

# Reality status & the Yolŋu verbal paradigm

A formal account of an irrealis mood

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# Roadmap

## introduction

the notion of TAM prominence

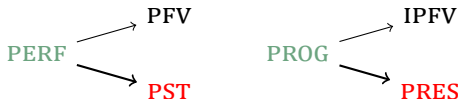
Verbal inflection in Djambarrpuyŋu

## Negative asymmetry

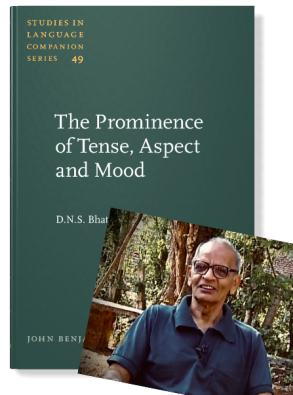
## An irrealis semantics

# Introduction

- ▶ As I've suggested, TENSE, MOOD, ASPECT are related categories
- ▶ Bhat's typological claim (1999):  
*languages can be regarded as TENSE-, ASPECT- or MOOD-prominent*
- ▶ Typology implies • conceptual connections between categories • and that languages can 'move between' these "types".
- ▶ Cross-categorical change between **tense**, **modal**, **aspectual** domains  
(Bybee *et al.* 1994; Condoravdi & Deo 2014)



# TAM prominence

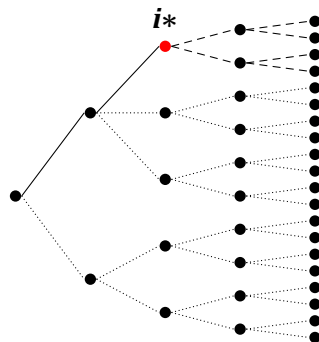


# Branching times

*if the determinist sees Time as a line, the indeterminist sees it  
as a system of forking paths*

**Burgess '78**

- ▶ Futurity as a modal concept (Abusch 1985, Copley 2004, Kaufman 2005, Giannakidou 2012...)
- ▶ Manipuri *li* 'FUT' ← 'IRR' (e.g., Mao Naga *le*) (Bhat 1999: 19,67,183)



# Yolnu

## Verbal morphology

- ▶ Significant variation in grammatical expression of TMA
- ▶ Cognate inflectional paradigms point to semantic change
- ▶ **Djambarrpuyŋu** and **Wägilak**: all verbs inflect for four categories

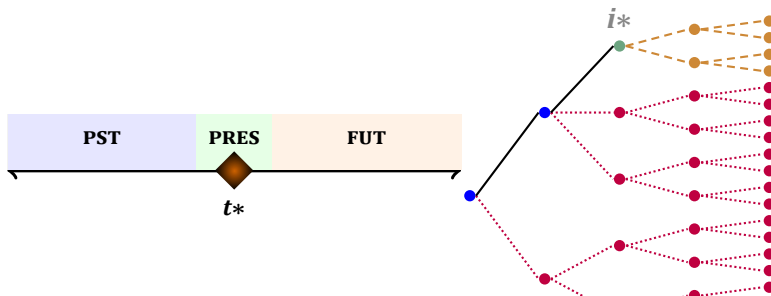
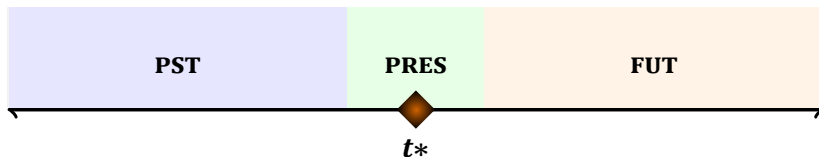


# Inflection in Wägilak

- ▶ Heath (1980): Apparent 3-way tense distinction.

PAST, PRESENT, FUTURE

- ▶ Fourth inflection: PAST POTENTIAL

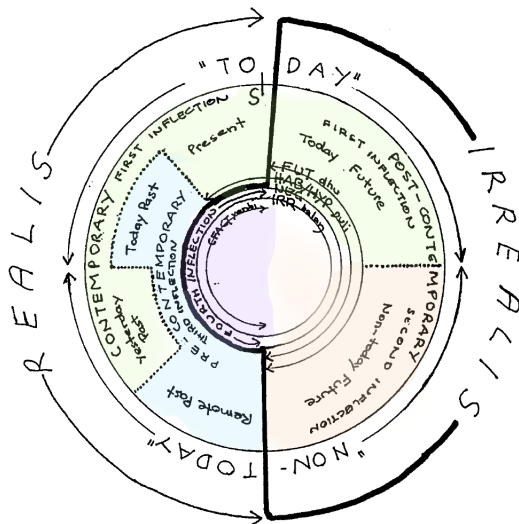


# Yolŋu

# Verbal morphology

- ▶ Djambarrpuyŋu: four inflectional categories
- ▶ Two particular phenomena exhibited in (geographically Western varieties) include:
  - ▶ **Cyclic tense** (Comrie 1985)
  - ▶ **Negative asymmetry** (Miestamo 2005)
- ▶ Assigning metalinguistic labels to the Djambarrpuyŋu inflectional categories is non-obvious:
  - ▶ They will be numbered **I**, **II**, **III**, **IV** throughout

# Distribution of the inflections



- I** PAST, PRESENT, FUTURE
- II** FUTURE, NON-PAST IRREALIS
- III** PAST
- IV** PAST IRREALIS, PAST HABITUAL
- ★ here we go...

(Wilkinson 1991: 362)



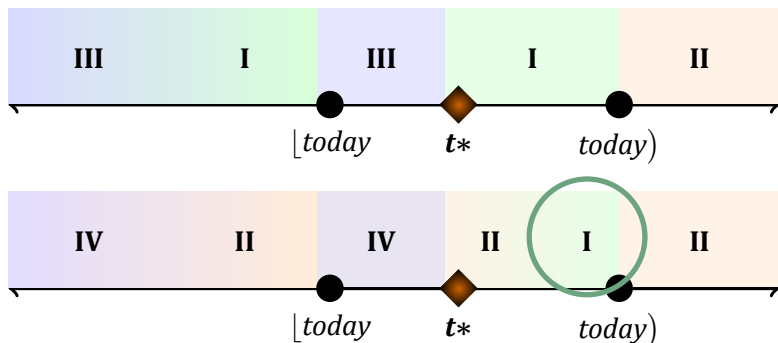
# Djambarrpuyngu cyclic tense

- ▶ Tense morphology licensed by discontinuous intervals
- ▶ Reported in the languages of Maningrida



# The negative asymmetry

- ▶ There are a number of overt operators which constrain the distribution of **I** and (particularly) **III** as presented here
- ▶ **I** and **III** are ungrammatical under negation



## Asymmetric negation

## Djambarrpuyŋu

7 *bäyŋu ŋarra ga nhäma mukulnha* [PRESENT]  
 NEX 1s IPFV.I see.I aunt-ACC  
 'I see my aunt (right now).'

8 *bäyŋu ŋarra nhäŋal mukulnha gäthur* [TODAY PST]  
 NEX 1s see.III aunt-ACC today  
 'I saw my aunt this morning.'

9 *bäyŋu ŋarra dhu nhäŋu mukulnha* [FUTURE]  
 NEX 1s FUT see.II aunt.ACC  
 'I'll see my aunt (tomorrow).'

10 *bäyŋu ŋarra nhäma mukulnha barpuru* [REC PST]  
 NEX 1s see.I aunt-ACC yesterday  
 'I saw my aunt yesterday.'

# Negative asymmetry

## IN DJAMBARRPUYNJU

Negative REALIS and IRREALIS  
predications are inflected  
identically

INFLECTION	
-NEG	+NEG
I	II
II	
III	IV
IV	

# Negative asymmetry

## II and IV as IRR

- So II and IV turn up as the counterparts of I and III in negative predication. Also...

11 *Barpuru godarr      narra dhu nhä-ŋu* [FUTURE]  
funeral tomorrow 1s FUT see.II

‘I’ll see the funeral tomorrow’

12 *nhä-ŋu nhanŋu dhurrwara!* [IMPERATIVE]  
look.II 2s.DAT door

‘Look at her mouth!’

13 *ŋayi bala      balanu bakthu-rru* [CIRC]  
3s MVTAWY MOD break.II

‘It [the recorder] might break.’

## Negative asymmetry

## II and IV as IRR

- 14 *waṭuy balanu luka-nha chocolate* [CIRC]  
dog.ERG MOD eat-IV chocolate

‘The dog may/must have eaten the chocolate.’

- 15 *ṇarra ṇuli baman’ luplupthu-na dhiyal* [PST HAB]  
1s HAB prior swim-IV PROX.LOC

‘I used to swim there.’

- 16 *ṇāthil ṇarra ṇuli balan liya-ṇamaṇamayunmi-nya* [COND]  
earlier 1sg MOD MOD head-make.I.REFL-IV

*bala ṇarra balan waṇa-nha-n*  
then 1s MOD speak-IV-SEQ

‘Had I thought of it before, I would have spoken.’ (Wilk 91)

## Negative asymmetry

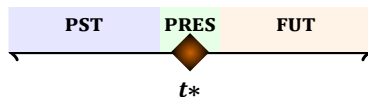
## II and IV as IRR

- ▶ II and IV co-occur with :
  - ▶ **future** marking
  - ▶ **modals** (nonepistemic)
  - ▶ **negation**
- ▶ Formal treatments of the future predict a range of modal uses of future morphemes
- ▶ Compare En. *will* 'FUT': *that'll be the postman*
  - ▶ ( $\forall$ -quantification over different "conversational bkgrds")
- ▶ **Can all this data be unified?**

# RECAP

# THE PARADIGMS

## Wägilak

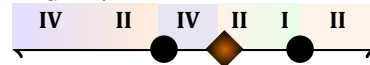


## Western Dhuwal(a)

### POSITIVE



### NEGATIVE





# Negation as a modal operator

- ▶ Building on a symbolic-logical tradition that conceives of negation as a modal operator

**Negation as a (species of) alethic impossibility** (cf Wansing 2001):

$$\mathcal{M}, w \models \sim A \iff \forall u. wCu \rightarrow \mathcal{M}, u \not\models A$$

- ▶ I propose that *yaka*, *bäyŋu* ‘NEG’ are part of a class of modal particles (2-place operators, following Kratzer a.o.)

$$\llbracket \text{NEG} \rrbracket = \lambda P_{\langle s, t \rangle} \lambda w. \#w' [w' \in \cap \mathbb{C}(w) \rightarrow \text{AT}(P, w')]$$

Pred modifiers that asserts that there's no  $w$ -compatible world, the pred is not instantiated

*I.e.*, they effectively mark the counterfactual status of  $P$

- ▶ Takeaway: there's a way of conceptualising  $\neg$  as a (2-place) modal operator

# Modal particles

- ▶ This treatment allows us to posit a natural class with the other licensing environments for **II** and **IV**.
- ▶ In one way or another, WD modal particles signal the **objective nonveridicality** of prejacent
  - ▶  $\stackrel{\text{def}}{=} \exists w' [w' \in \mathbb{M} \wedge w' \in \neg p]$   
(Giannakidou 2016a.o.)
  - ▶ this p much means that **the truth of a given proposition can't be known/asserted** as a “settled” fact in a given situation
- ▶ Our semantics for negative and modal operators — those elements that co-occur with **II** and **IV** — all satisfy **nonveridicality** in some circumstantial modal base

## II and IV as IRREALIS mood

- ▶ suggests a treatment of WD inflections as verbal mood
- ▶ super dissimilar to the IND-SBJV distinction in European
  - ▶ NOT licensed by subordinating preds
  - ▶ Also not licensed by **epistemic modals**
- ▶ Paradigm realises a systematic REALIS-IRREALIS distinction
  - ▶ this notion is both much-used and much-maligned in the typological literature
  - ▶ Krifka, von Prince *et al.* have formal proposals in N/C-vanuatuan langs

# Proposal for the WD paradigm

The paradigm is organised around two semantic features:

- ▶ **NONVERIDICALITY**  
satisfied when c-commanding a modal

$$\exists i' [i' \in \cap \approx_i \wedge P(i')]$$

- ▶ **“PRECONTEMPORANEITY”**  
(NONFINAL INSTANTIATION)

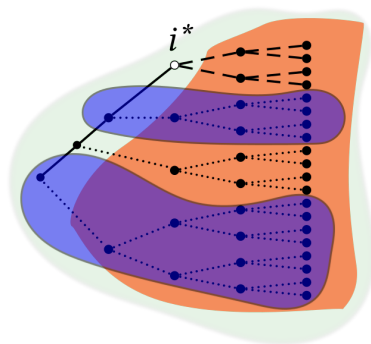
$$\exists j [j \sqsubseteq_{\text{FINAL}} i \wedge \text{NFINST}(P, i, j)] \quad (\text{C\&D '15})$$

I

II

III

IV



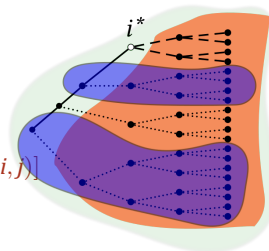
# Proposal for the WD paradigm

$$[\text{I}]^{i*} = \lambda P \lambda i. P(i)$$

$$[\text{II}]^{i*} = \lambda P \lambda i : \exists i' [i' \in \cap \approx_i \wedge \neg P(i')] . P(i)$$

$$[\text{III}]^{i*} = \lambda P \lambda i : \exists j [j \sqsubseteq_{\text{FINAL}} i. \text{NFINST}(P, i, j)]$$

$$[\text{IV}]^{i*} = \lambda P \lambda i : \exists i' [i' \in \cap \approx_i \wedge \neg P(i')] \wedge \exists j [j \sqsubseteq_{\text{FINAL}} i. \text{NFINST}(P, i, j)]$$



-NONVER    +NONVER

-PRECON

I

II

+PRECON

III

IV

I

II

III

IV

## CONCLUSIONS

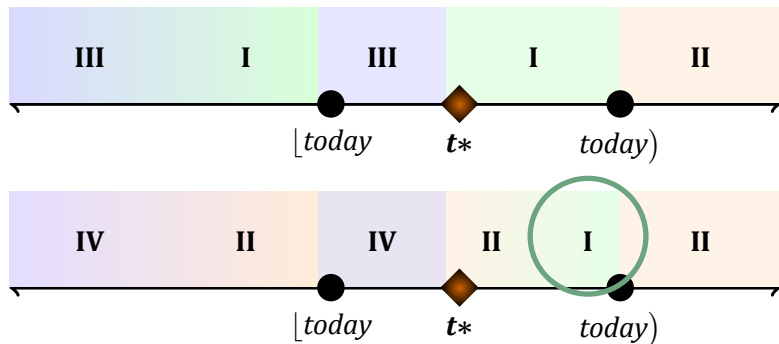
- ▶ We've seen a treatment of negative operators that places them in a class of modals
- ▶ We've seen how the interaction of two properties—NONVERIDICALITY and PRECONTEMPORANEITY—get us a principled analysis of WD inflectional semantics (I, II, III, IV)
- ▶ (see dissertation for intricacies & semantic composition)

## Selected References

**Bhat** (1999) *Prominence of Tense, Mood & Aspect* • **Boneh** (2016) On becoming a tense prominent system. *FoDS1* • **Bowern** (2009) Conjugation class stability. *ICHL19* • **Bybee, Perkins & Pacuglia** (1991) *Evolution of Grammar* • **Comrie** (1985) *Tense* • **Condoravdi** (2002) Temporal Interpretation of Modals • **Condoravdi & Deo** (2014) Aspect shifts in Indo-Aryan and trajectories of semantic change • **Copley** (2009) *The semantics of the Future* • **Giannikidou** (2016). Evaluative subjunctive and nonveridicality • **de Haan** (2012) Irrealis: fact or fiction? *Lang. Sci.* 34 • **Heath** (1981) *Ritharrngu* • **Kaufmann** (2005) Conditional truth and future reference • —, **Condoravdi & Harizanov** (2006) Formal approaches to modality • **Krazer** (1989) Lumps of thought *L&P* • **Krifka** (2016) Realis & nonrealis modalities in Daakie. *SALT26* • **Lowe** (n.d.) *Grammar lessons in Gupapuyngu* • **Matthewson** (2010) Cross-linguistic variation in modality systems: The role of mood. *S&P* • **Miestamo** (2005) *Standard negation* • **von Prince** (2019) Counterfactuality and past. *L&P* • **Ripley** (2009) *Negation in natural language* • **Thomason** (1970) Indeterminist time and truth-value gaps • **Waters** (1989) *Djinang & Djinba* • **Wansing** (2001) *Negation*. Blackwell *Phil. Logic* • **Wilkinson** (1991) *Djambarrpuyngu*.

# Appendix A

## The I same-day future



- Under negation, **I** occurs only in same-day future predication

17 (bäyŋu) ŋarra dhu ga ŋhäma mukulnha [SAME-DAY FUT]  
 (NEG) 1s FUT IPFV.I see.I aunty.ACC

'I'm (not) seeing my aunt (tonight).'



# Appendix A

# The I same-day future

- ▶ A grammaticalised FUTURATE (Copley 2009)

$\text{PLAN}(d)(p)(w)(t)$

- ▶ ‘The speaker of a futurate has some high level of confidence that the future eventuality will happen’
- ▶ Copley’s conditional presupposition: *If  $p$  is planned,  $p$  will happen*
- ▶ In this case, the reality status of  $\text{PLAN}(p)$  and  $\text{PLAN}(\neg p)$  ought to be the same.

# Appendix A

# The I same-day future

- ▶ Conversely the neutralisation still happens in the present

7 *bäyŋu* *ŋarra ga* *nhäma* *mukulnha* [PRESENT]  
 NEX 1s IPFV.I see.I aunt-ACC

‘I see my aunt (right now).’

- ▶ Negative present descriptions are still counterfactual
- ▶ Note that this is fine for the current analysis:  
 I is maximally underspecified, and is outcompeted by the other inflections (MAXPRESUPP)

# Appendix C

# Directionality

- ▶ Yolŋu as a Pama-Nyungan “enclave” in the Arnhem Land
- ▶ Most other (nPN) Arnhem languages express NEG asymmetry
- ▶ Maningrida language family has cyclic tense
- ▶ Waters (1989) provides a number of other features shared between W Yolŋu and Arnhem languages
- ▶ Evidence of a Sprachbund
- ▶ Bower (2009) proposes a 6-way inflected Proto-Yolŋu paradigm. The West Arnhem Sprachbund features are not reconstructed.

## Appendix D

## Inflection in Wägilak

- 1 *godarr      ŋarra nhäŋu-’ma’ mukulnha*  
tomorrow 1s      see.**II-NEG**      aunt.ACC

[FUTURE]

‘I will see my aunt tomorrow.’

- 2 *nhäma-’ma’ rra yakuthi mukulnha*  
see.**I-NEG**      1s      now      aunt.ACC

[PRESENT]

‘I’m (not) looking at my aunt currently.’

- 3 *gätha ŋarra nhäwala-’ma’ mukulnha*  
today 1s      see.**III-NEG**      aunt.ACC

[PAST]

‘I saw my aunt this morning.’

## Appendix C

## Inflection in Wägilak

- ▶ Closest related Yolŋu languages do not exhibit the asymmetry
- ▶ Inflections encode temporal information
- ▶ Imperatives formally identical to declaratives
- ▶ **II** and **IV** also occur in conditionals (without modal particles)

4 *wäniya* *ŋay* *ŋunbalaya* *bulu*, *ŋayi* *guyupiya* [SBJV]  
 go.**IV** 3s that way again 3s die.**IV**

‘If he had gone that way, he would’ve died’

5 *wäni* *ŋay* *ŋunbalaya* *bulu*, *ŋayi* *guyupi* [COND]  
 go.**II** 3s that way again 3s die.**II**

‘If he had gone that way, he would’ve died’