchildren, as a cousin among cousins, as the systemic organisation of the kinship network emerges. If the kinship system being acquired is a 'universal' classificatory system (Barnard 1978) like the Murrinhpatha system, this can be a protracted process that extends into adulthood.

Drawing on a longitudinal video corpus of child and care-giver interactions, we use Conversation Analysis and Membership Categorization Analysis to explore how Murrinhpatha speaking caregivers and child-peers impart the basics of classificatory kinship to very young children. Caregivers and child-peers use strings of imperative speech verbs (e.g. *thama*, 'say it'/'do it', *nange*, 'tell her', *narna*, 'tell him' and *tjikay* 'call out {to someone}') to instigate (real and imagined) conversations with and about the child's close relatives. These protracted prompting routines utilize category terms, including kinterms, which are mapped onto the referents' personal names; such that children are quite literally told what to say to these relatives and how to address them.

We also examine shorter sequences in which caregivers other-correct (Jefferson 1987) children's improper kinship attributions, as well as extracts in which older children are co-opted into explaining to younger children who specifically has been referred to, and thereby how these younger children are related to the referents in question.

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## Murrinhpatha speaking children's acquisition of sibling-inflected verbal morphology

Joe Blythe, Jeremiah Tunmuck, Alice Mitchell and Péter Rácz

Our understanding of first language learning predominantly comes from a small set of languages, spoken in Western industrialised societies. Recent years have seen an expansion of the range of languages that provide data for the field, although there remains a long way to go before it fully incorporates the breadth of human linguistic diversity (Kelly et al. 2015). As baby steps toward this end, we present comprehension data collected in a series of experiments in the field in Wadeye, Northern Australia, from children and adults, on the kinship inflected grammar of Murrinhpatha.

Murrinhpatha is a polysynthetic language with sibling infected morphosyntax, one of only 16 Australian languages known to mark kinship inflections in their pronominal paradigms (Blythe 2013). Murrinhpatha kinship is all expansive, in that the entire Aboriginal population of Wadeye – more than 3000 people – can (at least theoretically) be incorporated into family networks and allocated kinterms. In the Murrinhpatha classificatory kinship system, cross-cousins (mothers' brothers' children or fathers' sisters' children) are distinguished from parallel cousins (fathers' brothers' children or mothers' sisters' children), who are classified as siblings. During fieldwork, we collected data on the comprehension and production of both kinship terms and sibling infected morphosyntax. Here, we focus on children and adults' understanding of how kinship, as well as other morphological features, such as number and gender agreement, are marked on the Murrinhpatha verb.

We collected data on the comprehension of verb agreement from 39 participants, 23 males and 16 females, between the age of 5 and 40. Each participant went through 20 trials. In each trial, they saw an animation depicting one of five activities and heard a sentence containing a Murrinhpatha verb (e.g. *parnamkawalalanykangime*, “several non-siblings, at least one of whom is female, are waving.”, see Figure 1) then they were presented with a pair of images depicting individuals they know in Wadeye (see Figure 2). One image matched the sentence (e.g. the left one which includes females) and one did not (the males, on the right). For the *siblinghood* contrast, one image (of two people who are siblings / parallel-cousins) matched the sentence (e.g. “The two siblings are fighting.”) and the other one (of two people who are cross-cousins / not siblings at all) did not. Participants had to pick the appropriate image.

Figure 3 shows the aggregate results across contrasts tested (*gender*, *number*, *siblinghood*) for the five age bands of our 39 participants. What we can see is that older participants get more accurate in the task, the siblinghood contrast is commensurate in difficulty with the gender and number contrasts. This is supported by a mixed-effects logistic regression analysis of the individual answers.

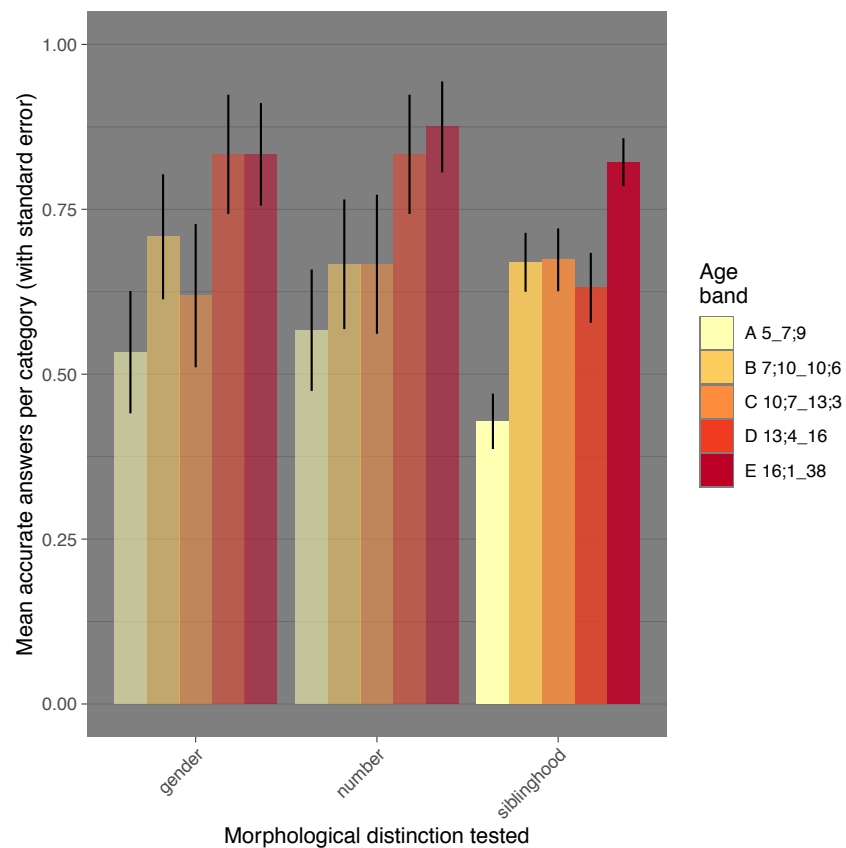
The results, together with results from our other experiments, suggest that children's comprehension of siblinghood (and classificatory kinship, more broadly) is a drawn-out process that proceeds into adulthood as a child's genealogical knowledge of the community expands. Grasp of the *siblinghood* contrast tracks in tandem with the morphological marking of gender and number, with mastery developing in the late teens/early adulthood. Children's ability to use verbal morphology alone in distinguishing parallel cousins from cross cousins tracks behind these other three contrasts, as this calls on deeper genealogical knowledge of the community. Overall, Murrinhpatha provides a fascinating glimpse into how the social and the referential aspects of first language learning go hand in hand through childhood and young adulthood.



**Figure 1.** A still from the "laughing" animation.



**Figure 2.** The subsequent image pair.



**Figure 3.** Mean accurate answers per morphological category tested, across the five age bands.

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***The water come in a burst:***

**A semantically-enhanced discourse analysis of 2010 Queensland Floods witness accounts**

Helen Bromhead, Griffith University

Australian English can act as a mirror of conceptualisations of and attitudes towards extreme weather events in the country such as *floods* and *bushfires*, which are often matters of life and death, and viewed as issues of national identity. Just as Australian English encodes local meanings about the Australian landscape in words like *creek* and *bush* (Arthur 2003; Bromhead 2018), the semantics of, and discourse associated with, words like *flood*, *cyclone* and *bushfire* contains information about Australians' experiences with extreme weather and their environmental knowledge (Bromhead, in press, 2020). Words of this kind can be considered Australian cultural keywords as evidenced through lexical elaboration of extreme weather event vocabulary in Australian English, for example, in colloquial expressions such as *SES vollies* 'State Emergency Services volunteers', and more formal language such as *flood insurance* (Wierzbicka 1997). The semantics of the word *flood* even became a political issue in Australia following the 2011 floods in Southeast Queensland due to unevenness in insurance coverage for those affected by the events (*Sydney Morning Herald* 2011).

This talk presents a semantically-enhanced discourse analysis of how *floods* are spoken about in Australian English. It draws on a study of a corpus composed of statements by lay witnesses to the 2011 Queensland floods as given to the state government's Queensland Floods Commission of Inquiry (2012). The presentation takes a discourse analysis approach which applies semantic analysis in the Natural Semantic Metalanguage tradition to the study of cultural discourses, and demonstrates the prospects for the use of this approach in the area of extreme weather events (Carbaugh 2007; Forbes 2019; Levisen and Waters 2017).

Topics analysed include the nature of people's experience of the devastation wrought by 'floods' (particularly in contrast to those of 'bushfires'); 'flood warnings' discourse and its relationship with the semantics of the word *warning*; the valorisation of those who volunteered in the flood; and the differences in definition of the word *flood* to speakers of Australian English vs. that in insurance policies.

Overall, the study shows how semantically-enhanced discourse analysis of lay speakers of Australian English can reveal local Australian environmental knowledge and cultural experience.

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## A description of reciprocity and reflexivity in Light Warlpiri

Cedar Brown

Cross-linguistically there is a wide range of strategies for how reciprocal and reflexive events are encoded (Evans et al., 2011). Mixed languages present an interesting arena for these constructions because they combine features of more than one type of source language, yet there is very little study of these constructions in mixed languages.

Light Warlpiri is a newly-emerged Australian mixed language that systematically combines elements from Warlpiri (Pama-Nyungan), Kriol (an English-based creole) and English, with innovations (O'Shannessy, 2005).

In this study, production data from 22 Light Warlpiri speakers are analysed and the reciprocal and reflexive system of Light Warlpiri is described.

The reflexive and reciprocal forms have a common lexical base, *-self* (< English *self*), English-derived in form, but drawing on both English and Warlpiri in having the same base form for both expressions.

The reflexive system displays a significant influence from English in form and structure, surprising because Kriol influences Light Warlpiri in other parts of the verbal system. Unlike Kriol, the Light Warlpiri reflexive system displays person and number agreement with the subject:

- 1) *i-m*                      *hurt isselb*  
3SG-NONFUT hurt REFLX  
'He hurt himself.'                      (LA62)

Reciprocity is encoded by a single marker *de(m)selb* (< English *themselves*). There is variation in the context in which the form appears, and some semantic specifications of reciprocity are dispreferred. There is also an 'unspecified' marker *de* occurring in reciprocal contexts. Further, innovation is seen in the combination of reciprocal and iterative morphology in the verb.

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## The application of morpho-phonological rules comes with a processing cost.

Rikke Bundgaard-Nielsen and Brett Baker

**Background:** Many traditional Indigenous Australian languages are described as allowing long and complex single ‘words’, such as ‘nganiyanangujugujaani’ in Wubuy (Nunggubuyu: Heath, 1984) best translated into the English phrase ‘I was tickling him on the head’. Such ‘words’ appear to defy the distinction often made in linguistics between individual words and phrases: It is not clear to which extent these ‘words’ are generated much like phrases in English, or whether they are stored as whole chunks in a speaker’s mental lexicon much like words. Recent research [1] suggests that speakers of Wubuy have access to some word-internal morphological junctures, and it is plausible that the answer is neither ‘word’ nor ‘phrase’. Indeed, the distinction may be seen as a gradient phenomenon. One morpho-phonological rule in Wubuy provides a typologically rare opportunity to examine this question further: In Wubuy, all stems beginning in a continuant (vowel, liquid or glide) alternate with stop-initial forms when the stem is following a nasal or stops across a morpheme boundary. If Wubuy ‘words’ are indeed word-like, these alternant forms would be stored as individual entries in the mental lexicon and retrieved in ‘one go’ as needed. If, on the other hand, speakers generate these ‘words’ much like phrases, we would expect the application of a morpho-phonological alternation rule to be applied only as needed, to the un-hardened lexeme, potentially with a processing cost. **The present study:** We conducted a self-timed two-alternate forced choice preference paradigm in two parts. In Part 1, participants were presented with Wubuy ‘words’ that differ only in whether or not the hardening rule is been applied to the stem: Wubuy verbs ‘lhiyn’ (to chop), ‘aayuu’ (to cut), ‘walangi’ (to paint), and ‘walbumana’ (also ‘to paint’) and their hardend forms ‘dhiyn’, ‘gaayuu’, ‘balangi’, and ‘balbumana’. The targets were presented in two frames which induce hardening (1a, 1b) and two which do not (2a, 2b). The target stems were cross-spliced into each of the four frames. This generated 32 items (16 paired ‘words’), in which hardening was correctly applied in half and over-applied in the other half. Each pair was presented twice (order of the two phrases counterbalanced) equalling a total of 32 trials. Part 2 was identical to Part 1, except that a 500 ms pause was inserted between the frame and the target verb.

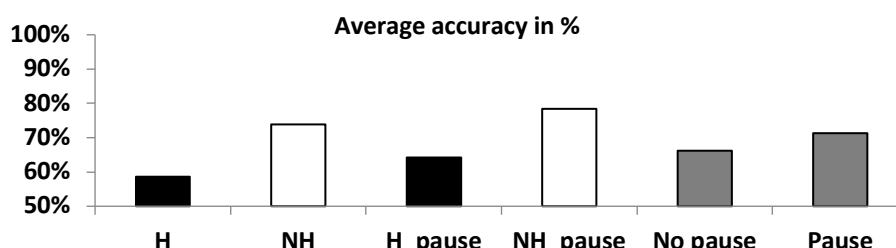
**Participants:** 14 speakers of Wubuy participated in the study. All were aged between 40-70 years. Some participants were literate in Wubuy and English, others had limited literacy. All were L1 Wubuy speakers, but spoke other Indigenous languages, as well as (some) English. The results of three of the participants were excluded from analysis as they failed to understand the task. With a likely speaking population of ~60, this is approximately 25% of the population. **Predictions:** If Wubuy ‘words’ are stored in the lexicon of speakers as whole units, which do not require morphological decomposition, we would expect a null result (no difference in the preference of correctly hardened (H) and correctly not-hardened (NH) in the two testing conditions (no pause (\_pause) vs pause inserted (\_no pause)). If on the other hand, ‘words’ are generated, and in this case interpreted on the fly, we would expect extra processing time at the morphological juncture to increase accuracy. In the latter case, we would expect that correct identification of a hardened target would be hardest (resulting in lower accuracy scores in the 2AFC task) in Part 1, where no pause is added. **Results and Discussion:** Figure 1 shows the average preference scores of the participants. The number of participants and the number of data points is low, reflecting the size of the speaker population as well as task familiarity/competence. A One-Way Analysis of Variance on the accuracy score of the participants in the four conditions indicated that the results were (very nearly) significant,  $F(3, 40) = 2.686, p = .059$ . Post-hoc LSD comparisons suggest that accuracy in the H condition differed (nearly) significantly from both the NH ( $p = .056$ ) and in the NH\_pause condition ( $p = .014$ ). Further, NH\_pause vs H\_pause also approached significance ( $p = .077$ ). This suggests that increased processing time assists listeners, and that the benefit may be greater when the hardening rule has to be applied than when it does not. Further, inspection of individual response patters (Figure 2) suggest that the pause condition results in greater accuracy for most participants. However, for three participants, Figure 2 suggests that it is plausible that artificial pause

insertion interrupts the application of the hardening rule, resulting in a default preference of non-hardened forms even in a frame that elicits hardening. We take the results to provide evidence for on-the-fly processes to play a significant role in polysynthetic word comprehension.

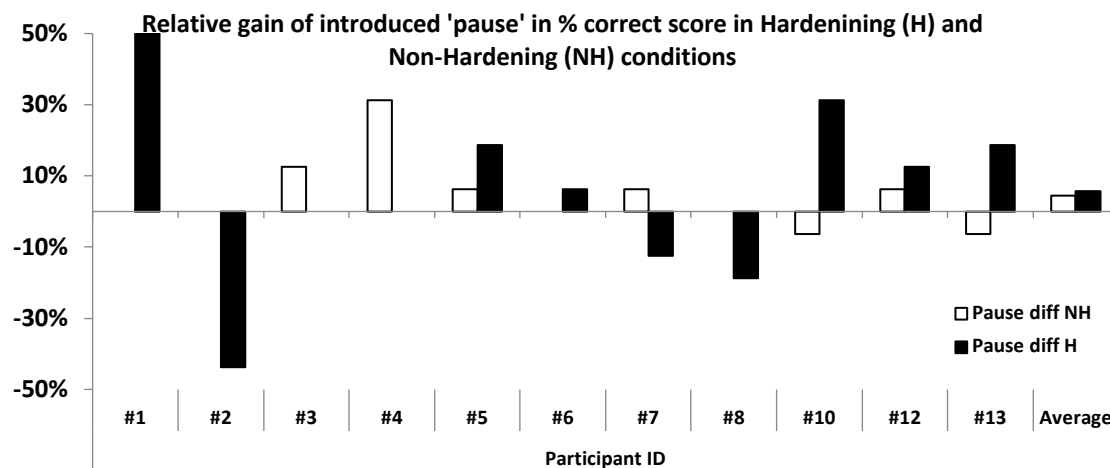
- 1a) nungaa banja (*we for her + arm*) + TARGET
- 1b) nungaa dhuganda (*we for her + leg*) + TARGET
- 2a) nungaa dharrbij (*we for her + thigh*) + TARGET
- 2b) nungaa dangag (*we for her + branch*) + TARGET

Note that all nouns are hardened forms, following the benefactive.

**Figure 1.** Average accuracy in %. H = correctly hardened; NH = correctly not hardened; H\_pause = correctly hardened, with 500 ms pause insertion; NH\_pause = correctly not hardened, with 500 ms pause insertion. No pause = average accuracy when no pause was inserted before the target stem; Pause = average accuracy when 500 ms of pause was inserted before the stem.



**Figure 2.** Individual accuracy gains by introduction of a 500 ms pause. White bars represent 'no pause insertion'; black bars represent 'pause insertion'. Where no bar is visible, the differential was 0%.



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# An acoustic study of citation tones of Southern Pinghua (Sinitic, Wucun Dialect)

Xiaolan Cao and Yizhou Wang

Southern Pinghua is a minority Sinitic language spoken primarily in the south part of Guangxi Zhuang Autonomous Region of China. Phonologically, the tone systems of Southern Pinghua dialects vary in both tone numbers and tone contours significantly (for example, see descriptions by Chen and Liu (2009); Li (2000); Liang and Zhang (1996); Qin (2000); Zhang (1987)). However, in the current literature, pitch contours and other acoustic features of Southern Pinghua tones have not yet been described.

The current study is an acoustic description of the citation tones of the Wucun dialect (Wucun Pinghua), the native language of the first author and the community language of five villages located in the outskirt of Nanning, Guangxi, China. Data were elicited in the field from seven female speakers and seven male speakers and annotated in Praat (Boersma & Weenink, 2019) with TextGrids before being plotted in R studio (version 1.1.463).

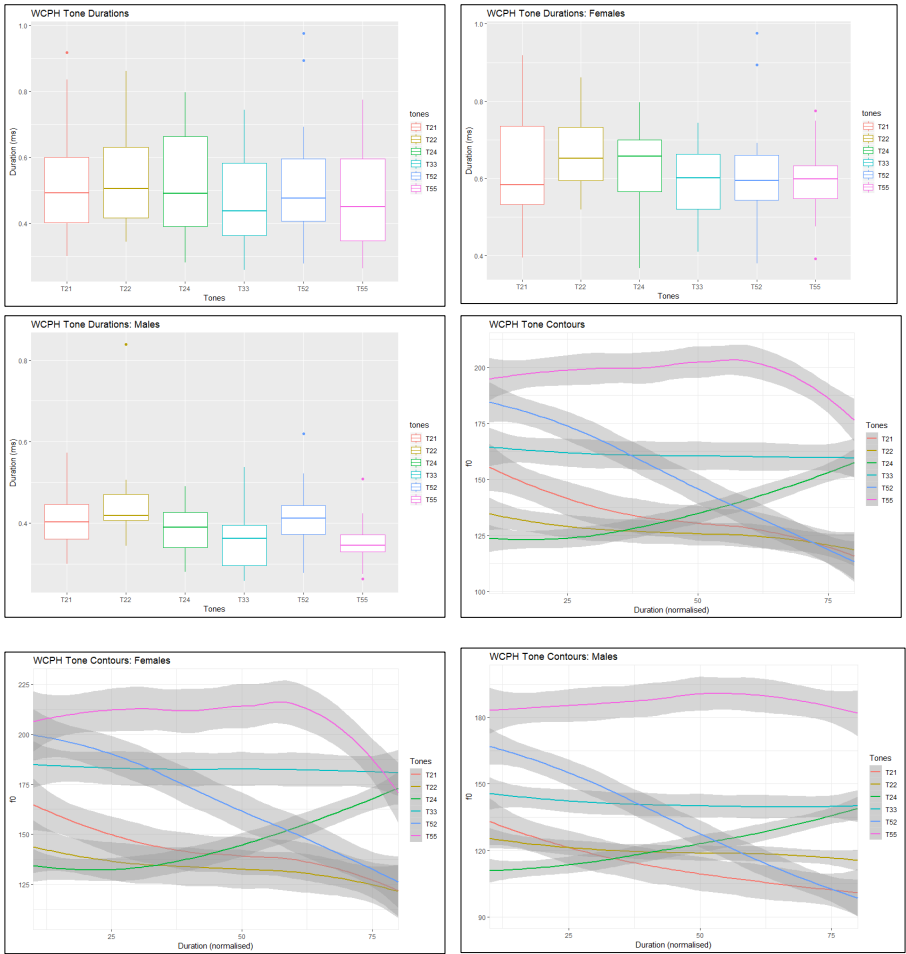
The first part of the current study plots and describes the pitch contours of Wucun Pinghua citation tones with special attention given to differences between female and male speakers. Based on the contour plot, the current study also examines whether the impressionistic phonological description of Wucun Pinghua tone system by the first author is accurate and whether a revision is needed. Moving on, the second part of the current study investigates whether citation tones in Wucun Pinghua differ in duration and whether the patterns are similar between female and male speakers.

In conclusion, this study shows that the impressionistic phonological description of Wucun Pinghua tones by the first author needs to be revised. Both citation-tone contours and durations differ considerably between male and female speakers, and some citation-tones are merging and losing their acoustic distinctions.

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Figures



## Syntactic ergativity in Ngkolmpu

Matthew Carroll

It is well known that languages display ergative patterning rarely display ergative throughout their system (Croft 1991). Ngkolmpu, a Yam language spoken east of Merauke in the Indonesian province of Papua, shows a complex split ergativity in both its morphology and syntax. The language displays at least four distinct arguments selectors (Witzlack-Makarevich and Bickel, 2019), i.e. morphosyntactic constructions which refer to grammatical relations, and these align to three distinct alignment types. A summary of which can be seen in Table 1.

Argument selector	Alignment	Type
<i>Case marking (flagging)</i>	S & O vs. A	Ergative
<i>Verbal agreement (indexing)</i>	Stative-S & O vs. Dynamic-S & A	Split-S
<i>Adjunct coreference</i>	S & A vs. O	Accusative
<i>Relative coreference</i>	S & O vs. A	Ergative

Table 1. Argument selectors and alignment in Ngkolmpu

Case marking or flagging which is marked on a standard ergative-absolutive basis. Verbal agreement or indexing patterns follow a split-S system conditioned by the lexical semantics of the verb being either stative or dynamic. This pattern is typologically unusual but common to all languages of the Yam family (Evans, et. al., 2017). Since both these mechanisms are relatively common and well documented, I will not exemplify them in this abstract for considerations of space.

More interestingly are the syntactic argument selectors in Ngkolmpu both of which involve coreference between an argument in a matrix clause and a subordinate clause. The first is used to mark simultaneous action and involves a subordinate non-finite clause adjunct to the matrix clause. In this construction, the non-finite verb is marked with a case form which indicates which argument in the matrix clause is coreferential with the S/A argument of the subordinate clause. The instrumental case indicates the S/A argument of the matrix clause is coreferential with the S/A argument of the subordinate clause (1, 2). Conversely, the allative case indicates that the O argument of the matrix clause is co-referential with the S/A argument of the subordinate clause (3,4).

There are two distinct relative clause strategies in Ngkolmpu. The default strategy is what is known as a correlative strategy (Andrews, 2005) and is unrestricted in terms of its argument structure. There is also another structure which involves a relative pronoun strategy postponed to the end of the clause (5). This construction is unusual in that the relative pronoun in the subordinate clause can only ever refer to the absolutive argument of the matrix clause.

It has long been noted that relative clauses display restriction with respects to grammatical relations (Keenan and Comrie, 1977). However, much previous work on this topic has noted that this restriction applies only to the role the argument plays in the relative clause. In Ngkolmpu, the role of the relative noun phrase within the relative clause is unrestricted; rather, the restriction here is aligned to the role of coreferential noun phrase in the matrix clause, this being S/O. This is similar to what has been described for the Australian language Yidj (Dixon, 1977) except in Yidj both the matrix and subordinate noun phrase must be either S or O.

This suggests a need to revise the notion of ‘ergative languages’ and grammatical relations typology more broadly. More recent work on this topic (Witzlack-Makarevich and Bickel, 2019) allows for more a fine-grained classification of languages with respect to these alignments however Ngkolmpu posits a rather interesting challenge as it displays so much variation in the types of alignments displayed by various subsystems within the morphosyntax of the language.

1. klɔwɔ poi yɔumey yua-nm  
child there it:sat cry.INF-INST  
'The child sat there (while *the child* was) crying'
2. ʔkai mpowr sarmy warkɔ-nm  
1.SG.ERG cassowary I:shot:it run.INF-INST  
'I shot the cassowary while (*I* was) running.'
3. ʔkai krar srsoy umans-ŋke  
1.SG.ERG dog I:hit:it sit.INF-ALL  
'I hit the dog while (*it* was) sitting.'
4. ʔkai mpowr sarmy warkɔ-ŋke  
1.SG.ERG cassowary I:shot:it run.INF-ALL  
'I shot the cassowary while (*it* was) running.'
5. krar-w pieŋku irepe pi srampu [n<sup>top</sup> mi  
dog-SG.ERG 3SG.ERG man DIST he:will:bite:him big REL.ABS  
bori ye]  
COMP is  
'The dog will bite the man *who is big*'  
\*'The dog, *who is big*, will bite the man.'

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## A Corpus-Based Study of N<sub>1</sub>-N<sub>2</sub> Words in Archaic Chinese

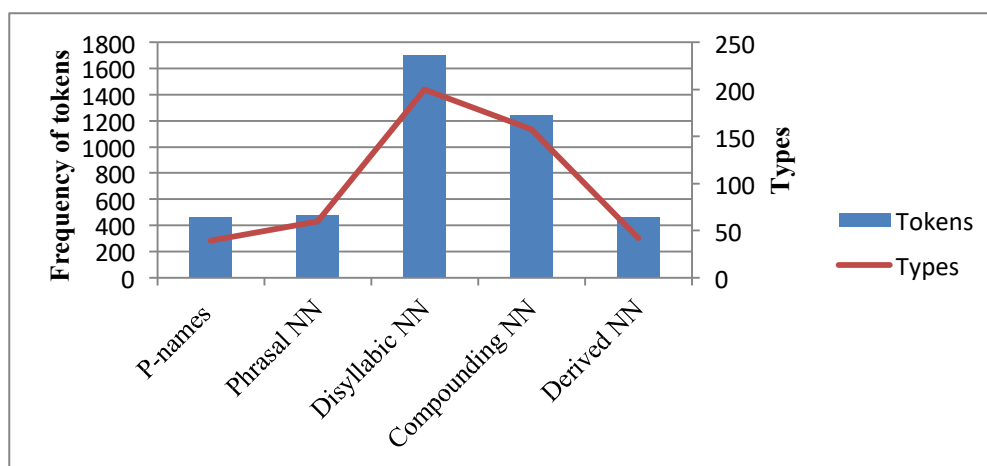
Jane Chanell

In Modern Chinese, the majority of words with a combination of two characters have been identified as compounds (Chao 1968, Duanmu 2007, Li & Thompson 1981, Packard 2000). However, the general consensus is that compounds or disyllabic words in general did not exist in early Archaic Chinese (before 220 BC) (Chao 1968, Karlgren 1926, Li 1993, Li & Thompson 1981, Pulleyblank 2000, Tai & Chan 1999, Ting 2002, Wang 1958). While some previous research has reported the occurrence of disyllabic words or compounds, the only compounds identified in Archaic Chinese were proper nouns and reduplicative formation (Jin 2017, Tang 2007, Tao 1996, Wang 2017, Wu 2001). The aim of this study is to investigate more thoroughly the origin of disyllabic words in the history of Mandarin. It focuses, in particular, on the nominal combination of two nouns ( $N_1$ - $N_2$ ), the most frequently occurring and highly productive combination in later periods (Huang 1998).

The study adopts a corpus-based approach to analyse a sample of texts spanning a period of over 3000 years. 299  $N_1$ - $N_2$ -sequence types, the most frequent forms in the early Archaic Chinese period of the Sheffield Corpus of Chinese (SCC), were chosen for linguistic analysis by applying the criteria established by the study. The findings show that nominal words with  $N_1$ - $N_2$  sequences originated in early Archaic Chinese, and  $N_1$ - $N_2$  words emerge much more frequently than the  $N_1$ - $N_2$  phrases in both their token and type frequencies, with 64.4% versus 18.12% of the total 2643  $N_1$ - $N_2$ -sequence tokens and 66.89% versus 20.07% of the total 299  $N_1$ - $N_2$ -sequence types (Figure 1). These  $N_1$ - $N_2$  words were structurally formed using a range of linguistic rules. The occurrence of words in a set of nominal  $N_1$ - $N_2$  words (identified in the early Archaic period) decreased during later periods, probably a result of the uneven distribution of genres in the corpus, and changes in language use due to transformations of cultural and political systems.

The main conclusions drawn from this study are that compounding was not only the consequence of the phonological simplification of the Medieval period (Karlgren 1926, Li 1993, Pulleyblank 2000, Wang 1958), and that other types of compounds, in addition to proper nouns and reduplicates (Tang 2007, Wu 2001), occurred in Archaic Chinese. Further research is recommended to assess the constituents of compounds phonologically, morphologically, and semantically to better understand the order of sequences of the constituents of compounds and the historical disappearance of some compounds.





**Figure 1:** Distribution of 299 N<sub>1</sub>-N<sub>2</sub> forms in early Archaic Chinese  
(P-names = personal names, disyllabic NNs are made up by compounding NNs and derived NNs)

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**Giving information in cosmetics sales interactions: Exploring some interactional functions of the Mandarin response token *dui***

This study examines how Mandarin Chinese, a common migrant language in Australia, is used in sales interactions in the cosmetics store. It explores the interactional functions of the Mandarin response token *dui* in the assertion sequences. The assertion sequences are initiated by salespeople and often consist of assertion in the first position, acknowledgement in the second position and the response token *dui* in the third position.

This project employs qualitative, collection-based conversation analytic methods. 10 people were recruited to participate. Five participants were salespeople working in a cosmetics store, and five participants were customers. The data was collected in the Mandarin-speaking cosmetics store in Sydney. The data is transcribed in a three-line structure, the Mandarin pinyin at the first line, the word-to-word translation at the second line, and the free translation at the third line. 65 minutes of recordings were subjected to conversation-analytic transcription and analysis, focusing on 29 assertion sequences. In these assertion sequences, the response token *dui* occurs in third position, and is produced by the salesperson.

It is argued that third-position *dui* registers the development of common ground via the prior assertion and the customer's response to it. This is tied to important institutional goals, and foreshadows possible transition in the interaction. However, when customers offer weaker or ill-fitting receipt of the first-position assertion, third-position *dui* is much less likely to occur. This project generates new knowledge on interlocutors' collaborative management of common ground, sequential positions and interactional functions of the response token *dui*, and highlights its role in the organisation of cosmetics sales interactions.

Key words: Conversation Analysis; response token; assertion; sales interaction; Mandarin

Example S1=Salesperson 1 C1=Customer 1

1 S1 -> =danshi wo zhiqian:- >wo zhei ge < (.) yong wan le  
But I previously I this CL use over PFV  
**=But I previously:- >mine< (.) has been used up**

2 (0.3)

3 C1 -> †ao:;=  
PRT  
†(Oh):;=

4 S1 => =dui; yong wan zhi shengxia yidiandian  
PRT use over only left a little bit  
**=Dui; used up, only a little bit left**

5 >suoyi wo< shi:-  
So I be  
**>So I< am:-**

6 ba ta gen jiu shi lingwai yi ge °hu-° FENDI hunhe yong=  
ACT it with just be another one CL °mi-° foundation mix use  
**I use it with, just, another °mi-° foundation mixed to use=**

At line 1, S produces an assertion, indicating that her foundation had been used up. However, the precise import of this assertion is somewhat unclear, and there is a sense that there may be more to come. C's response is a prosodically-marked *ao* token at line 2, which is followed by a thirdposition *dui*. Some evidence for the preliminary nature of S's assertion at 1 can be found in the talk following *dui*. That is, S does not shift to a next topic or completely close the sequence; instead, she partially repeats her prior assertion (i.e., *yong wan* 'used up') at line 4 and expands it to inform C about way she mixes the left-over of foundation with another foundation (lines 5-6).

## Using ‘they’ as singular pronoun: Celebrating diversity in academic writing

Maria Chisari

The use of personal pronouns in academic writing in English continues to be an intensely debated issue in Australian universities. Depending on the disciplinary discourse, the use of personal pronouns may be considered to be informal, subjective and sexist, or important in establishing the writer’s authority and identity (Hyland, 2002). More recently, the focus has shifted to the use of ‘they’ as a singular pronoun in order to promote gender-neutral language in academic writing. The use of ‘they’ as singular pronoun is believed to best represent human diversity when the gender of the referent is not known, or when it refers to an individual who does not identify with a particular gender. Framed through a critical discourse analysis (Fairclough, 2010; Wodak & Meyer, 2009), this paper explores how the use of ‘they’ as singular pronoun is discussed in key academic texts used to inform students about academic writing. These texts include academic style guides and language and support workshops. The analysis suggests that the use of gender-neutral language such as the singular ‘they’ pronoun is useful in developing students’ cultural competence and respecting gender diversity in academic literacies.

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## **‘Why can’t you just say yes or no?’: Interpreter-mediated cross-cultural communication**

Jinhyun Cho

This presentation examines various cultural factors that affect communication outcomes in diverse interpreter-mediated communication settings in Australia. It specifically explores why speakers of languages other than English (LOTE) appear to digress from answering yes-no questions in communication facilitated by interpreters. Based on interview data with 55 professional interpreters who specialize in English and LOTE, the research provides some insights into the reasons why speakers of some languages may perceive yes-no questions as invitations to present their own story (c.f. Eades, 2000). First of all, an apparent deviation from declarative yes-no responses to questions was attributed by some interpreter-participants to a storytelling conversational style distinctive among migrants of certain African and Arabic backgrounds. In this particular style, speakers tend to begin with an account of the reason before giving a definite yes or no answer (Scollon, Scollon, & Jones, 2011). The second factor concerns a common element that characterises the experiences of many elderly members of migrant communities in Australia. Migration at a later stage of life often means a near absence of English language proficiency, which in turn can result in social isolation and loneliness. This makes elderly migrants welcome any opportunity to speak in their language, and having someone dedicated to listening to their stories, i.e. an interpreter, encourages them to become verbose in interpreter-mediated communication. The presentation concludes by discussing various professional strategies employed by interpreters in trying to overcome communication challenges of this nature that arise from cultural diversity.

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## **How historical data contribute to the understanding of endangered languages: the Old**

## Zamuco dictionary by Ignace Chomé

Luca Ciucci

In this paper, I will show how the finding of new historical documentation, combined with fieldwork, can improve our knowledge of indigenous languages and our understanding of linguistic diversity.

Zamucoan is a small language family consisting of two endangered languages: Ayoreo (ca. 4,500 speakers) and Chamacoco (ca. 2,050 speakers). Zamucoan populations traditionally inhabit the Boreal Chaco in southeastern Bolivia and northern Paraguay. The Zamucoan family was named after its earliest documented language: Zamuco or Old Zamuco. This was the working language of the Jesuit mission of *San Ignacio de Samucos*, founded in 1724 in a remote area of the Boreal Chaco, and abandoned in 1745. In this short period, Old Zamuco was documented by the Jesuit Father Ignace Chomé, who wrote a grammar and a dictionary. Chomé's grammar was published by Lussagnet (1958), while the dictionary remained inaccessible to scholars until recently. As a result, almost all studies on Zamucoan could only analyze and compare the data from the Old Zamuco grammar (see, for instance, Kelm 1964; Lussagnet 1961, 1962; Sušnik 1972; Bertinetto 2011 and Ciucci 2016). Ciucci (2018) is a first description of the Old Zamuco dictionary, now in the course of publication (Ciucci, forthcoming).

After having introduced the Zamucoan family, I will show the lexicographical criteria adopted by Chomé in his dictionary and what kind of morphological information he provides for the main word classes (verbs, nouns and adjectives). Then, comparing Old Zamuco with fieldwork data for Ayoreo and Chamacoco, I will focus on the suffixation of nouns and adjectives (henceforth nominals). In Zamucoan, nominal suffixation shows a rare threefold system which involves the distinction between PREDICATIVE FORM, ARGUMENT FORM and INDETERMINATE FORM (Bertinetto et al. 2019). The PREDICATE FORM is used when the nominal is the head of an intransitive predicate, while the ARGUMENT and INDETERMINATE FORM mark the NP functioning as a core or peripheral argument. The difference between ARGUMENT and INDETERMINATE form involves semantics, since the latter indicates that the referent is unspecified. Other uses of the three forms, which can be language-specific, will be discussed during the talk. In addition, Zamucoan languages are fusional, and the same suffix used for nominal form also expresses gender (masculine or feminine) and number (singular or plural). The description of nominal suffixation in the Old Zamuco grammar is obscure, because Chomé lacked the theoretical tools to describe it. By contrast, the dictionary offers new data for a deeper analysis of Old Zamuco nominal suffixation. Finally, the comparison of these data permits us to identify some innovations in the morphology and morphosyntax of Ayoreo and Chamacoco nominal suffixation.

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**Diachronic register change: A corpus-based study of register change in Australian English from 1931 to 2006, with comparisons across British and American English**  
Peter Collins, Xinyue Yao, Haidee Kruger, Adam Smith and Minna Korhonen

A number of studies have found that grammatical differences across registers are more extensive than those across dialects (e.g. Biber et al. 1999; Kruger & Van Rooy 2018; Leech et al. 2009; Yao & Collins 2019). However, there is a paucity of research examining intervarietal register change, exploring how and why registers change differently over time in different regional varieties. The present study addresses this diachronic deficit, focusing on grammatical developments – from the early 20<sup>th</sup> to the early 21<sup>st</sup> century – in three written registers and two speech-based registers in Australian, British and American English.

The written registers examined – fiction, newspaper reportage and academic prose – represent much of the range of variation in English, and for that reason are amongst the most intensely studied in the literature. A logical choice for the most well-known speech register would have been conversation, but in the absence of suitable diachronic corpus data, we selected the nearest available speech-based data: official records of parliamentary speeches and debates.

Questions to which we sought answers included: What forces influence register change, and do they do so uniformly or variably in the three varieties? Does register change proceed at the same speed or at different speeds in the three varieties? Does register change involve the same or different sets of linguistic features in the three varieties?

The study was based on 69 lexico-grammatical features comprising much of the core grammar of standard English: 26 representing the noun phrase, 16 the verb phrase, 14 adjectival, adverbial and prepositional phrases, and 13 several smaller categories. After determining the frequencies of the features across the corpora, we conducted a new factor analysis (rather than replicating Biber's (1988) multidimensional analysis), then sought to interpret the features with positive and negative loadings on each factor. After calculating a dimension score for each text, we used regression analysis to determine whether different registers in the three varieties showed similar or different patterns of change on each dimension.

Of the findings emerging from the study, one supports the suggestion made in previous studies (e.g. Collins & Yao 2018; Kruger & Smith 2018) that two significant, and opposing, drivers of register change are colloquialisation and anti-colloquialisation/densification. Our findings reflect the differential effects of broad social changes on individual registers, including in the case of Australian English the progressive rejection of cultural and economic ties with Britain from the 1960s and emergent celebration of Australian culture and language.

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## **Salvage Phonology**

Jacqueline Cook

Is it possible to learn about the sound system of a language from scant written records? What if those wordlists were transcribed by lay people? How can we possibly recover a phonology from that? In this talk, I will address why this work is important for language reclamation efforts. I will then outline the methods we have used at Bundiyarra Irra Wangga Language Centre to tease out information about the sound systems of under-described languages.

Language reclamation is a real challenge for communities and the linguists working with them. A common barrier people state is a fear of “saying it wrong”, even when no living speakers exist to correct them. In the Mid-West region of Western Australia, the fear of offending one’s ancestors holds many back from engaging with their heritage languages. This is a challenge for all our languages but for those that have very little documentation, this barrier can seem insurmountable.

Bundiyarra Irra Wangga Language Centre recently added the language of Geraldton to its prior count of seven languages of the Mid-West and Gascoyne regions. There are just two wordlists for this language and we have had to be innovative and persistent in order to salvage what does exist to piece together the information.

I have found several techniques to be of use in tackling this project. Since the language is so under-documented, we searched for any other extant records, such as ethnographic research. From trawling old papers in the State Library of Western Australia, we found 25 new words to add to the database.

We then turned to learning about the amateur transcribers who provided the wordlists. Researching their linguistic background helped to decode their transcription tendencies. We found a strong bias towards English sound-symbol correspondences. This can be straightforward to decode, such as ‘oo’ representing a high back vowel, or less certain, such as ‘u’ representing a low back vowel. It has been useful to identify possible areas of overlap with English and common mistakes made by English speakers when hearing and imitating new sounds.

We examined our primary sources closely and cross-checked them against each other. We considered the distributions of graphemes in light of the above and tried to assign underlying forms. Where there was trouble making a decision on the underlying form based on internal logic, we checked for cognates in related languages and generated hypotheses from that. We have been cautious with this technique, so as to not regularise the under-described language to the cognate sources. Where possible, we have identified systematic differences, such as a correspondence of a plain stop in the Geraldton language to a nasal stop cluster in a related language, in order to generate more informed hypotheses. We have been methodical in keeping track of how decisions have been made to keep the work as transparent and accountable as possible. Where there are cases of true uncertainty, we plan to let the community decide which sound to use from the list of possibilities. This makes them an integral part of the process and will hopefully bring a stronger sense of ownership to the project output. The community will also be strongly involved in designing the orthography to increase their pride in and understanding of it.

While this process has been a lot of work, we believe it will produce a more linguistically robust output and assist the community to reclaim their language with greater confidence. This kind of work is rewarding from a research and a community perspective and will hopefully feed into a sustainable reclamation movement.

### **Place reference and pointing in Gija conversation**

Referring to places in physical space is fundamental to everyday interactions. This talk explores place reference in conversations conducted in Gija - an endangered Australian Aboriginal language from the East Kimberley region, northern Western Australia. This project adopts an innovative 'geospatial' approach to multimodal conversation analysis, which laminates occasions of place reference onto actual geographical space, thus creating an additional layer of 'situatedness'. Sixty-six minutes of video-recorded multiparty conversation were transcribed and analysed with the aims of investigating how spatial relationships are expressed through talk and pointing gestures, and the ways that participants manage problems that arise in the context of place reference. Spatial relationships are expressed in all languages, but each language has specific tools for achieving spatial description. Frames of Reference (FoRs) (Levinson, 1996, 2003) provide a central means for describing the position of entities in relation to other entities in space. However, spatial description has only been investigated in a small number of Australian Aboriginal languages (e.g., Green, 2014; Haviland, 1993, 1998; Levinson, 1997, 2003; Meakins et al., 2016; Blythe et al., 2016). Findings from the Gija data reveal that the boundaries between absolute and intrinsic FoRs are at times difficult to delimit due to the use of a shared term across frames, and geocentric systems related to hillslope and river-drainage appear to overlap. The use of interactional linguistics has provided a unique perspective of the language, and has advanced our understanding of Gija demonstratives and the semantics of certain suffixes and enclitics used to mark motion between specified locations.

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## Distributional Semantics Models on the Indonesian Prefixes *PE-* and *PEN-*

Karlina Denistia, Elnaz Shafaei-Bajestan and R. Harald Baayen

Indonesian has two nominal prefixes that are similar in form and realize closely related semantic functions (e.g., agent, instrument, patient), such as *PE-* in *pedagang* ‘seller’ and *PEN-* in *pemandu* ‘guide’ (Sneddon et al., 2010). The first prefix, *PEN-*, is described as having six phonologically-conditioned allomorphs, which are in complementary distribution (Ramlan, 2009). The *N* in *PEN-* denotes nasal assimilation found across its five allomorphs (*PEN<sub>peng-</sub>*, *PEN<sub>peny-</sub>*, *PEN<sub>pen-</sub>*, *PEN<sub>pem-</sub>*, *PEN<sub>penge-</sub>*), except for *PEN<sub>pe-</sub>*. The second prefix, *PE-*, is described as having similar form and meanings as *PEN<sub>pe-</sub>* (Nomoto, 2006). The obvious similarities of *PEN<sub>pe-</sub>* and *PE-* in both form and meaning give rise to the question of whether *PE-* and *PEN-* variants of the same prefix, or should instead be understood as two related but separate prefixes. There is no consensus among Indonesian linguists on this issue (Denistia, 2018). A recent corpus study on the productivity of these prefixes, Denistia and Baayen (2019), argues that *PE-* and *PEN-* are not allomorphs.

Continuing Denistia and Baayen (2019)’s study on productivity, this present study used another technique that is grounded in Distributional Semantics Models (DSM), Landauer and Dumais (1997), to investigate whether *PE-* and *PEN-* have discriminable semantics. In DSM, word meanings are quantified by looking at words’ contexts, and in accordance with the following observations: 1) words that have similar meanings usually occur in similar contexts (Rubenstein and Goodenough, 1965); and 2) words appearing in similar contexts tend to have similar meanings (Pantel, 2005). To operationalize this, distributional information of words (their co-occurrences with other words in large corpora) is brought together in high-dimensional vectors (Turney and Pantel, 2010). Our hypothesis is if *PE-* and *PEN-* words differ in meaning, they are expected to occur in systematically different contexts and show different semantic distributions in the vector space. On the contrary, if *PE-* and *PEN-* words are close in meaning, then similar semantic distributions are expected.

We compiled a database of 116 nouns with the prefix *PE-* and 1584 nouns with *PEN-* from the written Indonesian corpus of the Leipzig Corpora Collection (Quasthoff et al., 2006). We analyzed the words’ morphological structure with the MorphInd parser (Larasati et al., 2011). Then, we checked the results against the on-line version of a comprehensive dictionary of Indonesian (Alwi, 2012). Subsequently, word2vec was employed to extract vector representations for these words (Mikolov et al., 2013). The cosine similarity measure was used to evaluate the extent to which the semantic vectors of pairs of words are similar in meaning.

Figure 1 (left panel) shows that semantic similarities between *PEN-* and *PE-* words differ in the mean compared to within-prefix similarities. Mean cosine similarity for the *PE-/PEN-* group is indeed significantly lower than that for the *PEN-/PEN-* and the *PE-/PE-* groups ( $p < 0.0001$  for both comparisons). The mean cosine similarity for word pairs within the *PEN-* group, however, is not convincingly different from the cosine similarity of pairs in within the *PE-* group ( $p = 0.048$ ). Furthermore, as shown in the right panel of Figure 1, *PE-* words with agent role are clustered closer together in semantic space, and the same holds for *PEN-* words ( $p < 0.0001$  for both comparisons). The tests also clarified that agents with the less productive *PE-* prefix are significantly more similar than those with the more productive *PEN-* prefix ( $p < 0.0001$ ). The more cohesive agents with *PE-* is driven by its specialised semantic role as a professional athlete, as what qualitatively described by Ramlan (2009).

In a nutshell, our results show that there is a subtle but statistically significant difference in *PE-* and *PEN-* distributions. This finding dovetails well with the hypothesis that *PE-* and *PEN-* are different prefixes, rather than allomorphs (Ramlan, 2009; Sneddon et al., 2010; Nomoto, 2017; Denistia and Baayen, 2019).

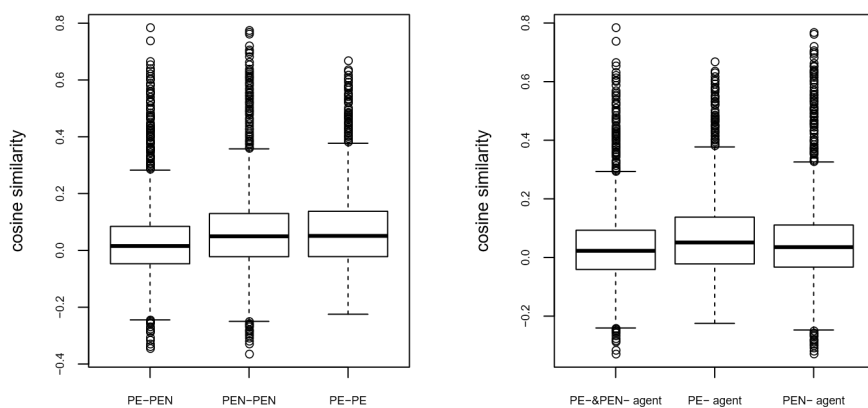


Figure 1: Left panel: cosine similarity between *PE*- and *PEN*-, within *PEN*- and within *PE*-. Within and between prefix cosine similarities, group means are significantly different only for between prefix comparisons. Right panel: cosine similarity between *PE*- and *PEN*- as agent, within *PE*-, and within *PEN*- semantic role. Group means are significantly different for within prefix and between each semantic role prefix comparisons

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## Geographic variation in Kriol: the quotative and exemplifier 'lagijat' (like that)

Greg Dickson

Australian Kriol emerged around a century ago and while research on Kriol has regularly noted geographic variation (e.g. Sandefur 1986), it has never been studied systematically. This paper analyses geographic distribution of a Kriol lexeme that has two main functions: a quotative (correlating to the English quotative 'like') and an exemplifier (correlating to the English 'like so'). The etymology of the lexeme is the English form 'like that'.

The lexeme was first described by Hudson (1985: 76) who identified two variants – represented orthographically as *layet* and *laigajet* – in use in the Fitzroy Valley variety. The Kriol Bible uses the form *lagijat*, while other scholars have transcribed the lexeme variably (e.g. Angelo & Schultze-Berndt 2016, Ponsonnet 2016).

The present study of geographic variation of the *lagijat* variable stems from sociolinguistic interviews involving over 60 participants from nine Kriol-speaking communities east of Katherine, Northern Territory, Australia carried out in 2016, producing 48 hours of conversational Kriol data. This study is part of a larger investigation into geographic variation in Australian Kriol. Initial analysis into the *lagijat* variable noted 11 phonetic variants, categorised into five main variants:

1. Tri-syllabic variants realised as *lagijat~lagajet*
2. Di-syllabic variants realised as *laijat~laithad*
3. A monosyllabic stop-final variant: *la:t*
4. A monosyllabic open syllable variant: *la*
5. Tri-syllabic variants as in (1) but with metathesis: e.g. *lajigat*

Current analysis encompasses four communities and twelve participants, producing 403 tokens. (I aim to expand this to six communities and twenty participants for the purposes of the paper).

Present analysis includes two communities, Ngukurr and Minyerri, considered to speak the same variety named Roper Kriol. Ngukurr participants predominantly use variants 1 (39%) and 4 (50%) while nearby Minyerri prefers variants 2 (39%) and 3 (36%). These findings do not correspond to current dialect boundaries that suggest both communities speak the same Kriol variety. Variants 5 are virtually absent from the two Roper Kriol communities surveyed but common (35% of all tokens) in the two other communities surveyed which lie in the 'Barunga Kriol' area. Considering function, the two 'Roper Kriol' communities use quotative function of the lexeme approximately three times more than in the two 'Barunga Kriol' locations. Analysis of the *lagijat* variable combined with research into other variables provide the first quantitative analyses of geographic variation in Kriol while also increasing the documentation and description of this new relatively language.

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**Variability in cross-language and cross-dialect perception:  
How Irish and Chinese migrants process Australian English vowels**

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Australia's largest cities are becoming increasingly culturally and linguistically diverse, creating more complex sites of language contact between speakers of Australian English (AusE) and of different languages and other varieties of English. Despite this, little is known about how the sounds of AusE are perceived by newcomers. Previous research shows that listening is language-specific (Best 1995; Cutler 2012; Escudero 2007) and variety-specific (Diskin *et al.* 2018; Clopper 2014; Evans & Iverson 2004; Sumner & Samuel 2009). We investigate how listeners from different language and dialect backgrounds categorise the lax front vowels /ɪ e æ/ in AusE. These contrasts are known to be perceptually challenging for native AusE listeners (Mannell 2004) and are also undergoing change in production (Cox & Palethorpe 2008). The present study thus provides valuable insights into how listeners from different language and dialect backgrounds react and respond to variable input. Furthermore, by examining participants who have lived in Australia for varying lengths of time (5 months-14 years), we track the perception of features of a second language/dialect in apparent time.

We report on a perception experiment: a forced-choice vowel categorisation task testing /ɪ e æ/ in /hVt/, /hVl/ and /mVl/ environments, completed in 2017 by 10 Irish migrants, 14 Chinese migrants (all native speakers of Mandarin and two Mandarin-Cantonese bilinguals) and a 'control' group of 12 native AusE listeners. All participants were residing in Melbourne. The task was presented to listeners on an iPad using a specifically-designed custom app with stimuli (recordings of one female native AusE speaker) played as seven-step continua. Response times were recorded and the effects of coarticulation were also incorporated into the analysis.

Results for Australian listeners show that their categorisations are predictable with respect to the test design, with largely 100% agreement in all contexts. For Irish and Chinese listeners, category crossovers (the point at which a listener perceives a contrast) are later than for Australian listeners in all contexts (e.g. Fig. 1). As regards coarticulation, for Irish and Australian listeners the nasal onset (/mVl/ contexts) raises the vowel in perception, resulting in earlier category crossover. However, it results in later crossover for Chinese listeners (Fig. 1; right panel), showing that they parse coarticulation differently from native English speakers.

Overall, the Chinese had less agreement, more within-group inconsistency and later crossovers than the native English listeners (Fig. 2), even by Step 7 (the point at which the contrast should be the most obvious). For the Chinese participants, proficiency in English and length of residence (LoR) in Australia did not have an overall significant effect, but select individuals with longer LoRs exhibited more Australian-like categorisation behaviour. Irish and AusE listeners typically had faster response times (RTs) than Chinese listeners; however, RTs varied by stimulus and listener group, with responses for e.g. *Mel* to *Mal* slowest for the AusE listeners, and fastest for Chinese listeners. This may reflect uncertainty among the AusE listeners for this stimulus due to variable input of this contrast in production (Loakes *et al.* 2017).

Our findings provide evidence for a strong first language/dialect influence in speech perception and processing. This contributes to our understanding of how language production is related to perception and learning (see Labov *et al.* 1991) and has broader implications for how we can model variability and its transmission and diffusion in highly diverse, multilingual contexts.

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Figure 1: Response curves for /hell-Hal/ and /Mel-Mal/ (Australian, Irish and Chinese)

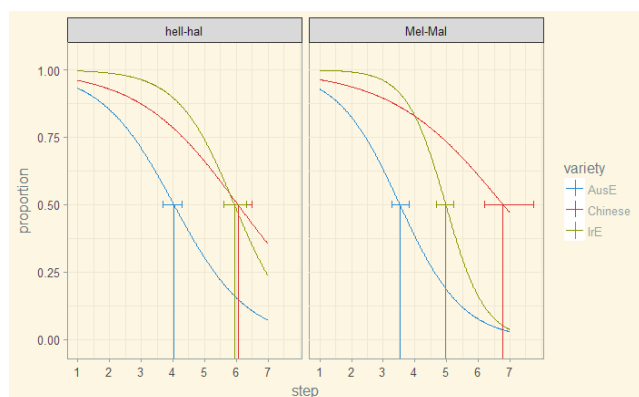
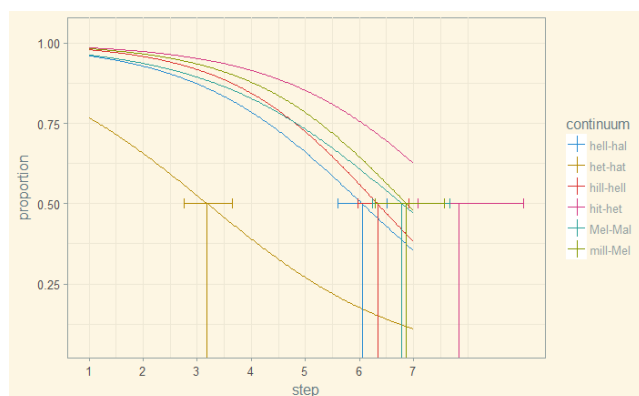


Figure 2: Response curves for /hell-Hal/, /het-hat/, /hill-hell/, /hit-het/, /Mel-Mal/ and /mill-Mel/ (Chinese)



## **The realisation of unstressed KIT vowels in the conversational speech of young people from Perth**

*Gerry Docherty, Paul Foulkes, Simon Gonzalez*

Descriptions of the realisation of vowels in English varieties of Australia point to a centralised realisation of the short-front KIT vowel class when this occurs in unstressed syllables. Thus Cox & Palethorpe (2007) provide examples such as “rabbit” and “roses” with the final underlying KIT vowel realised as schwa. However, since the vast majority of previous investigations of the acoustic properties of vowels of English speakers in Australia have focused exclusively on isolated words lacking accentual contrasts, the properties of this centralised realisation of the unstressed KIT class of vowels have not been thoroughly investigated.

The aim of this study is to present relevant findings from a conversational speech corpus of speakers from Perth WA. In doing so, the study incorporates another important and potentially relevant conditioning factor, namely the fact that many of the items in which KIT is unstressed are grammatical words (such as “it” or “this”), known in many cases to be subject to extensive temporal and spectral reduction in connected speech styles, but also occurring with relatively high frequency within a natural corpus.

The questions addressed here then are (a) to what extent are the vowels in unstressed KIT syllables realised as schwa in line with conventional accounts, (b) does the status of the lexical item as grammatical or non-grammatical impact significantly on the realisations of the unstressed syllables, and (c) to what extent is any centralisation correlated with the duration of the unstressed syllables?

The data arise from an acoustic analysis of conversational tokens of KIT by 40 Perth speakers (20M/F) aged 18-22, equally distributed across socially-differentiated neighbourhoods, recorded for around 30 minutes engaged in a spontaneous conversational interaction. The findings have implications not only for descriptive accounts of phonological variation in English speakers in Australia, but also for some more general methodological and theoretical issues relating to the interpretation of variation in the realisation of vowels in naturalistic speech performance.

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## At (the very) least: superlative modifiers, epistemic uncertainty, and preferred alternatives

Flóra Lili Donáti, Katherine Fraser and James Gray

Although the superlative modifier *at least* has been the subject of extensive investigation in the literature

(Krifka 1999, Geurts & Nouwen 2007, Mayr 2013, Schwarz 2016, a.m.o.), the related *at the very least* has largely escaped notice. We address this gap in the literature by comparing *at the very least* (ATVL) with *at least*, and by characterising the pragmatic contributions that distinguish them. We propose that like *at least*, ATVL conveys an ignorance implicature. However, ATVL differs in having an additional inference of the speaker believing, between the alternatives ‘exactly *n*’ and ‘more than *n*’, the second is more likely.

- (1) Mary speaks at the very least five languages.  
‘It is certain that Mary speaks a minimum of five languages.’  
‘It is likely that she speaks more than five languages.’

We adopt the idea that the stronger alternatives to *at least n* are ‘exactly *n*’ and ‘more than *n*’ (Buring 2008, Schwarz 2016, Mendia 2016) and that ATVL has the same set of alternatives. Crucially, ATVL differs in that it is accompanied by an additional inference that the speaker expects, based on their epistemic knowledge, ‘more than *n*’ over other alternatives. This can be seen in the continuation in (2) as opposed to the one with *at least* in (3).

- (2) M. speaks at the very least five languages, #but I would be surprised if it were six.  
(3) M. speaks at least five languages, but I would be surprised if it were six.

Like with *at least*, there is a second use of ATVL with a different implicature: embedded under a universal operator, ATVL has a scalar implicature. Interestingly, there is still an additional inference for ATVL missing in *at least*. Whereas the ATVL use with an ignorance implicature carried the inference that the speaker believed it is likely there is more than *n*, in this use, the inference is that the speaker prefers the second alternative, as in (4).

- (4) The password must be at the very least five characters, #but I would prefer if it were five.

We follow Geurts and Nouwen (2007) in assuming that superlative modifiers have modal components. For the *at least*-variant of (1), *Mary knows at least five languages*, the interpretation on their account contains a necessity modal ‘It is certain that Mary speaks five languages’ and a possibility modal ‘It is possible that she speaks more than five’. We also adopt Lassiter’s (2010) analysis for epistemic modals, namely that they are gradable, in the same way as gradable adjectives are and this results in *possible*, *probable/likely* and *certain* belonging to the same scale, here listed in respective strength order. So while *at least n*, has the ‘*n* and possibly more’ reading, ATVL *n* has the ‘*n* and probably more’ reading.

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## A Case of Historical Grammatical Reanalysis: Aramaic

Charbel El-Khaissi

Syntactic reanalysis is a well-documented mechanism and principle of language change that involves modifications to underlying syntactic structures without necessarily changing its surface form (Harris & Campbell 1995: 61). I present evidence from Aramaic that exposes these processes of syntactic change by demonstrating the reanalysis of definiteness specifications in its nominal paradigm system.

Beginning with the Old Aramaic noun state system, as in Figure 1, it is evident that its nominal paradigm was an inflectional system for the expression of definiteness ('emphatic state'), genitive case ('construct state'), and the bare, indeterminate noun form ('absolute state'). The surface forms of this nominal paradigm were retained during the later stages of Aramaic, including Syriac (Healey 2011: 647). However, there is wide consensus among traditional Syriac grammars that the same noun forms were no longer used in the same way (e.g. Muraoka, 2005). Consider the constructions between an older stage of Aramaic and Syriac, in examples (1)-(4). In the old Aramaic examples in (1) and (2), the 'emphatic state' nouns were interpreted with definite ('the') force, which was a direct interpretation of the final *-a*, a post-positive definite article (Fales 2011: 568; Gzella 2010a; Pat-El 2012; Grassi 2011). However, the same nominal form in the later stages of the language, as in (3) and (4), are interpreted as indeterminate ('a'/'the'), with definite interpretations being determined contextually or through the use of demonstratives. Given that indeterminate interpretations were syntactically marked in the old Aramaic 'absolute state' form, and that this same form witnessed a severely curtailed usage with the emergence of Syriac (Muraoka, 2005), it lends strong evidence towards the proposal that the old Aramaic 'absolute state' noun form transferred its indeterminate function across to the 'emphatic state' form within the nominal paradigm before being made productively redundant. This process seems to be complemented by a transfer of definiteness specifications to the genitive noun form (see Figure 2). To substantiate this claim, I conducted a distributional analysis of genitive noun forms in an ancient manuscript titled, *The Chronicles of Joshua the Stylite* (Wright, 1882), and observe genitive noun forms to occur in complementary distribution with determiners; I interpret this to mean that morphosyntactic definiteness features [+def] are present in Syriac genitive noun forms, and argue that this must have been later acquired during the development of Aramaic given that definiteness was overtly marked in the 'emphatic state' noun in previous stages of the language.

The exact nature of Syriac's nominal paradigm has not been analysed in this context before and provides grounds for additional research in syntactic variation and change in the Aramaic language, as well as the need to closely analyse and reinterpret traditional and historical grammars under more recent insights of contemporary linguistic theory.

### Examples

Old Aramaic data (*Ahiqar Proverbs*, as cited in Grassi 2011: 23)

(1) <i>mlt</i>	<i>mlk</i>	(2) <i>mlyā</i>	<i>zy</i>	<i>mlka</i>
NGEN	NINDET	NDEF	GEN	NDEF
the-word	a-king	the-words of	the-king	
‘the word of a king’		‘the words of the king’		

Syriac data (MS §24, p.19)

(3) <i>brt</i>	<i>mlka</i>	(4) <i>mlka</i>	<i>d-hwnya</i>
NGEN	NINDET	NINDET	GEN-PN
sister	king	king	of-Huns
‘a/the sister of a/the king’		‘a/the king of the Huns	

## Figures

	Absolute	construct	emphatic
m. sg.	<i>mlk</i> , “king”	<i>mlk</i> , “king of ...”	<i>mlk’</i> (-a’), “the king”
m. pl.	<i>mlkn</i> (-in)	<i>mlky</i> (-ay)	<i>mlky’</i> (-ayya’)
f. sg.	<i>mlkh</i> (-ā/ah)	<i>mlkt</i> (-at)	<i>mlkt’</i> (-ata’)
f. pl.	<i>mlkn</i> (-ān), <i>mlkt</i> (-āt)	<i>mlkt</i> (-āt)	<i>mlkt’</i> (-āta’)

Figure 1: Noun State paradigm in Old Aramaic (Geoffrey 2011: 567)

		<i>Nominal Inflection System</i>			
		<i>Traditional</i>	<i>Absolute</i>	<i>Emphatic</i>	<i>Construct</i>
<i>Syntactic Function</i>	<i>Old Aramaic</i>	<i>Indeterminate</i>	<i>Definite</i>	<i>Genitive marking</i>	
	<i>Syriac</i>	<i>Restricted use</i>	<i>Indeterminate</i>	<i>Gen. + Def. marking</i>	

Figure 2: The proposal of grammatical reanalysis in Syriac’s nominal paradigm.

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## **Needs and demands for classroom and community-based support for heritage language maintenance in Australia: Findings from a large-scale online survey**

Paola Escudero, Christine Jones Diaz, Chloé Diskin and John Hajek

Almost half of all Australians now have at least one parent born overseas; and one in five (21%) now speak one of 300 languages besides English at home (ABS 2017). The Australian Government recognises the importance of heritage languages and sponsors community language schools for school-aged children (Cardona et al. 2008), but support for pre-school aged children has been more limited. Furthermore, little is known about the frequency, efficacy and nature of family language policies and how they interact with community language initiatives in the Australian context.

This paper presents findings from a large-scale online survey of heritage language maintenance conducted across Australia. Responses to 57 questions covered topics including: (1) the range and frequency of languages spoken in households; (2) home language maintenance policies and strategies, such as enrolling children in bilingual day care and pre-school programs, or Skyping with overseas relatives; (3) attitudes towards language maintenance, such as positive evaluations of its cognitive benefits, and negative evaluations of its potential to ‘confuse’ children.

Preliminary findings indicate that caregivers find it difficult to encourage their children to speak their home languages, particularly when their partner speaks a different language. The majority of respondents agreed that they would have more success in transferring their heritage language if there were more support in their children’s day care or school setting and local community. An expressed need emerged among respondents for pre-school (under five years of age) level support in particular. This finding is of particular urgency considering the importance of early establishment of a home language policy in order for language maintenance to have effective longevity (Adesope et al. 2010). The survey and its findings have important implications for shaping the future of multilingualism and community language initiatives in Australia, both at the home and (pre)school level.

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## **Incorporating variation into language documentation**

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While the field of linguistics knows an increasing amount about the nature of linguistic diversity, we still have no more than a basic understanding of its causes. Why are there such radical differences, across the globe, in the distribution of linguistic diversity – whether measured in numbers of languages, of language families, or of typological variability? Many partial explanations have been proposed, at all levels of causality from environmental (rainfall) to political organisation to language practice (how ideologies of minor language difference can be harnessed for group distinctions; what are the effects of egalitarian multilingualism).

This talk will summarise the approach and findings coming out of Nick Evans' ARC Laureate Project 'The Wellsprings of Linguistic Diversity', drawing on case studies from Arnhem Land, Southern New Guinea, Vanuatu and Polynesia which afford an opportunity to study variation in a number of small-scale traditional speech communities, drawing on close study of variation that shines a light on whether speech communities in linguistically diverse parts of the world have different profiles of inter-individual variation to what would be found in larger, more familiar speech communities.

## Applying conversation analysis: A focus on teacher education

Anna Filipi, Monash University

Applications from findings in conversation analysis (CA) (or interventionist CA) have been a focus of interest in second language teaching and learning (e.g., Barraja-Rohan 1997; Huth & Taleghani-Nikazm 2006; Wong 2002) and high stakes second language testing (e.g., Filipi, 1994; Seedhouse & Egbert, 2006) for well over a decade. Since these early studies, research interest has gained momentum both in studies about L2 including teacher education (e.g., Wong & Waring, 2010) and more widely in a range of professions. The studies in Antaki (2011) for example, show how findings from conversation analysis can be used in ways that go beyond a mere telling or informing through interventions in the training of a range of professionals. Typically, these interventions include both a pre-intervention and a main intervention stage where professionals start by noticing patterns that “are most often located in some sequentially specific slot within that phase/activity” (Robinson & Heritage 2014, p. 203). The main intervention is then approached in ways relevant to the context. Using approaches from experiential learning, the interventions typically involve using video and audio materials, transcripts, tasks such as role-play, and corpora (generated over time by the participants themselves or drawing on other publicly available corpora). In this way, through a process of noticing, practising, “doing” and reflecting, the professionals undergo a shift from being participants to becoming analysts.

Using Antaki’s (2011) distinction between institutional and interventionist applied CA, Filipi & Markee (2018) categorised a five-point scale of approaches in language teaching and learning from the most descriptive to the most interventionist. In the first category are studies that describe what is going on in L2 classroom talk. In the second, are studies that conclude with a statement about the implications for teacher education and learning. The third category includes a stronger set of specific recommendations directly addressed to stakeholders for consideration and implementation. In the fourth category are studies that offer a set of actual procedures, activities to be used and course materials or a pedagogy. They are therefore aimed at language teaching and/or teacher education. Finally, in the fifth group, are studies that are longitudinal in design and addressed to the development of interactional competence in the L2 or professional competence over time. It also includes researching the intervention at the end of the process.

Using these categories and specific research findings in CA about teacher talk - i.e. the three part instructional sequence of Initiation, Response, Evaluation (Mehan, 1979) and the language alternation practices in the L2 classroom (Filipi & Markee, 2018) - this paper will describe how applications of findings, mainly consistent with category 4 described above, have been incorporated in teacher education courses (the languages specialism in the Master of Teaching and the Master of TESOL) at an Australian University through course activities and in assessment tasks. The study will also discuss the limitations in achieving more “lasting” change (as per studies in category 5) imposed by the structure of the courses.

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## **Transcription Survey**

Ben Foley, Gautier Durantin, Alina Ajayan and Janet Wiles

Transcription is the process of writing a textual version of a language recording. It is a pivotal practice in world-wide efforts of documenting languages. On a broad scale, it is an enabling process within the language documentation workflow of recording the dynamics of languages, towards their reawakening and revitalisation (Hobson, 2010). The greatest hurdle to the task of transcription stems from the “transcription bottleneck”, the amount of time it takes to transcribe language recordings (audio or video formats, speech or sign corpora) (Bird, 2014; Brinckmann, 2009; Do, 2014). By using contemporary digital documentation tools such as video and audio recorders, language workers are able to record and store large collections of knowledge (Green, 2011; Meakins, 2018). The task of transcribing these collections is, for most of the world's languages, manual; this transcription bottleneck hinders the creation of accompanying annotations for these collections.

The objective of this article is to review current transcription practices and workflow methodologies, and reflect on their feasibility, usability and perceptions of these practices. We base our review on the results of an online survey conducted in 2017. The respondents were documentation linguists with a range of experiences, from novices to people with many years of experience with language documentation projects. Survey questions covered aspects of current work practises, tools and techniques, and the respondents’ perceptions of these practises.

Analysis of the responses related to timescales of work tell us the average time spent transcribing per year (on average 152 hr), and the average time to transcribe (on average it takes 39 min to transcribe 1 min of audio). Put together, these figures argue in favour of a “transcribed corpus” outcome of 234 min (about 33.5h) per year per linguist.

In this article, we highlight the bottleneck in existing workflows, as demonstrated by the survey data. In interpreting the data and reflecting upon the processes, we recognise that what may be perceived as shortcomings may in fact be important processes to maintain, and that identifying these points doesn’t suggest that the processes should be wholly automated. For many people working with language there is significant value in continuing a manual process, for cultural reasons or as useful processes for linguistic learning.

In recent years, technologies such as Automatic Speech Recognition (ASR) have been proposed to remove or lessen the bottleneck (Gorin, 1999; Cavar, 2016; Adams, 2018; van Esch, 2018). We reflect upon current progress in the design, development & application of such tools to bridge this gap, and their suitability to amplify the efforts that language workers, including linguists and non-linguists, put into their transcription work.

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## **Age and gender-based patterning of /t/-realisations in Australian English**

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Realisations of /t/ are highly salient across varieties of English (e.g., Benor 2001, Bucholtz 2001, Eckert 2018, Trudgill 1986). Previous research in Australian English (AusE) has investigated aspects of the evaluation of /t/ and the production of its variants (e.g., Horvath 1985, Ingram 1989, Loakes & McDougall 2007, Loakes et al. 2018, Su 2007, Tollfree 2001). However, gendered distribution, age-based usage and social meanings of the variation, and their intersection, remain under-explored in contemporary AusE.

In this paper we present part of an analysis of /t/-realisations of AusE speaking children aged 5–13 and young adults aged 20–25. The acquisition of sociophonetic variation amongst children demonstrates their engagement with peer and community norms, moving away from caregiver(s) as model. The examination of children and young adults allows insights into gender-based usage, when this is established and if these norms appear to be maintained in early adulthood, with the changes in peer groups and community engagement this entails (e.g. Docherty et al. 2002; Docherty & Foulkes 2005).

Tokens were extracted from conversational speech and coded for position within the word and aspirated, affricated, fricated, unreleased, tapped, glottalised, laryngealised or deleted /t/. The results and discussion are focussed on variation in the medial and final word positions, and the patterning of gender and age-based distributions of the realisations. The effects of the speakers' gender and age, and phonological context on the phonetic realisation of /t/ are tested using mixed-effects modelling in R (R Core Team 2018). Results demonstrate gender and age-based variation, with changes over apparent time. From these results, we consider possible social meanings of variants, based on age and gender, and how these compare with findings in other varieties of English.

The paper provides new insights into sociophonetic variation, especially as it relates to children, an apparent time view of /t/-realisations in AusE and engages with contemporary sociolinguistic theory in its explanations of variation.

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## Investigating Japanese undergraduate L2 identity through a drama-based EFL course

Hamish Gillies

This presentation reports on initial findings from a PhD research project focusing on how Japanese undergraduate learners of English as a foreign language perceive their experience of learning and using English, and how they imagine themselves as learners and users of English. Recognising the often-demotivating transition that Japanese students undergo as they progress from secondary to tertiary educational contexts (Carpenter et al.; McVeigh, 2002; Ryan, 2009), and acknowledging the importance of learner identity in this phenomenon, in terms of both social comparisons and learning goal availability, the current study attempts to address these issues from within the context in question, and question existing limited and limiting stereotypes of Japanese learners. Adopting a Narrative Inquiry approach, the study follows the stories of seven students as they participate in an innovative 15-week 'English-through-Drama' course at a Japanese Arts & Humanities university. Employing a mix of improvised and scripted scene work, adapting the Playback Theatre genre (Salas, 2013) and the *Jigazou* (self-portrait) genre (Ishii, 2017), the course attempted to combine language learning skill development with L2 identity and motivation awareness-raising and promotion, using the students' own stories as the dramatic material. Through narrative analysis of the students' weekly reflective journal entries based on their experience of the above activities and the insights arising therein, and triangulated by analysis of the teacher's weekly journal entries, the study attempts to provide answers to key questions linking the students' L2 motivation to their larger L2 identity. It adopts a view of identity-as-process (Oyserman et al., 2011), and therefore coins a new term, *self-ing*, to reflect that view. While the project acknowledges the usefulness and relevance of Dornyei's (2005, 2009) L2 Motivational Self System as a framework for explaining the motivational power of learners' Ideal L2 Selves (in other words, the learners' personalised image of their future hopes and dreams of themselves as a user of English), it also acknowledges the importance of actual and past selves (Falout, 2015). In other words, it takes a more holistic view of the Ideal L2 Self construct, seeing it as one integral element of the learner's overall identity. Furthermore, it sees the explanatory, and interventional, potential of viewing that identity as narrative identity, or life story (McAdams & McLean, 2013), taking advantage of the role that life story telling can play in helping people integrate their sense of self both across time (and thus mitigating the motivationally disruptive potential of life transitions) and across social context (mitigating the motivationally disruptive potential of apparently conflicting selves)(Habermas & Reese, 2015). Finally, the study assessed the value of this drama-based educational model and its component task-sequences in terms of its ability to not only explore learners' L2 identity and motivation, but also to empower learners by fostering their own awareness of their L2 *self-ing* and motivation. Based on these findings, practical suggestions will be made for future EFL teaching practice.

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## **Accommodation in a cross-dialectal shadowing task**

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Anita Szakay, Macquarie University

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A substantial body of linguistic work has demonstrated that speakers tend to accommodate to their interlocutors (e.g. Giles et al., 1973). Such convergence has been documented across several dialect boundaries: New Zealand vs Australian English (Babel, 2010), New Zealand and American vs New Zealand, Australian, and American English (Walker & Campbell-Kibler, 2015). However, most of this sort of work has been done with monolingual speakers. We ask: Do second language (L2) speakers accommodate similarly to first language (L1) speakers across dialect boundaries?

Four groups of speakers participated in the study (Figure 1): 4 L1 speakers of Australian English (L1D1), 7 L1 speakers of American English with Australian English as their second dialect (L1D2), 14 L1 speakers of Russian with Australian English as their first English dialect (L2D1), and 9 L1 speakers of Russian with American English as their first and Australian English as their second English dialect (L2D2). First, they read a word list containing 10 monosyllabic (C)CVC(C) words for each of the lexical sets BATH, DRESS, FACE, FLEECE, KIT, LOT, NEAR, NURSE, PRICE, TRAP. Second, they participated in a shadowing task where they had to repeat the same words twice, after both a non-rhotic speaker of Australian English and a rhotic speaker of American English, in random order.

For analysis of accommodation, F1 and F2 were measured at 50% for monophthongs and at 20% for diphthongs. For rhoticity, F3 was measured at 65% of the rhyme for NEAR and NURSE.

Unsurprisingly, the 4 groups varied in their word list reading productions of the vowels, with the bilingual groups usually falling between the monolingual groups. For rhoticity, the bilingual groups produced a lower F3 (more rhotic) than the Australian group and a higher F3 (less rhotic) than the American group for NURSE. All groups produced a less rhotic NEAR, compared to the American group. The bilingual groups also produced a fronter PRICE, compared to the Australian group, and a backer PRICE, compared to the American group.

The participants also converged to the speakers in the stimuli. All the participants equally produced a higher F3 (less rhotic) for NEAR and a more central KIT, when shadowing the Australian speaker, and a higher and fronter FACE when shadowing the American.

There was also a significant interaction for BATH such that different groups converged differently to the stimuli: L2D1 and L2D2 produced a more backed BATH shadowing the Australian and a more fronted BATH shadowing the American (Figure 2). The L1D1 group accommodated to the American, and the L1D2 group did not vary significantly across conditions.

The results indicate that both monolingual and bilingual speakers accommodate across dialect boundaries. Moreover, for most vowels different groups accommodated similarly, resulting in only one significant interaction for BATH where the bilingual groups varied the most. BATH may be a special case because it is not simply phonetic convergence but a reanalysis of the vowel as a different class, making it more salient. Overall, the results suggest that bilingual speakers may be as flexible as monolingual speakers in accommodation, or even more so for certain variables.

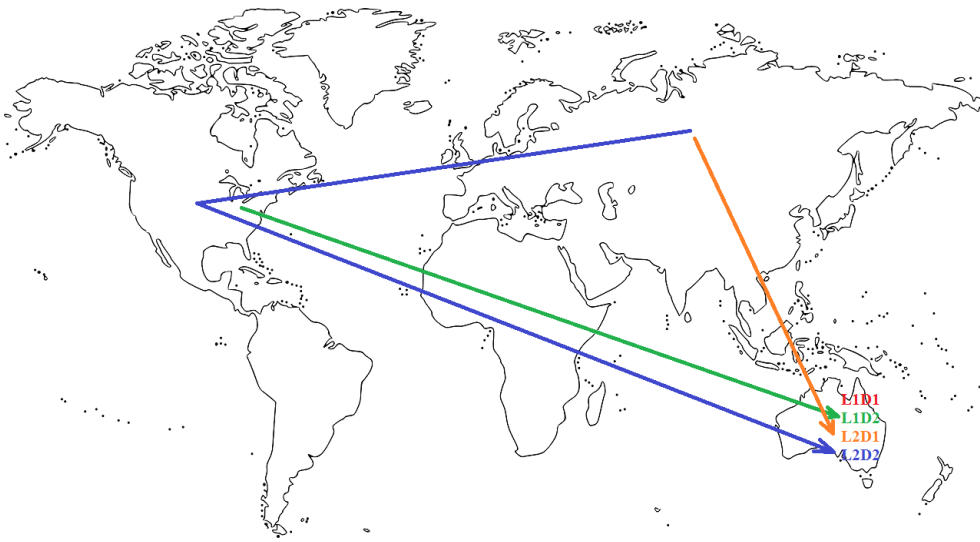


Figure 1: Schematic representation of mobility of the 4 participant groups.

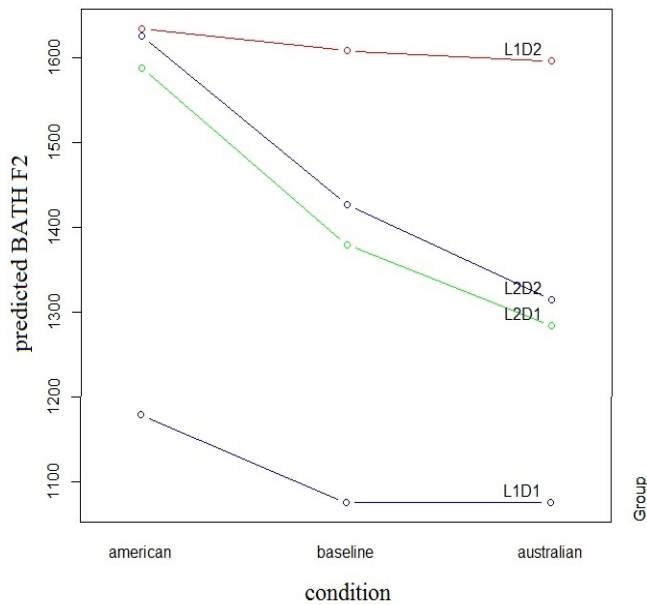


Figure 1: BATH F2 across participant groups and shadowing conditions

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## **The conceptual semantics of “money words”: *money, buy, sell, pay, (it) costs.***

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Linguists have often addressed the syntax and semantics of English *buy* and *sell*, both on account of their complex, interrelated argument structures and because they are classic examples of converses (aka relational antonyms). Many speak about “Commercial Transaction” verbs or about the “Commercial Transaction Frame”, e.g. Jackendoff (1990), Fillmore and Atkins (1992), Croft et al. (2001), Hudson (2002), Van Valin (n.d.). Little attention has been devoted, however, to unravelling the conceptual semantics of the crucial element: ‘money’. This is a key aspect of the present study, which uses the Natural Semantic Metalanguage framework (Goddard and Wierzbicka 2014, 2016; Goddard 2018). The NSM framework depicts lexical meanings using reductive paraphrases (explications) composed in a small cross-translatable vocabulary of semantic primes and molecules. The treatment pays attention to lexical polysemy and to the various grammatical frames of the verbs in question.

We first present semantic explications for four important English verbs – *buy, sell, pay, (it) costs* – aiming to shed new light on their argument structures and semantic interrelationships. All the explications employ ‘money’ (in one of its meanings) as a semantic molecule, i.e. as a “building block” of meaning. It emerges that ‘buy’ is also a crucial semantic molecule in various other meanings. The explications demonstrate chains of conceptual dependency; for example: ‘money’ > ‘buy’ > ‘pay’ > ‘(it) costs’. To illustrate, consider the explication for *This shirt costs \$100* (‘[m]’ indicates a semantic molecule): ‘it is like this: if someone wants to buy [m] this shirt, they can’t not pay [m] this much: \$100 | people can know this’. We show how the constructional frames available to these verbs reflects their semantic-conceptual structure.

These analyses all depend, of course, on it being possible to demonstrate that ‘money’ can be explicated independently and without circularity. In the second part of the paper we explicate ‘money-1’, i.e. the relatively “concrete” meaning found in a sentence like *There was some money on the table*. The explication is complex (30+ lines of semantic text) but tightly coherent. Disclosing the essential social character of the ‘money-1’ concept, it relies heavily on semantic primes such as PEOPLE, SOMEONE, WANT, SAY, and DO, as well as on semantic molecules such as ‘hands’, ‘number’ and ‘country’. It includes a prototypical scenario in which two people say and do something with ‘money-1’, each as the other says.

We show how ‘money-1’ can function as a semantic molecule, as required, in the explications for *buy, sell* and *(it) costs* (and other “commercial transaction” verbs), even though such transactions need not be made with “cash money” as such. The concept of ‘money-1’, we argue, provides the foundation for a truly vast lexical and conceptual field. We also briefly discuss how ‘money-1’ gets extended to more abstract uses of the word *money*, e.g. in *have*-constructions such as *He has a lot of money*, noting that much work remains to be done in this regard.

Finally, we emphasise the importance of understanding the conceptual semantics of basic English “money words” as an entry point into everyday economic thinking. This is important for applied purposes, including education (cf. Mooney and Sifaki 2017), and as a contribution to “humanomics”, i.e. the project which aims “to explore economics through the lens of the humanities and humanity through the lens of economics” (Smith and Wilson 2019).

**Keywords:** verb semantics; commercial transaction verbs; money concept; humanomics; Natural Semantic Metalanguage

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### ***Just a word: Sound change at the level of the word across dialects***

James Grama, Ksenia Gnevsheva, Jennifer Hay, James Brand, Simon Gonzalez, Debbie Loakes, Gerry Docherty, Elena Sheard, Paul Foulkes, Chloé Diskin, Katie Drager, and Catherine E. Travis

Lexical sets (Wells 1982) have become a mainstay in sociophonetic work as a way of representing vowel categories without ascribing them a specific realisation. Thus, words such as *think*, *bit*, and *still* are representative of the KIT vowel class, and *come*, *stuff*, and *other* of the STRUT vowel class. While grammatical words are also associated with lexical sets (e.g. *it*, *in*, *but*, *up*), they are typically excluded from analyses, due to their high frequency and phonetic reduction. Thus, it is unknown to what degree such words might concord with the patterning of a corresponding lexical set. The current paper addresses this by investigating variation over time in one high frequency grammatical word, *just*, in two varieties of English (New Zealand and Australian English), to ask to what degree it functions as a member of the STRUT lexical set to which it would typically be assigned.

Data come from two corpora of spontaneous speech: the Origins of New Zealand English (ONZE) corpus (Gordon et al. 2007), including speakers born between 1851 and 1988 ( $n = 592$ ); and a subset of the Sydney Speaks corpus (Travis et al. In Progress), with speakers born between 1914 and 1999 ( $n = 77$ ), providing some 12,000 tokens of *just* for analysis. The data are time-aligned at the phonemic level, and vowel formant measures are extracted automatically at the midpoint for all monophthongs, and normalised using a modified version of Lobanov (1971).

As depicted in Figure 1, *just* (in black dots, representing individual tokens) does not pattern with the STRUT lexical set (in blue), but rather broadly falls within the distribution of KIT (in purple). Furthermore, results from statistical modelling reveal that *just* generally falls between STRUT and KIT, not only in New Zealand English (for which KIT has undergone centralization), but also for Australian English (where KIT remains high and front).

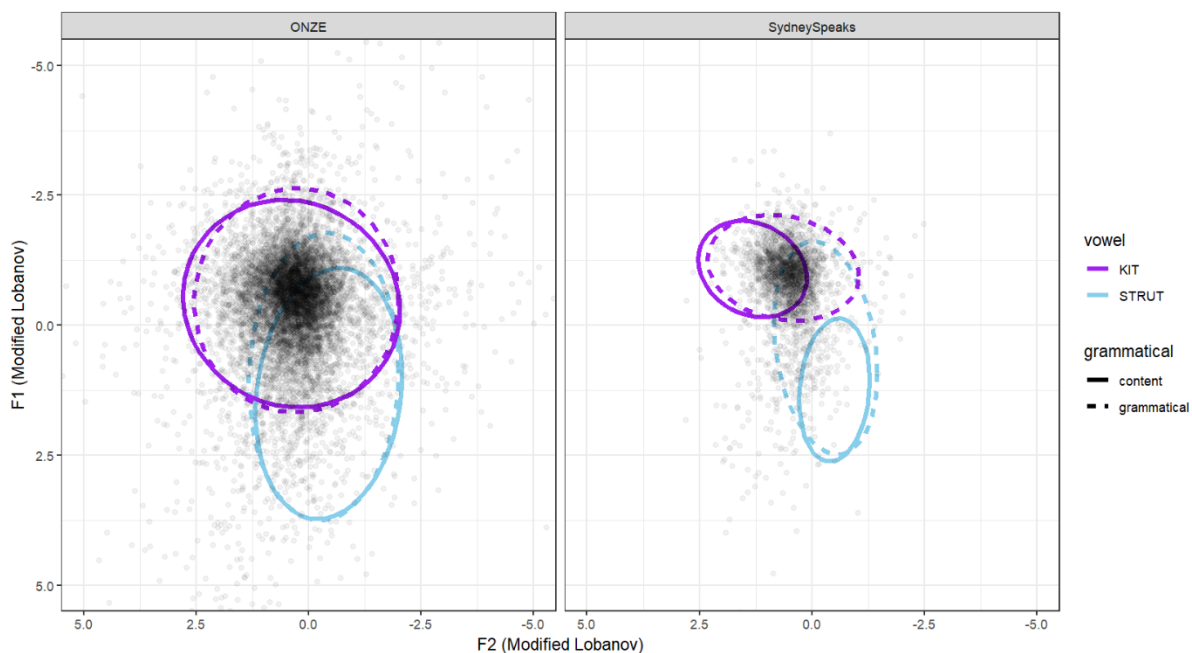
Separate modelling of the behaviour of *just* in the two varieties provides insight into its social distribution and change over time. For women within both varieties, and men within Australian English, we find a significant raising of *just* over time. Note that this change is in the same direction as KIT movement for Australian English, and is in the opposite direction of change from that of both KIT and STRUT for New Zealand English females. We also observe that *just* is significantly fronting over time in Australia, and backing over time in New Zealand. In both varieties, *just* is not moving at the same rate as KIT or STRUT, and its movement is more dramatic for women than for men. These changes bring *just* closer to KIT, despite the very different positions the vowel occupies in both varieties.

In sum, we find that *just* behaves differently from KIT and STRUT in terms of its position in the vowel space, its direction of change across variety and gender, and its rate of change. We interpret these results as evidence that grammatical words may follow their own path of change, independently of the vowel classes they are traditionally linked to. This is in line with usage-based models of speech production (Bybee 2001; Pierrehumbert 2003; Johnson 2006), according to which speakers possess word-level representations.

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Figure 1. Tokens of *just* plotted with KIT (purple) and STRUT (blue) in content (solid line) and grammatical words (dashed line) for New Zealand (left) and Australia (right) corpora.



## Rhotics and Lenition in Arabana

Mark Harvey, Robert Mailhammer, Michael Carne, Juqiang Chen and Clara Stockigt

The term “lenition” and its counterpart “fortition” are applied to a wide range of processes. There are two main approaches to the analysis of lenition. One approach aims to provide a unified account of these processes. Unifying motivations include: (i) reduction of gesture magnitude and/or duration (Bybee & Easterday 2019; Lavoie 2001); (ii) “undershoot” - failure to achieve phonetic target (Bauer 2008); (iii) reduction of effort (Kirchner 2001). The other approach argues that no unified analysis is possible as some of the processes are fundamentally heterogenous. This approach proposes that “lenition” processes fall into at least two distinct categories: (i) *continuity lenition* – processes which align intensity profiles with prosodic structure, lowering intensity at prosodic boundaries and raising intensity within prosodic constituents; (ii) *loss lenition* – other “lenition” processes which should be modelled by independently motivated general phonology (Katz 2016). Current analyses in the unified approach are not explicit as to the full range of possible relations between duration and gesture in lenition and fortition. Lengthening is analysed as fortition and shortening is analysed as lenition (Blevins 2004: 144-147; Bybee & Easterday 2019). In the undershoot analysis, shortening is a causal factor for failure to attain phonetic targets (Bauer 2008). However, analyses using the unified approach do not explicitly address how cases involving an increase in duration but a reduction in gestural magnitude or vice versa should be modelled. In this paper, we report on lenition of the alveolar rhotics /r/ and /ɾ/ in Arabana, a language of northern South Australia, where gestural reduction may be accompanied by both lengthening and shortening.

Arabana has a phonemic contrast in medial position between an alveolar trill /r/ and an alveolar tap /ɾ/. Current materials report considerable overlap in production between the two and difficulties in perceiving the /r/ vs /ɾ/ contrast (Hercus 1994: 45-46). We undertook a production study to examine their acoustic characteristics. As shown in Table 1, the phonetic realization range for /ɾ/ is a subset of that for /r/. Phonemically, /r/ is distinguished from /ɾ/ by the fact that /r/ permits [r] realizations whereas /ɾ/ does not. As also indicated in Table 1, the standard analysis of the alveolar realizations is as a fortis → lenis continuum: [r] (multiple closures) > [ɾ] (single closure) > [ɹ] (no closure). Therefore, these patterns should be included in any unified analysis of lenition.

Figure 1 illustrates the duration data for the alveolar rhotics, categorized by phoneme and allophone. Table 2 summarizes the statistical evaluation of this data. For both the trill /r/ and tap /ɾ/ phonemes, continuant realizations [ɹ] are significantly longer than tap [ɾ] realizations. The continuant [ɹ] realizations of the trill /r/ are significantly longer than the continuant [ɹ] realizations of the tap /ɾ/. The tap [ɾ] realizations of /r/ and /ɾ/ are not significantly different. The trill [r] and continuant [ɹ] realizations of the trill /r/ are not significantly different.

The lenited allophones of /r/ are [ɾ, ɹ] and that of /ɾ/ is [ɹ]. Overall, the [ɹ] realizations of /r/ and /ɾ/ pattern very differently from the [ɾ] realizations of /r/. This difference does not have a wellmotivated analysis under the unified approach. The continuant [ɹ] is more lenis than the tap [ɾ], as a tap involves greater gestural magnitude and more effort than a continuant. If gestural reduction/lesser effort are the basic factors motivating the production of more lenis realizations, then it is not evident why production of a more lenis variant should require greater duration.

By contrast, under the Katz approach the difference is straightforward. The [ɹ] realizations of /r/ and /ɾ/ are examples of continuity lenition as they improve intensity profiles within prosodic constituents. Improving intensity profiles has no necessary relation with duration and is compatible with a range of durational realizations. The [ɾ] realizations of /r/ do not improve intensity profiles

and are examples of loss lenition following from general patterns. Further research is required to determine the specific factors responsible for the reduction of /r/ to [ɾ].

Table 1: Realization Ranges

		Allophonic realizations (fortis → lenis)		
Phoneme		trill	tap	continuant
Alv trill	/r/	[r]	[ɾ]	[ɹ]
Alv tap	/ɾ/		[ɾ]	[ɹ]

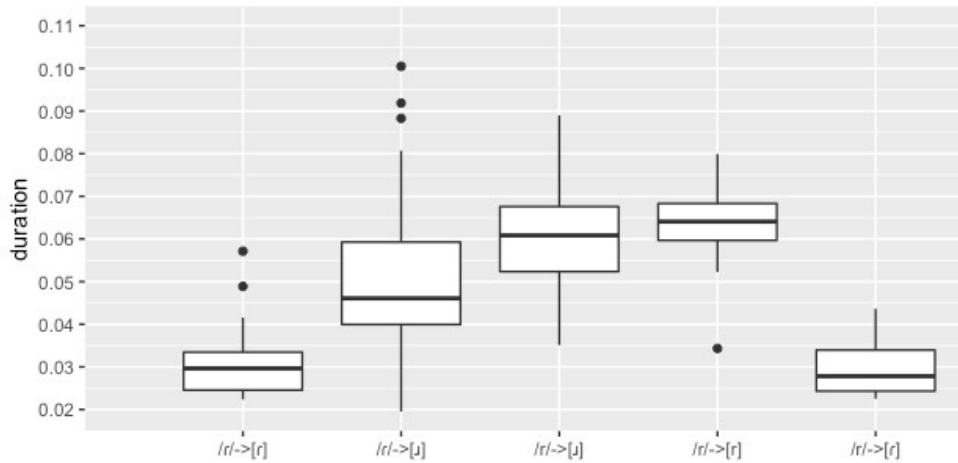


Figure 1

Table 2: Summary Statistics\*

Phoneme	Realisation	$\bar{x}_1$	$\bar{x}_2$	Test statistic	p-value
/r/	[r] (n=11) [ɹ] (n=4)	0.063	0.030	$t(13) = 4.65$	0.00023
	[r] (n=11) [ɹ] (n=42)	0.063	0.061	$t(15) = 0.47$	0.32
	[ɹ] (n=4) [ɹ] (n=42)	0.030	0.061	$t(44) = -4.52$	0.99
/ɹ/	[ɹ] (n=67) [ɹ] (n=17)	0.049	0.032	$W = 924$	0.00004
/r/, /ɹ/	[ɹ] (n=42) [ɹ] (n=67)	0.061	0.049	$t(107) = 3.74$	0.0002
	[ɹ] (n=14) [ɹ] (n=4)	0.030	0.032	$W = 33$	0.55

\*Two-sample t-tests were applied for sample pairs where normality could be assumed (determined by a Shapiro-Wilk test,  $\alpha = 0.05$ ). Mann-Whitney U tests were used for non-parametric distributions. Test statistics are  $t$ (degrees of freedom) and  $W$  respectively. All tests were upper one-tailed tests at a significance level ( $\alpha$ ) of 0.05.

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## Shifting the Burden: towards more robust and transparent procedures for LAAP

Jim Hoskin and Paul Foulkes

Since the inception of Language Analysis in the Asylum Process (LAAP)—also known as Language Analysis for the Determination of Origin (LADO)—in the mid-1990s, remarkably little experimental work directly relevant to the field has been conducted. Most published work on LAAP has instead taken the form of case-based critique and in-principle polemic (Cambier-Langeveld 2010b, 2012; Eades 2005; Eades et al. 2003; Fraser 2011). Much discussion has focused on the involvement of native speaker non-linguists (NSNLs) as LAAP analysts (Cambier-Langeveld 2010a, 2016; Foulkes, French & Wilson 2019; Hoskin 2018; Nolan 2012; Patrick 2012; Wilson & Foulkes 2014). A recently explicated debate concerns the nature of the basic question LAAP should seek to answer and, associated with this, the forensic rigour of its conduct (Cambier-Langeveld 2014; Matras 2018; Patrick 2016; Hoskin, Cambier-Langeveld & Foulkes submitted).

The experimental research reviewed in (but not originally conducted for) such contributions as Fraser (2009) and Preston (2019) centres on selected findings from perceptual dialectology which are of, at best, limited applicability to LAAP. By and large they test naïve listeners' accent identification skills on the basis of recordings of read texts or phonological units heard in isolation, with little or no time for review of conclusions. Preston's work focuses particularly on language ideologies. It elicits judgements according to affective criteria ('correctness', 'pleasantness', 'friendliness' and so on), has listeners judge whether samples feature speakers of a 'language' or a 'dialect' and speculates as to what informants' performance in dialect-mapping tasks reveals about NSNL attitudes to the relationship between official and non-official language varieties. Such tasks, however, are largely irrelevant to LAAP. Rather, LAAP involves the assessment—with time allowed for revision of conclusions—of longer passages of (semi-)spontaneous speech produced by an asylum applicant under the forensic conditions of an official interview. Expressed simply, the question in LAAP is: How likely is it that this person is an authentic speaker of the variety he/she claims to speak?

Only Wilson (2016) and Hedegard (2015) have conducted original research under conditions ecologically valid for LAAP. The final experiments forming the basis of the present PhD project will examine the extent to which Arabic-speaking asylum seekers themselves are able to differentiate the characteristics of their native vernacular from those of related but distinct language varieties. They will be tested on their ability to do so through three kinds of task: (1) dialect recognition (2) lexical and grammatical parsing of samples; and (3) spoken repetitive replication of the samples. The experiments are as follows.

- (i) A dialect recognition test: the asylum applicant listens to samples of a language variety in which he/she claims native competence and attempts to identify whether the speaker in each case speaks 'their' dialect.
- (ii) A listen-parse-repeat test: the applicant listens to a sample of colloquial/conversational speech representative of the variety which they claim to speak natively. They then attempt to perform two tasks. The first is to parse the sample into the relevant standard language variety. The second (after Moosmüller 2011) is to repeat the sample utterance multiple times, at timed intervals.

A pilot of experiment (1) asked NSNL listeners of three types (Yorkshire born-and-raised, other British and non-British) to identify which of 13 samples feature speakers of Yorkshire English. Results indicate that Yorkshire born-and-raised listeners are the most accurate of the three groups. A pilot of experiments (2) and (3), involving samples of Geordie English, is in progress. Results are expected by mid-November 2019. It is hoped that the project will lead to the development of auxiliary tests for LAAP. This would have two main benefits. First, it would shift some of the burden of judgement away from the NSNL analyst and thus perhaps contribute to resolving the debate on their involvement in LAAP. Second, the auxiliary tests could in principle be used in a uniform and standardised manner across LAAP agencies and for any language variety.

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## **How you say “thank you” matters: Grateful & Apologetic Gratitude Production and Perception of Mandarin Speakers**

Yu Ting Hsieh and Yuwen Lai

### **Purpose of research**

The social influence of gratification has been widely discussed in the past decade. In particular, studies regarding Asian cultures have demonstrated the impact of indebtedness on gratitude perception. The present study investigates the strategies native Mandarin speakers adopt when dealing with scenarios which can be responded with either grateful or apologetic gratification. The participants' perception of the scenario were also examined. We aim to study the effect of Relationship, Degree of favor, Hierarchy, and Imposition on such behavior and the correlation between the written responses & perception rating.

### **Research method & Data analysis**

A revised survey of the Discourse Completion Task (aforementioned as DCT) was adopted and gratitude responses from 121 Mandarin speakers were collected. In section 1, 18 daily scenarios were presented in writing and participants were instructed to produce a written response to the depicted favor. The responses were then categorized according to Cheng's study on gratification (2005), and further divided as grateful response or apologetic response. The effect of the four factors on the responses were examined using a series of ANOVA.

In section 2, the same participants were asked to rate for degree of gratefulness and apology in each scenario. This design allows us to cross reference the perception of the participants and their written responses to the same favor.

### **Result & Discussion**

The writing response of the two categories yielded significant results in grateful/apologetic ratings, confirming the consistency between production and perception and the validity of word choices in each scenario.

In terms of the four factors, Relationship, Degree of favor, and Imposition were found to significantly influence grateful rating, indicating that closer Relationships, higher Degree of favor, and imposition on the part of the receiver may trigger higher levels of gratification. In addition, Degree of favor and Imposition both elicit significantly higher apologetic reaction, while only Relationship show a significant negative effect on apologetic rating.

In sum, the findings support our hypothesis that Relationship, Degree of favor, and Imposition affect gratification and warrant future studies on the impact of grateful/apologetic expressions on eliciting pro-social behavior. We hope the results could facilitate the infamous interpersonal relationships of the modern world and contribute to build better human and computer interaction models.

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## **The use of quotation markers with regard to aspects of Korean and Japanese culture and society**

Hyunsu Kim

This study discusses the interactional use of *-tte* in Japanese and *-tay* in Korean with respect to different cultural values in talk. When conveying a third person's utterances, these markers have a number of similarities in terms of their functions: that is, topic initial elicitor, evidence-leaking marker and context-detailing marker. As a topic initial elicitor, these markers are used by the speaker to introduce a new topic in conversation, in order to evaluate the topic with the hearer. Both *-tte* and *-tay* also indicate the function of evidence-leaking marker to express the speaker's attitude toward information which is reliable and trustworthy. In addition, speakers use these markers to provide hearers with detailed information about contexts. However, certain pragmatic principles are embedded in the usage of the Japanese *-tte* as a face-saving marker to save hearers' negative and/or speakers' positive faces, and this function has not been identified in the Korean *-tay*. Focusing on the difference between the Japanese *-tte* and the Korean *-tay*, this study compares Japanese cultural values expressed in verbal behaviours such as *enryo* ('restraint'), *meiwaku* ('inconvenience') and *omoiyari* ('consideration') with the Korean counterparts, solidarity, affection and intimacy in socio-cultural contexts (Wierzbicka, 2003). By analysing naturally occurring data of telephone conversations and using Natural Semantic Metalanguage (NSM), this study reveals how different cultural values are reflected in spoken interactions and how the language communities in different societies and cultures display different assumptions and cultural values.

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**Adverbial modification in Wagiman**  
Daniel Krauß and Mark Harvey

In this paper, we examine two principal analyses of adverbial modification in Wagiman, a language of the middle Daly River region in northern Australia:

1. There is an open syntactic position for adverbial modifiers and this position may be filled by a range of parts-of-speech.
2. There is a part-of-speech class, adverb, which may appear freely within the clauses.

Cook (1987:92) proposes a closed class of adverbs, whereas Wilson (1999:47) states that there is no justification for a distinct class of adverbs in the language. We propose that Wagiman uses both strategies for adverbial modification. Our analysis is based on published material (Cook 1987; Krauß & Harvey 2018; Tryon 1971; Wilson 1999) and unpublished fieldnotes (1980-2016).

There are four main parts-of-speech in Wagiman: nominals, verbs, coverbs, and particles. Nominals form an open class, function as the argument of a predicate and may take case suffixation. Verbs take TAM inflection and fall into two classes. One is an unproductive closed class of 43 members, the other is a productive open class derived from a coverb root. Coverbs are non-finite predicational elements in Wagiman and take an aspectual suffix, primarily *-Ma* (with allomorphic variation) and  $\emptyset$  (ex. 1) Particles are uninflectable elements that cannot take affixes. The combination of a coverb such as *worok* ‘wash’ and a verb such as *ma* ‘get’ is termed a complex predicate (1). The same coverb may also fill the adverbial position and modify a complex predicate such as *lem ya* ‘enter + go’ (2).

Example (2) shows that adverbial modification of complex predicates can produce constructions with two coverbs. Our study of all occurrences of more than one coverb in a clause suggests that whichever coverb is adjacent to the verb forms a complex predicate with it, whereas the other coverb modifies this complex predicate. The coverb *lem* ‘enter’ in the complex predicate is well attested with motion verbs like *ya* ‘go’ (i.e. *lem ya* ‘enter + go’), whereas the modifying coverb *worok* ‘wash’ is not attested with motion verbs but with *ma* ‘get’ (i.e. \**worok ya* ‘wash + go’, but *worok ma* ‘wash + get’). The position of the modifier is free whereas in the vast majority of complex predicates the constituents are adjacent. A coverb that has a predicational function in a complex predicate construction normally immediately precedes the verb. By contrast, coverbs in a modifying adverbial function appear freely either before or after the verb and not necessarily adjacent to the verb.

Adverbial modification in Wagiman is also possible with nominals such as *maman* ‘good one’ (3) and particles such as *benybeny* ‘a little while’ (4). The fact that coverbs, nominals and particles can all function adverbially supports a syntactic analysis of adverbial modification.

However, there is a small class of words in Wagiman that have coverb morphology but behave syntactically like particles. They show an alternation between *-Ma* and  $\emptyset$ , as is typical for coverbs, but the distribution of these forms does not match that of other coverbs. Compare the morphology of the adverbial modifier *gabarn-a* in example (5) with the standard coverb morphology of *worok-ka* in (1). In examples (6) and (7), the coverbs *darrp* ‘be hanging up’ and *wek* ‘swallow’ have a perfective reading and they select the verbs *ge* ‘put’ and *ra* ‘throw’, respectively. In contrast, *gabarn-a* ‘quick’ in the same sentences does not pattern with the perfective reading and does not select specific verbs. It shows unconstrained syntactic distribution. Our corpus shows no attestation of unambiguously predicational uses of words like *gabarn-a*, and they are not attested with verbal derivation, which is a productive process for coverbs in Wagiman. These words have been classified as belonging to an adverbial subclass of coverbs in Wilson (1999:46). Given the differences between these words and synchronically productive coverbs, we propose a small closed class of adverbs in the language.

- (1) a. *Worok-ka Ø-ma-yi lawel.*  
**wash-NPFV** 3>3PST-get-PST clothes  
 ‘She washed/was washing the clothes.’
- b. *Worok-Ø Ø-ma-ny wayitjjalbu.*  
**wash-PFV** 3>3PST-get-PST.PFV child  
 ‘She has washed/\*was washing the child.’
- (2) *Gahan worok-Ø lem-wi gu-ya gahan hawtj goron.*  
 DEM.MED **wash-PFV** enter-ACH 3FUT-go DEM.MED house house  
 ‘That (current) will enter **washingly/in a washing manner** right inside the house’
- (3) *Maman nangnang-a ga-ya=ma marluga gahan.*  
**good** perform-NPFV PRS-3-go=FOC old.man DEM.MED  
 ‘That old man performs **well**.’
- (4) *Benybeny nga-yu mahan dup-pa.*  
**little.while** 1SG:PRS-be DEM.PROX sit-NPFV  
 ‘I’m sitting here **for a little while**.’
- (5) a. *Dardam-Ø m-i-Ø-ma-Ø gahan lamang, gabarn-a [< gabarn-Ma]!*  
 be.opened.up-PFV IMP-2SG.AGT-3PAT-get-IRR DEM.MED meat **quick-Ma/NPFV**  
 ‘Open that (tinned) meat up, **quickly**!’
- b. *Bum-ma m-i-Ø-bu-Ø gahan jarnin gabarn~gabarn-Ø!*  
 heat-NPFV IMP-2SG.AGT-3PAT-hit-IRR DEM.MED bamboo **INTS~quick-PFV**  
 ‘Heat that bamboo up **quickly**!’
- (6) *Gabarn-a darrp-Ø m-e-Ø-ge-Ø nganung!*  
**quick-Ma/NPFV** be.hanging.up-PFV IMP-2SG.AGT-3PAT-put-IRR 1SG.OBL  
 ‘Hang it up for me!’
- (7) *Gahan warren-yi ... danganyin wek-Ø mama g-a-Ø-ra-n*  
 DEM.MED child-ERG tucker swallow-PFV ITER PRS-3AGT-3PAT-throw-REAL  
**gabarn-a.**  
**quick-Ma/NPFV**  
 ‘That kid always swallows tucker quickly.’

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## **Language processing in dynamic multimodal texts: The case for subtitles in classroom videos**

Jan-Louis Kruger and Stephen Doherty

The use of video in education has accelerated rapidly in the past decade owing to technological developments (see Doherty, 2016), as well as pedagogical and institutional change. Students regularly interact with recorded lectures, particularly in blended and online courses. These educational videos, however, are not optimally accessible to all students and represent a language and accessibility barrier to the learning process, especially for those who need language support or study through a foreign language (e.g., Berman & Cheng, 2010). Although subtitles have been shown to be a valuable support in such contexts (e.g., Gernsbacher, 2015), we still lack an understanding of the optimal use of subtitles in educational videos to address the needs of cognitively and linguistically diverse students (Kruger & Doherty, 2016).

Over the past 6 years, we have been exploring the extent to which subtitles improve comprehension for first and second language viewers, but also how subtitles impact upon cognitive load. These studies have led to an increasing focus on the way in which language is processed in dynamic multimodal texts in which the viewer has to balance reading with listening and other tasks. Initially, we studied the effect of subtitles on comprehension and cognitive load in classroom videos and found that in a second language context, subtitles assisted in reducing the cognitive load of students (Kruger, Hefer, & Matthew, 2013). We also found that cognitive resources are assigned to more stable information sources like slides and non-verbal visual contextual information when the presentation speed of subtitles increases (Kruger, 2013). Following this, we investigated the extent to which subtitles are processed, and found that students who process subtitles more thoroughly also perform better in comprehension tests after the video than students who only process the subtitles partially (Kruger & Steyn, 2014). In a subsequent study, we established that L1 subtitles resulted in lower self-reported cognitive effort and higher long-term comprehension as well as higher instructional efficiency (Kruger, Hefer, & Matthew, 2015). We then reported on the validated measurement of cognitive load at the ALS/ALAA conference (Kruger, Doherty & Castro-Meneses, 2016) and also started developing more robust multimodal measurements of cognitive load and engagement using eye tracking and EEG measures combined with performance and self-report measures (Kruger & Doherty, 2016; Kruger, Doherty & Ibrahim, 2017; Kruger, Doherty, Fox & De Lissa, 2018 and Castro-Meneses, Kruger & Doherty, 2019). Simultaneously, we explored the quality of machine-generated subtitles (Doherty & Kruger, 2018) and the application of more contemporary statistical modelling techniques (Doherty, 2018).

In this paper, we will discuss barriers to the measurement of fluctuations in cognitive load in the context of language processing, as well as the most significant linguistic turn in our research, namely the use of word-level and sentence-level local eye tracking measures in the study of subtitle reading. In particular, we will focus on the use of high-speed eye trackers to determine the impact of presentation speed of subtitles as well as visual competition on language processing. Preliminary findings indicate that viewers adapt their reading patterns to process language at a higher speed when the presentation speed increases, and also that viewers remain sensitive to changes in lexical information such as word frequency even when the presentation speed of the text and visual competition with video test the limits of their reading skills (Kruger, Liao, Yu, Doherty, & Reichle, 2019).



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## Computational Modelling of Verbal Morphology in a Polysynthetic Language

William Lane and Steven Bird

Kunwok is an Aboriginal language of the Gunwinyguan language family, and is spoken by about 1700-2000 speakers in northern central Australia. Several Kunwok communities have shown interest in leveraging technology to help revitalize the language through increased access to resources and language learning tools (Bird, 2018). In addition to the value of language technologies for the community, computational models of language supports analytical rigor: systematizing a grammar forces one to confront tacet assumptions, and allows one to empirically measure coverage and accuracy of an analysis. In order to satisfy the objectives listed above, there are particular challenges that need to be addressed vis-à-vis the linguistic features of Kunwok, namely polysynthesis, morphophonemic alternations, incorporation, reduplication, and long-distance dependencies. As such, we are investigating which aspects of morphosyntax can we model, and what are the limitations of computational approaches for modelling polysynthetic languages more generally.

Our approach makes use of Finite State Transducers (FST) to model the morphosyntax of the Kunwinjku dialect of Kunwok, as described in Nicholas Evans’ pan-dialectal grammar (Evans, 2003). We use the Foma Toolkit (Hulden, 2009), a popular choice for implementing morphosyntax of polysynthetic languages (Chen and Schwartz, 2018; Littell, 2018, Moeller et al, 2018). Further, we use analyses generated from the FST to train a neural sequence-to-sequence model, which has been shown to improve on the FST model in terms of both coverage and accuracy (Schwartz et al., 2019). As for model inputs and outputs, consider the following example of a complex verb, translated into English as “I left the swags with those two” :

Input: “ngabenbenemarnemadjyibawong”

Output: “[V][Intrans.1.3du.past][BEN][GIN.madj][COM]bawo[PstPerf]”

The example above exhibits several features of Kunwok including the incorporation of subject, object and tense in the pronominal prefix, benefactive and comitative infixes, and noun incorporation. This is a good example of a fairly straightforward, agglutinative verb form. Below, we see a more difficult example which exhibits some allophonic changes and reduplication:

Input: “birridukkarrukkarrinj”

Output: “[V][Intrans.3pl.past][REDUP.dukka]dukka[RR][PstPrf]”

Our models implement the Evans grammar, and are evaluated in terms of coverage and accuracy on a corpus of inflected verb forms paired with their analysis which was derived from that text. Our FST model achieves 98.4% coverage and 95% accuracy on this data set.

We encountered features of the languages that lend themselves nicely to FST models, as well as others for which the FST is not conducive. In general, the FST is good at capturing non-recursive constructions, and the agglutinative nature of Kunwok means that there is only limited need to model allophony as morphemes are combined. However, FSTs struggle with the variation commonly found in oral languages. Feeding an FST out-of-vocabulary items produces no analysis at all. This is where the neural modelling approach comes into its own, and we see that it is robust in the face of variation and can even posit out-of-vocabulary verb roots.

FST models are not well-suited for modelling recursive processes like reduplication. Moreover, implementing long-distance dependencies such as tense and valency agreement of pronominal prefixes and tense/aspect/mood suffixes is cumbersome, especially given Kunwok’s propensity to

alter valency in the presence of particular morphemes. Our ongoing work is addressing these challenges.

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## Initial observations of voice quality in L1 Aboriginal English: a phonetic analysis

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It is well known that “Indigenous people had a different path towards English” compared to mainstream Australian English speakers (Malcolm 2011), and it follows that there should also be linguistic differences between them. While some research has been carried out into vowel spaces (e.g. Butcher & Anderson 2008; Loakes et al. 2016), consonant variation (Mailhammer, Sherwood & Stoakes forthcoming; Loakes et al. 2018) and prosody (Jespersen 2016), no research has yet been carried out into the “distinctive and recognizably ‘Aboriginal’ voice quality” (Butcher 2008: 631).

In the small number of sociophonetic studies into voice quality that exist, significant differences have been observed depending on speaker ethnicity, for example in Maori compared with Pakeha New Zealand English (Szakay 2012) and in “black” vs “white” South African English speakers (Wileman 2018). In Australian English, there is very little research into linguistic voice quality at all, and to our knowledge this study begins the first descriptive analyses of L1 Aboriginal English, in the Western Victorian variety spoken in Warrnambool.

Speakers in this study are 6 males and 5 females (aged between 19-65), data are controlled speech. In the first instance, auditory perceptual analysis was performed on the vowels in the data by the second author using a voice quality analysis tool that utilises perceptual cues as well as inspection of the visual waveform and spectrogram (see e.g. Gregory 2018). Each token was categorised as, for example, “modal”, “creaky”, “harsh” etc. Overall results show that predominant voice qualities are modal (51%) and creaky (42%). When examined by gender, men produce more vowels with non-modal voice qualities while women are more likely to produce a vowel with modal voicing (see Fig.1). Instances of breathy voice quality are overwhelmingly produced by females, whilst creaky voice is more likely to be produced by males. This indicates that *within* the sample of Aboriginal English speakers, sociophonetic factors are at play. Acoustic analysis was also performed and confirms these results. The analyses showed that 2% of the items analysed were breathy, 40% creaky, 5% harsh and 53% modal, and showed that speaker sex and vowel type were significant predictors of voice quality. Acoustic correlates found to be most useful for classifying these data are variables F0, followed by H4-2K and A1.

Auditory and acoustic results support Butcher’s as yet untested hypothesis that Aboriginal English has “long-term phonatory and vocal tract resonance characteristics... which could include relatively high levels of roughness and strain” (Butcher 2008:631); creaky voice is often described using these kinds of terms (i.e. Esling et al.2019). Results further support the prediction that there is a connection between overall voice quality and consonant type, though not a one-to-one relationship (i.e. Gordon & Ladefoged 2001). In an earlier study, these L1 Aboriginal English speakers from Western Victoria have been shown to use large numbers of “glottal” variants such as full glottal stops and ejectives, which is unusual for both L1 Australian English and Aboriginal English (Loakes et al. 2018). Similar to work on Scottish English (Gordeeva & Scobbie 2013) we anticipate that this is influenced by an overall creakier voice quality, as well as social and stylistic factors. This study shows that levels of sociophonetic variability are not restricted to the segmental level, and that voice quality is an integral part of the description of a language variety.

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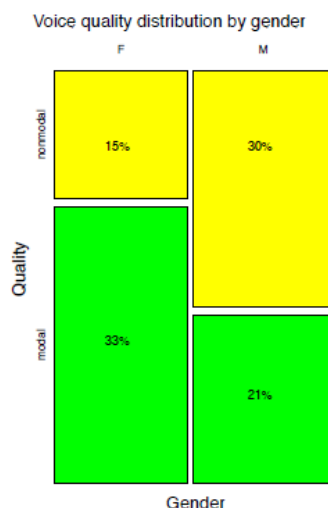
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**Fig. 1**



## **How international war law makes violence legal: a case study of the Rome Statute**

Annabelle Lukin

*War is so awful that it makes us cynical about the possibility of restraint, and then it is so much worse that it makes us indignant at the absence of restraint* (Walzer, 1992, 46.)

Some international law scholars have argued that international war law, rather than proscribing violence in war, has instead been a vehicle for its legitimization (Jochnick and Normand, 1994; Mégret 2016). Given that laws are constituted in and through language, this paper explores this paradox through linguistic analysis of the text of the Rome Statute\*, an international treaty adopted in 1998 which established the International Criminal Court to prosecute the crimes of "genocide", "crimes against humanity", "war crimes" and "crimes of aggression". At the time of its adoption, the Rome Statute was declared by then UN Secretary-General Kofi Annan to be "one of the finest moments in the history of the United Nations" and "a giant step forward in the march towards universal human rights and the rule of law" (Annan, 1999, ix).

I begin the paper with a discussion of the nature of international law as a kind of context, drawing on Halliday's metafunctional proposal. For Halliday, context is an inescapable, active force which has both shaped the internal organisation of language itself, and operates in the unfolding of each and every specific utterance (e.g. Halliday 2003). The key concepts he has proposed for the analysis of the contextual construct are: field (the nature of the social process), tenor (the nature of interactant relations) and mode (the way in which material and semantic contact is made manifest) (Halliday and Hasan 1985, Hasan 1999, 2014, 2015). Applied to the Rome Statute, the nature of mode or language contact is via a written treaty, in the highly dense and intricate discourse which depends on the elaborated grammatical style characteristic of modernity (Halliday 2011). In terms of tenor, the speaker is a highly abstract entity also characteristic of modernity, that is, the nation state (Malešević's 2010). It is also a context in which the speaker is coextensive with the addressee role.

The parameter of field – that is, the nature of the work language is doing in the context of international war law – is entirely paradoxical. Overtly, the work of international war law is the restraint of violence. Yet it has been claimed that the effect of this discourse is precisely the opposite. That documents of such profound political and human significance can be interpreted as both proscribing and legitimating violence raises important theoretical and empirical challenges for linguists.

With this brief discussion of the socio-cultural context of the Rome Statute, I focus on the linguistic features of Article 8 of the Rome Statute, which defines the scope of the term "war crimes". Article 8 comprises 1650 words spread over a mere nine clauses. One clause, in which the definition of "war crimes" is set out, recruits 88% of this wording. As a definition, the clause is a "relational" process, of the "identifying" type (Halliday and Matthiessen 2014). That is, it is structured by a relationship of a "Token" element in relation to a "Value", along the lines of "x means y". The 'y' or Value element is what grounds the definition. In this case, it is where the concept of "war crimes" can be found to either criminalize or authorize the use of violence by national states. The sole technology in this extraordinarily consequential semiotic act is lexicogrammar. Through complex combinations of choices from various lexicogrammatical systems, certain forms of behaviour are entirely proscribed (such as the use of chemical weapons), while others are made legal, despite their well-known devastating human consequences.

The analysis provides linguistic evidence for Malešević's (2010) claim that at the heart of modernity lies an "ontological dissonance", through which we criminalise some forms of violence, while legitimating others.

\* Rome Statute of the International Criminal Court, done at Rome 17 July 1998; in force 1 July 2002; 2187 UN Treaty Series 90.

## **Change and variation in the possessive systems of two Vanuatu Polynesian Outliers**

Catriona Malau and Amy Dewar

The expression of possession in Polynesian triangle languages is characterised by constructions that centre on a contrast between two possessive particles, *a* and *o*. Choice of particle reflects semantic distinctions based on the relation between the possessor and the possessum, which have been characterised variously as dominant vs. subordinate, active vs. passive, etc. Polynesian Outlier languages, spoken outside the Polynesian triangle, vary in the extent to which the *a/o* distinction is retained as a central feature of possessive constructions. Some Polynesian Outlier languages retain the distinction fully, others show traces of the distinction, some show different morphosyntactic distinctions in possessive constructions which are not seen in Polynesian triangle languages (Clark 2000, Naess 2012, Wilson 1982).

This paper looks at possessive constructions in two of the three Polynesian Outliers spoken in Vanuatu, Fakamae, spoken on the island of Emae, and the Imere dialect of Ifira-Mele, spoken in Mele village on the island of Efate. Brief grammatical sketches have been published for both of these languages, based on the languages as they were spoken 40+ years ago (Capell 1962 for Fakamae, Clark 2001 for Imere). These descriptions show similarities and differences in the possessive constructions of the two languages in comparison with each other and with Polynesian triangle languages. Both languages have lost the *a/o* contrast as a primary feature. Both languages have retained *a* as the possessive particle that combines with determiners and possessive suffixes or pronouns to form the primary possessive construction. Both languages show some traces of the *o* particle, however, it no longer represents a salient aspect of possessive constructions. In both languages, as discussed in these earlier publications, a small number of kinterms were seen to exhibit direct suffixation of the possessed noun. For Imere, Clark (2001) uses the terms ‘intrinsic’ and ‘contingent’ to refer to semantic distinctions in the system that are distinguished morphosyntactically. Intrinsic possession is marked by prefixes, in a few cases in combination with the suffixes, to express possession of kin, body parts, partwhole relations, and a few other ‘inalienable’ items, in contrast to contingent possession which centres on *a* forms. Such a contrast has not been documented for Fakamae.

Recent data collected for both these languages in 2017-19 shows how the possessive constructions have continued to change. The expression of possession in Fakamae has stabilised as a single construction, with direct suffixation no longer in evidence for any kinterms. In Imere too, there is no current evidence of suffixation. In general, unlike the stable system in Fakamae, the expression of possession in Imere exhibits considerable variation. Like Fakamae, the ‘intrinsic’ construction, involving direct marking by way of prefixes, appears to be losing ground to ‘contingent’ possession based on *a*. As the system changes, some speakers use a combination of both constructions. It is for kinterms in particular that the direct construction is falling out of use. It is likely that this is due to a combination of factors. In the system described by Clark (2001), kinterms were split between the two constructions; much as in languages with *a/o* distinction, the system suggests that some kin relations are dominant, others subordinate. Further, there have been considerable lexical changes to kinterms, mostly as a result of borrowing of terms, stimulated partly by confusion over phonetically similar terms in English and Bislama with differing meanings. For example, Imere *eemama* ‘father’ is being replaced by *papa* and, more commonly, *tati*. For body parts, the intrinsic system is falling from use only for much younger speakers, in their 20s and under, presumably as the confusing semantic and phonetic similarities and contrasts are not an issue. We present data from a sample of 24 speakers, illustrating the extent of current variation.

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## Aboriginal languages in the city

John Mansfield

Research on Aboriginal languages is usually conducted in remote communities. But with increasing mobility of speakers, Aboriginal language can now be heard far beyond their homelands, with social orbits taking in urban centres such as Darwin and Alice Springs (Prout 2009; Burke 2018; Simpson & Wigglesworth 2018). As the speakers of these languages continue to seek out new social horizons, urban language ecologies can be expected to play a key role in the future of Aboriginal languages. I here present initial findings from a project on Aboriginal language use in Darwin.

The latest census reports 4053 speakers of Aboriginal languages in Darwin (ABS 2016; cf. Karidakis & Kelly 2017), though this may undercount the transient population. In my 2018–2019 fieldwork the languages I encountered most were Anindilyakwa, Burarra, Kriol, Murrinhpatha, Tiwi and Yolngu varieties, spoken by both permanent residents and visitors from remote communities. Some speakers move back and forth regularly between homelands and Darwin. There is some degree of social differentiation between those who live in mainstream housing, those who live in Aboriginal-only ‘town camps’ (Sansom 1980; Collman 1988), and those who sleep in public parks and bushland, i.e. ‘long-grassers’ (Day 2006; Holmes 2007).

Aboriginal language speakers in Darwin employ complex linguistic repertoires, which are qualitatively different from the forms of multilingualism practiced in remote communities (Singer 2018a; Singer 2018b; Vaughan 2018; Vaughan in press). I illustrate this with three brief case studies of life-and-language histories. One speaker grew up speaking Kriol in a town camp, but now lives in mainstream housing. She has partial knowledge of multiple languages from the Daly region, and is fluent in the Daly lingua franca Murrinhpatha, though she is related to this language only by marriage. A second speaker orbits between his East-Arnhem homeland and mainstream housing in Darwin. He is fluent in several Yolngu languages and English, but also understands his wife’s language Burarra, as well as some Murrinhpatha. A third speaker orbits between Maningrida and Darwin long-grass. He is fluent in his father-language Burarra, and socialises predominantly with other Maningrida orbiters and therefore understands Maningrida languages but not those from distant areas.

Research across northern and central Australia suggests that Aboriginal language use may be converging on about a dozen ‘strong languages’, at the expense of other languages (Evans 2007; Walsh 2007; Simpson & Wigglesworth 2018). Initial findings from the Darwin project support this, while also illustrating new urban uses for the languages that have remained strong in their home communities.

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## Lexicalisation in Murrinhpatha polysynthetic verbs

John Mansfield

Polysynthetic verbs occupy a grey area between canonical words and phrases, as shown by phonological and morphosyntactic criteria (Russell 1999; Evans et al. 2008; Bickel & Zúñiga 2017). An alternative approach to polysynthetic wordhood focuses on whether polysynthetic *speakers* mentally represent verbs as more holistic (word-like) or combinatoric (phrase-like) (Baker & Bundgaard-Nielsen 2016; Mansfield 2016). Two factors likely to reflect holistic representation are the loss of semantic compositionality, i.e. ‘lexicalisation’ (Brinton & Traugott 2005), and high frequency of co-occurrence in corpora (Hay 2001; Hay 2002; Plag & Baayen 2009). In information-theoretic research, parts of words have been shown to cooccur more predictably, whereas parts of phrases are less predictable (Geertzen et al. 2016; Blevins 2016).

With the aim of adapting existing corpus methods to polysynthesis, I present a case study from the Murrinhpatha language of northern Australia. Murrinhpatha complex stems have generally been considered ‘classifier’ constructions (Walsh 1976; Street 1987; Blythe 2009; Nordlinger 2015), with a large set of lexical roots being classified by a smaller, more grammaticalised set of finite verb stems. Classifiers encode vector, Aktionsart and valency properties of events, e.g. *man-dharrkat* ‘(s)he tangled it up’, *dim-dharrkat* ‘it is tangled, stuck’. However, alongside the semantic classifier constructions, there are also a substantial number of lexicalised coverb–finite stem combinations – i.e. those in which the meaning of the verb is incompatible with the classifier semantics of the finite stem.

I present corpus data on coverb–stem co-occurrence in a sample of 5673 complex verb tokens. Some coverbs in the sample are productively classified by multiple finite stems, whereas others always co-occur with the same finite stem. I measure predictability of classifier selection using conditional entropy (Shannon 1948; cf. Church & Hanks 1990). Over the time-span of the corpus, which encompasses speakers born between 1900 and 2000, there is a small increase in overall predictability of classifier selection. Analysis of particular examples reveals some of the semantic and phonological factors in increased predicability, and supports the association of predictable co-occurrence with lexicalisation.

My findings suggest that Murrinhpatha verbs are on a long pathway between phrasehood and wordhood, involving both grammaticalisation and lexicalisation along the way. Speakers negotiate competing complex and holistic representations, with the latter gradually prevailing over the former. Cross-linguistic research on combinatoric predictability promises to further our understanding how different language types are mentally represented, while also offering a new approach to typological research on wordhood.

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## Language variation and change in Aboriginal Australia: Word-initial engma deletion in Bininj Kunwok

Alexandra Marley  
Australian National University

Bininj Kunwok is a Gunwinyguan language spoken in west Arnhem Land, Australia, and includes the dialects Kunwinjku, Mayali, Kundjeyhmi, Kune, Kuninjku, and Kundedjnjenghmi. With around 2000 speakers and children still acquiring it as a first language, it is one of the strongest indigenous languages in Australia. Variation and change in Aboriginal Australian languages is a nascent area of study; as a language still being spoken by children, Bininj Kunwok is ideal to help advance such research, and thus enhance our understanding of the current context of minority and indigenous languages in Australia.

In this paper, I consider variation in word-initial velar nasal, or engma. Initial consonant ( $C_1$ ) loss is a well-documented historical process in Australian languages (Fletcher & Butcher 2014), but there has been no quantitative analysis of this phenomenon over time, meaning that the nature of this change is not well understood. In the case of Bininj Kunwok, Evans (2003) noted some regional conditioning of word-initial velar-nasal deletion (e.g. *nganabbarru* ~ *anabbarru* 'buffalo'), describing it as a prominent feature of speakers from the western and southern peripheries of the dialect chain (especially Kundjeyhmi), but variable in speakers from the central region (Kunwinjku). Factors conditioning the variation, were not described in detail, although Evans did propose that front vowels were a conditioning factor. He also speculated on a lexical effect but disclosed that he could not detect any patterns and further investigation was required.

The analysis presented here is based on a corpus of some 48,000 words from 98 speakers, including data I collected over 13 months of fieldwork, as well as recordings and transcripts collected over 70-odd years of language documentation by linguists and anthropologists working in the region since the mid-1940s (e.g. Capell, Hale, Stanley). This corpus covers the whole dialectal region, and has a time depth of around 100 years, with speaker birth dates ranging from 1907 to 2010. There is a fairly even male-female ratio, and a range of genres are included, such as narratives, historical recounts, procedural texts and elicitation tasks.

Instances of engma deletion were easily identified as Bininj Kunwok has a CV(C) syllable structure meaning that any vowel-initial words are either borrowed items or a consequence of engma deletion. Borrowed words were set aside, and the 5000-odd tokens of variably realised word-initial engma were extracted from the corpus and examined for both linguistic and social conditioning.

The regional distribution as described by Evans (2003) was confirmed, with speakers in the eastern areas of the dialect chain very rarely deleting initial-engma (3%), while speakers on the western and southern fringes dropping initial-engma at a rate of 39%. The Kunwinjku speakers in the central region closely matched the latter group though, with an average of 36%. Plotting their data over time indicated strong evidence of change in progress, with older speakers deleting engma at a rate of 12%, which has risen to 48% in the youngest group.

The lexical effects that Evans (2003) hinted at were found to be due to the openness/closedness of the item class: only pronouns (free and bound), noun class and gender prefixes, and kin terms have the variable. The exception to this is the word for 'buffalo' (*nganabbarru*), which only entered the language around 150 years ago. While the precise etymology is unknown, by following the history of the buffalo trade in the Top End, it seems likely that *nganabbarru* entered Bininj Kunwok via several languages, some of which had a vowel-initial version: *anabbarru*. Meanwhile, the phonological constraints he proposed (vowel frontedness) were found to be epiphenomenal of the

morphological conditioning, namely that there are no front vowels in closed-class enigma-initial morphemes.

Australian indigenous languages generally have a CV structure and so this study contributes to our understanding of the phonological evolution of indigenous languages. As an areal phenomenon, consonant-initial variation can be compared across languages, and by taking note of the consequences that may arise (such as altered stress patterns), we are granted insight into language genealogies and future trajectories. Furthermore, this is one of the first studies to examine quantitatively variation and change in a polysynthetic language. By expanding on the typological diversity in sociolinguistic studies, we stand make incalculable advances into our understanding of language change, variation and evolution.

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## **Semantic diversity: Now you see it, now you don't**

Lisa Matthewson

(Invited Plenary)

Cross-linguistic semantic research often reveals rich linguistic diversity: semantic phenomena that differ markedly from those of familiar languages. At the same time, cross-linguistic research often suggests that semantic diversity is not limitless. Phenomena that at first glance appear strikingly divergent sometimes turn out, after targeted fieldwork testing, to display a certain amount of underlying similarity. Such limited diversity is perhaps the most intriguing type of finding, as it takes us a step further towards discovering the boundaries within which human languages may vary.

In this talk I present several case-studies of semantic diversity and also show how the diversity is limited. The case-studies involve modals, the perfect aspect, and yes-no questions. Languages discussed are St'át'imcets (Lillooet Salish), Gitksan (Tsimshianic) and Niuean (Polynesian).

## **Bidirectional verb borrowing between Jingulu and Mudburra**

Felicity Meakins, Caitlin Zipf and Rob Pensalfini

In this paper, we discuss two unrelated languages, Jingulu (Mirndi, non-PamaNyungan) and Mudburra (Ngumpin-Yapa, Pama-Nyungan), which came into contact in the Elliott region of the Northern Territory (Australia) (Black, 2007; Meakins & Pensalfini, forthcoming; Pensalfini, 2001). The language contact situation is unusual cross-linguistically due to the high number of shared nouns, tending to an almost shared noun lexicon, which was formed by borrowing in both directions at a relatively equal rate (Meakins & Pensalfini, forthcoming; Pensalfini & Meakins, 2019). However, both languages have retained their individual grammar systems, leading Meakins and Pensalfini (forthcoming) to consider the situation as the opposite to that of a converted language, which consists of a shared grammar and distinct lexicons (Bakker, 2003; Ross, 2006). The aim of this paper is to extend the bidirectional noun-borrowing results to the verbal systems of Jingulu and Mudburra to determine whether a similarly high rate of borrowing occurs, and if so, whether it is similarly bidirectional. The high degree of shared Jingulu-Mudburra verb forms was first observed by Pensalfini (2001, p. 391) who claimed that Jingulu and Mudburra lexical verbs are “almost entirely cognate across these two languages”. This paper aims to quantify the degree of shared verb forms and determine the direction of borrowing between Mudburra and Jingulu. We follow methods developed by Pensalfini and Meakins (2019, pp. 6-7) by first establishing shared forms and then determining the forms’ origins based on a database of verbs from geographic and phylogenetic neighbours (Wambaya, Jaminjung, Gurindji, Jaru, Warumungu and Warlmanpa).

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## The linguistic nature of New Zealand English relative clauses: Semantics and history as the basis for synchronic variation

Miriam Meyerhoff<sup>1</sup>, Alexandra Birchfield<sup>1</sup>, Elaine Ballard<sup>2</sup>, Catherine Watson<sup>2</sup> and Helen Charters<sup>3</sup>

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Previous sociolinguistic research on variation in English relative clauses presents the alternation between relative complementisers (*that*) and specifiers (*who/which*,  $\emptyset$ ) (Gisborne & Truswell 2017) as primarily a socially constrained phenomenon (Romaine 1982, Nevalainen & Raumolin-Brunberg 2017, Tagliamonte et al. 2005, D'Arcy & Tagliamonte 2010). In our data, we find the single strongest (and only consistently significant) constraint is linguistic (Cheshire 1998). This suggests that English relative clauses (at least in some varieties of English) remain primarily a linguistic phenomenon, influenced by constraints inherited from centuries of slow and rich syntactic development (Gisborne & Truswell 2017). Our analysis also provides a principled basis for when speakers use *that*, and it places *wh*- and zero relativisers in the same syntactic slot for semantic reasons, not stipulative, theory-internal ones.

We present data from a study of English spoken in Auckland, New Zealand's largest and most ethnically diverse city. 2261 restrictive relative clauses were analysed (Birchfield 2019) in three demographically disparate communities; only one constraint (of 5 linguistic and 3 social) emerges as a highly significant predictor of the relativiser used in subject and non-subject relative clauses. This is whether the head noun is an indefinite pronoun (e.g. *somebody*, *anyone*); *WH*-specifiers are strongly favoured with indefinite pronouns in subject relatives and zero specifiers are favoured with non-subject relatives. This pattern cannot be explained by the supposed 'prestige' associated with *WH*- and zero relative specifiers (Romaine 1982, Tagliamonte et al. 2005, D'Arcy & Tagliamonte 2010). Instead, we suggest that this co-occurrence preference emerges from the semantics of the *WH*- and zero relative specifiers, as an extension of a centuries-long grammaticalisation process, during which *WH*-specifiers have moved from introducing non-restrictive relatives to restrictive relative clauses.

We propose that the semantics of the *WH*- and zero operators felicitously bind the open variable associated with the indefinite pronoun. Conversely, the [+specific] features associated with *that* combine more felicitously with the [+specific] nature of the other nominal heads. In short, *that* is not a default or 'elsewhere' variant. Our analysis provides a principled basis for speakers' selection of all three relativisers, and provides an empirical argument for *WH*- and zero relativisers, indeed, filling the same underlying syntactic position.

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## Doppel-Avoidance in Dominant Forms

Luisa Miceli, T. Mark Ellison, Alba Tuninetti, Paola Escudero and Niels Schiller

Doppels are words with recognisably similar (phonological) forms and meanings across two languages. For example, German *Schuh* and English *shoe* are doppels. Doppels are not false friends, as the latter while similar in form, are necessarily distinct in meaning. Doppels also may be, but need not be, cognate: Italian *informazione* and English *information* are doppels, but as *information* is a borrowing into English, these are not cognates.

Given the context, and the lexical meaning they wish to convey, speakers often have multiple lexical options. One of these options will be (for that meaning and context) the most common. For example, in naming the picture in Figure 1, English speakers have choices such as ‘shirt’ and ‘blouse’, but ‘shirt’ is the most frequently used option. We call this the dominant word choice for this meaning-incontext.

Picture-naming tasks within psycholinguistic experiments standardly seek stimuli for which nondominant responses are rare. In fact, non-dominant responses are regarded frequently as errors and ignored. For this reason, bilingual processing biases, such as doppel-avoidance (Ellison & Miceli 2017), have long remained unidentified despite many studies of this kind focusing on bilingual lexical production.

In this talk, we analyse the results of a picture-naming experiment which does not restrict stimuli to single answer pictures. The participants in this experiment were monolingual English speakers and Dutch-English bilinguals. The responses of the monolingual participants let us identify which responses are the dominant words for each stimulus within the experimental context. We looked at two conditions across both groups of speakers: in one condition the dominant form was a doppel, but there were non-doppel options, in the other condition, the dominant form was a non-doppel, and there were other options which may or may not have included a doppel (e.g. the stimulus presented as Figure 1). In total, thus, we had four conditions: monolingual non-doppel dominant, monolingual doppel dominant, bilingual non-doppel dominant, bilingual doppel dominant. Figure 2 shows the raw results.

If we compare the frequencies of the dominant words between the monolingual non-doppel condition and the monolingual doppel condition, we find a positive evidence ( $BF=10$ ) in the Bayes’ Factor for these having frequencies within 5% of each other (using the scale of Kass & Raftery 1995). Similarly, there is strong evidence ( $BF=35$ ) that the rate of use of dominant non-doppel forms being within 5% of each other for monolinguals and bilinguals.

In contrast, there is very strong evidence ( $BF=558$ ) of doppel dominant forms being at least 5% less frequent than non-doppel dominant forms in the bilingual data. Similarly, there is positive evidence ( $BF=18$ ) that the doppel dominant forms are at least 5% less frequent in bilinguals than monolinguals.

In summary, then, we argue that common experimental design in picture-naming tasks precludes the observation of certain processing behaviours. We show that picture-naming can be adapted to investigate a wider range of behaviour in bilingual lexical production, and provide further experimental evidence through this novel paradigm for the anti-doppel bias, first described by Ellison & Miceli (2017).

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Figure 1: shirt/blouse stimulus

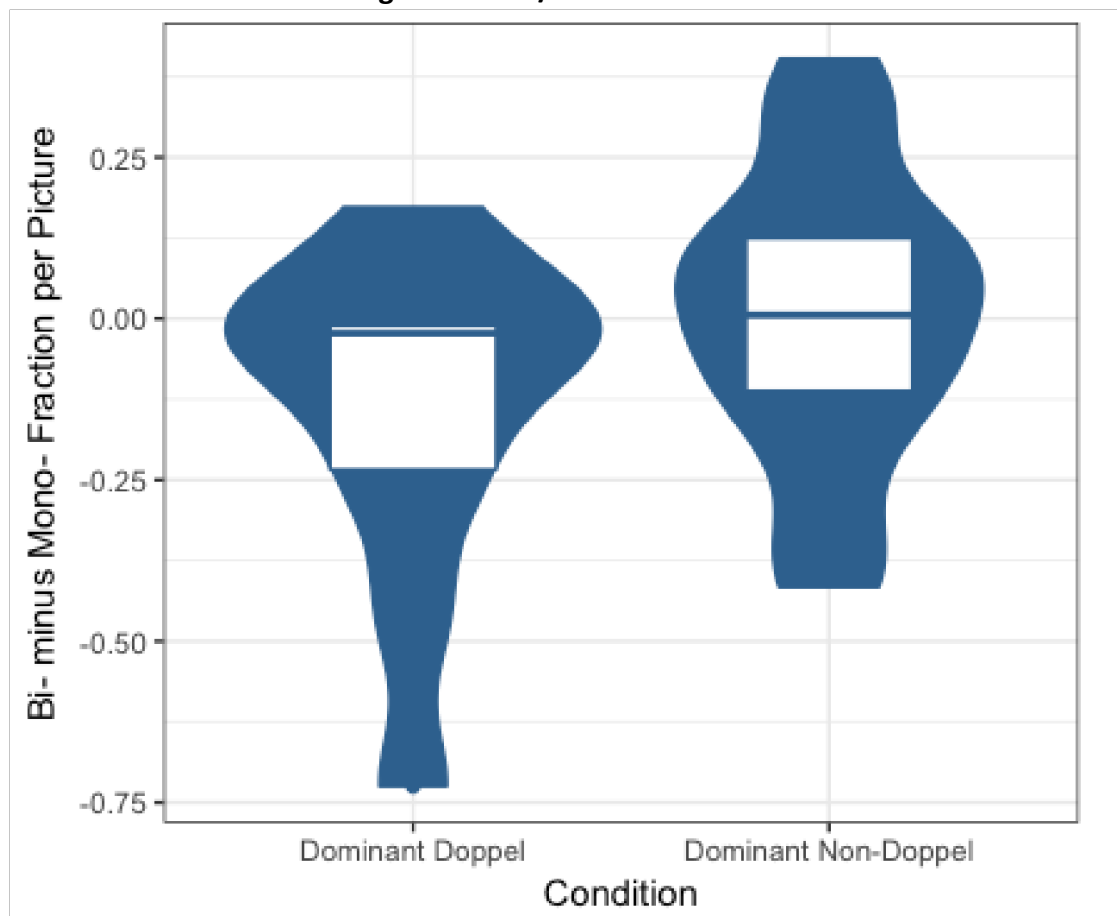


Figure 2: Raw results showing bilinguals' avoidance of dominant word forms that are doppels in comparison to non-doppels.

## **Building the curriculum**

Daniel Midgley, University of Western Australia

This presentation investigates the process of creating a 24-lesson syllabus for a secondary school linguistics course, along with some preliminary results from evaluations from students who have gone through the course. Creating this syllabus has required a fine balance between student needs, student interest, availability of existing materials, teacher skillset, and the requirements of the language curriculum.

The state of Victoria already has a working system, with outcomes, materials, and institutional support. The content of this program served as a model for the current study. However, putting a secondary linguistics program into effect in Western Australia, without this infrastructure in place, has required some modification of this approach.

Initially, materials from the yearly OzCLO competition — the Australian Computational and Linguistic Olympiad — were selected for their wide availability and appeal. This appeal, while evident in a competitive situation, has not translated to the classroom. Speedy analysis is one useful skill in linguistics, but other skills have taken precedence in this curriculum, including knowledge about language, code-switching, and the ability of students to analyse their own language behaviour.

## Switch Reference in Arandic language varieties revisited

David Moore

Wilkins (1989: 13) compares the Perception complement construction of Western Arrernte (WA) with that of Mparntwe Arrernte (MpA): ‘Perception complements in MpA are signalled by the different subject switch reference marker *-rlenge* attached to the dependent verb, while in WA they are signalled by *-me-nge* [Present-CR], also the different subject switch reference marker’:

WA	Ire	anteme	tnengkarre	are-ke	ketyeye	mape	ulpaye-le	arrken-irre-menge
MpA	re	anteme	Altyerre	are-ke	Ampe	mape	lhere-le	arrken-irre-rlenge
	3sgA	now	Dream	see-pc	Child	Pl(grp)	creekbed-LOC	play-INCH-DS

‘She then had a dream about some children playing in a creek bed. (lit. She now saw in a dream some children playing in a creek bed’).

I argue that the different subject switch reference marker *-rlenge* in MpA may be analysed as *-rle* ‘Generic’ (corresponding to *-me* in Western Arrernte) and the clause relator marker *-nge* which follows tense and negation markers. This paper considers recent data from Central Australia and aims to provide an updated and more consistent account of switch reference in Arandic language varieties.

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## New findings on the morphosyntax of the languages of the Melbourne area

Stephen Morey and Harley Dunolly-Lee

The language varieties Woiwurrung, Boonwurrung and Thagungwurrung were first grouped together as Ost-Kulin (Eastern Kulin) by Schmidt (1919) together with . In the century that has followed they have been referred to as both Eastern Kulin (Hercus 1986) and Central Victoria (Blake and Reid 1998).

The most important study of these languages undertaken in modern times was Blake (1991), under the title ‘Woiwurrung, The Melbourne Language’. This study, bringing together a range of sources, presented a substantial word list with forms regularised to follow as closely as possible the tentative phonology recorded by Hercus (1996). It also presented the grammatical information found in the various publications of R.H. Mathews with some additional information on morpho-syntax from the earlier sources for the language.

Morey (1998) presented a first transcription of the largest single source for this group of languages, the papers of Rev William Thomas in the State Library of New South Wales (MLMSS 214). This source had not been included in Blake (1991) and consists of large word lists, multiple sentences and some translations into language, as well as descriptions of cultural practices such as corroborees with texts of traditional songs sometimes translated into English.

The present paper presents new findings about the grammatical structure of this group of languages, based on a more comprehensive study of all the surviving sources. A single data base with all the sources, both individual words, phrases, and sentences is being assembled, and regularizations are then suggested. This is allowing for analysis of some of the many short phrases and sentences in the early sources that have not been examined using modern linguistic methodology. For example, John Green made a word list including quite few translations of adjectives in English that have initial *un-*. One such example was (1):

- 1) Uneaten            *Nga-be-din-tangerr-bi*

Clearly this example is likely to have multiple morphemes. Our current analysis suggests the following:

- 2)     **ngabu-dhan**     **dhanga-rra-bi**  
      NEG-1SG.PAST    eat-?-?  
      ‘I did not eat (it all up).’

Here we see person marking on the negative word, followed by the well attested root **dhanga** ‘eat’ followed by two other morphemes of as yet unclear meaning.

This paper will present an overview of recent findings relating to the morpho-syntax of this language.

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## **Assessing VCE English Language nearly twenty years on**

Jean Mulder, University of Melbourne and

Caroline Thomas, Foundation VCE English Language Teacher

VCE English Language (EL), which is unique to Victoria, is one of the four senior secondary English subjects offered at the Unit 3-4 level in this state by the Victorian Curriculum and Assessment Authority (VCAA). Broadly, EL takes a linguistic approach, combining the explicit teaching of grammar with the actual real-world study of language. Piloted in 2000 with full accreditation in 2001, the study design for EL has undergone two major revisions, with a third currently projected for 2021.

Although EL has now been offered for nearly twenty years and has seen steady growth in terms of student numbers and providers, there has been little detailed evaluation of the subject, particularly in terms of the nature of the students who take it up and their assessment of it. Accordingly, in this presentation, we consider the following questions:

- Which types of students choose EL and why?
- Do they choose EL in addition to or instead of other offerings in the VCE English group?
- What benefits do students see in doing the subject?
- By doing the subject, what appreciation of language do students report that they develop?
- What challenges do they find that they face in doing this subject?

Our data consist of four surveys that we conducted during 2009-2015 with a total of over 1500 Unit 3-4 EL students augmented with statistical information obtained from the VCAA website ([www.vcaa.vic.edu.au](http://www.vcaa.vic.edu.au)). We first characterize the students who choose EL in terms of gender and subject selection, with a significant finding being that maths/science students are by far the largest identifiable stream of Unit 3-4 EL students. Taken together, our findings present a clear idea of the type of students who are drawn to this subject and suggest that in the main they are different from those who choose Literature as an alternative, or in addition, to English and English as an Additional Language.

We then turn to the student perspective, presenting both quantitative and qualitative data from the four surveys. Results from the six Liker-scale questions consistently show high mean values for students' evaluation of EL in terms of 'Enjoyment', 'Raising awareness of the use of English', 'Strengthening skills in written and spoken use of English', 'Relevance to everyday life' and 'Recommendation to other VCE students'; interestingly, students indicate that 'Studying Linguistics in the future' is not currently in their plans. Responses to open-ended questions about why students chose to do EL, what they enjoyed most and what they found most challenging are presented thematically, with results compared across the years. This analysis provides rich insight into students' assessment of the subject.

Overall, we argue that having a better understanding of the nature of the students who take up EL and their perceptions of the subject provides valuable information about the role of this subject within the English suite of senior secondary subjects in Victoria, which, in turn, is useful for future planning of the subject and potential offerings of a similar subject elsewhere.

## 0.1 Final velar deletion and gestural overlap in Wubuy

Peter Nyhuis

In Wubuy, a Gunwinyguan language of South-East Arnhem Land, velar stops are deleted before any other consonant (Heath 1984). Also, continuant consonants (except /l/ and /ʎ/) harden to stops following nasals and stops. Where a cluster of /g/ followed by an alternating continuant consonant appears in the underlying form, the result on the surface is a single stop with the place of articulation of the underlying continuant, e.g. /g-t/ → [d]. Heath (1984) accounts for this by means of serial rule ordering: the underlying velar stop triggers Hardening in the following continuant, and then the velar stop must be deleted as it appears before another consonant. For example, in (1), the final velar stop of /maɖa[ag]/ ‘beach’ triggers hardening in the initial alveolar tap of the locative suffix /-ruj/, giving rise to a /g-d/ cluster over the morpheme boundary. Since /g/ cannot appear immediately before any other stop, it is deleted from the surface.

- (1) Underlying representation: /maɖa[ag]/+/-  
Hardening: ruj/ maɖa[ag]-  
Stop deletion: duj maɖa[a-duj  
Surface output: [maɖa[aduɟ]  
                  ‘beach-Loc’

The interaction between these two processes is a classic example of phonological opacity (Baker 2009). As is by now very well known, opaque interactions such as these are easily accounted for in any theory of phonology that allows multiple stages of evaluation, but they are fundamentally difficult to capture in standard varieties of Optimality Theory (Kiparsky 2000; McCarthy 1996; McCarthy 1999; McCarthy 2007; Mielke et al. 2003). Moreover, they are often thought to be difficult to learn and prone to reanalysis (Mielke et al. 2003).

In this paper, I argue that stop deletion can profitably be understood from an articulatory perspective, in the manner of Browman & Goldstein (1989; 1992). Where gestural overlap between adjacent consonants occurs, velars are subject to deletion preceding other consonants as any closure on the dorsal articulatory tier is liable to be perceptually masked by a closure at any other place of articulation. If we assume there is gestural overlap between velar stops and any following consonant, we can treat velar stop deletion and hardening not as separate, independent phonological modifications, but instead as a single coherent coarticulatory process which blends the manner (i.e. constriction type and degree) of the velar stop gesture with the articulatory target of the following continuant. Viewed in this way, the problem of opacity largely disappears.

However, while Heath (1984) presents stop deletion as categorical and inescapable, in fact there are a range of realisations of underlying /g-C/ clusters — from full deletion, to very brief and weak closure, to no deletion at all. As I also show, not all morphemes are alike in this respect: recent loans can never undergo final velar deletion, and morphemes whose right edge cannot align with a grammatical word boundary (such as suppletive incorporated nouns, compounding elements and derivational prefixes) must always undergo full deletion of the final velar stop. Thus, /jinag/ ‘head’ can occur on its own, as [jinag]. With a following consonant-initial morpheme, the /g/ can be realised clearly, weakly, or not at all, but it will always trigger hardening. The /g/ of the applicative marker /ag-/, on the other hand, cannot occur at the right word edge; it is always deleted, and always triggers hardening.

In order to explain the differing realisations of final velars in different kinds of morpheme, I draw on work on coarticulatory effects in derived environments (Bradley 2002; Cho 2001), as well as motor routines in speech planning (Fowler 2010). I suggest that if a velar-final morpheme can occur in a non-deleting environment (such as word-finally), then the velar gesture will be activated in deleting environments also; as a consequence, these final velars can survive deletion. Velar-final morphemes which cannot appear in nondeleting environments, such as /ag-/ ‘Appl’ no longer have a velar gesture associated with them at all; the only evidence for their existence is the fact that continuants must



harden following them. In other words, this latter kind of velar deletion is a categorical phonologisation of what is in the former case only a gradient phonotactic preference. And it is only this kind of velar deletion which stands in a truly opaque relationship to hardening. This points the way to an analysis of hardening as lexicalised stem suppletion, in line with proposals by Mielke et al. (2003).

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## Celebrating diversity and multilingualism in the *manyardi/kunborrk* songs of northwestern Arnhem Land

Isabel O'Keeffe

In this 2019 United Nations' International Year of Indigenous Languages, we have seen greater national awareness and celebration of the linguistic diversity of Indigenous Australia. However, in northwestern Arnhem Land, celebrating the linguistic diversity and the 'exuberant multilingualism' of Indigenous Australia (Evans 2010:276) is a long-standing and continuing tradition, particularly in the composition and performance of verbal art, such as the *manyardi/kunborrk* public dance-song genre.

This paper outlines how the *manyardi/kunborrk* song traditions, their composers and performers, celebrate and promote the diversity and multilingualism of northwestern Arnhem Land (see Evans 2010, Singer and Harris 2016) from the macro-levels of the organisation of the song traditions and performance practices, to the micro-levels of song-texts and musical features. At the macro-levels, the *manyardi/kunborrk* genre is organised into named song-sets affiliated with different language varieties. Every language in northwestern Arnhem Land appears to have at least one affiliated *manyardi/kunborrk* song-set (see also Barwick, Birch and Evans 2007) and public performances always bring together different *manyardi/kunborrk* song-sets and performers who are affiliated with and speak a range of language varieties. At the micro-levels, the repertoires, song-sets and songtexts often include multiple language varieties. The linguistic features of song-texts, combined with the musical organisation, are used to 'consciously differentiate' (Barwick 2011:348) song-sets, paralleling the 'constructive fostering of variegation' (Evans 2010:14) that is found in languages of the region.

In considering how *manyardi/kunborrk* song traditions celebrate linguistic diversity and multilingualism, I draw on an analysis of historical and recent *manyardi/kunborrk* performances, interviews with songmen, composers and performers and detailed linguistic and musical analysis of six song-sets: *Itpiyitpi* 'grasshopper', *Kun-barlang* love songs, *Karrbarda* 'long yam', *Kaddikkaddik* 'oyster catcher', *Inyjalarrku* 'mermaid' and *Nginji/Ngili* (O'Keeffe 2016, Brown et al 2017). While the findings relate specifically to the sociocultural and linguistic context of northwestern Arnhem Land, I argue that they have wider implications for our study of diversity and multilingualism and the ways they can be fostered and maintained. Indeed, the insights from the Indigenous composers and performers of the *manyardi/kunborrk* song traditions—and other Indigenous song traditions that are being maintained or revived—can help ensure that the awareness and celebration of Indigenous languages in Australia and worldwide continues well beyond the International Year of Indigenous Languages 2019.

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Song-set	Language affiliation	Language/s of songtexts	Strophic structure	Melodic modes	Rhythmic modes
<i>Karrbarda</i> 'Long yam'	Kunwinjku	spirit language	SSS: 14 of 15 SVVS: 1 of 15	Lydian: 2 of 15 Mixolydian: 5 of 15 Dorian: 3 of 15 Aeolian: 1 of 15 Phrygian: 4 of 15	Mode 1 Mode 2a Mode 3a Mode 5a, b Mode 5b
<i>Kunbarlang</i> 'Love songs'	Kunbarlang	Kunbarlang, Kunwinjku, Mawng	SSV: 8 of 8	Mixolydian: 1 of 8 Dorian: 5 of 8 Phrygian: 2 of 5	Mode 5a Mode 5b
<i>Itpiyitpi</i> 'Grasshopper'	Mawng	Kunwinjku, Mawng, Kunbarlang	SSS: 8 of 17 SSV: 9 of 17	Mixolydian: 1 of 17 Dorian: 6 of 17 Aeolian: 9 of 17 Phrygian: 1 of 17	Mode 5a Mode 5b Mode 5f
<i>Kaddikkaddik</i> 'Oyster catcher bird'	Kunbarlang	Kunbarlang, spirit language	SSS: 13 of 24 SSV: 5 of 24 SVV1: 3 of 24 SVS: 1 of 24	Ionian: 5 of 24 Mixolydian: 13 of 24 Dorian: 1 of 24 Aeolian: 1 of 24	Mode 3a Mode 5a Mode 5b
<i>Nginji</i> (untranslatable name)	Mawng (Western Ngurtikin)	spirit language	SSS: 15 of 15	Ionian: 2 of 13 Mixolydian: 8 of 13 Dorian: 1 of 13 Aeolian: 1 of 13	Mode 2a Mode 2c Mode 3a Mode 3d
<i>Ngili</i> 'Mosquito'	Mawng (Western Ngurtikin)	spirit language	SSSS: 1 of 2 SVSV: 1 of 2	Mixolydian: 1 of 2 Dorian: 1 of 2	Mode 1 Mode 5a Mode 3c
<i>Inyjalarrku</i> 'Mermaid'	Mawng (Eastern Ngurtikin)	spirit language	SSS: 37 of 37	Dorian: 24 of 34 Aeolian: 10 of 34	Mode 2a, b Mode 3a, b, c Mode 4 a, b, c, e Mode 5 a, b, e

**Summary of the linguistic and musical features used to consciously differentiate the manyardi/kun-borrk song-sets analysed**

## Language maintenance and change in morphophonology four Warlpiri communities

Carmel O'Shannessy, Kirsten Culhane, Siva Kalyan, Emma Browne

Several Australian languages are still being learned by children, a sign of language vitality. Warlpiri, a Pama-Nyungan language spoken in the Northern Territory, is one of these. It is spoken by all generations in four remote Warlpiri communities, and has an estimate of 3000 speakers, in addition to being spoken in a large diaspora (Burke, 2018). Although a new mixed variety has been recorded in one of the communities, the children there also learn the traditional variety of Warlpiri from a young age (O'Shannessy, 2005).

The sociolinguistic turn in studies of Australian languages has seen language maintenance and variation investigated across languages, varieties and age groups (e.g. Disbray, 2008; Dixon, 2018; Mansfield, 2014; Marley, 2018; McConvell & Meakins, 2005; O'Shannessy, 2009; Poetsch, 2018; Vaughan, 2018; Wilson, Hurst, & Wigglesworth, 2018). In several instances a traditional language is being maintained and spoken as an everyday means of communication, with some language change in progress, probably accelerated by contact with English. For example, some changes in morphophonology in Warlpiri in one community have been identified (O'Shannessy, 2016), but the extent to which these changes are also present in other communities has not been systematically investigated.

This is the first study to examine the production of child and adult Warlpiri across the four remote communities. We investigate audio-recorded production data from adults and children (age range 5 – 14), narratives up to about 10-12 minutes in length told by individuals in 2010 in response to picture book stimuli.

There are many angles for analysis that could be chosen, and for this study we focus only on allomorphy of affix forms. The transcribed data were coded for the occurrence of seven core and semantic affixal case-markers (ergative, locative, allative, comitative, ablative, possessive, evitative), a topic marker *-ju/-ji*, and two other suffixes, *-juku/-jiki* 'still, yet' and *-lku/-lki* 'then'. All of the forms in the study traditionally have between two and four allomorphs. All except the locative case-marker vary according to vowel harmony, the ergative case-marker also varies according to the length of the word stem, and the locative affix varies only according to the length of the stem. Every speaker produced most or all of the affixes in focus. Apart from the use of ergative case-marking (which in some instances shows less than obligatory use), there are no instances of novel constructions or semantics involving these affixes. Using mixed effects logistic regression analyses, we examine the variation in the forms of the affixes, across age groups and communities.

We find that new phonologically-reduced allomorphs of each affix occur alongside traditional allomorphs, in all age groups and in all communities. Quantitative differences are seen between affixes, and these vary according to age and community. Overall, children use more new forms than adults do. The communities show considerable similarity in which affixes show the most change, with some small differences. This means that Warlpiri is being maintained by child and adult speakers in all communities, with some morphophonological changes occurring across all communities.

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## Syntactically relevant morphology: The Coastal Marind fourth gender

Bruno Olsson and Matthew Carroll

A common assumption in most approaches to morphosyntax is that purely morphological facts, such as inflectional class membership or patterns of syncretism, do not have effects in the syntax (Zwicky 1987, 1992). Corbett (2016: 77–84) reviews some tantalising, but ultimately inconclusive, examples of purely morphological patterns seemingly having an impact on syntax. In this paper, we argue that a more convincing counterexample to morphology-free syntax is provided by syncretism in the exponence of gender agreement in Coastal Marind, a Papuan language of the Anim family.

Coastal Marind has a system of four genders (labelled with the Roman numerals I–IV; Olsson 2017). Nouns are assigned to a gender on the basis of animacy and sex: male humans are in Gender I, female humans and all animals in Gender II; inanimates are assigned to Genders III and IV. Assignment to the two inanimate genders is largely arbitrary: most inanimate nouns belong to Gender III (70%), and the residue is assigned to Gender IV (30%). The relevant morphological pattern is found in targets that agree according to gender. Table 1 illustrates exponence of gender agreement on an adjective. The important observations are (i) that only the animate genders (I and II) trigger a distinction between singular and plural, and (ii), that the agreement form of the plural of the animate genders is syncretic with Gender IV (cf. the shaded cells). The syncretic form here is *akik*; other adjectives differ in the details of exponence, but the pattern of syncretism remains constant across lexemes. Outside the nominal domain, the same pattern is found in the indexing of patient-like participants on the verb stem, as illustrated in Table 2. Exponents of patient indexing (which are unrelated to those found in the nominal domain) occur either as prefixes, infixes or suffixes depending on the inflectional subclass of the verb, but the conflation of Gender IV and the 3rd person plural is consistent in a system otherwise rife with lexical exceptions. This systematic syncretism is **morphomic** (Aronoff 1994), most clearly because there are no semantic features grouping the categories (Gender IV and animate plural) that map onto the shared set of exponents. We discuss, and reject, descriptions in terms of semantic commonalities, which would have deprived the pattern of its morphomic status, as morphemes per definition have no semantic basis.

We then demonstrate some unexpected repercussions of the morphomic pattern in two areas of Coastal Marind grammar: **verb suppletion** according to participant number and the availability of **applicative constructions**. Several verbs employ unrelated stems depending on whether the absolutive participant is singular or plural, as in the pair *man* ‘one come’ vs. *nayam* ‘many come’. We show that the morphomic syncretism reoccurs with such verbs, and we systematically find the suppletive plural stems triggered by absolutive arguments belonging to Gender IV, as in example (1). This alternation is remarkable as the semantic concept of participant number is a well-known trigger of suppletion cross-linguistically, but here the verb suppletion turns out to obey a completely morphomic pattern found elsewhere in the grammar. We then turn to two applicative constructions used to add a comitative participant to a motion verb. One construction is used to add an animate object, while the other adds an inanimate object. We show that in addition to involving unrelated morphology, these constructions differ structurally and semantically and must be treated as separate syntactic configurations (rather than different variants of the same construction). Surprisingly, we find that the construction associated with inanimates is unavailable to nouns in Gender IV, and that despite their inanimate status, these nouns select for the construction associated with an added animate object—again, as predicted by the morphome grouping Gender IV nouns with (plural) animates. The data is remarkable, and we argue that it constitutes a serious challenge to the claim that syntax is morphology-free.

## Tables and examples

'light (not heavy)'		
	SG	PL
I	<i>akek</i>	<i>akik</i>
II	<i>akuk</i>	
III	<i>akak</i>	
IV	<i>akik</i>	

Table 1: Exponents of gender agreement

		SG	PL
I/II	1	<i>hwaga⟨n⟩ib</i>	
	2	<i>hwaga⟨y⟩ib</i>	<i>hwaga⟨h⟩ib</i>
	3	<i>hwag⟨ø⟩ib</i>	
III		<i>hwag⟨ø⟩ib</i>	
IV		<i>hwaga⟨h⟩ib</i>	

Table 2: Patient indexing in *hwagib* 'put away'

- (1) a. *nggawil-yahun*  $\emptyset$ -*a-* *man*  
 motorcycle(III) NEUT-3.A- come  
 'A motorcycle came.'
- b. *lahwalah-yahun*  $\emptyset$ -*a-* *nayam*  
 airplane(IV) NEUT-3.A- many.come  
 'An airplane came.'

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## An ethnopragmatic analysis of Japanese speech acts *o/go-N-sama*

Asako Otomo

This study focuses on speech acts in Japanese which have the morphological structure ‘*o/go-N(oun)-sama*’ and demonstrates that the usage of this structure mirrors Japanese speakers’ world view. Speech acts which reflect culture values have been under intense investigation in the framework of the Natural Semantic Metalanguage (Wierzbicka 2003, Goddard 1998, 2006, among others). Goddard (1998), for example, argues that the wealth of English speech act verbs can be ascribed to Anglo culture, which is particularly interested in ‘specifying the interplay between causation and volition’ (p. 156). In comparison to this, the number of Japanese speech act verbs is smaller. Interestingly, however, Japanese has a set of speech act nouns with the *o/go-N-sama* structure (Otomo 2010). This set of speech acts deserves a closer look, and its semantics and pragmatics help us better understand the way people interact in the Japanese community. What shapes Japanese culture is not just ‘*omoiyari*’ (roughly ‘empathy’, Wierzbicka 2003) and the like. Another factor in play is ‘allocentric perception’: a shift in point of view from ‘me’ to ‘you’ when performing a speech act.

Let us first briefly look at the word structure of *o/go-N-sama*. *O-* and *go-* are both honorific prefixes. They give a respectful or polite sense to the following noun, which is the word root. For instance, *o-kyaku* ‘customer’ is a polite way of saying *kyaku* ‘customer’. The suffix *-sama* is one of the honorific titles. By using it, the speaker or writer shows respect towards the referent denoted by the preceding noun as in (1a). When the noun *o-kyaku* ‘customer’ is followed by *sama*, the resulting noun *o-kyaku-sama* can not only be a form of reference (1b), but also can be a form of address (1c).

This *o/go-N-sama* structure has an extended function, that is, the speech act usage. To take an example, *o-tsukare-sama* is one of the most common expressions that Japanese people use in everyday interaction. It is exchanged as a greeting among friends, colleagues, and family members. You hear this anywhere as a hello, goodbye, thank you, or even cheers when toasting. It is so common that it comes as a surprise to Japanese learners of English that there is no exact equivalent of *o-tsukare-sama* in English. To Anglo learners of Japanese, on the other hand, this utterance may sound strange, given that *o-tsukare-sama* roughly means ‘you are tired’ (the root *tsukare* means ‘fatigue’ or ‘to be tired’). How can ‘you are tired’ be used as a greeting? The cultural value *omoiyari* plays a part here. In this culture, it is considered particularly important to have a spirit of *omoiyari* and place oneself in the other person’s position. By saying *o-tsukare-sama*, the speaker shows recognition and appreciation of all the hard work the interlocutor has been doing. This utterance would thus be interpreted more like ‘I appreciate your hard work.’ than just ‘you are tired’. With utterances as in (2), you can also perform speech acts such as apologies, compliments and condolence. It is not that any kind of noun occurs in *o/go-N-sama*. Nouns which depict a state or an event fit best into this structure. Thus, it can be said that the *o/go-N-sama* structure describes the speaker’s respectful and empathetic attitude towards the interlocutor or something they are involved in. Note here that the Japanese speech acts in (2) stand in stark contrast with their English counterparts. Whereas the latter are self-centred, the former do not mention the self ‘me’ at all. This allocentric perception might be another key which shapes the Japanese culture, and in order to explicate it free from linguistic and ethnocultural bias, this study adopts the Natural Semantic Metalanguage methodology.



## Examples

- (1) a. *Sato-sama-ga irashi-ta.* 'Ms. Sato has arrived.'  
Sato-HON-NOM arrive-PAST  
b. *O-kyaku-sama-ga irashi-ta.* 'The customer has arrived.'  
HON-customer-HON-NOM arrive-PAST  
c. *O-kyaku-sama, doozo kochira-e* 'This way please, ma'am.'  
HON-customer-HON please this-TO
- (2) a. *O-machidoo* ('to wait long') -sama. 'I'm sorry I kept you waiting.'  
b. *Go-kuroo* ('to make effort') -sama. 'I appreciate your effort.'  
c. *Go-syuusyoo* ('bereavement') -sama. 'Please accept my condolences for your loss.'

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## Participant number versus subject agreement. A case study in Kunama (Nilo-Saharan)

Bill Palmer

A distinction has long been drawn between inflectional argument agreement on one hand, and derivational verbal number (pluractionality) in which a verb may have singular and plural stems on the other. In such pluractional stems, number is a semantic property of the verb itself (Lasnik 1995:241; Mattioli 2019:27-28; Newman 1990:53). This may include multiple instances of an action within an event, or an action performed by or on multiple participants (Durie 1986; Greenberg 1966:79; Newman 1990; Newman 2012:195). Corbett terms the former ‘event number’ and the latter ‘participant number’ (2000:246-249). The former, resembling aspect, has been the subject of investigation from the perspective of event structure (Cusick 1981; Henderson 2012; Lasnik 1995; Ward 2012; Wood 2007). Participant number has been less investigated, in particular in terms of a basis for distinguishing between participant number and verb agreement.

Kunama verbal morphology has proved challenging to analyse (Böhm 1984:13-29; Thompson 1989: 308-324) and raises questions about the boundary between agreement and verbal number. Two verb classes exist. Class I is straightforward. Class II morphology is extremely complex, involving a person hierarchy, competing subject and object forms, tone, vowel harmony, and length, and appears highly irregular. Teasing these factors apart, this paper finds a participant referencing system that, while complex, is regular, in which agreement and participant number interact. A single set of nominative agreement prefixes occur, with vowel harmony in certain contexts (1). Object prefixes also occur that, contrary to previous analyses, distinguish only person, not number. Both sets occupy a single prefixal agreement position on the basis of a person hierarchy (2). (High tone also marks 2<sup>nd</sup> person subject on the 1SG object prefix ((2d) v (2b)), and 2SG object (2f) including on a subject prefix if present ((2g) v (2a)).) Previous analyses argue object plurality is marked by object prefixes with long vowels (*a*- 1SG.O, *aa*- 1PL.O, etc). However, length is independent of the object person prefixes, occurring with whatever object or subject prefix is present: an underspecified vowel prefix harmonises with the melody of the preceding person agreement vowel. With an object prefix in the preceding slot, *V*- shares its melody ((3a) v (2b,d), (3b) v (2f)), giving the appearance of a long vowel in the person prefix. However, when the preceding prefix encodes subject, the plural object prefix harmonises with the subject prefix ((4a) v (2a), (4b) v (2c)). Interacting with that agreement system, vowel-initial Class II verbs display an additional prefix *n*- or *l*- between agreement and the root, deriving a pluractional stem. Distribution of the two prefixes is lexically determined (compare homophones in (5) and (7b-c)). Unlike agreement with its accusative alignment, this morphology targets the absolutive argument: the object in (5)-(6), and the intransitive subject in (7) ((7a) v (1b), (7b) v (7c)). A further complication arises with verbs taking *l*-: some display an alternative prefix *m*- when the subject is dual. Veselinova (2013) cites Kunama as an example of dual verbal number via suppletion (the only language outside North America with dual verbal number). However, no suppletion is involved. Instead, the morphology concatenates in the same way as the pluractional *l*- (8).

This analysis raises questions for diagnosing participant number versus agreement. Why not say absolutive plurality in (5)-(8) is a further layer of agreement? With one set of forms targeting S/A and another set targeting O person, both appearing based on person not grammatical relation, and a prefix targeting O number, a further form targeting S/O may allow the hearer to more effectively triangulate the identity of the referent. No established criteria for diagnosing participant number exist, but several typical characteristics have been considered (Corbett 2000:252-258; Durie 1986:357-362; Mattioli 2019:86-93; Newman 1990, 2012). Drawing on those I develop a set of criteria against which I test Kunama *n*-/*l*-/*m*- prefixes, finding that they fail to satisfy several claimed common verbal number traits: they encode only participant number and not also event number; and there is no suppletion or reduplication - the morphology involves regular (within relevant classes) fixed affixal forms. However, they do conform to several claimed generalisations about verbal number: they occur only with a non-functionally determined subset of verbs, with variants in lexically determined classes; they co-occur with agreement in a separate position in the verb; they encode only number and not also

person; they follow a different alignment to clear agreement, and that alignment is absolutive (claimed to be universal for pluractionality). At this point they are therefore interpreted as pluractional.

- (1) a. *uutake* b. *eenake* c. *ootawake* i-uta-ke i-ana-ke  
o-atawa-ke  
3SG.SBJ-vomit-REAL 3SG.SBJ-sing-REAL 3PL.SBJ-choose-REAL  
'He/she vomited (it out).' 'He/she sang.' 'They chose him/her/it.'
- (2) a. *na-wii-ke* b. *a-wii-ke* c. *ni-wii-ke* d. *á-wii-ke*  
1SG.SBJ-leave-REAL 1.OBJ-leave-REAL 2SG.SBJ-leave-REAL 1.OBJ.2.SBJ-leave-REAL 'I left him/her/it.' 'He/she/it left me.' 'You (SG) left it.' 'You (SG/DU/PL) left me.'
- e. *o-wii-ke* f. *é-wii-ke* g. *ná-wii-ke*  
3PL.SBJ-leave-REAL 2.OBJ.2SG.OBJ-leave-REAL 1SG.SBJ.2SG.OBJ-leave-REAL  
'They left it.' 'He/she/it/they left you (SG).' 'I left you (SG).'
- (3) a. *a-a-wii-ke* b. *e-e-wii-ke*  
1.OBJ-PL.OBJ-leave-REAL 2.OBJ-PL.OBJ-leave-REAL  
'You (SG/DU/PL)/he/she/it left us.' 'He/she/it/they left you (PL).'
- (4) a. *na-a-wii-ke* b. *ni-i-wii-ke* c. *mé-e-wii-ke*  
1SG.SBJ-PL.OBJ-leave-REAL 2SG.SBJ-PL.OBJ-leave-REAL 2DU.SBJ-PL.OBJ-leave-REAL  
'I left you(PL)/them.' 'You(SG) left them.' 'You two left them.'
- (5) a. *u-uta-ke* b. *na-a-n-uta-ke* c. *u-u-n-uta-ke*  
1SG.SBJ-vomit-REAL 1SG.SBJ-PL.OBJ-PLACT-vomit-REAL 3SG.SBJ-PL.OBJ-PLACT-vomit-REAL  
'I vomited (it out).' 'I vomited them out.' 'He/she vomited them out.'
- (6) a. *u-u-ke* b. *u-u-l-uu-ke* c. *o-o-l-uu-ke*  
3SG.SBJ-enter-REAL 3SG.SBJ-PL.OBJ-PLACT-enter-REAL 3PL.SBJ-PL.OBJ-PLACT-enter-REAL  
'He entered (it).' 'He entered them.' 'They entered them.'
- (7) a. *o-n-ana-ke* b. *na-uta-ke* c. *ma-l-uta-ke*  
3PL.SBJ-PLACT-sing-REAL 1SG.SBJ-dwell-REAL 1EXCL.PL.SBJ-PLACT-dwell-REAL  
'They sang.' 'I stayed (somewhere).' 'We (EXCL.) stayed (somewhere).'
- (8) a. *i-í-ke* b. *mí-m-íi-ke* c. *o-l-íi-ke*  
3SG.SBJ-go.to-REAL 3DU.SBJ-DUACT-go.to-REAL 3PL.SBJ-PLACT-go.to-REAL 'He/she went there.'  
'They both went there.' 'They all went there.'

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## The Minimal Word in Kaytetye

Forrest Panther, Mark Harvey, Harold Koch, Myfany Turpin and Michael Proctor

Kaytetye is an Arandic language of Central Australia. This paper considers the minimal word in Kaytetye. We show that the minimal word is a target in morphological and phonological processes. We also show that the structure of the minimal word in Kaytetye involves a significant departure from general cross-linguistic patterns.

The minimal word is a bimoraic word shape that has a significant role in the morphophonology of the world's languages (Alderete & MacMillan 2015; Crowhurst 1991; Itô 1990; McCarthy & Prince 1993: 45-48; McCarthy & Prince 1995: 51; Park 1997). The minimal word is a target in at least three independent categories of processes: (i) allomorphy, (ii) reduplication, and (iii) augmentation of sub-minimal words, or exceptions to reduction processes that occur in larger words.

We exemplify these processes in three different languages. In Martuthunira, the default locative suffix is *-la*. If the noun root is a minimal word, the locative suffix is instead *-ŋka* (1) (Dench 1995: 37). In Hawaiian, the minimal word is a target for reduplication (2) (Alderete & MacMillan 2015: 8). In Latin, CV words are always realised with a long vowel, creating a bimoraic syllable (3) (Mester 1994: 23).

In Kaytetye, the shape VCV is a target in allomorphy, reduction, and reduplication processes. VCV nominal roots take the Ergative marker *-nge*, whereas longer roots take *-le* (4). VCV words do not permit vowel reduction, whereas longer words may undergo optional wordinitial and word-final vowel deletion (5). The target for verbal reduplication in Kaytetye is the final VCV of the verb root (6). The Kaytetye VCV shape may be analysed as a minimal word as it is both bimoraic and a target in processes which target the minimal word cross-linguistically.

The standard interpretation of a bimoraic minimal word would also include consonant-initial (CVCV) forms, and these should show the same patterns as VCV forms. However, in Kaytetye, CVCV roots do not pattern with VCV roots. Rather, they pattern with longer forms: (i) CVCV nominal roots take the *-le* Ergative allomorph (7); (ii) CVCV words undergo optional final vowel deletion (8); (iii) CVCV verb roots do not show CVCV reduplicants, but rather show VCV reduplicants (9).

There are two approaches to the analysis of the minimal word. The standard analysis proposes that the bimoraic minimum for the minimal word follows from a requirement that a minimal word must constitute a prosodic foot. Word minimality follows from the requirement for prosodic feet to be binary (Crowhurst 1991; McCarthy & Prince 1993). The alternative analysis proposes that word minimality and foot structure are distinct, with word minimality being motivated by independent phonological constraints. Potential constraints include: (i) word structure, such as constraints against the occurrence of monomoraic word forms; (ii) the distribution of stress, such as requirements for stressed syllables to be preceded by unstressed syllables (Garrett 1999).

Stress in Kaytetye selects the first vowel preceded by an onset (5). Kaytetye feet are trochees, and CVCV roots correspond to a binary foot (10). In VCV words, the final syllable is stressed (11). This means that VCV words contain a degenerate foot, in which a stressed syllable is preceded by an extrametrical unstressed vowel (see also Turpin & Demuth 2012).

CVCV words correspond to a bimoraic foot but do not constitute a minimal word. VCV words do not correspond to a bimoraic foot but are a minimal word. The standard analysis of word minimality cannot account this distribution of foot structure and word minimality. Rather, the structure of Kaytetye minimal words supports an analysis in which word minimality is independent of the categories of the prosodic hierarchy.

- (1) a. *ɲuu-ŋka*  
face-LOC  
'On the face'  
b. *kaa.a-la*  
**hipbone**-LOC  
'On the hipbone'  
(Dench 1995: 38)
- (2) *hiolo* → **hio**-*hiolo*  
'Tumble down (freq.)'  
(Alderete & MacMillan 2015: 8)
- (3) /da/ → [da:]  
'Give (imp. sg.)'  
(Mester 1994: 23)
- (4) a. *apmwe-nge*  
snake-ERG  
'Snake (erg.)'  
b. *aleke-le*  
**dog**-ERG  
'Dog (erg.)'
- (5) a. *aleke* 'dog'  
[a<sub>ft</sub>('lə.kə)<sub>ft</sub>~<sub>ft</sub>('lə.kə)<sub>ft</sub>~  
a<sub>ft</sub>('lək)<sub>ft</sub>]  
b. *ake* 'head'  
[a<sub>ft</sub>('ka)<sub>ft</sub>~ \*<sub>ft</sub>('ka)<sub>ft</sub>~  
\*<sub>ft</sub>(ak)<sub>ft</sub>]
- (6) *alarre-lp+arre-nke*  
hit-during+**RED**-PRS.SIM  
'Hit on the way'
- (7) *kayte-le*  
**grub**-ERG  
\**kayte-nge*
- (8) *kayte* 'grub'  
[<sub>ft</sub>('kaj.tə)<sub>ft</sub>~<sub>ft</sub>('kajt)<sub>ft</sub>]
- (9) *kwathe-lp+athe-nke*  
drink-during+**RED**-PRS.SIM  
'Drink on the way'  
\**kwathe-lp+kwathe-nke*
- (10) *kayte* 'grub'  
[<sub>ft</sub>('kaj.tə)<sub>ft</sub>]
- (11) *ake* 'head'  
[a<sub>ft</sub>('ka)<sub>ft</sub>]

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## **The acquisition of the placement of postnominal adjectives in French as a foreign language.**

Hugues Peters

This presentation will focus on the placement of postnominal adnominal adjectives (AP) in oral productions by adult learners of French as a foreign language (L2). The research is based on the analysis of all postnominal APs collected from a 50.000-word oral corpus of 10 Jamaican learners of French L2 in an instructional context. I will particularly pay attention to the category of Relational adjectives (eg. *social work*, *French African policy*), often called ‘pseudo-adjectives’ within the generative tradition (Postal 1969, Levi 1978, Bartning 1980). Such denominal adjectives do not express a property of the head-noun, but, in e.g. *Presidential palace*, ‘relate’ their base-noun ‘president’ with the head-noun ‘palace.’ They have been characterized by Bally (1965 [1944]) as non-predicating, non-gradable and obligatorily postnominal (in French), as well as not able to be coordinated with Qualifying adjectives. Following Bartning (1980), Bosque & Picallo (1996) and Bortolotto (2016), two types of relational adjectives (Classificatory/Classifying and Thematic) will be distinguished.

Contrary to English in which all APs are prenominal, French is a ‘mixed’ system: some APs are obligatorily placed before N, others obligatorily after N, and many can appear before or after N, often with a change of meaning. Interestingly, when there are several Post-N APs in French, they generally appear in the mirror-image order of prenominal APs in English. Yet, the topic of the acquisition of the placement of APs by L2 learners of French has received little attention in SLA, as it appears to be largely uneventful (but with strong initial L1 influence, Granfeldt 2000): apparently Pre-N AP are rapidly placed before the noun, and Post-N APs after the noun. So, the issue of the position of adjectives is usually studied in correlation with other issues like the changes of interpretation resulting from the position of the APs with respect to N (Anderson 2008), or the thornier issue of the acquisition of gender agreement (delayed in Pre-N APs) (Véronique 2009). Apart from Herschensohn (2002) and Stringer (2013), there have been no studies on the relative placement of APs with respect to other modifiers in the DP, and no studies based on oral production data specifically on that topic.

Concurrently, extensive research has been conducted within the cartographic generative framework with regards to a universal rigid ordering of Quantifying and Qualifying adjective (Cinque 1994, 2010; Scott 2002; Laenzlinger 2005, 2011; Durrleman 2015). The order of APs follows the order of strictly ordered, semantically based, functional projections. Bortolotto (2016) extends the approach to Relational adjectives. It will be interesting to evaluate how such underlying universal order influences the acquisition of adjectival modifiers in a second language (L2) (via learners’ oral production).

In this presentation, I will focus solely on the issue of the position of Post-N APs with respect to other APs (1-2), prepositional phrases (PP) (3), and elements realizing secondary predication (4). I will also evaluate whether learners are aware of the morphosyntactic properties associated with Relational adjectives. I will describe the interlanguage grammar (IL) of the learners to account for the observed data and compare it to the systems found in their L1s (Jamaican English and Jamaican Creole) and in the target language to be acquired (French). Based on the limited data available, it will be shown that learners develop an IL distinct from L1s and L2:

L1s (EN/JA):	QUALIFYING < THEMATIC < CLASSIFYING < N < PP < PredP
IL:	N < QUALIFYING < CLASSIFYING < THEMATIC < PP / PredP
L2 (FR):	N < CLASSIFYING < THEMATIC < QUALIFYING < PP < PredP

To conclude, I attempt to show that generative hypotheses on a specific grammatical structure allow us to make sense of the oral output produced by (L1) adult learners of an L2: the method of learners corpus linguistics and the theory of generative grammar can collaborate harmoniously to account for the hypotheses that the learners construct in their interlanguage.

Examples:

- (1) les chaînes télé(visée)s jamaïcaines (L0831)  
'Jamaican televised/TV channels.'
- (2) des choses nécessaires \*quotidiens (L1431)  
'necessary daily/everyday things.'
- (3) des problèmes économiques au Sénégal (L1212)  
'economic problems in Senegal.'
- (4) l'organisation internationale établie pour entretenir la paix mondiale (L3312)  
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## My belly is angry and my throat is in love

A typology of body-based emotion metaphors in Australian languages

Maïa Ponsonnet and Kitty-Jean Laginha

### Abstract

Many Australian Indigenous languages use collocations featuring body parts to describe emotions. For instance, in Dalabon (Gunwinyguan, NPN), *kangu-yowyow(mu)*, lit. ‘belly+flows’, means ‘feel good, be nice’; in Arrernte (PN, Arandic), *ahentye ampeme*, lit. ‘throat+burn’ means ‘feel angry’; in Kurna (PN, Thura-Yura), *tangka mampinhi*, lit. ‘liver+stagger’ means ‘to mourn, to be cast down about a deceased person’. Such body-based emotional collocations have been identified in many languages across the world’s languages (Wierzbicka 1999; Sharifian et al. 2008) and in Australia in particular (Turpin 2002; Gaby 2008; [Author] 2014). However, the overall distribution of such collocations in Australian languages had not been thoroughly examined so far, and no systematic typological study of these phenomena had been attempted across any continent.

This paper will fill this gap by presenting a typology of body-based emotion metaphors in Australia, based on a balanced sample of 67 languages for which we systematically collected emotion metaphors across published and unpublished sources. We will discuss the figurative profiles of individual body parts, which emotions they map onto, via which figurative processes, as well as their distribution across regions and language families. We will also propose a number of historical scenarios to explain how body parts become linguistically associated with emotions, and what these scenarios tell us about the cultural status of linguistic associations between emotions and body parts.

In our 67-language sample, 30 distinct body parts occur in emotional expressions. The belly is by far the most frequent, but a dozen others also reach significant numbers. These divide into four categories based on the types of tropes that link them with emotions. The belly, the heart and the throat display direct somatic associations with emotions – as illustrated for Dalabon with *ngerh-(r)dow(r)dow(mu)* ‘heart+beat’, ‘worry (be anxious)’. The liver, the chest and generic terms for ‘abdomen’ are likely to have become associated with emotions via words for ‘belly’ that shifted to denote one of these other body parts. The ear, head and forehead are construed as loci and intellectual functions (Evans & Wilkins 2001; [Author] 2009), and in turn some intellectual processes relate to emotions, as in Kuku Yalanji, *milka-wulay* lit. ‘ear+die’, ‘become unconscious, forget, forgive’. Finally, the eyes, nose and face associate with emotions via typical emotional behaviors, for instance in Wik Mungkan, *mee'ang wakan*, lit. ‘follow from the eyes’, ‘covet’.

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## Social constraints on the distribution of ‘Dative Sickness’ in Icelandic

Lachlan Price, Stacey Sherwood and Robert Mailhammer

Variation in subject case marking has been well studied both synchronically and diachronically in Icelandic. One particular instance of this kind of variation, known as Dative Substitution among linguists and “Dative Sickness” more popularly, occurs when accusative subjects are marked as dative subjects (Barðdal, 2011). See (1) and (2) below.

(1) *Mig langar að fara*

I.ACC long.PRES to go

‘I long to go.’

(2) *Mér langar að fara*

I.DAT long.PRES to go

‘I long to go (Schätzle et al., 2015)

While the internal, linguistic factors surrounding the phenomenon of Dative Sickness have been well explored in the literature (Barðdal, 2011; Dunn et al., 2017; Friðriksson, 2009; Schätzle et al., 2015), the external, sociolinguistic factors which influence the distribution of datively marked subjects remains largely unexplored (Friðriksson, 2009). This favouring of linguistic constraints over sociolinguistic constraints presents a significant gap in research as it is well known that linguistic variation is influenced by both internal and external factors. Thus, the aim of the current study is to probe the social correlates of datively marked pronouns to determine which social factors contribute to the distribution of Dative Sickness in Icelandic.

In his 2009 study, Friðriksson explored the social factors pertaining to the speaker’s background and found that datively marked subjects occur more frequently with younger speakers, females and speakers who live outside the Reykjavik area. To both test the reliability of Friðriksson’s findings and further explore the social constraints of Dative Sickness, including that of situational factors, the current study employs (1) an analysis of three corpora (Google Search Results, Mörkuð Íslensk Málheild, MÍM ‘The Tagged Icelandic Corpus’, and Risamálheildin ‘The Gigaword Corpus’) and compares the distribution of datively marked pronouns with (2) the social stratification of the pronouns from sociolinguistic interviews. Ten Icelandic experienter verbs were targeted for analysis and elicitation in order to examine the realisation of the pronoun (accusative vs dative) and the relevant social correlates. The decision to target experienter verbs was born of the finding that experienter verbs often pattern with Dative Sickness (Jónsson, 2013; Schätzle et al., 2015).

The findings of the corpora analyses show, unexpectedly, that the distribution of the experienter verbs is not as clear cut as previous studies have demonstrated (Barðdal, 2011; Dunn et al., 2017; Friðriksson, 2009; Schätzle et al., 2015). The Google corpus analysis found that experienter verbs occur more frequently with datively marked subjects compared to accusatively marked subjects (Mean Dative = 4,176,420 search results; Mean Accusative = 1,805,878 search results). The MÍM and the Risamálheildin corpora, on the other hand, show an opposite distribution: that the experienter verbs occur more frequently with subjects in accusative form compared to dative form (MÍM Mean Dative = 2; Mean Accusative = 151, with the Risamálheildin Mean Dative = 25; Mean Accusative = 6,814). This difference in findings across corpora suggests that the distribution may be more attributable to sociolinguistic factors than previously predicted. Specifically, the situational context of the variable may also contribute to its distribution. The Google corpus is more likely to contain vernacular samples of Icelandic compared to the MÍM and the Risamálheildin corpora, which both utilise speech samples from published Icelandic texts, rather than Google’s samples of social media, blogs and websites.

The planned sociolinguistic interviews are currently in progress and when analysed (October, 2019) the results will be compared to the corpus analyses. The comparison will thus further examine the social constraints identified by Friðriksson (2009) and explore the possibility that situational constraints influence the distribution of Dative Sickness in Icelandic. Ultimately, this corpus and

variationist study will contribute towards a deeper understanding of Dative Substitution in Icelandic and, more generally, highlight the importance of examining social factors when exploring the distribution of linguistic variables.

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Social class in Australia:  
Constructing meaningful groupings for real-time vowel analysis  
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Social class has been a longstanding sociolinguistic variable, with the widely reported linguistic effects of social stratification being interpreted as a reflection of the “hierarchical organization of the speech community” (Labov 1990:220, cf. review in Ash 2013). In Australia, class has received less attention, and where it has been studied, results have been conflicting. For example, some scholars have argued that vowel realisations do not vary systematically according to class (e.g., Mitchell & Delbridge 1965, Bernard 1981, Cox & Palethorpe 1998, 2012), while others have observed class stratification (Horvath 1985), and have found that it has contracted over time (Grama, Gonzalez & Travis 2019). Behind these findings lies the methodological question of how to adequately model class (cf. Dodsworth 2009). In this paper, we address this issue, paying particular attention to how to model class over time and over diverse social groups.

We examine data from sociolinguistic-style interviews with approximately 220 Australian English speakers (including Anglo, Chinese, Greek and Italian Australians), compiled under the umbrella of the *Sydney Speaks* corpora (Travis, Grama & Gonzalez, In Progress). Five generational groups are represented, with birthdates spanning 100 years, namely: elderly (born 1890s to 1900s) recorded in the 1980s for the *NSW Bicentennial Oral History Project* (1987); adults and teenagers (born 1930s and 1960s) recorded in the 1970s for the *Sydney Social Dialect Survey* (Horvath 1985); and adults and young adults (born 1960s and 1990s) recorded in the 2010s for *Sydney Speaks*.

We examine the class of these speakers on the basis of four social metrics motivated by prior sociolinguistic research — occupation, education, suburb, and high school type — each operationalised via external measures (Australian-based occupational scales, McMillan et al. 2009; Australian Qualifications Framework 2013; Australian Census data, ABS 2018; and research into high school education, Ho & Bonnor 2018). By adapting these measures for each of the different groups, taking into account generation, gender, and ethnicity, we devise metrics that are both *temporally* relevant, to account for changes in social and economic structures over time (cf. Guy 1988: 48-9), and *socially* relevant, based on socioeconomic scales that are local to the speech community (Rickford 1986: 216).

The linguistic impact of each of these four social metrics is considered over time, and illustrated via patterning of the vowel FLEECE (the realisation of which has been impacted by contraction of the broadness continuum, Cox, Palethorpe, Bentink 2014). We find that while each individual social metric has some impact on the realisation of this vowel, differences over time, for gender and for ethnicity render wholesale comparisons difficult to make. To address this, we utilise hierarchical kmeans cluster analysis to group together speakers who share similar social characteristics, defined specifically for each age cohort, and which we interpret as indicating higher or lower socioeconomic status. Comparison of the clusters over time provides evidence for social stratification of FLEECE in the 1970s, and the weakening of this over time, more so for men than for women.

These tailored class scales address the methodological issue of social class construction over time, and may prove fruitful for further explorations of class as a sociolinguistic variable in Australian English.

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## The effect of vowel length on CVC syllables in Australian English

Louise Ratko, Michael Proctor and Felicity Cox

Onset and coda consonants display different patterns of articulatory organisation with respect to the syllable nucleus: onsets share a closer timing relationship with the syllable nucleus than codas [2, 4]. Temporal and spatial properties of coda consonant gestures are also reduced and more variable in their realisation than those of onset consonants [2]. Articulatory organisation within the syllable is also affected by phonological vowel length, however this process is still not clearly understood. In Estonian, German and Slovak, onsets and codas in syllables with long vowels have longer gestural durations and are produced with greater displacement of the articulators than onsets and codas produced adjacent to short vowels [1, 5, 6, 7]. Australian English (AusE) provides an interesting test case for studying the effect of vowel length on articulatory organisation of CVC syllables due to its complex vowel length system. In AusE, /e:-e/ share overlapping spectral qualities and are differentiated primarily by vowel duration [3]. Conversely, /i:-ɪ/ are differentiated by vowel duration and marginally by spectral quality [3]. Electromagnetic articulography (EMA) was used to investigate realisation of onset and coda consonants in pVp and pV:p syllables, focusing on vowel pairs /i:-ɪ/ (*beat-bit*) and /e:-e/ (*cart-cut*).

**Methods:** EMA data was collected from 9 AusE speakers (5 males). Target items were embedded in one of two carrier phrases. For the high-front vowel pair /i:-ɪ/, the carrier contained low vowels *Far pVp heart* [fe: pVp he:t], and for /e:-e/, the carrier contained high vowels *Fee pVp heat* [fi: pVp hi:t]. For each target item, 1) onset consonant (C<sub>1</sub>), 2) vowel (V) and 3) coda consonant (C<sub>2</sub>) gestures were analysed. Gestural duration and gestural displacement were calculated as shown in Figure 1. Measurements were based on the lower lip (LL) sensor for C<sub>1</sub> and C<sub>2</sub>, and the tongue dorsum (TD) sensor for vowel gestures. Gestural duration spanned from gesture onset to gesture offset (Fig. 1). Gestural displacement was calculated as the Euclidean displacement during gesture formation (movement towards the gestural target) + Euclidean displacement during gesture release (movement away from the gestural target; Fig. 1).

**Results:** Linear mixed effects models were constructed with the following equation: Dependent variable ~ V length (Long = 0) × V pair (high-front = 0) + (1 + V length | spkr) + (1 + V pair | spkr). The total gesture duration of long /i:/ and /e:/ was 64.0 ms longer than their short equivalents /ɪ, e/ ( $p < .001$ ; Fig. 3). There was no significant interaction between V length × V pair ( $p = .521$ ). The duration of C<sub>1</sub> preceding long Vs was 11.6 ms longer than for short Vs ( $p = .018$ ; Fig. 2). For C<sub>1</sub> there was no significant interaction between V length × V pair ( $p = .321$ ).

The total duration of C<sub>2</sub> was unaffected by preceding V length ( $p = .733$ ; Fig. 3). The interaction between V length × V pair on C<sub>2</sub> duration was not significant ( $p = .061$ ).

The displacement of long Vs was 1.8 mm greater than their short equivalents ( $p < .001$ ; Fig. 4). There was a significant interaction between V length × V pair ( $p = .018$ ) indicating that the difference in displacement was greater between /i:/ and /ɪ/ (2.6 mm) than between /e:/ and /e/ (1.0 mm). LL displacement of C<sub>1</sub> gestures preceding long Vs was 0.6 mm greater than C<sub>1</sub> preceding short Vs ( $p = .003$ ; Fig. 3). There was no significant interaction between V length × V pair ( $p = .155$ ).

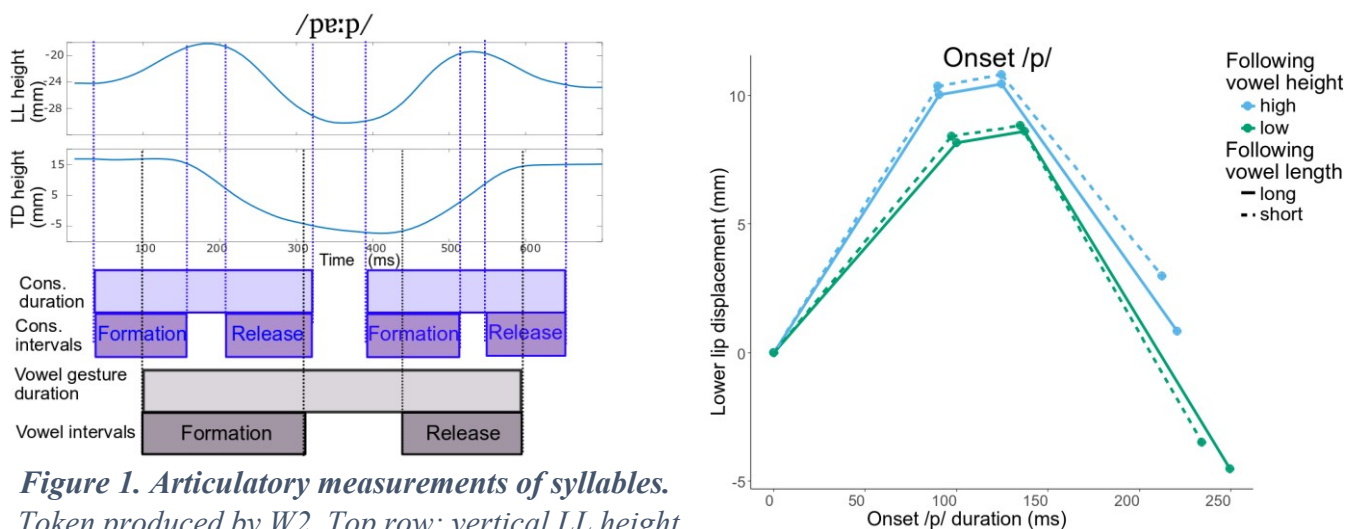
The displacement of C<sub>2</sub> following long Vs was 0.9 mm greater than C<sub>2</sub> preceding short Vs ( $p < .001$ ; Fig. 4). There was a significant interaction between V length × V pair ( $p < .001$ ),

indicating that the difference in displacement was greater between C<sub>2</sub> following /i:/ and /ɪ/ (1.6 mm) than for C<sub>2</sub> following /e:/ and /ɐ/ (0.3 mm).

**Discussion:** Consistent with studies showing /i:-ɪ/ to be more spectrally dissimilar than /e:-ɐ/ [3] we found a greater difference in displacement between /i:/ and /ɪ/ than between /e:/ and /ɐ/ (Fig. 3). Consistent with prior research, onsets preceding long vowels had greater durations than onsets preceding short vowels [1, 5, 6, 7]. However, contrary to past research, vowel length did not impact coda duration [1, 5, 6, 7]. The results also support studies that have found onsets and codas flanking long vowels to have a greater spatial extent than onset and codas flanking short vowels [1, 6]. Furthermore, codas following /i:-ɪ/ had a greater pairwise difference in gestural displacement than coda consonants following /e:-ɐ/ (Fig. 4). This difference was not observed however for onset consonants (Fig. 2). These overall results highlight the role of the syllable in articulating vowel length contrasts in AusE. However, observed asymmetry between onset and coda consonants highlight how differences in CV versus VC coordination may lead to different realisations of vowel length contrasts in onset versus coda consonants.

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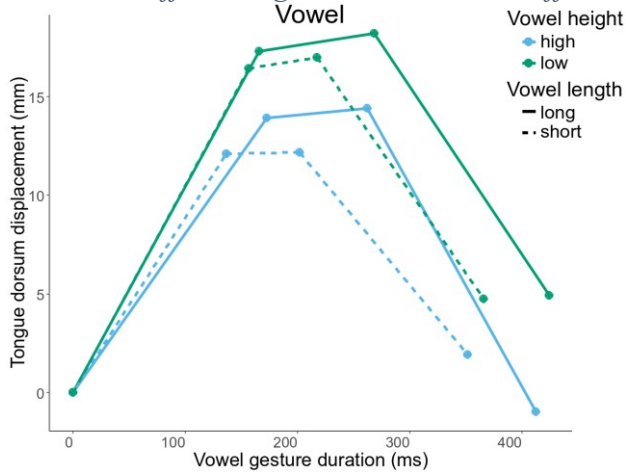
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**Figure 1. Articulatory measurements of syllables.**  
Token produced by W2. Top row: vertical LL height

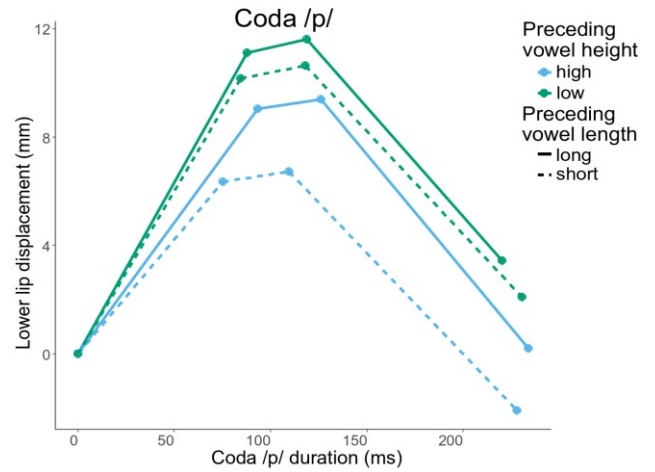


= vertical displacement of LL sensor. TD height = vertical displacement of tongue dorsum sensor. Vertical lines (left to right) denote key articulatory landmarks: C<sub>1</sub> Gesture and formation onset (blue), V onset (black), C<sub>1</sub> formation offset (blue), C<sub>1</sub> release onset (blue), V formation offset (black), C<sub>1</sub> gesture and release offset, C<sub>2</sub> gesture and formation onset,, V release onset, C<sub>2</sub> formation offset, C<sub>2</sub> release onset, V release offset, C<sub>2</sub> gesture and release offset.



**Figure 3. Displacement-time graph for vowel gesture.** Tongue dorsum sensor displacement from sensor position at onset of gesture. Duration in ms

**Figure 2. Displacement-time graph for onset /p/ gesture (C<sub>1</sub>).** Lower lip sensor displacement from sensor position at onset of gesture. Duration in ms



## A novel comparative method for young sign languages: Base comparison

Lauren Reed

As studies of diverse sign languages (SLs) have grown, scholars have been interested in establishing historical and synchronic relationships between them. This has traditionally been done by identifying lexical cognates between SLs, using versions of the Swadesh (1971) basic vocabulary list, most famously that of Woodward (1991). The most common method of identifying cognates is by using sublexical contrastive parameters of signs. A sign is made up of three major contrastive parameters: handshape, location (in space or on the body), and movement pattern (cf. Brentari, 2011). Figure 1 demonstrates minimal pairs on these three parameters in Israeli SL.

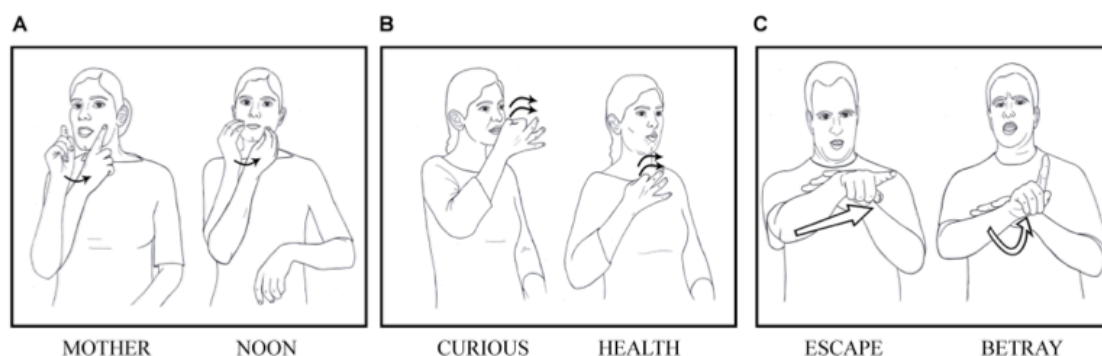
Scholars traditionally establish cognates between SLs depending on how many contrastive parameters vary between two signs. This method has been used to hypothesise relationships between SLs of the Australian North and Central Deserts (Kendon, 1988); between Auslan, New Zealand SL and British SL (Johnston, 2003); and between Spanish SL, Mexican SL, French SL and Japanese SL (Guerra Currie, Meier, & Walters, 2002). In order for this lexicostatistical method to work, however, signs need to have a prototypical, "citation" form, where signers adhere to sublexical contrastive parameters. If signers do not do so - if there is significant intra-signer variation in form - then the sublexical parameter comparison method is not effective in quantifying relationships between SLs.

This work is based on fieldwork with 12 deaf signers in the Nebilyer/Kaugel region of rural Western Highlands, Papua New Guinea. The author administered a wordlist to these signers, most of whom did not know one another and who lived in different communities. Signers in this area do have established signs for referents, such as MAN which is articulated on the chin, referring to the beard of an adult man. However, the form of this sign varies even by single signers. Figures 2 and 3 demonstrates two tokens of MAN, articulated by the same signer within 20 seconds. Even by the same user, in very close proximity, two tokens of the same sign differ in terms of the usually contrastive parameter of handshape.

As such, the standard parameter comparison method is not appropriate for these rural SLs. In order to explore sign sharedness between these SLs, I instead consider the *base* of each sign; that is, the "object or action that the production of the sign is derived from" (Kendon, 1980, p. 83). All signs in Nebilyer/Kaugel are iconic; that is, they have a motivated form-meaning relationship. Hence, all signs have a base, and thus we can compare these bases. Even iconic signs carry a measure of arbitrariness in that there are a number of bases that could be selected (Planer & Kalkman, 2019). For example, signs for PIG I have recorded across Papua New Guinea reference the pig's ears; its snout; traditional tying methods; its rooting in the earth; and so on.

While similar identification of sign base has been employed by Hou (2016), and Richie, Fanghella and Coppola (2012), these studies were not specifically directed at exploring relationships between SLs. The base comparison method I present is a valuable tool for scholars working with young and/or rural SLs such as those in Papua New Guinea, where signs are best characterised as wholes, lacking stable internal structure. It provides an effective alternative to standard sublexical comparative parameter models as discussed above.

This paper begins by presenting the theoretical evidence for base as a valid comparative element of signs. I discuss how I created my wordlist, collected data, coded, and carried out statistical analysis. I present challenges with the method, such as when signers produced multiple signs with different bases throughout the session for a given referent. Finally, I present the results of base comparison for seven SLs of Papua New Guinea. Levels of base similarity pattern highest for five SLs in the Nebilyer/Kaugel rural area, while base similarity is lowest between those languages and two other SLs from other parts of Papua New Guinea. Base comparison is shown to be a promising and effective tool for addition to the sign linguistic toolkit.



**FIGURE 1** | Minimal pairs in Israeli Sign Language. From left to right: **(Ai)** MOTHER, **(Aii)** NOON distinguished by handshape; **(Bi)** CURIOUS, **(Bii)** HEALTH distinguished by location; and **(Ci)** ESCAPE, **(Cii)** BETRAY distinguished by movement.

Figure 1: Sandler, 2018, p. 4



Figure 2

Figure 3

MAN, 20180415\_Canon01\_001 2:33 MAN, 20180415\_Canon01\_001

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## **Diatopic variation in the *get*-passive within Britain and Ireland.**

John Rice-Whetton

As described in Gronemeyer (1999), over the centuries, the verb *get* in English has developed a range of different grammatical uses. The most prominent of these grammatical uses is probably the *get*-passive, with its recent rise described by Weiner and Labov as “one of the most active grammatical changes taking place in English” (1983, p. 43). However, a lot of the work on the *get*-passive seems to assume that its grammaticalization has unfolded in fundamentally the same way across all the places that English is spoken. Variation between different varieties in terms of exactly how *get* is used grammatically is relatively underresearched. There is some work looking at differences in usage of the *get*-passive across different varieties of English around the world (Bruckmaier, 2016, 2017; e.g. Collins, 1996; Coto-Villalibre, 2014; Hundt, Hay, & Gordon, 2004; Leech, Hundt, Mair, & Smith, 2009; Peters & Burridge, 2012), but there has been little research into differences among dialects within Britain and Ireland.

Hickey (2004) suggests that *get*-passives are particularly used in Scotland and Ireland, and the work of Macaulay (1991) and Romain (cited in Miller, 2011) seems to support such a claim, reporting seemingly high frequencies of use in parts of Scotland. However, the existence of such differences has until now not been quantitatively demonstrated. This study represents the first systematic comparison between different regional varieties within Britain and Ireland.

Three corpora of informal spoken language were selected, one each from England, Scotland and Ireland. The 366,000 word NECTE2 subcorpus of the Diachronic Electronic Corpus of Tyneside English (Corrigan, Buchstaller, Mearns, & Moisl, 2012), was chosen representing the variety spoken in the north east of England. From the Scottish Corpus of Texts and Speech (SCOTS) (2019), 283,000 words of conversational data were selected for analysis. Representing English as spoken in Ireland, around 500,000 words of conversational data marked “Intimate” from the Limerick Corpus of Irish English (LCIE) (Farr, Murphy, & O’Keeffe, 2004) were chosen.

Results show that contrary to Hickey’s suggestion, there is no evidence that the frequency of usage of *get* passives is any higher in Scotland and Ireland when compared to usage from the north east of England. Tyneside English demonstrates a marginally higher frequency of 63.4 tokens per 100,000 words compared with the 55.5 tokens per 100,000 words found in the Scottish corpus. Initial results for Irish English by contrast seem to indicate a lower frequency, with around 25 tokens per 100,000 words found in the portion of the corpus categorised thus far (around 20%).

Despite the fact that there does not appear to be a significant difference between Scottish usage and Tyneside usage in terms of the absolute frequency of *get*-passives, when one looks in finer detail at exactly how the *get*-passive is being used, differences become apparent. In particular, there is a difference between the two corpora in terms of the animacy of the subject. In NECTE2, 90.5% (210/232) of the subjects of *get*-passives are animate, whereas in SCOTS only 68.2% (107/157) are animate. A chi-squared test indicates that this difference is significant ( $p < 0.01$ ). Furthermore, initial results from LCIE data show an even higher proportion than in NECTE2 with 24/25 subjects of *get*-passives being animate.

Overall, these results indicate there are differences worthwhile investigating between regional varieties of English within Britain and Ireland in terms of usage of the *get*-passive, and that differences may consist in more than just differences in relative frequency. Differences such as those relating to how the *get*-passive patterns with subject animacy suggests that the precise

grammaticalization pathway may have differed in different places, and that the rise of the *get*passive is not a monolithic process occurring in the same way in all places that English is spoken.

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## Yarnin the *yorga* way: Quotation in urban Aboriginal English

Celeste Rodríguez Louro & Glenys Collard

The University of Western Australia and Mallee Aboriginal Corporation

Since colonisation, Australian languages have contended with the encroachment of English to the detriment of traditional culture. Part and parcel of this process has been the rise of Aboriginal English as a carrier of ethnic identity and one that has received descriptive attention (cf. Kaldor & Malcolm, 1991). Yet, the sociolinguistic patterns governing Aboriginal English – those ‘varieties of English [...] vernacularised in Aboriginal communities’ (Rigsby, 1998: 825) – remain vastly untapped.

A pressing issue for native speakers of Aboriginal English is that of contact with white Australian English (AusE). Metropolitan cities around the world have increasingly become global. Linguistically, this trend is linked to the ingress of linguistic variants readily taken up by metropolitan youth (Cukor-Avila, 2012). Quotative *be like* is one such variant and the quotative system of inner-circle Englishes has changed drastically since its inception. For example, *say* has been ousted by *be like* as the most widely used quotative by speakers born as early as 1967 in white AusE (Rodríguez Louro, 2013). Additionally, the remarkable expansion of *be like* in inner-circle Englishes has been linked to the rise of psychological drama in narratives, with speakers encoding their thought as monologic performances which, starting in the late 1960s, led to the rise of first-person inner dialogue – ‘the very niche of *be like*’ (Tagliamonte, D’Arcy & Rodríguez Louro, 2016: 839-840). Are Aboriginal English speakers participating in these changes?

We analyse 15 hours of talk-in-interaction data stemming from the speech of 18 women aged 14-88 who speak Aboriginal English as their L1. All speakers are ancestrally Nyungar and identify as Nyungar. Led by Nyungar language worker Glenys Collard, fieldwork rests on three pillars: (1) the data stem from group recording sessions, as culturally appropriate in the community (Malcolm, 2018: 15); (2) speakers are recruited in culturally salient venues such as city parks and streets; (3) data collection is based on the form of conversation and storytelling known as ‘yarning’ (Craven, Ryan, Mooney, Vallerand, Dillon, Blacklock & Magson, 2016: 35): ‘a process of making meaning, communicating and passing on history and knowledge’ (Terszak, 2008: 90).

We circumscribe the envelope of variation functionally to include all uses of direct quotation, internal thought and non-lexicalised sounds and gestures by self/others (examples 1 and 2). Quotative *be like* is first attested in our sample amongst those born in 1981 and later, and while women aged 14-34 are active *be like* users (35% [65/186]), these tokens overwhelmingly encode speech (92% [47/51]). Additionally, the grammar of quotation is most variable in the encoding of speech, while thought encoding is dominated by quotative *think* and unconstrained by speaker’s DOB (Figure 1). Aboriginal English seldom encodes thought via quotation (7%); instead, an overwhelming 93% of the data represent speech-encoding (and the difference with AusE which encodes thought at 13% and speech at 87% is statistically significant: chi-square = 20.78;  $p = 0.000005$ ). This favouring effect is also evident in the use of *zero* (cf. example 2) which categorically introduces speech in our sample. To triangulate these findings, we draw on diachronic data collected by Susan Kaldor and Ian Malcolm in the 1970s. We also draw on data collected with two 16-year-old women from Derby and Kununurra, WA – currently boarders at a private Perth high school. These additional sources of data confirm that, independently of the quotative frame used, speech is the most widely encoded content type in Aboriginal English.

These results run contrary to claims that the rise of psychological drama in narrative has been a niche for *be like* across Englishes. The central role of speech-reporting in the quotative system of Aboriginal English also raises important questions as to the place of traditional practice in modern Aboriginal Australia. May Nunn’s (2018) statement that ‘before humans were writing down their knowledge, they were telling it to each other in the form of stories’ explain why speech-encoding is overwhelmingly favoured over the encoding of one’s inner dialogue in our study? Could entrenched knowledge-sharing practices, including yarning, have implications for how stories are structured in Aboriginal English?

## Examples

- (1) So I come runnin out of the room. I close the door and I pushed her and I **said**, ‘Don’t open the door. Now she knows we’re home’. Then ah, well, she **goes**, ‘Oh, it’s okay’. I **said**, ‘You deal with it and you deal with it’, cause she thought she knew and I knew what was gonna happen Nan, but I won’t say it. She opens the door now. She **says**, ‘Oh, come inside. Do you need any help?’ I **go** to her, ‘I’m warnin you, don’t take that meat off her’, cause she had a trolley, a pram with no baby in there, a pram full of meat. [...] And then she comes pushin it in, with the pram. She’s **like**, ‘Hi darlin, how you goin? Thanks for lettin me in your house’, and pushes the white girl and **says** ‘Get out of my way’ and walks in the kitchen. She’s **like** ‘I’m makin a feed, I don’t care’. I walked out. She **reckon**, ‘See, that’s my niece there. She’s black’. (Female/18/2001)
- (2) Years and years after I found out she got in touch with someone that, the woman that fostered my girl out. She was givin them out to, bringin all the English fellas out to find them jobs and find them ‘omes and things for people to rear. That’s what they did. They was findin them ‘omes and settin them all up, findin them. Mrs Smith brought my, brought that same girl that he’s talkin about back to me after she was – well, she was married and left, couldn get on with the whites and she looked at me, I brought her home, **ZERO** ‘Will you look after her?’ Well look, I tell you, I think I was like ice standin there. I **said**, ‘You wouldn let me see her for all those years and you brin her home now because you’ve got cancer’. (Female/88/1931)

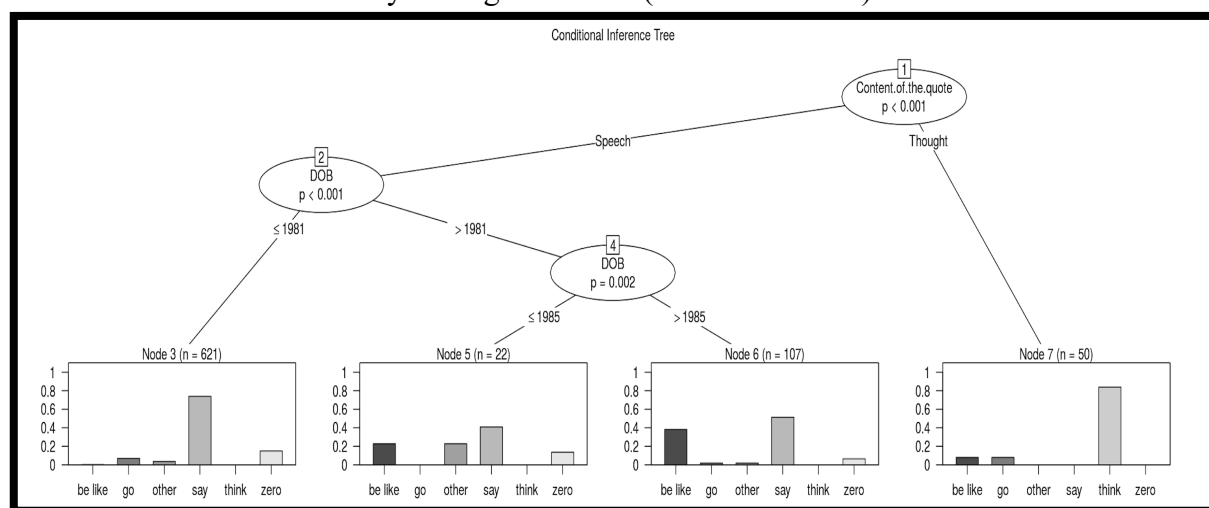


FIGURE 1. Conditional inference recursive partitioning tree: *Be like* and content of the quote (N=800)

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## **Managing the clinical interaction: An analysis of interactive framing**

Peter Roger, Lynda Yates, Maria Dahm and John Cartmill

Clinical communication is now an established element of medical curricula in a number of countries, as well as a central point of focus for international medical graduates seeking to gain registration in countries to which they have migrated. As Australia's medical workforce becomes more linguistically and culturally diverse, the field of applied linguistics can offer systematic approaches to the analysis of clinical interactions which can inform the teaching of clinical communication. In this presentation, we will illustrate how one such approach, analysis of interactive framing (see Goffman, 1974; Tannen & Wallat, 1993; Gumperz, 1999), provides a way of conceptualising communicative expertise in healthcare encounters. From an educational standpoint, this analytical approach also provides a framework that enables medical educators to pinpoint the source of communication barriers in their feedback, rather than offering vague and subjective commentary.

The purposes of this study were (1) to explore the way in which medical professionals with different levels of experience and contexts of training and practice structured their explanation of an adverse reaction to a patient's carer, and (2) to inform discourse-level strategies that could be used in training both international and local medical graduates in clinical communication. Seven clinicians were recruited to participate in this study, which took place in a clinical simulation facility at a university hospital. They included clinicians with different levels of experience (e.g. resident and specialist), as well as participants who had completed their training in Australia and some who had trained and practiced previously in other parts of the world. They each participated in a two-part role play study, which included a discussion with the grandfather of a paediatric patient who had suffered an adverse reaction following an imaging procedure. The interactions were video-taped and transcribed, and an interactive framing discourse analysis was undertaken.

Marked differences were apparent between participants in the way that they managed the clinical interaction with the grandfather. The way in which the participants framed and contextualised the adverse reaction was found to have significant consequences for the way in which the interaction unfolded. In particular, the questions that the grandfather asked highlighted points at which the potential for misunderstanding occurred. In this presentation, we will demonstrate how effective clinical communication relies on an ability of practitioners to reflect in real time on the interaction at hand, and to adjust their interactive choices appropriately.

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### **The *Poetry in First Languages* (PIFL) program**

Kirli Saunders, Red Room Poetry

Join proud Gunai poet and award-winning international children's author, Kirli Saunders as she reflects on the findings of Bailey and Yang in their report on her ***Poetry in First Languages* (PIFL)** program. Delivered by Red Room Poetry, PIFL aims to celebrate, preserve and share first nations languages through poetry publication, workshops and performances. Kirli will explore poetry as a medium for cultural learning and examine the practical applications of the First Nations language instruction for teaching and learning in the classroom.

## Vowel change over the lifespan in Australian English: Sydney speaks forty years on

*Elena Sheard, Catherine Travis, James Grama*

*Australian National University*

Australian society has changed drastically over the past forty years; it is now more ethnically and religiously diverse, and generally wealthier and better educated. Features characteristic of Australian English have also undergone change during this time, including the FLEECE, FACE, GOAT and PRICE diphthongs (e.g. Cox and Palethorpe 2012: 297-99). In this study, we probe the relationship between changing demographics and the way Australian English is spoken, specifically at the level of the individual, through a direct comparison of the speech of individual Sydneysiders recorded twice, over a forty-year period. This is possible due to the landmark Sydney Social Dialect Survey (SSDS) (Horvath 1985), which recorded sociolinguistic interviews with Anglo-, Greek-, and Italian-Australian teenagers in the late 1970s. Here, we report on research that involves a new set of recordings of three of these same teenagers, now in their 50s.

This research is situated within a larger sociolinguistic project, Sydney Speaks (Travis 2016-2021), which is studying the contemporary speech of Anglo-, Greek-, and Italian-Australians, as well as newer migrant groups. The 2010s Sydney Speaks corpus includes adults born in the 1960s, the same period in which the SSDS teenagers were born. This study therefore anchors a lifespan panel study to a trend study, allowing the individual patterning observed to be contextualised within change across the community (cf. Sankoff and Blondeau 2007; Wagner and Sankoff 2011). We test for three possible patterns that are followed by individual speakers over time: change in the same direction as the community (generational change), change in the opposite direction to the community (retrograde grade), and stability (Sankoff 2019).

This presentation examines realisations of the FLEECE, FACE, GOAT and PRICE vowels of three Italian-Australian males in the 1970s and today. Acoustic analyses of F1 and F2 at the vowels' onset and glide reveal that the three speakers exhibit generational change, that is, they have participated in the changes these vowels have undergone in the community (a move towards a higher and fronter FLEECE and FACE, a higher and backer GOAT, and a fronter and lower PRICE), changes in which the Italian community has participated (Grama, Gonzalez, and Travis 2019). However, they do so in varying ways, and, in some cases, they are ahead of their generation in the change. We interpret this finding in terms of the broader social meaning of these changes; these vowels are moving away from realisations associated with male, working class Australians in the 1970s. Participation of these three speakers in this change is therefore consistent with their upward social mobility, as evident from information recounted in the sociolinguistic interviews.

This research validates the robustness of the apparent-time construct in identifying whether change has taken place, but suggests that it is less informative as to the degree of change, aligning with prior work proposing that apparent time is a conservative measure of change (Sankoff 2019: 222; Buchstaller 2015: 459).

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## The evolution of politeness marker *-baa* in Turubul

Karen Sullivan

Turubul is a Pama-Nyungan language traditionally spoken in the area that now includes the Brisbane CBD. Turubul is unusual in that the major source of information on the language consists of Bible stories elicited in 1866 from a white boy, Tom Petrie, who grew up among the Turubul and was attributed with a high degree of fluency by Turubul sources.

Petrie's proficiency in the language is corroborated by the consistency with which he uses suffixes throughout the Bible stories. I argue in this paper that one of the most apparently problematic suffixes, *-baa*, can be explained in terms of a semantic extension from the temporal sense into a causal, alongside its grammaticalization into a distancing politeness marker. Since temporal sequencing often implies causation, temporal markers frequently evolve into causals in the world's languages (Heine and Kuteva 2002; Dancygier and Sweetser 2005). The texts from Tom Petrie include temporal examples which express overlapping or sequential events, as in (1) (*-baa* is boldfaced in all examples), alongside causal uses as in (2).

- (1)    wunal    jiga-**baa**-li            balga-ri            garan    jidnan-di            wunal-ba-di  
         3.sg.nim   shake-RES-IMM   come-PERF   fall    foot-LOC            3.sg-ABL-LOC  
         'He was shaking as he came and fell at his feet.'
- (2)    ngaja            mangin-**baa**-ni                            ngaja            nguruman  
         1.sg.nom        ashamed-RES-INTENS                    1.sg.nom        hide.oneself  
         'I was very ashamed, so I hid myself.'

The politeness sense of *-baa* is most frequent in requests, as in (3). The grammaticalization of this sense of *-baa* is evident in that it follows the aspectual marker *-li*, as in (3)-(4), rather than preceding it, as in (1).

- (3)    wana    ngali-ngana    waia-li-**baa**                            wungu  
         do.not   1.pl.acc        send-IMM-SUBJ                            pit  
         'Please don't send us into the pit.'

However, the politeness sense of *-baa* occurs in other contexts, such as questions as in (4):

- (4)    minya    nginda            baran    yaga-li-**baa**?  
         what   2.nom            now    do-IMM-SUBJ  
         'What are you doing now?'

This usage of *-baa* occurs only on verbs with second-person agents. I therefore suggest that the temporal sense of *-baa*, which signalled temporal distancing, extended not only into a causal, but also grammaticalized into a politeness sense indicating social distancing, following the progression described in Dancygier and Sweetser (2005). This hypothetical progression explains the coexistence of temporal, causal, and politeness uses of *-baa* in the Bible stories elicited from Tom Petrie.

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## Sociolinguistic trios, quartets, and ensembles: New compositions for the Meyerhoffian symphony

James N. Stanford  
Dartmouth College

(Invited Plenary)

As Meyerhoff (2017, 2019) proposes, if we blend language documentation and variationist approaches together, the result can be a magnificent "linguistic symphony" that represents the language more richly than any unidimensional approach ever could. The Wellsprings of Linguistic Diversity project has carried out this blended "symphonic" field approach on an impressive scale (Evans, this conference), including recent fieldwork across a wide range of linguistic ecologies in the Asia-Pacific region (e.g., Schokkin, Kashima, Duhamel, Singer, Evans, Skirgard, Garde, Ellison). Other recent projects, including Mansfield's "polysynthetic sociolinguistics" of Murrinh Patha and Barth's work on Matukar Panau, exemplify this blended approach as well.

Unfortunately, such approaches are still rather rare in sociolinguistics around the world. Although variationist sociolinguists began investigating indigenous minority languages as early as Sankoff (1980) and Foley (1980), such languages remain underrepresented in this subfield of linguistics (Nagy and Meyerhoff 2008; Stanford and Preston 2009; Smakman and Heinrich 2015; Stanford 2016; Kasstan and Horesh 2018; Guy and Adli 2019; Barth, Schokkin, Travis, Lindsey 2019 *inter alia*). As a result, many of the classic sociolinguistic principles depend heavily on traditional studies of large, majority languages in Western, industrialized, often monolingual societies (refreshing exceptions include Walker et al. 2019 on Chinese varieties, and other likeminded research). By contrast, many other linguistic subfields like phonetics, phonology, morphology, syntax, typology, anthropological linguistics and so on, have long recognized the importance of small indigenous languages. Meanwhile, field linguists see the need for a greater focus on describing and quantifying variation while building a grammar (e.g., Nagy 2009; Bower 2015), rather than demoting linguistic variants to a footnote or parenthetical comment. All of this brings us to Meyerhoff's linguistic symphony.

Taking the viewpoint of a sociolinguist, the present talk investigates new "compositions" for this linguistic symphony. The talk explores the increasing importance of composing our projects collaboratively, often involving indigenous scholars and other members of the communities being researched (e.g., Rodriguez Louro and Collard, this conference). When are such approaches the most useful? When are other approaches more appropriate? How can researchers and communities decide which approach to take? The talk examines a series of variationist sociolinguistic studies composed of different combinations of researchers, including research with Sui, Bouyei, Zhuang, Ersu, and Na/Mosuo language communities in southwest China, as well as work with Hmong Americans, Lakota, Navajo, Inupiat and other indigenous communities in North America. While presenting the quantified sociolinguistic results from these projects, this study ponders the benefits and challenges of different compositions of these research teams, including benefits of emic versus etic perspectives and the differing project roles of insiders/outside, as well as nuanced differences in field locations and sociopolitical circumstances-- all of which can help us to make music together, linguistically.

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**Listening to Wiradjuri voices. An exploration with the Wiradjuri community of the evolution of the use and development of Wiradjuri language materials.**

Janette Thambyrajah

The Wiradjuri community of Central and Southern NSW are working hard towards the revitalisation of their language. This research is exploring their ideas about, and responses to various forms of Wiradjuri literacy. Using a Critical Participatory Action Research model, it is discovering the Wiradjuri ways of thinking about literacy as a tool for Wiradjuri language development and giving opportunity to evolve those ideas together. A multiliteracy standpoint is taken because of the expanding horizons of the 21<sup>st</sup> Century. Literacy embedded in technology, multimedia, images, songs, games and books are considered, with a focus on children. Analysis of qualitative data will address: perceptions of literacy, aspects of multiliteracy, loss of control, language immersion, geographical constraints, attitudes of children, lack of trust of government organisations, maintenance of elder respect, future generations and other topics as they arise.

**From gesture to sound:  
Experimental evidence for the projection of co-speech sound effects**

Lyn Tieu and Robert Pasternak

**Summary:** *Co-speech gestures* have been reported to give rise to inferences that ‘project’ in a variety of linguistic environments, just like verbal *presuppositions*. We present an experimental study investigating the meaning contributions of *co-speech sound effects*, i.e. sound effects accompanying spoken speech. The results indicate that co-speech sound effects also give rise to inferences that project like presuppositions. The findings bring closer together the speech, gesture, and (non-linguistic) sound modalities, and suggest that the observed projection patterns encompass a rather broad variety of co-speech content.

**Background:** Much recent work has focused on the semantic and pragmatic contributions of *co-speech gestures*, i.e. gestures that co-occur with speech. Such gestures appear to contribute ‘not-at-issue’ meanings;<sup>[1-5]</sup> these presuppositional-like meanings ‘project’ out of linguistic environments such as negation, just as verbal presuppositions do. (As an example of a verbal presupposition: *June knows that it will rain* presupposes that it will rain, and this presupposition is preserved under negation – *June doesn’t know it will rain* still presupposes that it will rain.) Sentences containing co-speech gestures, such as (1) containing the UP gesture (index finger pointed upwards) have been reported to trigger conditionalized presuppositions (‘cosuppositions’) that also project from environments like negation (2).<sup>[3,6,7]</sup>

- (1) Mary will [use the stairs]\_UP  $\Rightarrow$  *Mary will use the stairs in an upwards direction*
- (2) Mary will not [use the stairs]\_UP  $\Rightarrow$  *If Mary were to use the stairs, it would be in an upwards direction*

[8] asks whether the projection pattern exhibited by co-speech gestures is unique to gestures (perhaps because gestures play a special role in language evolution and acquisition). He proposes that co-speech sound effects provide an informative case study, since sound effects also use the same modality as speech, but do not share the same special status of gestures.

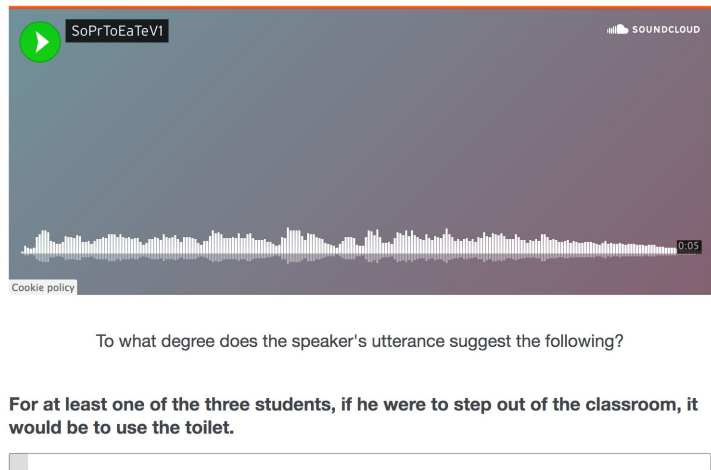
**Experiment:** [7] tested the inferences of co-speech gestures in six different linguistic environments (unembedded, *might*, negation, *each*, *none*, *exactly-one*), using an Inferential Judgment Task. We used the same design and methodology; but instead of viewing videos of a speaker producing sentences with co-speech gestures, our participants listened to sentences containing co-speech sound effects, such as (3) and (4).

- (3) The businesswoman will [travel to the board meeting]\_PLANE-SOUND  
 $\Rightarrow$  *The businesswoman will travel to the board meeting by plane*
- (4) The professor will not [be interrupted during her lecture]\_PHONE-RING-SOUND  
 $\Rightarrow$  *If the professor were to be interrupted during her lecture, it would be by a ringing phone*

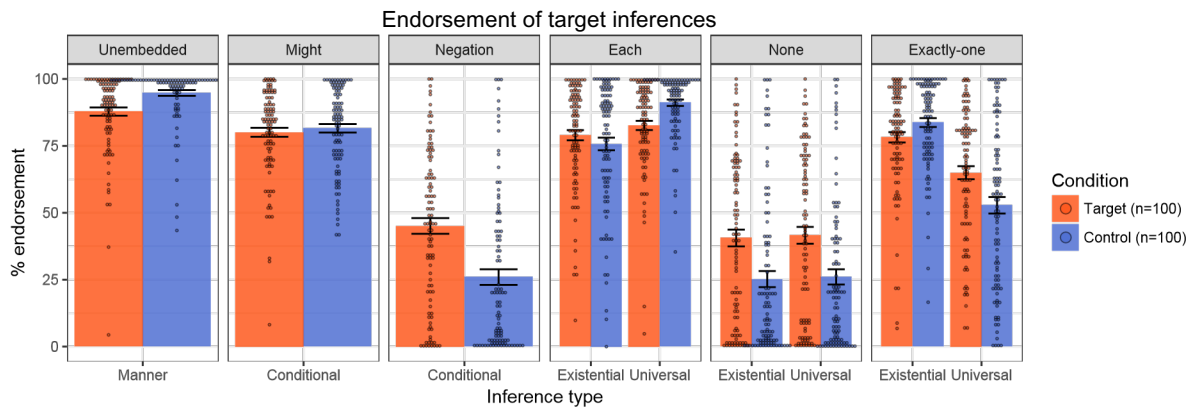
On each trial, participants listened to a pre-recorded audio clip of a sentence like (3) or (4), and used a slider bar to indicate how strongly they felt the spoken sentence gave rise to the inference indicated in text below the audioclip (Figure 1). A control condition was included, where the sound effects were explicitly supported by the verbal assertion, e.g., “The businesswoman will travel to the board meeting **like this** – PLANE.” (If an inference was endorsed more strongly for the target than for the ‘like this’ control, we could be reassured that the inference was indeed contributed specifically by the sound effect.) 200 MTurk participants were randomly assigned to the target or control condition. Fig. 2 shows endorsement of the target inferences in positive environments and *projection* of the inferences in negative environments; linear regression models revealed that in quantificational environments, the inferences were endorsed more strongly for targets than for controls. The results remarkably resemble those reported for cospeech gestures,<sup>[7]</sup> and suggest that the ‘gestural’ projection pattern encompasses a broader variety of co-speech content.<sup>[8]</sup>



**Figure 1:** Screenshot of an “each” trial. The sentence produced by the speaker was “Each of these three students will [step out of the classroom] TOILET-FLUSH.”



**Figure 2:** % endorsement of target inferences in six different linguistic environments. Error bars represent standard error of the mean across participants. Dots represent individual participants’ mean endorsement.



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## Challenges in the study of *stress* - the case of Drehu

Catalina Torres

This presentation discusses methodological difficulties fieldworkers may experience when investigating phonological *stress* in under-described languages and provides suggestions on how to overcome them. For this purpose, the example of the language Drehu is taken. Incongruencies between previous impressionistic descriptions and a current phonetic analysis of prominence marking will be presented. It will be shown that the final syllable of the word is prominently marked through means of duration and the modulation of fundamental frequency (F0). Based on the ongoing work on Drehu as well as considerations reported in the study of *stress* (Röttger & Gordon, 2017) methodological biases that can influence fieldworkers will be discussed. It is argued that detailed instrumental studies are necessary in order to allow for an acoustic description of prominence and word prosody (or stress).

Drehu represents an interesting case in the study of word prosody since early records report a typologically rather unusual pattern within Austronesian languages. The first impressionistic descriptions claim there is word initial stress (Lenormand, 1954; Tryon, 1968). In a survey on word accentual patterns in the Austronesian language family, 117 languages were evaluated, and it was found that in 89% of the cases, the stress domain is located at the right edge of the word. Further, it was found that in 75% stress is restricted to the penultimate or ultimate syllable (van der Hulst, Goedemans, & van Zanten, 2010). Initial stress was found in only four languages of the data set, all of which belong to the Oceanic subgroup, two of them are from the Loyalty Islands, one of them is Drehu. Word initial stress is the only word prosodic system with a stress domain that has not been identified at the right edge of the word. However, acoustic analyses on Drehu show that there is a preference to prominently mark that last syllable of the word.

The current analysis on Drehu word prosody is based on two experimental studies carried out during fieldwork in Lifou and is couched within the autosegmental metrical approach (Ladd, 2008). The speech materials of these experiments were designed to allow for teasing apart word level stress from phrase level prominence and investigate acoustic correlates. Experiment I examined how nouns in informational focus were realised, using a word insertion task, in three different positions of carrier phrases. Four adult female speakers were recorded for this purpose. Experiment II aimed to test whether nouns embedded in fully fledged sentences, in non-focal condition, would either show evidence for word-initial or final prominence. The study used token words placed phrase medially in two positions, and which were preceded by at least one monosyllabic function word. Twelve adolescent speakers were recorded.

In both experiments sound files were manually transcribed, and force aligned in WebMAUS, using a language independent grapheme to phoneme conversion based on SAMPA (Reichel, 2012). Phoneme alignment was manually corrected, and all target tokens were labelled in Praat (Boersma & Weenink, 2019). A hierarchical data base was constructed using the EMU Speech Database Management System. Intonational labels, acoustic, and durational measurements were queried using the emuR package in R (R Core Team 2018; Winkelmann, Harrington & Jänsch, 2017). Results of Experiment I show that non-utterance-final tokens generally start with a low tone, and that there is an F0 rising movement towards the right edge. The tonal patterns LH, LHL<sub>1</sub>H<sub>1</sub>, LL<sub>1</sub>H, and HLH<sub>1</sub> were found in 98% of the data. Experiment II shows that despite the manipulation of position and focus the initial low and final high tone are predominantly used on nouns. Additionally, final syllable lengthening and significant pre-pausal pitch expansion are found.

From these findings it is established that previous descriptions are incongruent with the current data analysis. Due to the lack of acoustic evidence for word initial stress, it is proposed that in Drehu there is phrasal prominence which is marked on the right edge. Data from an under-described language like Drehu contributes to the understanding of typological variation found in the intonational phonology of the languages of the world. This study also provides evidence for a phrasal prominence marking in the language which hadn't been reported before.

### Example of stimuli used in Experiment II:

(Token words are in bold)

- (1) Ame la [**maamu**], tre, hna sile hnei itre qatr.

PRS.1 ART bogeyman PRS.2 PST invent A PL old

‘The bogeyman was invented by the old’

- (2) Ame la satana me la [**maamu**], tre, hna sile hnei itre qatr.

PRS.1 ART devil and ART bogeyman PRS.2 PST invent A PL old

‘The devil and the bogeyman were invented by the old’

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## **In search of acoustic cues to foreign-accented second language (L2) Japanese: A crosssectional study**

Kimiko Tsukada, Kaori Idemaru and Misaki Kato

The current study examined acoustic sources of foreign accent in second language (L2) Japanese produced by American learners across different instructional levels and learning backgrounds. Our prior work has demonstrated that pitch accent, vowel duration, and spectral information of the vowel [e] influence perceived foreign accent in the Japanese sentences produced by intermediate learners, with pitch accent exerting the strongest influence. Building on this prior finding, we addressed two research questions: 1) What acoustic features predict perception of foreign accent in L2 Japanese? 2) Do the predictors change across learners of different proficiency levels and learning environments?

We recruited four groups of speakers: American learners of Japanese at the beginning level (firstyear (1Y),  $n = 10$ ), at the intermediate level (second- and fourth-year (2Y4Y),  $n = 21$ ), American learners who have had early exposure to Japanese (heritage speaker (HS),  $n = 10$ ), native Japanese speakers (NS,  $n = 10$ ). The speakers produced six short Japanese sentences in a delayed repetition task (e.g., Flege, Munro & MacKay, 1995). The production data were acoustically analyzed for segmental (e.g., F1/F2 of vowels, closure and VOT duration of voiceless stops) and prosodic (e.g., Varco $\Delta$ V, V%, Varco $\Delta$ C) features (e.g., Ramus, Nespor & Mehler, 2000; White & Mattys, 2007).

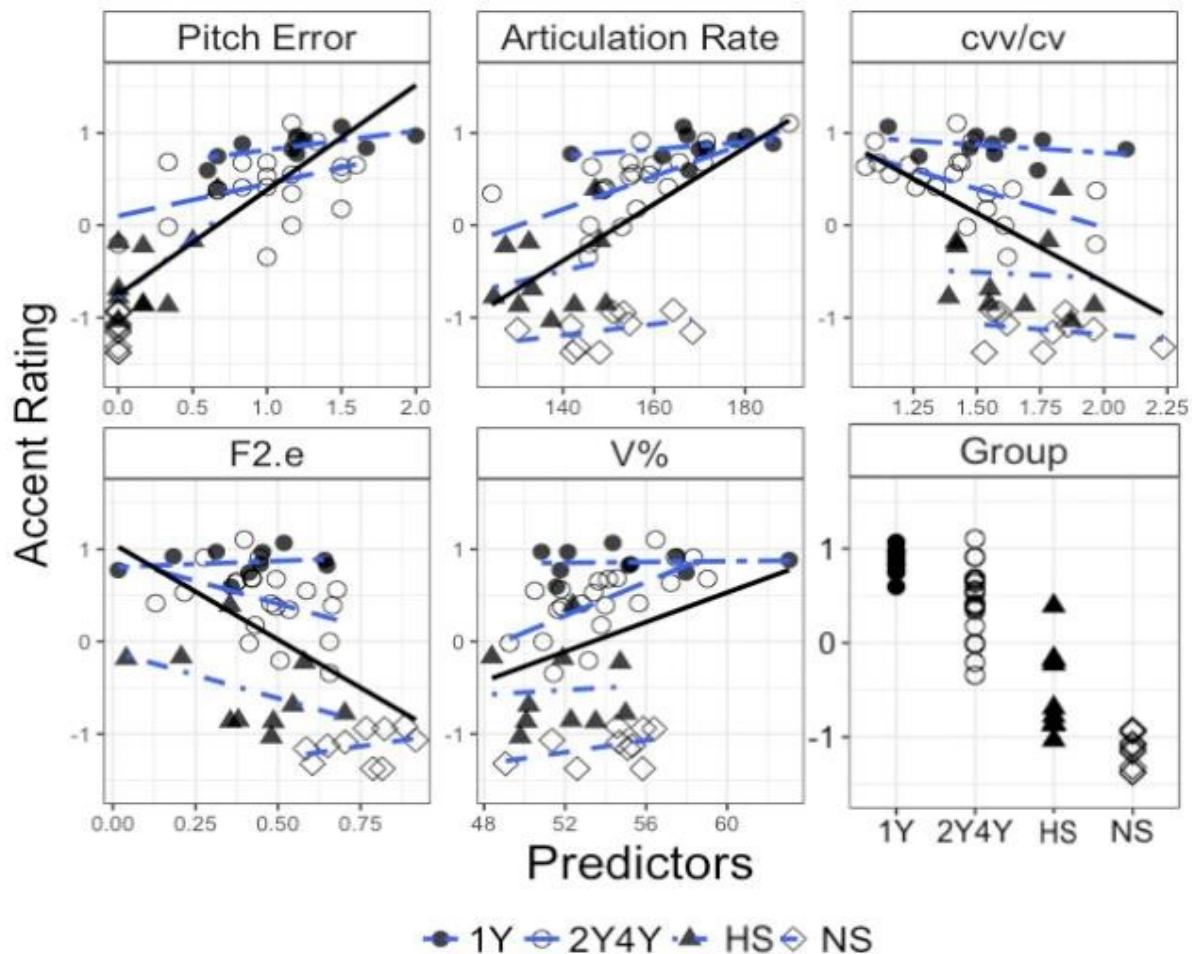
Twenty-three native Japanese listeners rated each of the six utterances produced by 41 speakers for a degree of foreign accent by moving a slider bar on a Visual Analogue Scale on a computer screen (Urberg-Carlson, Munson & Kaiser, 2009). The ratings were z-score normalized for each rater.

We then examined the relative contribution of the above-mentioned acoustic variables to perceived accentedness by 23 native Japanese listeners in an exploratory fashion, using Random forests (e.g., Breiman, 2001; Tagliamonte & Baayen, 2012). Variable importance was computed via conditional permutation scheme, a method that accounts better for collinearity (Strobl, Malley & Tutz, 2009).

Based on the above exploratory analysis, five acoustic variables were selected: Pitch-accent error, articulation rate, CVV/CV, F2 in [e], and V%. The effects of these variables on accentedness ratings were tested using hierarchical linear regression modelling. Figure 1 illustrates the correlations between these predictors (five acoustic variables and speaker groups) and accent ratings, with each data point representing a speaker. It is clear that the accent ratings differed by speaker groups (right bottom panel): 1Y group was perceived to be the most accented, followed by 2Y4Y, HS, and NS groups. Group factors explained a large amount of variability in the accent ratings ( $R^2 = .83$ ), suggesting that native Japanese listeners were sensitive to the differences in speakers' characteristics (i.e., instructional levels and learning backgrounds). All variables significantly improved the model fit ( $p < .05$ ) except for F2 in [e].

Overall, we observed that pitch-accent errors most strongly affected the degree of perceived foreign accents when speaker groups were pooled together. Vowel duration measure (CVV/CV) and articulation rate were also important, suggesting the strong influence of prosodic features on perceived accents of L2 Japanese in general. In addition to these general patterns, the relative importance of acoustic variables differed across groups. Prosodic variables influenced perceived accents of 1Y and 2Y4Y groups more than segmental variables, whereas the pattern was the opposite for HS group. It is possible that learning Japanese prosodic features is inherently more challenging than learning segmentals for native English learners.

These results shed light on issues related to development of L2 speech and have implications for language teaching. We suggest that different acoustic features may need to be targeted in pronunciation instructions for learners with different backgrounds.



**Figure 1:** Correlations between the five acoustic variables and accent ratings. Each data point represents a speaker. Accent ratings by speaker groups are also shown.

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## Case-marking and nominal structure in Pitjantjatjara

Sasha Wilmoth and Rachel Nordlinger

The Pitjantjatjara/Yankunytjatjara case-marking system has been described as “[presenting] a complex picture, not so much in the sheer number of markers ... but in the way that morphological, phonological and semantic factors interact to determine their distribution” (Goddard, 1985, p. 24). In this paper we show how the case-marking system provides evidence for an articulated NP structure, and present a unified syntactic analysis of case-marking and nominal structure in Pitjantjatjara within the framework of Lexical-Functional Grammar (Bresnan, Ausdeh, Toivonen, & Wechsler, 2016).

Pitjantjatjara has 8 cases: three core cases (ergative, nominative, accusative), locative, genitive/purposive, ablative, allative, and perlative. Case marking is generally found on the right edge of the phrase as in examples (1) and (2), albeit with different forms and patterns of syncretism between pronouns, proper nouns and other nominals. Generic-specific constructions (3) and part-whole constructions (4) also take case marking on the right edge, showing them to belong to a single NP. This contrasts with inclusory constructions (5), coordinated constructions (6), and inalienable possession (7), which take case marking on the edge of each nominal constituent. Thus, in Pitjantjatjara we see clear structural differences between types of juxtaposed nominals (*contra* the general claims of Sadler and Nordlinger (2010)).

However, ablative, allative, and perlative case markers have a different pattern to the other cases since these appear on the right edge of inclusory and coordinated constructions also (see (8) and (9)). Furthermore, while they attach directly to common nouns like the other case markers, they require the locative form of pronouns or proper nouns (10). Interestingly, the locative form of the pronoun or proper noun is required on all nominals within the scope of the case marker, even if it is not the one to which the case marker is attached (11). The locative case-marker on proper nouns and pronouns has previously been described as a stem-formative, and as a ‘portmanteau’ morpheme, “indicating name-status as well as case” on proper nouns (Goddard, 1985, p. 25).

In this paper we provide an analysis of these different case marking patterns and unify it with a syntactic account of NP constituents in Pitjantjatjara that can account for the different construction types found in the data. Our analysis is couched within the LFG framework, and expands on previous work on case and NP structure in LFG (e.g. Butt & King, 2004; Sadler & Nordlinger, 2010; Simpson, 1991). This analysis of Pitjantjatjara contributes to our understanding of NP structure in Australian languages more generally and supports recent typological work arguing that there is greater syntactic complexity within NPs in Australian languages than has previously been assumed (Louagie, 2017).

## Examples

- (1) *kungka*            *kulupa-ngku*  
girl                little-ERG
- (2) *Sally-lu*  
Sally-ERG
- (3) *punu itara-ngka*  
tree    bloodwood-LOC
- (4) *punu iwiri-ngka*  
tree    root-LOC
- (5) *palu-nya*        *pula-nya*  
3SG-ACC        3DU-ACC
- (6) *katja-ngku*    *munu untalpa-ngku*  
son-ERG        and    daughter-ERG
- (7) *tjulpu pulka-ngka*    *tjaa-ngka*  
bird    big-LOC    mouth-LOC
- (8) *Mimili-la*        *Intalka-la*        *tjana-la=kutu*  
Mimili-LOC    Indulkana-LOC    3PL-LOC=ALL  
'to Mimili, Indulkana, and other places' (Goddard, 1985, p. 52)
- (9) *tjilpi*            *munu pampa=kutu*  
old.man        and    old.woman=ALL
- (10) *palu-la=kutu*  
3SG-LOC=ALL
- (11) *Mary-la*        *munu Johnny-la=kutu*  
Mary-LOC        and    Johnny-LOC=ALL

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## Control Constructions in Sports News

Abhinan WONGKITTIPORN & Nirada CHITRAKARA

This study observes how different forms of control constructions, referring to *to*- infinitives, null infinitives and *-ing* infinitives forms, function in British and American sports news articles categorized as the semantic interpretations of non-factuality and factuality (Wongkittiporn & Chitrakara 2018). The non-factual events refer to unreal situations, including the desire, advice and readiness in sports register. The factuality, referring to actually happened events, is classified into development, signing, achievement and habit. As hypothesized, *to*- infinitives are used over the others in sports news articles. Previous studies interpreted *to*- infinitives as imaginative and irrealis events (Wiezbizka 1989; Wurmbrand 2014; Ibrahim 2019), whereas *-ing* infinitives and null infinitives denote simultaneity (Duffley, 2000, 2003). The sample of this study is the sport news articles from The Daily Telegraph, for the British sports news articles and USA Today, for the American sport news articles. A total amount of 100,000 words was derived from the data. The data analysis is divided into syntactic functions, including the subject, VP complements, adjunct and Advp and PP complements. The findings show that *to*- infinitives occur the most, followed by *-ing* infinitives and null infinitives. Each semantic interpretation shows the different stylistics of control constructions in sports news articles. While *to*- infinitives interpreted as imaginative are only used in the classification of non-factuality, all forms of control constructions are used in factual events where *to*- infinitives are interpreted as subsequent. The American sports news articles preferred only certain expression in non-factuality, such as *want to* and *be ready to*. British sports news articles show the synonyms in non-factuality, such as *would like to*, *would love to*, *hope to*, *need to*, and *excited to*. The stylistics of null infinitives in both datasets only appear in the factuality of development as in *help develop* and *help transform*. The factuality of *-ing* infinitives is used often in the interpretation of achievement as in [...] *Carolina lost its second straight game, missing a change to win three of four* and habit *I don't even like considering myself a celebrity*.

Keywords *syntax; control constructions: semantics; factuality; verbs; genre; sports news; written text*

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