The semantic evolution of the past irrealis in non-Pama-Nyungan languages

Modelling language change without access to written records

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FoDS 6: Formal Diachronic Semantics 6

6-7. September 2021

Introduction

- **Underlying theoretical problem we will here address:**

  How can we possibly determine semantic evolution in languages without written records ?

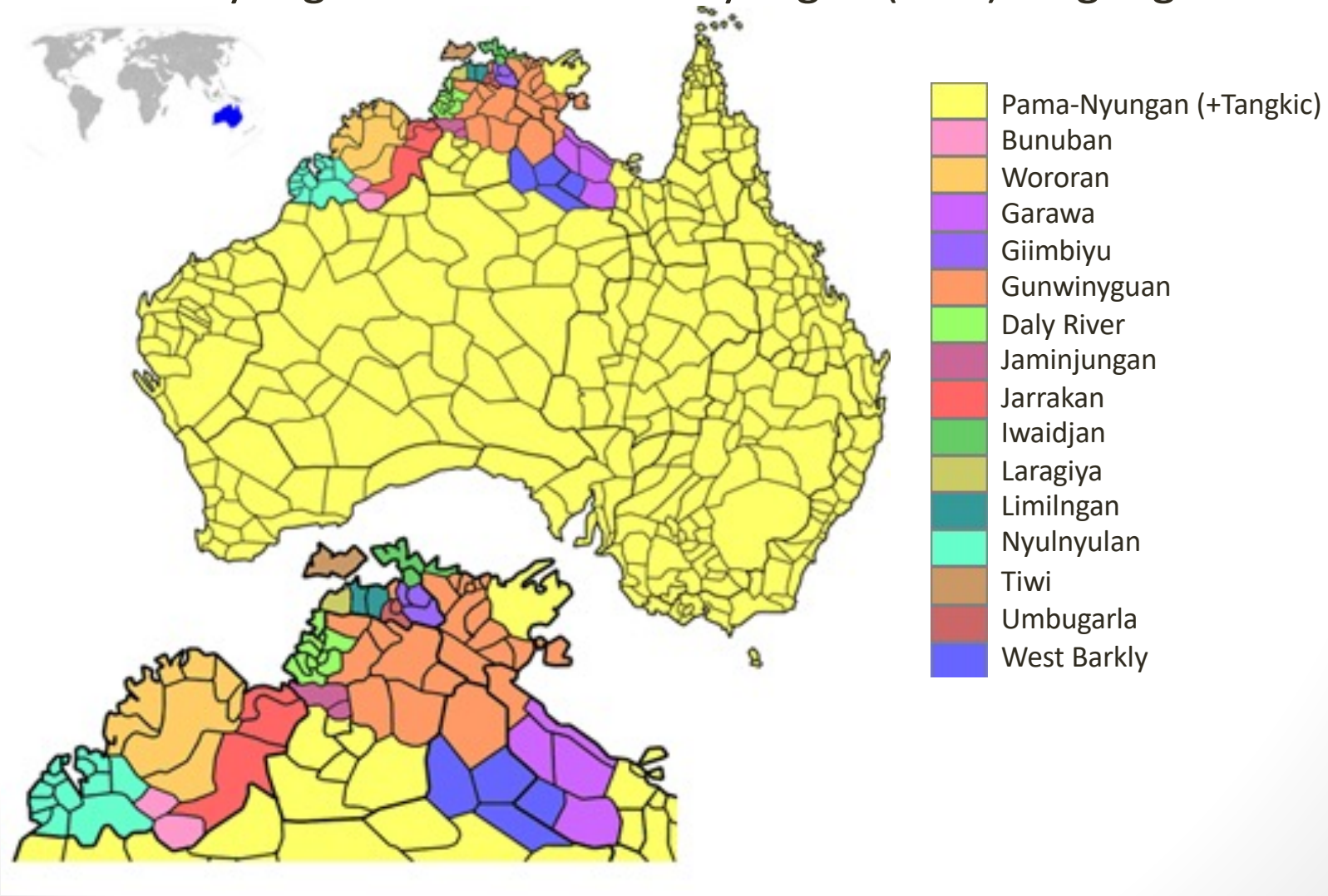
- **Methodological answer:** we can formulate diachronic semantic hypotheses, and their formal analysis by
  - Exploiting linguistic reconstruction in the phylum
  - Reconstructing development paths from synchronic comparison of form/meaning pairings

- **Purpose of paper :** answer this question through a case study
  - We will reformulate it as an empirically grounded question

    How can we account for the evolution of irrealis inflections in Northern Australian languages, in the absence of written records?

Introduction

- Pama-Nyungan vs. non-Pama-Nyungan (nPN) languages



Introduction: polysemy of the nPN irrealis

- Past irrealis inflections in nPN languages can typically express a subset of the following, with or with support material

1. Hypothetical past irrealis + past counterfactual ('Should he have V-ed/had he V-ed/if he had V-ed,…')
2. Unrealized wishes ('I wish you had V-ed')
3. Admonitives/reproachatives: 'you should have V-ed' (but you didn't P)
4. (Past) aversives: 'I feared he might P/Lest he should P'
5. Mistaken thought: 'he (wrongly) thought that P'
6. Past (unrealized epistemic) 'he might have V-ed'
7. Past (unrealized) capacity ('he could have V-ed')
8. **Past volitional/imminent – proximative past ('he wanted to P', 'he was going to P')**
9. **Inactuality entailments (Caudal 2022b, forthcoming) 'he wasn't able to V'**
10. ***Bona fide* avertives/frustratives: 'he V-ed in vain', 'he nearly V-ed ' (but didn't)**
11. **Negative past events**

- Our talk will focus on readings in green

Introduction

- Important notion: so-called avertive structures (Kuteva 1998)
  - Express thwarted expectations/desires
  - Events which should have happened/nearly happened but didn't
  - **Discursive structures comprising overt negative element**

- Special inflections in numerous languages, but not 'Standard Average European', so underdescribed/modelled question
  - Generally TA-M composite inflection: modal infl. + past marking
  - Cf. Amazonian (Overall 2017) and Australian languages (Caudal 2022a)

(1)	*ayana-wu-ni*	*ba*	*karlu*	(Iwaidja)
	1sg>3pl.PCF-hit-PCF	but	NEG	
	'I nearly hit them+I was going/tried/wanted to hit them, but I didn't.'			

Introduction

- Can be rendered in SAE languages using e.g. past volitional, past negative capacity, past proximative…
  - Avertive markers often derive from modal verbs/inflections

(2) He wanted to leave/was about to leave, but didn't.
(3) He wasn't able to /couldn't leave. (= he tried, and failed)

- **Relates to well-known interaction between perfective tenses and modals**
  - So-called 'actuality entailments' (14) (Bhatt 1999, Hacquard 2006…)
  - (13) is the negative twin of (14); Caudal (2022b) = 'inactuality entailment'
  - (14) is in fact a good approximation of e.g. Australian inflectional avertives
  - **Caudal (2022a): avertive meanings/'inactuality entailments' are as referentially existent as 'actuality entailments'**
  - Describe negative events … AND negative events are referential (Bernard & Champollion 2018)

(4)

Il	put	partir.	(French)
He	be.able-PFV.3sg	leave-INF.	

'He was able to leave'. (He managed to leave)

Introduction

- **Narrowig down our research question in the context of Northern-Australian languages**

  What are the parameters governing the evolution of the 'irrealis avertive cluster', especially found in Northern Australian, non-Pama-Nyungan languages?

  - Can we reconstructed likely development paths & a formal analysis from diachronic hypotheses + areal typology?

    - ⚠ Spoiler alert : yes to a certain degree

    - Results in a tentative but informed diachronic formal treatment of the polysemy of irrealis inflections in nPN languages

Mapping out our talk

1. Reconstructing Australian TAM inflectional patterns
    1. Reconstructing of TAM inflections in non-Pama-Nyungan languages
    2. Reconstructing proto-Iwaidjan TAM inflections

2. Synchronic comparison and development paths
    1. Context: a pan-Australian areal typological database for TAM inflections
    2. Presenting the Northern Australian 'irrealis avertive cluster'
    3. Analysis of sample & putative development paths

3. Towards a formal diachronic analysis
    1. A logic for negative events (Bernard & Champollion 2018)
    2. Modelling avertive readings
    3. Modelling negative past events

4. Concluding remarks

Section 1:
Reconstructing Australian TAM inflectional patterns

Reconstructing nPN languages

Reconstruction background for this paper: Harvey & Mailhammer (forthc.)

- Sample of ca. 70 non-Pama-Nyungan languages
  - Incorporating Proto-Pama-Nyungan reconstructions
- Sound correspondences
- Reconstruction of lexical items and morphology
  - 22 lexical cognate sets
  - Verbal and nominal morphology

From verbs/particles to affixes

- 'Grammaticalization cycles' for TAM inflections (Schultze-Berndt 2003) :

$\text{Word}_{\text{Lexical}}$>$\text{clitic}_{\text{Lexico-grammatical}}$>$\text{affix}_{\text{Grammatical}}$

Amurdak:

(5) *nu-rlu* vs. *aman-mun-kunurlu*
2sg-body 1sg.fut-kill-2sg.O
'my body' 'I'll kill you.'

Iwaidja, loss of transitive prefix:

(6) *kunman-bun*
1sg>2sg.fut-kill-fut

Particle/auxiliary > clitic > affix

(7) pre-PIw **nga-bana wani* > PIw **nga-wana=wani* > Iw ngana-wani
1sg-fut sit
'I'll sit.'

TAM in the Proto-Australian system

- Proto-Australian (Harvey & Mailhammer forthc.):
  - T/M suffixes at the verb stem
  - preverbal pronominal clitic complex with modal proclitics derived probably from adverbs
    - e.g. PAu **ba*(=) root modal, **la*- possibility modal, **nga*- 1sg.
  - It is likely that the TA/M suffixes interacted with the preverbal clitic complex
    - e.g. PAu *la- possibility modal combined with evitative suffix or past tense suffix

From verbs/particles to affixes

- 'Overlaying' of prefixation + suffixation
  - > Gives rises to discontinous inflections (so-called distributed exponence, Carroll 2016)
  - Iwaidja

(8)	*ri-wu-ng*	vs.	*ri-wu-0*
	3sg.m.ant>3sg-hit-ant		3sg.m.opt>3sg-hit-opt
	'he hit him'		'he might hit him'
(9)	nani-wu-ni	vs.	nani-wu
	3sg.m.rmod-hit-rmod		3sg.m.rmod-hit-rmod
	'he should have hit him'		'he can hit him'

Case study: Irrealis suffixes in Iwaidjan

- The irrealis (= modal) suffixes of Iwaidja and Mawng are reflexes of two Proto-Australian modal categories
  - e.g. zero root-modal suffixed element in Iwaidja (e.g. *kanalda-0* 'eat!') going back to a category with imperative readings
  - e.g. Mawng Irrealis I suffixes and Iwaidja optative suffixed elements reflext PAu evitative catgegory

- The modal elements in the portmanteau prefixes can mostly be reconstructed to Proto-Australian preverbal proclitics.
  - exception: the RMOD/PSTCFC prefix part in Iwaidja
  - and it is to be expected that some forms are Iwaidjan innovations

Formal and semantic continuity

- Some semantic changes, but also some clear semantic continuity, in cognate TAM exponents in Iwaidja
  - Suffixes: OPT/CMOD (nearly identical) in Iwaidja and IRR1 in Mawng still involved in paradigms expressing evitatives (among other readings), but the PSTCFC/CMOD suffix part cannot associated with this meaning
  - Prefixes: Iwajda and Mawng both have **bana-* as a future marker; Iwaidja also has a second modal prefix (*ana-*) of unclear origin

Observations: from PST.IRR to PR.IRR

- Mawng offers interesting evidence of TAM fusion in one position; two IRR suffixes: IRR1 (PR only) and IRR2 (PR+PST)
  - IRR2 obviously related to Iwaidja PCF suffix (PST.IRR)
  - IRR1 obviously related to Iwaidja OPT suffix (PR.IRR)

- 'Temporal shift' accounts for PR+PST value of Mawng IRR2:
  - Derived from former PST.IRR suffix
  - Common semantic change: PST dyn modal > PST.PR dyn modal
    - PST.IRR > PR.IRR+PST.IRR : bridging context à la Heine (2003)
    - = IRR2 came to have PR.IRR meanings on top of older PST.IRR meanings
  - Attested in other nPN languages (cf. Bininj Gun Wok IRR)
  - See also Romance conditionals: from PST.IRR to PR.IRR+PST.IRR

Observations: from *sit/hold* to IMPF/IRR

- Recurrent reconstructions of IMPF/IRR < *sit*/*hold*
  - Suggests that IRR are IMPF forms

- Proto-Maningrida 'sit' **ni* / **nu* > *-rni* likely source of past and past irrealis suffix across many languages (including some PN languages)

- *ma* 'take/hold' as widespead source for CAUS conjugations (Dixon 2002:204) – but also for imperfective & irrealis suffixes (in e.g. Dyirbalic, Daly…)
  - Nyawaygi (Dyirbalic, PN): irrealis *-lma*, *-yma*, *-ɠima*, and *ngɠima* possibly derived from *-ma* (Dixon 1983:478)
  - Warrgamay (Dyirbalic, PN): *-ma* irrealis (Dixon 1981, 2002:214) too?
  - Western Desert languages (PN): *–ma* imperfective/irrealis (Bednall 2011)
  - Daly languages (nPN) : *-ma* imperfective affix in MalakMalak (Cahir 2006:30) , Kamu (Harvey 1989:92, 98)

Section 2:
Synchronic comparison

Recurrent synchronic patterns

- Difficult to draw substantial semantic conclusions from reconstruction hypotheses alone – mostly a form-driven endeavour
  - Reconstruction will here contribute to groundind results of *comparative synchronic, areal-typological work*

- Synchronic comparison is sufficient to identify likely evolution paths given a large language sample of related languages
  - Even more efficacious than non-areal, typological observations about development paths à la Bybee & Pagliuca (1994) / Heine & Kuteva (2002)
  - …And can be complemented by the latter kind of study
  - …As well as reconstruction hypotheses

- **Method:** identification of recurrent synchronic patterns in form/meaning pairings in a large language sample

Recurrent synchronic patterns

- **Specifically recurrent associations between meanings** (*qua* e.g., 'overt' semantic composition / semantic classification / emphasis) **in composite TAM expressions**
  - Can help identify likely semantic development paths as revolving around
    - shared cognate items (cf. e.g. *–ma* or **ni/*nu*) (rare beyond family level)
    - a limited set of cognitive/semantic primitives (common)
  - Regardless of whether or not they are cognate, semantically similar forms with a similar form/meaning make up will tend to evolve in a similar way
- E.g. *purposive-volitional > avertive* (Anindilyakwa, Bednall 2019: 374)

(10) Anindilyakwa (Gn): PST.IRR=PURP (=*yedha*) 'wanted to'
(11) Wubuy (Gn): PST.IRRP-PURP (-*yungguyung*) 'was going/ wanted to')
(12) Mparntwe Arr. (Ar) PURP[IRR] -*tyeke* 'intended to'

Recurrent synchronic patterns

- **An example: *irrealis-V-IMPF* pattern found across many language families**
  - Cf. Murrinh-Patha past imperfective exponent *–dha* (Nordlinger & Caudal 2012) combines with past irrealis CStem to form past irrealis paradigm OR realis CStem to form past imperfective paradigm

(13) *ngay-yu* ***ngardi-parl****-dha* (Murrinh-Patha)
1SG-DM 1SGS.BE(4).PIMP-break-PIMP
'I was getting firewood.' (N&C 2012:76)

(14) *ku* *beg mertthaka* (Murrinh-Patha)
ku beg me-art-dha-ka
CLF:ANIM bag 1SGS.SNATCH(9).PSTIRR-get-PIMP-FOC
'I should have brought my bag.' (N&C 2012:105)

- Reconstruction and comparison support one another
  - Reconstruction: frequent IMPF>IRR cognates
  - Comparison: IMPF-V-IRR patterns synchronically widespread
  - **Confirms that imperfective operator is re-entrant in past irrealis forms**

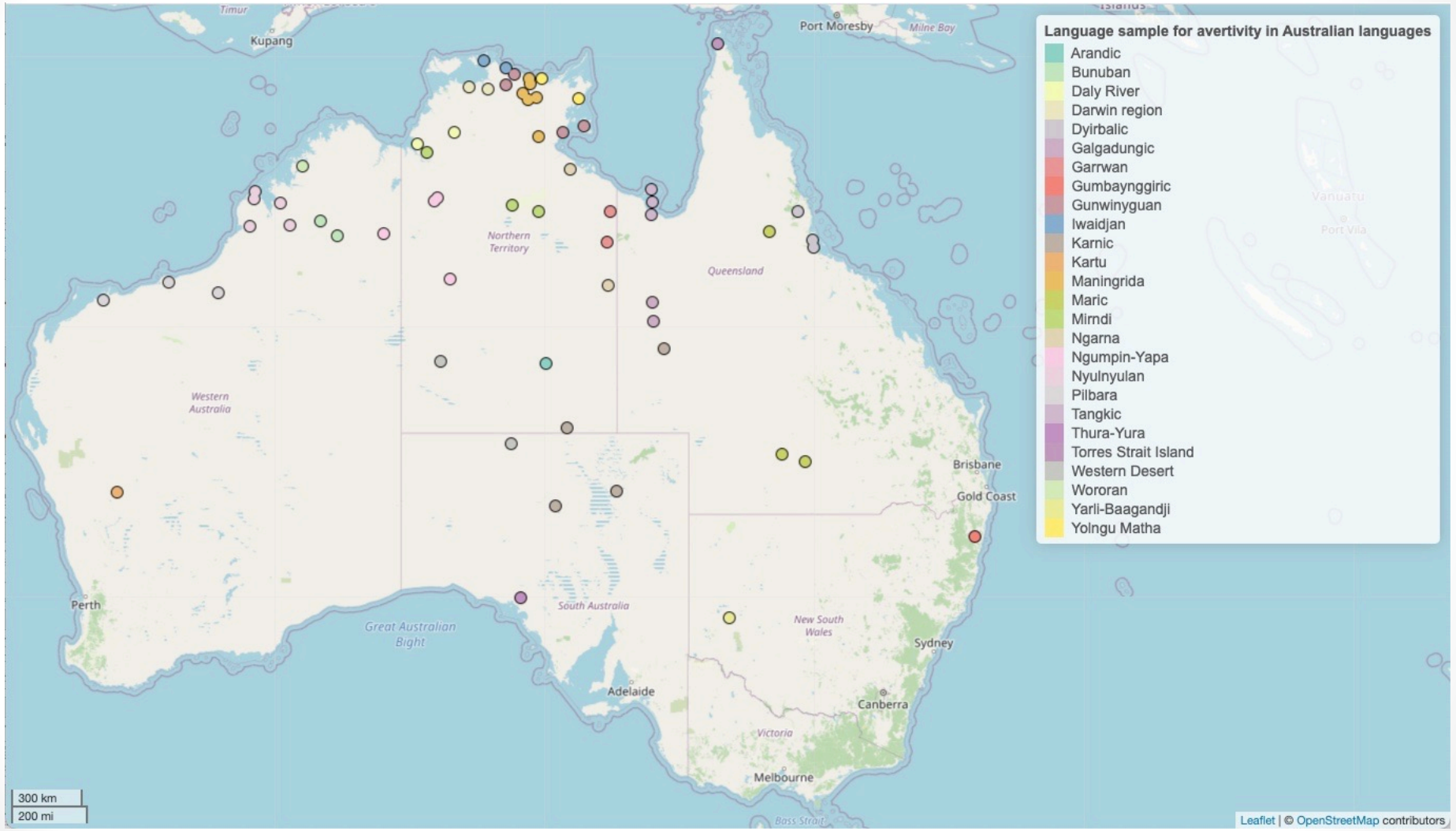
Recurrent synchronic patterns

- Identifying cognates + 'short distance' evolution can be straightforward
- Recent innovations / segments of development paths
  - *yimarne(k)* CNTFACT particle in Kunbarlang (Gn) (Kapitonov 2019)
  - *yima(r)ne(k)/yimankek* CNTFACT particle in Bininj Gun-Wok (Gn) (Evans 2003)
  - Cognate with+derive from similative *yiman(*BNG*) /yimarne(k) (*Kun*)* 'like/close to' (+comparative)
- ….AND exists recurrent semantic pattern *similative>irrealis* (Caudal 2022), illustrating a pervasive semantic path
- Kayardild (PN) *maraka* CNTFACT and similative (Evans 1995: 652, 692, 693)
- Nakkara (Maningrida) *karaddiabb(a)* < *djabba* 'like', (Eather 2011: 340–343)
- Pitta-Pitta (PN) *wiri* avertive and similative (Blake 1979b: 220)
- + General typology : development path also recurrent outside of Australia cf. similative-derived ('like') avertive in Tswana (Niger-Congo) (Creissels et al. 2007: 106)

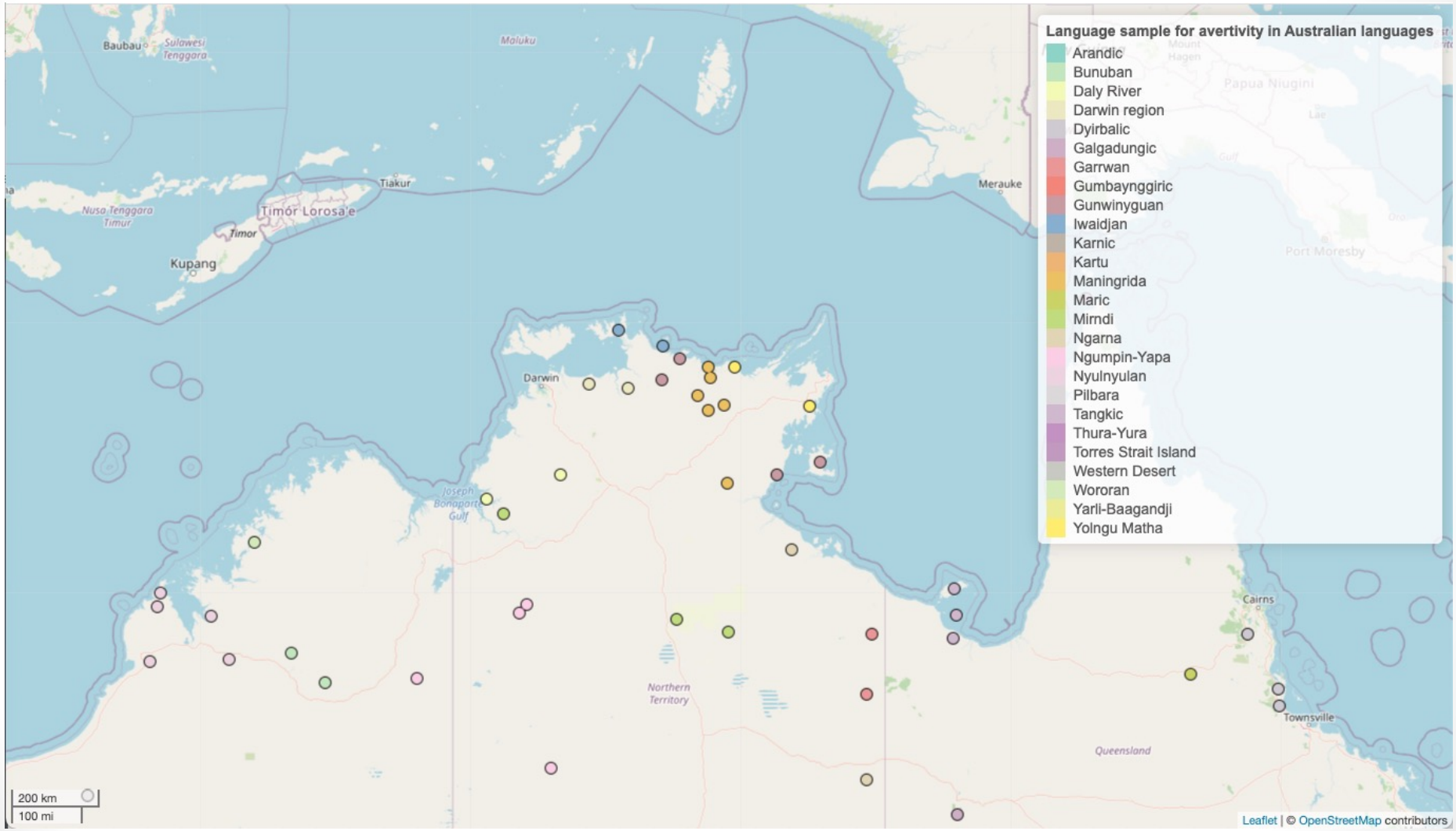
Quantitative areal typology method

- Grammar mining on 63+ Australian languages
  - 26 Australian language families
  - 8 non-Pama-Nyungan language families
    (Iwaidjan, Gunwinyguan, Mirndi, Worrorran, Maningrida, Gaagudju, Darwin Region, Daly River, Nyulnyulan)
  - 16 Pama-Nyungan language families
    (Western Desert, Arandic, Ngumin-Yapa, Pilbara, Tangkic, Yolngu Matha, Ngarna, Maric, Karnic, Bunuban, Gumbaynggiric, Galgadungic, Kartu, Dyirbalic, Yarli-Baagandi, Thura-Yura)
  - + Garrwan, Western Torres Strait Island
  - …ongoing work; see Caudal (2022) for analysis on sub-sample (17 languages)
- Irrealis-avertive cluster exists also among PN languages – though somewhat rare

R – *lingtypology* map



R – *lingtypology* map



Development paths we want to clarify

1. ‘Past irrealis-avertive cluster’ – how does it connect…
   1. Proximative/volitional modal meanings
   2. Avertive meanings
   3. ~~Other past irrealis meanings~~ > too much lexical variation here…

2. Irrealist past + NEG semantics – how does it connect…
   1. Negative past event readings
   2. Negative deontic = admonitives

Negative past events

- Negative past events often conveyed - sometimes exclusively so – by past inflection also conveying irrealis & avertivity
  - Extremely widespread phenomenon among nPN languages
  - **Implicates** 'frustated volition' (agentive) / 'expectation' (non-agentive) – i.e. has avertive flavour
  - **Evolution must depend on *irrealis>avertive* ⇨ will be our entry point**

(15) Korla ngayddjarrakindjama ngardawabba.
korla nga-y+ddjarraki-ndja-ma ngardawabba
NEG 1M(A)>3M(O)-IRR1+look.for-IRR1 –NEG.PC/T alone
'I couldn't find it by myself.' (Eather 1990:363) (Nakkara)
(…but I tried/wanted to)

(16) Korla ngaybburdama
korla nga-y-bburda-ma
NEG 1M(A)>3M(O)-IRR+hit –NEG.PC/T
'I didn't hit it'. (Eather 1990:363) (Nakkara)
(…but I should have hit it/I tried to hit it/I could have hit it)

Avertive patterns in the sample

- Inflectional past irrealis most frequent avertive pattern
  - Iwaidja has extended periphrastic system:
    - *angkad* (+OPT), *maju* (+ANT/IRR/OPT), *wurrkany* (+FUT/IRR), *wartuj* (+FUT), *mana* (+ANT/IRR/OPT)

(17) Wurrkany yanara karlu artirra-n.
FRUST 3sg.DIST.FUT-go-FUT NEG 3sg.ANT-come.back.ANT
'He was going to go, but he came back.' (Iwaidja Dictionary)

(18) Maju birdirlkbu-ny. Nganduka a-bi-ny?
WANT 3sg.ANT-struggle.fre-ANT INT3sg.ANT-do-ANT ?
'He tried to struggle free but in vain.' (Iwaidja Dictionary)

(19) Maju an-irrka-nyi, lda a-wardunyma-n
WANT 2sg.PCF-spear-PCF CONJ 3sg.ANT-miss-ANT
'You tried to spear [it], but you missed.' (Iwaidja Dictionary)

- Periphrastic avertives (MOD+PST) found in several language families (Iwaidjan, Gunwinguan, Pilbara
- **Illustrate recursivity of morphologization cycle (*particle*>clitic>affix)**

Modal avertives (i): volition/expectation

- Volitional/proximative FCs more abundant; 'wanted, was about'
  - Case of most (past) irrealis/potential in non-PN languages

(20) bariyoondirni marlami bithami (Goonyiandi) (Nyulnyulan)
he:might:have:climbed not he:got:stiff
'He tried to climb up, but couldn't. He was too stiff.' (McGregor 1990: 533)

(21) Ja karrkpin ja jalakaraj ing-errka-nyi.
MA big MA fishing.spear 3FE/3MA-spear-I2
'She tried to spear it with a big spear' (Mawng) (Singer 2006:63)

(22) Nungka yimankek Ø -dulubu-yi bulikki, (Bininj-Gun Wok)
he CTRFAC 3P-shoot-IRR bullock
dja burrkyak-ni. (Evans 2003:374)
but nothing-PI
'He tried to shoot the bullock, but nothing'

(23) yimarnek bi-rrulubom la Ø-djal-durnd-I. (Bininj-Gun Wok)
CTRFAC 3/3hP-hit.by.throwingpp CONJ 3P-just-return-PP
'He wanted to kill him by throwing a stick, but he just came back (without doing it).' (ibid., p. 694)

Modal avertives (i): volition/expectation

- Also attested among Pama-Nyungan language families, e.g. Pilbara, Ngumpin Yapa, Tangkic…:

(27) Purrkuruwuraal-wa-rru, manku-marni ngunhaa (Martuthunira)
true all.right-Ø-NOW grab-CONTR that.NOM
pungka-lha-rru nhurnti-rru.
fall-PAST-NOW dead-NOW (Dench 1995: 264–265)
'All right now, I was about to grab it, but it fell down dead.'

(28) Janparr-ju katu nga-nama kurlu mayi yukurru-mili.
hungry-ERG nearly eat-PSTCFL bad vegetable.food dog-GEN
'Because of his hunger he almost ate the dog's food.'
(Sharp 2004: 182) (Nyangumarta)

(29) Nama-ju Ø. langa-ngka yuka-ja ngarra- Ø-ma pali-yarla.
ant-TOP PERF ear-LOC enter-PST FUT.C-PERF- 1 SG die-IRR
'An ant got into my ear and I almost died.'
(Legate 2003 :157) (Warlpiri)

Modal avertives (ii): (negative) capacity

- Negative capacity action modals (require agentive subjects)
  - Cognate ‘can’t’ root found in Western Desert, Ngumpin-Yapa, Karnic, Pilbara (*pulu*/*puṯu*/*purtu* + Ngarla *purtukarri* ‘in vain’)

(30) ngayulu puṯu nya-ngu (Yankutjatjara)
lsg(ERG) IN.VAIN see/find-PAST
'I couldn't see/find it’ (I tried in vain) (Goddard 1983:247)

(31) wati tjiḻpi-ṉa ampu-ṟa (Yankutjatjara)
man old man(ACC) hold .in.arms-SERIAL
pakal-tjinga-nu, puṯu paka-ntja-la
get up-CAUSE.TO.DO-PAST IN.VAIN get.up-NOML-LOC
‘I held the old man in my arms, as he has been unable to get up (by himself)’ (tried in vain to get up) (Goddard 1983:230)

  - Similar negative capacity markers found in other language families

Modal avertives and negative meaning (i)

- Irrealis past does not have full-fledged negative meaning
  - Apparent variation – implicature vs. CI-style meaning?

(32) A-bal-guyin-yakwo-yi. (Bininj Gun-Wok)
1-away-almost-finish-IRR
'I've almost finished.' (Evans 2003:374)

(33) yatha nga-b-irriga-na mangarra
alright 1sg:3sg- POT:COOK-IMPF plant.food
dempa damarlung
damper nothing
'I was going to/wanted to bake bread all right, damper, (but) nothing (i.e. I didn´t)' (Schultze-Berndt 2000:93)

(34) yagbali birdij gana-w-arra-nyi, (Jaminjung)
place find 3sg:3sg-FUT-PUT-IMPF
Buru ga-jga-ny Gurlugurlu waga ga-rdba-ny
return 3sg-GO.PST <place.name> sit 3sg-FALL-PST
'he wanted to find a camp, he went back to Gurlugurlu and sat down (i.e. stayed there)' (Schultze-Berndt 2000: 93)

Modal avertives and negative meaning (ii)

- Additional negative material required in avertive structures
  - E.g. BNG *yimarnek* 'counterfactual', Iwaidja *wurrkany* FRUST

(35) Yi-man.ga-yi. (Bininj Gun Wok)
2-fall-IRR
'You were about to fall….' (Evans 2003: 373)

(36) Nungka yimankek Ø -dulubu-yi bulikki, (Bininj Gun Wok)
he CTRFAC 3P-shoot-IRR bullock (Evans 2003:374)
'He tried to shoot the bullock (and failed)'

(37) wurrkany nanilda ba walij ba karlu riwany (Iwaidja)
FRUST 3Msg>3sg.PCF-eat-PCF DET food CONJ NEG 3Msg>3sg.ANT-eat-ANT
'[The dog] looked like he was going to eat the food, but he didn't'
(TAIM_190604MM_Modality_1.eaf@ 00:30:21.204)

(38) nanilda ba walij.. Lda burruli, riwany (Iwaidja)
3Msg>3sg.PCF-eat-PCF DET food CONJ GOOD 3Msg>3sg.ANT-eat-ANT
'[The dog] looked like he was going to eat the food, and he did

Indicative avertive patterns

- PAST PERFECTIVE+dedicated avertive marker (‘in vain’)
  - Periphrastic irrealis avertive? (MOD + PST)

(39) Kwementyaye-le uyarne-le yake-ke ampe re-nhe,
Kwementyaye-ERG in.vain-LOC/ADV prevent-pc child 3sg-ACC
kenhe re kwenpe-le lhe-rlenge.
BUT 3sgS without.worry-LOC/ADV go-DS
‘Kwementyaye tried in vain to prevent the child (from going), but she went right ahead and took off.’ (Arrernte) (Wilkins 1989: 328)

(40) Pilyparr ngaja yarni+ma-rnu (Ngarla)
unsuccessfully 1SG.ERG repair[+CAUS]-PST vehicle
‘I tried and failed to repair the vehicle. (Westerlund 2013:75)

(41) barruntha-y duruma-th, nginja ngumu-wa-th, nginja
yestaday-LOC lie-ACT FRUST black-INCH-ACT FRUST
kamburi-ja muma-th, ja-warri
speak-ACT thunder-ACT rain-PRIV
'(The weather) lied yesterday. In vain the sky blackened, in vain the thunder spoke, there's no rain.’ (Kayardild) (Evans 1994:382)

Indicative avertive patterns

- Iterated/durative forms (RED/LLI) very common to stress failure; these structures border on imperfective

(42) a. ya-nu malu-ku paluru, yanku-la malu (Yankutjatjara)
go-PAST 'roo-PURPDEF(NOM) go-RED 'roo(ACC)
putu nguri-ra paluru ngalya-kulpa-ngi
IN.VAIN seek-SERIAL DEF(NOM) this.way-return-PAST.IMPF
'He went looking for kangaroo, moved around searching in vain (for) kangaroos, and then he was coming back here (when…)'
(Goddard 1985:248)

b. r-urlukba-n:: wardajb-ung (Iwaidja)
3sgMA>3sgO.ANT-step.on-ANT:: 3sg.ANT-couldn't.break it-ANT
'He repeatedly tried (= tried hard) to break it with his foot but failed.'

c. ri-ldalku-ku-ny:: karlu/arlarrarr.
3sgMA>3sgO.ANT-cut-RED-ANT:: NEG/nothing (Iwaidja)
'He repeatedly tried to cut it (= tried hard to cut), but in vain'.

Indicative avertive patterns

- BNG: ‘inceptive’ reduplication (‘start’) > ‘fail’

(43) Barri-yah-yame-ng gunj, barri-warreh-warrewo-ng. (Bininj Gun Wok)
3a/3P-INCEP.RED-spear-pp kangaroo 3a/3P-ITER-miss-PP
'They tried to spear the kangaroo but they kept missing it.’
(Evans 2003:381)

- Bilinarra: *najing* ‘nothing’ loanword and novel perfective FC
  - Derived from code switching. Same item in Gurindji Kiol
  - ‘modal’ patterns are more ancient FC patterns?

(44) Yanggiyanggi=rna ba-ni warlayarra-wu=ma najing (Bilinarra)
ask-REDUP=1MIN.S hit-PST tobacco-DAT=TOP nothing
‘I kept asking for tobacco, but he didn’t give me any.’
(Meakins & Nordlinger 2013:162)

(45) He tried grabbing im bat najing i bin nang la-im det tetul. (Gurindji Kriol)
3sg.obj but nothing 3sg.sbj pst stick obl-3sg the turtle
He tried grabbing the dog but the turtle was clamped on tight.

Summary of avertive patterns found

- Several types of avertive structures:

1. Inflectional irrealis/volitional modals (mostly nPN pattern)
    1. Predominant (>60%)
    2. Various realizations: synthetic, periphrastic..
    3. Very polysemous (volitional, deontic, past CF, mistaken thoughts…)
2. Dedicated avertive particles + PST or IRR (*PART + PST/IRR*) (nPN + PN)
    1. Very common (>50%), and overlaps with previous type
    2. Often polysemous ('lazy' particles, mistaken thoughts, potential…)
3. Indicative avertive constructions (PST/IRR + NEG – RED.PST) (nPN + PN)
    1. Also very common (50%) (and probably more)
    2. Not polysemous, 'frozen' avertive construction
4. Action modals (PN pattern; not a nPN pattern)
    1. Relatively rare (<10%)
    2. Particles/clitics (not inflectional)
    3. Limited polysemy (inability + avertivity)

- Action modals are the only purely semantic avertives
    - Others involve implicated meanings of various kinds

(Morphosyntax/)Semantics or pragmatics?

What are *V-PAST + NEG + V-PAST.IRR + NEG* patterns*?*

- Bi-clausal elliptic adversatives (Malchukov 2004)
  - 'AV.NEG' can be homophonous with 'normal' NEG
  - …or 'free' discursive, implicature-based phenomenon,?
    - NEG's *raison d'être* : cancelling an implicature

- **Evidence that these patterns are not pragmatic:**
  - AV.NEG phonologically identifical to NEG, but position is unusual
  - conventionalized contours
  - many specialized avertive NEGs not usable anywhere else → dedicated constructions (possibly periphrastic irrealis inflections)
    - Cf. Bilinarra *najing* ('in.vain') (<Eng. 'nothing') vs. *gula* NEG (Meakins & Nordlinger 2013) + Cf. Gurindji Kr. *najing* 'in vain' *vs. not/neber/kaan/top/don* NEG (Meakins 2013)

(Morphosyntax/)Semantics or pragmatics?

Inflectional avertives and defeasible or not so defeasible implicatures

(46) yagbali birdij gana-w-arra-nyi, (Jaminjung)
place find 3sg:3sg-FUT-PUT-IMPF
Buru ga-jga-ny Gurlugurlu waga ga-rdba-ny
return 3sg-GO.PST <place.name> sit 3sg-FALL-PST
'he wanted to find a camp, he went back to Gurlugurlu and sat down (i.e. stayed there)' (Schultze-Berndt 2000: 93)

(47) a. nanguj maju nani-ldar-a [ba walij] ba karlu
yesterday WANT 3m>3obj.PCF-pick.up-PCF [DET food] but no
'Yesterday he was going to/wanted to take the food… but he didn't'
(Prompt: speaker asked to rephrase in the past a prediction 'bani-ldari-0 ba walij' 'he's going to take-FUT the food') (with success expected; 'what do you think is going to happen?')))(TAIM20190608-MM+LC-MinjilangSchool-Modality+PearStory 01:09:13)
b. mana gananga-lda-Ø ba walij
MOD 3f>3obj.PCF-eat-PCF DET food
'Maybe she was going to eat the food'
(TAIM20190608-MM+LC-MinjilangSchool-Modality+PearStory 01:11:12)

Hypothetical development paths (1)

- *Past tense + proximative > Past CF* development path

Past tense + proximative adjunct ('almost, nearly') ⟶ past avertive-counterfactual (CF)

- *(Past) imperfective/proximative > Avertive/Irrealis* path:

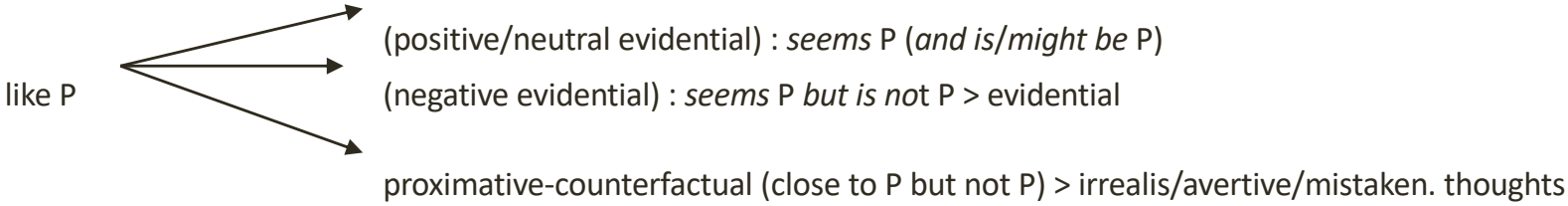
Pst.impf. ⟶ Pst.impf/proximative/volitional ⟶ prox./volitional/irrealis
⟶ avertive

- *Volition > avertivity* sub-path ('wanted to but didn't'):

volition (uncertain outcome) ⟶ (defeasible) implicature of failure ⟶ avertive (semanticized)

Hypothetical development paths (2)

- *Similatives > evidential/irrealis/avertive/mistaken thought*:



- *REDuplication*
  - *Focus on 'simple' reduplication* (*vs. 'inchoative' reduplication*)
  - If 'weak' perfective is used ⇨ result does not hold
  - Iwaidja patterns more restricted than BNG ()

RED-$V_{weak.pst}$ ⟶ RED-non-result-avertive ('Ved in vain') ⟶ RED-general-avertive ('tried to V in vain') (INCH-RED)

(Morphosyntax/)Semantics or pragmatics?

- **However, what of non-constructional irrealis uses?**
  - Obviously, failure less defeasible in some languages than others
  - Semantic avertives appear to implicate expressive meanings ('alas'/ 'unexpectedly': nuances of **mirativity**)
  - CI-type meanings ⇨ multi-dimensional semantic analysis

- **Hypothesis:** variation in defeasibility of avertive readings on inflectional avertives reflects on a distinction between *inactuality implicatures*, vs. *inactuality CIs*

  - **Comparative and diachronic hypothesis (Stage 3 optional:**
    - Stage 1: Inactuality implicature > ('was going to' [but didn't])
    - Stage 2 : Inactuality CI > ('was going to but didn't')
    - Stage 3 : Semantic inactuality ('didn't [but was going to]')

(Morphosyntax/)Semantics or pragmatics?

- **Makes diachronic-typological sense outside of Australia:**
  - Conventionalized implicatures have been argued to be a common source of novel semanticized meanings, since at least (Traugott 1988; Palmer 2001)
  - For a formal implementation, see e.g. Davis & Gutzmann 2015
- Typologically suspected to be a major diachronic mechanism for semantic evolution of composite TA-M expressions:
  1. past modal/counterfactual>present modal/counterfactual (Hogeweg 2009, Patard et al. 2015, Caudal 2018)
  2. past volitional/past deontic> 'attenuated' request (Caudal, forthcoming)
  3. etc.

Back to negative past events

- Current situation – widespread ambiguity of NEG + IRR

  (Nordlinger & Caudal 2012, MP & BNG)

  - *Compositional* reading: past admonitive ('should have but didn't')
  - *Conventionalized* reading: negative past event

- Negative past events developed from volitional > avertive path
  - 'Branching' sub-path – but where did the branching took place?

Back to negative past events

- Comparative evidence for former compositionality of volitional modal+NEG as well (not just admonitives) = Gooniyandi (McGregor 1990:535); NEG + PST IRREALIS yields three additional readings

- 'Wouldn't' = 'refused to'; plausible source of negative past event reading; coherent with negative past event readings having proximative/volitional/deontic implications

(48) mangaddi nganggilirni maa ngaddagi
not I:might:have:given:him meat my
'I wouldn't give it to him; it's my meat.'
(Gooniyandi) (McGregor 1990:535)

(49) mangaddi wardyirni boolga nhoongjinga
not he:might:have:gone old:man by:himself
'The old man wouldn't attempt to cross the flooded creek alone.'
(Gooniyandi) (McGregor 1990:535)

Back to negative past events

- Polar opposite of negative past event, further demonstrates compositionality:

(50) mangaddi niyi -binyi wardyirni daddgbani
not that PER he:might:have:gone he:fell
'He didn't mean to go that way (i.e. to step on the glass); (but) he fell (on it).' (Gooniyandi) (McGregor 1990:535)

- Interestingly, negative avertive also possible source – 'negative proximative'; but plain negative past events do not yield related implicated meanings – just proximative/volitional implications

(51) ngaaddi wajladdi mangaddi gardgooloonirni
stone I:threw:it not I:might:have:hit:him
'I threw the stone, but didn't nearly hit him.'
(Gooniyandi) (McGregor 1990:535)

Hypothetical development paths (4)

- NEG IRR.PAST as negative past event development path

(52) Negated volitional ('wouldn't') > negative past event + modal implications (wanted to/was expected to/should have, but didn't)

- 'Path pruning' in many other languages? Or descriptive gaps?
  - The following compositional readings are generally not attested

(53) He meant to go, but he didn't.

(54) He didn't nearly go.

Hypothetical development paths (4)

- Negative event development path branches off volitional:

- *(Past) imperfective/proximative > Neg Event* path:

Pst.impf. ⟶ Pst.impf/proximative/volitional ⟶ prox./volitional/irrealis

avertive

- *NEG volitional > negative past event*

X NEG volitional-PST. V ⟶ implicates X NEG V-PST ⟶ X NEG V-PST

Section 3:
Towards a diachronic formal analysis

Preformal analysis

All avertives involve:

- **A past event: (optionally, a partial or complete 'attempt' event, and)** a negative past event (implicated or semantically conveyed), sometimes 'packaged' with expressive mirative content ('alas', 'unexpectedly')
- **A modal content:** expectation/desire w.r.t. a potential situation
- (The absence of a relevant result state if a complete event holds)

- Both event and modal content are negatively cast
  - Event is either non-existent, or has a structural defect
    1. Event doesn't begin
    2. Event doesn't reach terminus
    3. Event doesn't achieve expected result (or it is quickly negated)
  - Modal content is flouted (failure to act - upon a past desire, orto exert a capacity – or to fulfill an expectation/a prediction)

Pre-formal analysis

- Analytical hypothesis, after Caudal (2022a,b)
  - Avertives are *inactuality entailments,* i.e. entail/convey negative events
  - (In)actuality entailments can be modelled in a multi-dimensional semantics

Hypothesis: Implicated 'avertive' meaning, and at-issue volitional/proximative 'swapped' places

- (In)actuality entailments are conventionalized implicated meanings

  He tried to hit it → He did not hit it
- Former at-issue modal content was demoted to secondary meaning status, while implicated (= avertive) meaning became conventionalized

At issue meaning : 'He tried to/nearly hit the dog [and did not hit it]'

Overt or covert perfective

CI meaning: 'He wanted to/was expected to hit the dog'

Overt imperfective (overt morphology)

- Nature of modal content is constrained by NEG particle / irrealis inflection + context

Modelling negative events

- Bernard & Champollion (2018): negative events are refentially *existent* in language – inactual, but existent
  - Can be modified with manner/temporal adverbials
  - Can be involved in anaphoric chains
  - Can be contributed by complex lexical items

(55) Hugo deliberately didn't leave. That didn't bother me.

(56) Hugo stayed.

Modelling negative events

- Past negative event descriptions can implicate modals:
  - At least by means of pragmatic entailments (cf. Zaradzki (2020) for a discussion)

(57) Hugo didn't show up. ***can entail***

a. Hugo was expected to come. (doxastic)

b. Hugo should have come. (deontic)

Modelling negative events

- Maximised events: Koenig & Muansuwan 2000)
  - Correspond to near-culminating readings of accomplishments

(58) $\text{Max}(e)(x)(V) \leftrightarrow (V(e)(x) \wedge \neg\exists e'' \in U_E[e \sqsubset e'' \wedge V(e'')])$

- Negative events: Bernard & Champollion (2018)

(59) Mary did not leave.

(60) $\exists e.\text{actual}(e) \wedge e \in \text{NEG}(\lambda e'.\text{sleep}(e') \wedge \text{ag}(e') = \text{Mary})$

(61) $\forall e \in \text{NEG}(P).\text{actual}(e) \leftrightarrow \neg\exists e' \in P.\text{actual}(e')$

- Expectations attached to negative events:

(62) $\exists e \in \text{NEG}(P).\text{actual}(e) \wedge \tau(e) = I) \leftrightarrow \neg\exists e' \in P.\text{actual}(e')\ \tau(e') \subseteq I) \wedge$
$(\exists e' \in P.\ \text{expected}(e')\ \tau(e') = I)$ (Zaradzki 2020:496)

Tentative formal diachronic analyses (1)

- Simplified formal diachronic analysis of the avertive : Stage 1 = implicated failure: Stage 2: conventionalization of implicated failure as CI; Stage 3: pragmatic inversion (Caudal 2022a)

(63) ayana-wu-ni (Iwaidja)
1sg>3pl.PCF-hit-PCF
'I was going to hit them [the boys].' (but I didn't)

(64) **Diachronic formal analysis of avertivity:**

1. [∃e.actual(e)∧WANTED(e)(s)[λe_2.hit(e_2) ∧ agent(e_2)=s ∧ patient(e_2)= the.boys])] → [∃e'.actual(e')∧e'∈Neg(λe".hit(e") ∧ agent(e")=s ∧ patient(e")= the.boys)] **('wanted to V (→but didn't V')**

2. [∃e.actual(e)∧WANTED(e)(s)[λe_2.hit(e_2) ∧ agent(e_2)=s ∧ patient(e_2)= the.boys])] ◆ [∃e'.actual(e')∧e'∈Neg(λe".hit(e") ∧ agent(e")=s ∧ patient(e") ∧EXPRESSIVE] **('wanted to V (but alas didn't V)')**

3. ∃e.actual(e)∧e∈Neg(λe'.hit(e') ∧ agent(e')=s ∧ patient(e')= the.boys) ∧EXPRESSIVE ◆ [∃e.actual(e)∧WANTED(e)(s)[λe_2.hit(e_2) ∧ agent(e_2)=s ∧ patient(e_2)= the.boys])] **('alas/unexpectedly didn't V (but wanted to V)')**

(latter stage seems rare, and restricted to periphrastic avertives)

Tentative formal diachronic analyses (2)

- Diachronic formal analysis for negative past events is straightforward simple case of *pragmaticization* à la Davis & Gutzmann (2015) (not pragmatic inversion)

(65) karlu ayana-wu-ni (Iwaidja)
NEG 1sg>3pl.PCF-hit-PCF
'I didn't hit them [the boys].'

(66) **Tentative diachronic analysis of NEG+IRR.PST = negative past event**

- **Stage 1:** inactuality implicature > ('didn't want to V' [→ didn't V])

[∃e.actual(e)∧e∈Neg(λe$_1$.WANTED(e$_1$)(s)[λe$_2$.hit(e$_2$) ∧ agent(e$_2$)=s ∧ patient(e$_2$)= the.boys])] → [∃e'.actual(e')∧e'∈Neg(λe".hit(e") ∧ agent(e")=s ∧ patient(e")= the.boys)]

- **Stage 2:** Inactuality CI > ('didn't want to V' [& didn't V]')

[∃e.actual(e)∧e∈Neg(λe$_1$.WANTED(e$_1$)(s)[λe$_2$.hit(e$_2$) ∧ agent(e$_2$)=s ∧ patient(e$_2$)= the.boys])]◆ [∃e'.actual(e')∧e'∈Neg(λe".hit(e") ∧ agent(e")=s ∧ patient(e")]

- **Stage 3:** Semantic inactuality + modal CI. ('didn't V (& didn't want to V')

[∃e'.actual(e')∧e'∈Neg(λe".hit(e") ∧ agent(e")=s ∧ patient(e")] ◆ [∃e.actual(e)∧e∈Neg(λe$_1$.WANTED(e$_1$)(s)[λe$_2$.hit(e$_2$) ∧ agent(e$_2$)=s ∧ patient(e$_2$)= the.boys])]

- **Stage 4:** Simple negative past event ('didn't V') (= *switch context* à la Heine 2003)

[∃e'.actual(e')∧e'∈Neg(λe".hit(e") ∧ agent(e")=s ∧ patient(e")]

Tentative formal synchronic analyses (1)

- Attempt at detailed lexical semantic entry unspecified volitional/proximative intransitive avertive (modal: underspecified type *Want.Prox*)
  - Additional TCL twist (Asher 2011): $\phi_{\in(\text{WantProx},\ldots)}$ = underspecified modal

(67) Intransitive $\text{AVERTIVE}_{\text{WantProx}}$ for near-culminating accomplishments:

$\lambda V \lambda x$

$(\exists e_1\ [\text{Avert}(x)(e_1)(V^{\wedge}) \wedge \text{Perfective}(e_1) \wedge \tau(e_1) = t_{TOP} \wedge t_{TOP} < \text{now}]$ ◆

[at-issue dimension]

$\exists e_2\ [\phi_{\in(\text{WantProx, type(x), type(V)})}(e_2)(V^{\wedge})(x)(\phi) \wedge \text{Imperfective}(e_2) \wedge \text{MAX}(e_{2,})(x)(\phi_{\in(\text{WantProx, type(x), type(V)})}) \wedge \tau(e_2) <<^{\circ} t_{TOP}]\ )$

[non-at-issue dimension]

(68) $\text{Max}(e,\phi) \leftrightarrow (\phi)(e) \wedge \neg\exists e'' \in U_E[e \sqsubset e'' \wedge \phi(e'')])$

(Koenig & Muansuwan 2000)

"X e_1-tried and failed to V (and x e_2-wanted or e_2-was.about to V up until the end of e_1)"

Problem: λx and λV must be shared by the two dimensions of meaning

Solution: a multi-dimensional semantics with mixed types, Gutzmann (2015)

Tentative formal synchronic analyses (2)

- Attempt at detailed lexical semantic entry for root/action modal intransitive 'could not' avertives
  - Inspired from diachronic concept of *pragmatic inversion* (Caudal, 2022c)
  - Construction, already quantified events (no need to wait for tense)

(69) Intransitive $\text{AVERTIVE}_{\text{ActionMod}}$:

$\lambda V \lambda x$

$(\exists e_1\ [\text{Avert}(x)(e_1)(V^{\wedge}) \wedge \text{Perfective}(e_1) \wedge \tau(e_1) = t_{TOP} \wedge t_{TOP} < \text{now}]$ ◆

[at-issue dimension]

$\exists e_2\ [\text{actual}(e_2) \wedge e_2 \in \text{NEG}(\text{COULD}(x)(V^{\wedge}) \wedge \text{ag}(e_2) = \text{Mary} \wedge \text{Imperfective}(e_2) \wedge \text{MAX}(e_2)(x)(\text{NEG}(\text{COULD}(x)(V^{\wedge})) \wedge \tau(e_2 >>^{\circ} t_{TOP}] \wedge \tau(e_2) < \text{now})$

[non-at-issue dimension]

(70) **Avertive events:** $\text{Avert}(x)(e)(V^{\wedge}) \leftrightarrow \exists e' \in \text{NEG}(V^{\wedge}) \wedge \tau(e') >>^{\circ} \wedge \tau(e')]$

"X e_1-failed to V/-almost.V-ed (and thus x could-not V)"

(e_1: negative event/partial completion meaning OR not results)

Problem: λx and λV must be shared by the two dimensions of meaning

Solution: a multi-dimensional semantics with mixed types, Gutzmann (2015)

Section 4:
Concluding remarks

Open questions & research directions

- Important questions were left open for future research

1. Variation in semantic / pragmatic status of avertive readings:
   - Local defeasible implicatures / not-so defeasible, or non-indefeasible implicated meanings / some fully semantic content + some implicated meaning (CI-type) etc.
   - Much of this hinges on finer-grained descriptive field work
   - Obviously, this would require setting up a dedicated large-scale project
   - The diachronic analysis sketched above would need to be fined-tuned to the specific semantic/pragmatic status of each inflection
   - Not all of them reached the same development stage along the path

Open questions & research directions

2. Reconstruction arguments for development paths

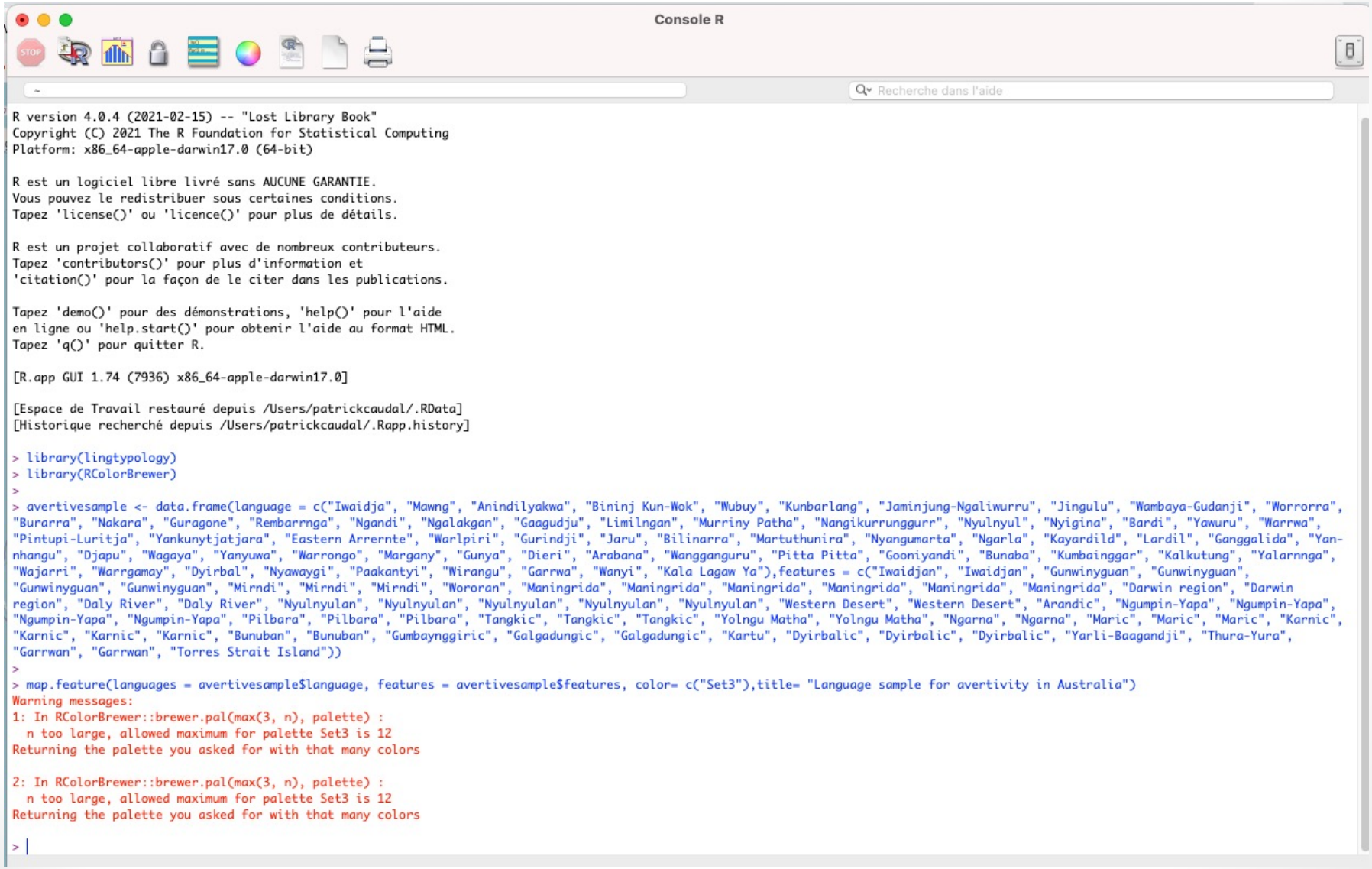
- Role played by reconstruction in our analysis is pretty limited at this stage
- Very much preliminary work; first order reconstruction more or less established, but detailed reconstruction on subsequent language layers remains to be done for the most part
- At this stage, Australian languages seem to have fragmented early after they established themselves in Australia
  - nPN only possess a handful of solidly reconstructed families on the basis of shared innovations
  - all the rest looks like language isolates with a *Sprachbund* situation (which explains why nPN languages have been regarded as 'family' isolates for such a long time)

Open questions & research directions

3. Typological consequences of this work: avertives and 'partitive culminations'

- **Ongoing debate – avertivity vs. partitive culminations (PC)?**
  - **Overlap** = Copley & Harley (2014) Tohono O'odham avertive *cem*
  - **Disjunct** = Kroeger (2017) Kimaragang avertive *dara*
- **Crosslinguistic differences between**
  - languages where 'grammatical' avertivity/PCs involve agentive notions (capacity modals, Salish agentive verb morphology, RED, evaluative iterative morpholy (Tovena 2015)….) vs.
  - languages where they involve volitionality-proximativity (including proximative adverbials, periphrases and verbs; cf. fr. 'faillir'; *lack* modal are inherently proximative modals)

Annexes


Console R
Recherche dans l'aide
R version 4.0.4 (2021-02-15) -- "Lost Library Book"
Copyright (C) 2021 The R Foundation for Statistical Computing
Platform: x86_64-apple-darwin17.0 (64-bit)
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Tapez 'demo()' pour des démonstrations, 'help()' pour l'aide
en ligne ou 'help.start()' pour obtenir l'aide au format HTML.
Tapez 'q()' pour quitter R.
[R.app GUI 1.74 (7936) x86_64-apple-darwin17.0]
[Espace de Travail restauré depuis /Users/patrickcaudal/.RData]
[Historique recherché depuis /Users/patrickcaudal/.Rapp.history]
> library(lingtypology)
> library(RColorBrewer)
>
> avertivesample <- data.frame(language = c("Iwaidja", "Mawng", "Anindilyakwa", "Bininj Kun-Wok", "Wubuy", "Kunbarlang", "Jaminjung-Ngaliwurru", "Jingulu", "Wambaya-Gudanji", "Worrorra", "Burarra", "Nakara", "Guragone", "Rembarrnga", "Ngandi", "Ngalakgan", "Gaagudju", "Limilngan", "Murriny Patha", "Nangikurrunggurr", "Nyulnyul", "Nyigina", "Bardi", "Yawuru", "Warrwa", "Pintupi-Luritja", "Yankunytjatjara", "Eastern Arrernte", "Warlpiri", "Gurindji", "Jaru", "Bilinarra", "Martuthunira", "Nyangumarta", "Ngarla", "Kayardild", "Lardil", "Ganggalida", "Yan-nhangu", "Djapu", "Wagaya", "Yanyuwa", "Warrongo", "Margany", "Gunya", "Dieri", "Arabana", "Wangganguru", "Pitta Pitta", "Gooniyandi", "Bunaba", "Kumbainggar", "Kalkutung", "Yalarnnga", "Wajarri", "Warrgamay", "Dyirbal", "Nyawaygi", "Paakantyi", "Wirangu", "Garrwa", "Wanyi", "Kala Lagaw Ya"),features = c("Iwaidjan", "Iwaidjan", "Gunwinyguan", "Gunwinyguan", "Gunwinyguan", "Gunwinyguan", "Mirndi", "Mirndi", "Mirndi", "Wororan", "Maningrida", "Maningrida", "Maningrida", "Maningrida", "Maningrida", "Maningrida", "Darwin region", "Darwin region", "Daly River", "Daly River", "Nyulnyulan", "Nyulnyulan", "Nyulnyulan", "Nyulnyulan", "Nyulnyulan", "Western Desert", "Western Desert", "Arandic", "Ngumpin-Yapa", "Ngumpin-Yapa", "Ngumpin-Yapa", "Ngumpin-Yapa", "Pilbara", "Pilbara", "Pilbara", "Tangkic", "Tangkic", "Tangkic", "Yolngu Matha", "Yolngu Matha", "Ngarna", "Ngarna", "Maric", "Maric", "Maric", "Karnic", "Karnic", "Karnic", "Karnic", "Bunuban", "Bunuban", "Gumbaynggiric", "Galgadungic", "Galgadungic", "Kartu", "Dyirbalic", "Dyirbalic", "Dyirbalic", "Yarli-Baagandji", "Thura-Yura", "Garrwan", "Garrwan", "Torres Strait Island"))
>
> map.feature(languages = avertivesample$language, features = avertivesample$features, color= c("Set3"),title= "Language sample for avertivity in Australia")
Warning messages:
1: In RColorBrewer::brewer.pal(max(3, n), palette) :
n too large, allowed maximum for palette Set3 is 12
Returning the palette you asked for with that many colors
2: In RColorBrewer::brewer.pal(max(3, n), palette) :
n too large, allowed maximum for palette Set3 is 12
Returning the palette you asked for with that many colors
>

Annexes

- List of languages & language families

```
avertivesample <- data.frame(language = c("Iwaidja", "Mawng", "Anindilyakwa", "Bininj Kun-Wok", "Wubuy", "Kunbarlang", "Jaminjung-Ngaliwurru", "Jingulu", "Wambaya-Gudanji", "Worrorra", "Burarra", "Nakara", "Guragone", "Rembarrnga", "Ngandi", "Ngalakgan", "Gaagudju", "Limilngan", "Murriny Patha", "Nangikurrunggurr", "Nyulnyul", "Nyigina", "Bardi", "Yawuru", "Warrwa", "Pintupi-Luritja", "Yankunytjatjara", "Eastern Arrernte", "Warlpiri", "Gurindji", "Jaru", "Bilinarra", "Martuthunira", "Nyangumarta", "Ngarla", "Kayardild", "Lardil", "Ganggalida", "Yan-nhangu", "Djapu", "Wagaya", "Yanyuwa", "Warrongo", "Margany", "Gunya", "Dieri", "Arabana", "Wanggangguru", "Pitta Pitta", "Gooniyandi", "Bunaba", "Kumbainggar", "Kalkutung", "Yalarnnga", "Wajarri", "Warrgamay", "Dyirbal", "Nyawaygi", "Paakantyi", "Wirangu", "Garrwa", "Wanyi", "Kala Lagaw Ya"),

features = c("Iwaidjan", "Iwaidjan", "Gunwinyguan", "Gunwinyguan", "Gunwinyguan", "Gunwinyguan", "Mirndi", "Mirndi", "Mirndi", "Wororan", "Maningrida", "Maningrida", "Maningrida", "Maningrida", "Maningrida", "Darwin region", "Darwin region", "Daly River", "Daly River", "Nyulnyulan", "Nyulnyulan", "Nyulnyulan", "Nyulnyulan", "Nyulnyulan", "Western Desert", "Western Desert", "Arandic", "Ngumpin-Yapa", "Ngumpin-Yapa", "Ngumpin-Yapa", "Ngumpin-Yapa", "Pilbara", "Pilbara", "Pilbara", "Tangkic", "Tangkic", "Tangkic", "Yolngu Matha", "Yolngu Matha", "Ngarna", "Ngarna", "Maric", "Maric", "Maric", "Karnic", "Karnic", "Karnic", "Karnic", "Bunuban", "Bunuban", "Gumbaynggiric", "Galgadungic", "Galgadungic", "Kartu", "Dyirbalic", "Dyirbalic", "Dyirbalic", "Yarli-Baagandji", "Thura-Yura", "Garrwan", "Garrwan", "Torres Strait Island"))
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Modal avertives (i): volition/expectation

- No agentivity required by volitional PST.IRR

(24) Na-ngartbu-na (arlirr) (Iwaidja)
3sg.PCF-fall-PCF (tree) (TAIM20181116DY-Minjilang-Modality6 00:47:56.176)
'The tree was about to fall/nearly fell'

(25) Yi-man.ga-yi. (Bininj Gun Wok)
2-fall-IRR
'You nearly fell.' (Evans 2003: 373)

- But with 'maju' Iwaidja PCF requires agentive subject

(26) Maju an-irrka-nyi, lda a-wardunyma-n
WANT 2sg.PCF-spear-PCF CONJ 3sg.ANT-miss-ANT
'You tried to spear it, but you missed.' (Iwaidja Dictionary)

2nd most frequent indicative avertive pattern

- PAST PERFECTIVE + proximative/similative (*like, near(ly), almost, about to*)
  - Known development path towards counterfactuality (cf. modern English *almost*/*nearly*, Ziegeler (2015), plus crosslinguistic abundance of irrealis/counterfactual markers derived from 'like/near')

(43) Kurra-ka ngan^{y}t^{y}a wiri (Pitta-Pitta)
Fall-PAST I like
'I was about to fall/nearly fell' (Blake 1979:221)

(44) ŋaru banbuliya (Margany / Gunya)
nearly fall-PAST-1sg
'I nearly fell over.' (Green 1981: 334)

(45) piti-ngka-ni Ø nguwanpa tjarpatju-nu (Pintupi)
in-burrow-1sg (it) nearly insert-PST
'Into a burrow I was nearly dragged by it.' (Rose 2001:276)

(46) Ngapi wurkaj nguran. (Mawng)
1sg nearly 1sg.ANT-go-ANT.
'I nearly went.' (Singer et al. 2015:195)

3rd most frequent indicative avertive pattern

- PAST PERFECTIVE + NEG 'not, nothing'
  - Probably more common pattern, but not well documented

(47) n-alyubaru-nu=ma y-akina yinumaninga
REAL.3M-eat-PST=MUT MASC-that MASC.food
akena nara kin-alyubari-na
but NEG IRR.3M>MASC-eat-PST
'He tried to eat the wild apple, but he didn't eat it'
(Bednall 2019: 121) (Anindilyakwa)

(48) Rildalkuny wunman karlu,
3M>3sg.ANT-cut-ANT 3sg.ANT-try-ANT NEG,
arijumardan.
small.
'(He went to cut a hollow tree). He cut it, he tried to cut it, but in vain. It was too small.' (Iwaidja) (Yirrwartbart004)

Aspectuo-temporal parameters

- **Aspectual parameters: event structure**
  - All bounded/maximized event structures appear with most indicative+irrealis avertive patterns, including bounded activities and states (the latter with teleological coercion: ‘stood with a purpose’)

(60) anamalamanma ba mudika ba arlarrarr (Iwaidja)
1sg>3sg.PCF-drive-PCF the car CONJ nothing
'I wanted to/tried to drive the car but I couldn’t’
(TAIM 190604MM_Modality_1@19:44)

(61) Ri-ldalku-ku-ny:: karlu/arlarrarr.
3sgMA>3sgO.ANT-cut-RED-ANT:: NEG/nothing (Iwaidja)
‘He repeatedly tried to cut it (= tried hard to cut), but in vain’.

(62) Ari-ngan ari-ngan ari-ngan, arlarrarr.
3sg-stand-UPST 3sg-stand-UPST 3sg-stand-UPST nothing.
‘He stood there for ages, but to no avail.’ (I&I, 23:06) (Iwaidja)

Synthetic overview of irrealis meanings

Modal+tense	Structure	Expressive meanings
Past volitional	Past optative (wanted P, but ¬P)	yearning ('want': *lack of*)
	Inactuality entailment/avertive + NEG (+NEG) (S tried P, but S ¬P-ed)	<form+context specific> (frustration, regret)
	Actuality entailment (S wanted P, and P came to be)	-
	Request (indirect) (Speaker wanted P BUT ◇¬Speaker want P)	-
	+NEG Past refusal (X wanted P, but Subj ¬wanted P)	-
Past predictive	Inactuality entailment avertive (*frustrative) + NEG (+NEG) (S nearly V-ed but ¬ S V-ed)	<form+context specific> (frustration, regret, relief)
Past epistemic	epistemic counterfactual (S might have P but ¬S P-ed)	-
	Past aversive (Lest X should)	fear/concern
Past hypothetical	Past aversive (Lest X should)	fear/concern
	hypothetical counterfactual If S had V-ed + implicature ¬S V-ed)	-
Past deontic/directive	+NEG admonitives/regrets (S should have ¬P but S ¬P-ed)	regret/anger
	Aversive actuality entailment ('of course S had to P': S P-ed, and ¬X desirable P)	regret/anger/surprise
Past capacitative	(PR) attenuated request (X was.able to P? > X should P)	-
	Inactuality entailment/avertive (+NEG) (¬X was.able P)	<form+context specific> (frustration, relief, regret)
	Actuality entailment - managed (X was.able P and X P-ed)	-
	counterfactual capacity (¬X could P)	-
Past evidential	mirative (NEG expected)	surprise (neutral, joy, horror…)
Past doxastic	mistaken thought	<form+context specific> (surprise, amusement, guilt(>apology))
	Indirect admonitive (thought X V-ed = 'why didn't you V?')	regret/anger