## Duality and phasal polarity in Oceanic languages

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26 February 2020, Disputation at Humboldt-Universität zu Berlin


DFG

## My thesis

Tense, mood, and aspect expressions in Nafsan (South Efate) from a typological perspective
The perfect aspect and the realis/irrealis mood


## Nafsan: Fieldwork

- grammar (Thieberger, 2006), corpus (Thieberger, 1995-2018)
- storyboards (von Prince, 2017; Krajinović, 2018)
- questionnaires (Dahl, 2000b; Olsson, 2013; Veselinova, 2018)
- data archived in PARADISEC (Krajinović, 2017)


Figure 1: Efate with locations where Nafsan is spoken

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- When the realis/irrealis mood is expressed by portmanteau subject markers, as in Nafsan, one of the two paradigms can be semantically underspecified.


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- the properties of perfect aspect in Oceanic languages go against the newly proposed iamitive category (Olsson, 2013)
- When the realis/irrealis mood is expressed by portmanteau subject markers, as in Nafsan, one of the two paradigms can be semantically underspecified.
- this reanalysis explains some of the "unexpected" behavior of this category, e.g. occurrence of "realis" in contexts otherwise associated with irrealis


## Duality and phasal polarity

- duality of aspectual particles 'already' and 'still’ (Löbner, 1989): the external negation of 'already' is equivalent to the internal negation of 'still' and vice versa


## Duals

(1) Are the lights already on? - No. $\equiv$ the lights are still off
(2) Are the lights still on? - No. $\equiv$ the lights are already off

## Duality and phasal polarity



Figure 2: Duality schema with English particles, based on Löbner (1989)

## Duality and phasal polarity



Figure 3: Duality schema with English and Portuguese particles, based on Löbner (1989)

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- criticism by van der Auwera $(1993,2018)$ and van Baar $(1997)$
- not all duality relationships are equally transparent formally - while 'still not' is fairly common for the meaning of 'not yet', we don't find 'not already not' for 'still' (van der Auwera, 1993; van Baar, 1997)


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- "phasal polarity" in typological literature (van Baar, 1997; van der Auwera, 1993; Kramer, 2018)
- criticism by van der Auwera $(1993,2018)$ and van Baar $(1997)$
- not all duality relationships are equally transparent formally - while 'still not' is fairly common for the meaning of 'not yet', we don't find 'not already not' for 'still' (van der Auwera, 1993; van Baar, 1997)
- duality hypothesis does not account for additional aspectual particles, e.g. "counterexpectational" 'still' markers, found in van Baar's (1997) typological study


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What type of evidence do Oceanic languages provide in this debate?

- many Oceanic languages express the meaning of change of state in their TMA systems, through particles that have often been analyzed as perfect aspect or 'already'


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(1) duality is tied to the category of perfect aspect only when it expresses change of state - duality effects are restricted to certain meanings
- many Oceanic languages have very rich inventories of aspectual particles
(2) languages can have additional particles which are not a part of the duality system


## Languages in this study



Figure 4: Four languages featured in this study

## Duality patterns



Figure 5: Duality patterns in Oceanic languages of this study in bold

## Duality patterns

| Nafsan | pe |
| :--- | :--- |
| Toqabaqita | naqa |
| Unua | $\boldsymbol{j u} \boldsymbol{u} / \boldsymbol{g o j}$ |
| Nêlêmwa | $(\boldsymbol{k} / \boldsymbol{x}) \boldsymbol{u}$ |



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Nafsan pe NEG Toqabaqita NEG naqa Unua $\quad$ NEG ju NEG mu


Nêlêmwa ( $\boldsymbol{k} / \boldsymbol{x}) \boldsymbol{u} \boldsymbol{N E G}$ NEG baa ?NEG ha(x)a

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## Change of state



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## The meaning of change of state: PRF (CoS)

(3) [Toqabaqita]

Fanua e rodo naqa.
place 3sG.NFUT be.dark PRF
'It is dark now. / It has gotten dark.' (Lichtenberk, 2008:712)
(4) [Nafsan]

Malfane nal-u-k ki=pe taar.
now hair-v-1sG.DP 3sG.PRF=PRF be.white
'My hair is blond now.' (AK1-146-03, 00:03:31.991-00:03:33.853)


## PRF (CoS) + NEG: 'not anymore'

(5) [Toqabaqita]

Kera araqi naqa. Kesi talaqa-na naqa raa-laa [...] 3pl.nfut be.old. prf 3pl.neg fit-3.obj PRF work-nMLZ 'They [the speaker's parents] had grown old. They were no longer able to work [...]' (Lichtenberk, 2008:1283)
(6) [Nafsan]
totur ntau $i=n r u$ nal-u- $k \quad g a \quad i=m i e l \quad m e ~ m a l f a n e ~$ during year 3sG=two hair-v-1sG.DP 3sG 3sG=be.red but now nal-u-k ki=pe ta miel mau.
hair-v-1sG.DP 3sG.PRF=PRF NEG1 be.red NEG2
'During these two years my hair was red, but it's not red anymore.' (AK1-154-03, 00:03:36.645-00:03:52.483)

## Negation of perfect with bounded events

(7) [Toqabaqita]

Wane baa qe=aqi si fula naqa.
man that 3sG.NFUT=NEGV 3sG.NEG arrive PRF
'The man has not arrived.' (Lichtenberk, 2008:180)
(8) [Nafsan]

Malen $\tilde{p} a=l e r \quad k a i=\boldsymbol{p e} \quad \boldsymbol{t a}$ mtir natus mau.
when 2sG.IRR=back 1sG.PRF=PrF NEG1 write letter NEG2
'When you come back, I will not have written the letter.' (by Lionel Emil, 19/06/2018)

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The negation of the meaning of change of state creates a duality relationship, not the negation of the perfect form!

## Additional 'still' markers



Figure 7: Duality patterns in Oceanic languages of this study

## Additional markers in Nêlêmwa: 'still'

- in Nêlêmwa at least two different markers can be translated as 'still' (Bril, 2016:93):
- baa DUR (durative)
- gaa PERSIST (persistive)
(9) Baa maaxa.

Dur be.raw
'It's still raw.' (Bril, 2016:94)
(10) Xam gaa pânaat.

ASS PERSIST stone
'It is still stone.' (as a persistent state of things, but a different one is expected) (Bril, 2016:93)

## Additional markers in Nêlêmwa: 'still'

(11) Gaa nabak=du kua-n.

PERSIST sink=down foot-poss.3sG
'Her feet keep on sinking down.' (Bril, 2016:93)
(12) Kio <i baa mago gat >.

NEG 3SG DUR sleep cont
'He's not/no longer sleeping.' (Bril, 2016:94)
(13) Baa < kio i mago gat >.
dur neg 3sg sleep cont
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DUR NEG 3sG sleep cont
'He's still not asleep.' (Bril, 2016:94)
The meaning of 'still' for gaa is only a translational equivalent in some contexts. Its meaning does not interact with duality!

## Conclusion

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- duality relationships are semantic (Löbner, 2011)


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- the existence of additional markers does not invalidate the duality hypothesis


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- duality relationships are semantic (Löbner, 2011)
- languages can have additional particles that might resemble 'already' or 'still', but they might have different semantics altogether, outside of the duality system
- the existence of additional markers does not invalidate the duality hypothesis
- Löbner's (1989) proposal for duality between 'already’ and 'still' can explain different relationships between aspectual particles in Oceanic languages


## Thank you

Nafsan speakers: Lionel Emil, Gray Kaltap̃au, Yvanna Ataurua, Marinette Kalpram, Belinda Kalopong, Julian Malnaem, Michael Joseph, Honoré Albert, Jefferey Taun, Lingkary Carol Kalpram, Glenda Lalier, Lillot Reecy, Touskau Kaloros, Tumaira Kaltap̃au, and Rose Kalfabun, all the participants of the dictionary workshops in Erakor in 2017 and 2018
Official and unofficial supervisors: Kilu von Prince, Manfred Krifka, Nick Thieberger, Rachel Nordlinger
MelaTAMP project: Lena Weissmann, Annika Tjuka, and Stephan Druskat In fieldwork: Rosey Billington, Eleanor Ridge, Mike Franjieh, Georgia Noy, and Marie-France Duhamel
Everyone in CoEDL, especially Stefan Schnell, Vanya Kapitonov, Catalina Torres Orjuela
Everyone at Humboldt, especially Paola Fritz, Julian Rott, and Jens Hopperdietzel For semantic discussions: Jozina Vander Klok, Marie-Eve Ritz, Östen Dahl, Jurica Polančec, James Bednall, Patrick Caudal, Johan van der Auwera, Elizabeth Pearce Funding: DFG (MelaTAMP project) and ARC Centre of Excellence for the Dynamics of Language

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## Krifka (2000): focus-sensitive particles

(14) Lydia is 3 months old. (Krifka, 2000:405) Alternatives considered: $1 \begin{array}{lllll}1 & 2 & 3 & 4 & 5 \text { months old }\end{array}$ Alternatives asserted:
(15) Lydia is already 3 months old. (Krifka, 2000:405) Alternatives considered: $1 \quad 2 \quad 3$ months old Alternatives asserted: 3 months old
(16) Lydia is still 3 months old. (Krifka, 2000:405) Alternatives considered: $\quad 3 \quad 4 \quad 5$ months old Alternatives asserted: 3 months old

## Additional markers in Nêlêmwa: gat

- glossed as continuous, it has the meaning of contradictory expectation (Bril, 2016)
(17) Fwâ kio i uya (gat). yet NEG 3sG arrive CONT
'He (still) hasn't arrived yet.' [gat rendered here as 'still’ suggests that he should be here.] (Bril, 2016:98)
(18) Baa kia-e gat.

DUR not.be.there-3sG cont
'He's still not there.' [but he should be] (Bril, 2016:94)

## Unua: 'not yet'

(19) Xamru mur-seb-rex rrobb? - I-jxe rrobb.

2DU 2DU-NEG-marry still - 3sG-not still
'Aren't you married yet? - Not yet' [SS.04,05] (Pearce, 2015:334)
(20) Naus ngo b-i-mirr ju go i-jxe tin. papaya the IRR-3sG already FOC 3 sG-not very
'The papaya will not be very ripe yet.' (Pearce, 2015:352)

## Unua: 'not anymore'

(21) no-berax ju be-re mur-b-ngar ien. 1SG-not.want already IRR-1SG-feel 2DU-IRR-cry here
'I don't want to hear you crying here anymore.' (Pearce, 2015:282)
(22) Go mokiki i-ter, i-seb-ngar rre mu rre and boy 3sG-strong 3sG-NEG-cry NEG again NEG
'And the boy grew strong, he didn't cry anymore' (Pearce, 2015:329)
(23) No-seb-xa mu rre. No-non, no-rex ien.

1SG-NEG-go again NEG 1sG-stay 1sG-marry here
'I've never been back. I live here, I married here,' (Pearce, 2015:328)
(24) I-vase ru-seb-matur mu rre, 3sG-make 3Du-nEG-sleep again NEG
'So they didn't sleep at all,' (Pearce, 2015:328)

## Additional markers in Nêlêmwa: 'not anymore'

(25) Io $\boldsymbol{h a ( x ) a}$ top na mwena.
fUT PERM rot loc there.DX2
'It will just remain rotting away there.' (Bril, 2016:99)
(26) Kio i ha(x)a mago.
neg 3sg perm sleep
'He never sleeps anymore.' [due to insomnia or disease] (Bril, 2016:100)
(27) Xu kio mwa na âlô gat.

PRF NEG SEQ 1SG child CONT
'I'm no longer young.' (Bril, 2016:95)

## Additional meanings: Expectations in Nafsan

(28) (Talking about a teenager who didn't come home on time) Max CALL (YET)? (Veselinova, 2018:NQ 51)
Max $\boldsymbol{k i = p e \quad r i n g ~ k o ? / ~ M a x ~ i = p o \quad r i n g ? ~}$

Max 3sG.PRF=PRF call or Max 3sG=PSP.REAL ring
'Did Max call yet?' (AK1-156)
(29) A=preg nanrik soksokien $i=s k e i \quad n a \quad k a=f o \quad$ welu-a 1SG=make say promise 3sG=one comp 1SG.IRR=PSP.IRR help-TR me kai=pe ta preg mau. but 1sG.PRF=PRF NEG1 make NEG2
'I made a promise I would help him, but I haven't done it after all/in the end.' (AK1-083-01)

## Structure of Nafsan

Table 1: Exemplified verbal complex in Nafsan, based on Thieberger (2006)

| SBJ = | TMA | AUX | NEG1 | BEN | V | PFV | NEG2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $r u i=(3 \mathrm{PL} . \mathrm{PRF})$ | $p e(\mathrm{PRF})$ | $\operatorname{mer}\left({ }^{\prime}\right.$ again') | $t a(p)$ | $g a(3 \mathrm{SG})$ | $s u$ | $m a u$ |  |

## Subject proclitics in Nafsan

Table 2: Reanalyzed subject proclitics in Nafsan, based on Thieberger (2006)
General (realis) Irrealis Perfect-agreeing (perfect)

| 1sG | $a=$ | $k a=$ | $k a i=$ |
| :--- | :--- | :--- | :--- |
| 2sG | $k u=$ | $p a=$ | $k u i=$ |
| 3sG | $i=$ | $k e=$ | $k i=$ |
| 1DU.INCL | $t a=$ | $t a k=$ | takai=, tai= |
| 1DU.EXCL | $r a=$ | $r a k=$ | rakai= |
| 2DU | $r a=$ | $r a k=$ | rakai= |
| 3DU | $r a=$ | $r a k=$ | $r a k a i=, r a i=$ |
| 1PL.INCL | $t u=$ | $t u k=$ | $t u i=$, tukoi= |
| 1PL.EXCL | $u=$ | $k o=$ | $u i=, k o i=$ |
| 2PL | $u=$ | $k o=$ | $k o i=$ |
| 3pL | $r u=$ | $r u k=$ | $r u i=, r u k u i=$ |

## Introduction: perfect, already, iamitives

- recent interest in typology in the connection between already and the perfect aspect (Olsson, 2013; Dahl \& Wälchli, 2016)
- iamitives are a new gram proposed by Olsson (2013) that aims at describing a perfect-like category with the additional meaning of change of state
- I argue that the categories of perfect and already are sufficient to describe the range of meanings found in languages - these categories also have semantic tools in place to describe different kinds of behavior related to their meanings:
- aspectual coercion
- paradigmatic blocking
- meaning compatibility


## Readings of the English perfect

(30) a. resultative (perfect of result)
b. experiential (existential)
c. universal (perfect of persistent situation)
d. 'hot news' (perfect of recent past)
e. anteriority readings: past/future perfect

I have arrived.


Figure 8: Representation of the present perfect (Klein, 1994)

## Already

Vander Klok \& Matthewson (2015) argue that, in contrast to the perfect, already can be identified through:

- change-of-state meaning
- presence of "earlier than expected"


## Perfect and already



Figure 9: Semantic map of the English Perfect in blue and the English already in yellow (full outline: core meanings, dotted outline: perfect meanings with which it can combine)

## The problem

There are two problems for the cross-linguistic validity of the perfect aspect:

- perfects in some languages lack some of the "core" functions of perfect
- perfects in some languages have additional functions (in comparison to the prototype)
- this prompted the creation of the iamitive category (Olsson, 2013; Dahl \& Wälchli, 2016) that can be identified by
- lack of experiential, universal, and anteriority functions
- presence of an additional change-of-state meaning (My hair is long now vs. My hair has been long)


## Iamitives

(31) [Jakarta Indonesian]

Kamu tidak bisa memakan-nya. Itu sudah busuk.
2sG NEG can eat-3 it IAM rotten
'You can't eat this one. It is rotten.' (Olsson, 2013:18)
(32) [Mandarin Chinese]
nǐ bù néng chīzhè-ge. tā làn le
2sg Neg can eat this-Cl 3sg rotten IAM
'You can't eat this one. It is rotten.' (Olsson, 2013:18)

## Iamitives



Figure 10: Semantic map of the proposed iamitive functions (Olsson, 2013)

## Perfect in Nafsan

(33) [Experiential] Question: You MEET my sister (at any time in your life up to now)? (Dahl, 2000b:801, PQ4)
kui=pe paatlas kore-k te-mal?
2SG.PRF=PRF meet sister-1sG.Poss one-time
'Have you met my sister?' (AK1-115-01)
(34) [Resultative]

Kineu kai=pe maa ntal su.
1SG 1SG.PRF=PRF grate taro PFV
'I have grated the taro.' (AK1-146-02, 00:02:32.335-00:02:41.410)


## Perfect in Nafsan: temporal adverbs

(35) Context: A question asked at 9 o'clock a.m.: Why do you look so tired? Answer: I WAKE UP at 4 o'clock this morning (TT). (Dahl, 2000b:TMAQ 16)
*kai=pel a=pilo 4oklok pulpog.
*1SG.PRF=PRF 1SG=wake.up 4 o'clock morning
'I woke up at 4 o'clock this morning.' (AK1-119-01)
(36) Context: If your alarm is set for 5 a.m. (TT), but by chance you woke up at 4 a.m. (TSit).
Kai=pe pilo 4 oklok p̃ulp̃og.
1SG.PRF=PRF wake.up 4 o'clock morning
'I had woken up at 4 o'clock in the morning.' (AK1-119-01)

## Temporal adverbs: Storyboards

Matthewson et al. (2017) highlight this example as eliciting temporal adverb restrictions:


Figure 11: A: The pet rat has just died! B: He is lying, he died yesterday. (Matthewson, 2014)

## Temporal adverbs: Storyboards

(37) i=to psir,ga ki=pe mat nanom su. 3SG=PROG lie 3sG 3sG.PRF=PrF die yesterday compl
'He is lying, he had died yesterday.' (AK1-146-04, 00:04:03.626-00:04:10.640)

Ga ki=pe mat nanom su.


Figure 12: Representation of example (37)

## Perfect functions in Nafsan

Table 3: Occurrence of different functions of pe in 3 empirical methods (+ attested, ? unclear, - not attested, -/+ restricted to certain environments, perfect=blue, iamitive/perfect=purple, iamitive/already=red)

| Method | Univ. | Exper. | Ant. | Result. | Adv. | CoS | Dual. | Expect. |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Corpus | $?$ | $?$ | + | + | + | + | $?$ | $?$ |
| Storyb. | + | + | + | + | $-/+$ | $-/+$ | $-/+$ | $-/+$ |
| Quest. | + | + | + | + | $-/+$ | $-/+$ | $-/+$ | $-/+$ |

## The spread of perfect-like functions in Melanesia

Table 4: Perfect values in Nafsan and other Oceanic languages (+ attested, ? unclear, - not attested, -/+ restricted to certain environments, e.g. needing to occur with another marker)

| Meanings | Nafsan | Toqabaqita |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| pe | naqa | Unua | Nu/ goj nu | kua | Maori |
|  | kua |  |  |  |  |
| Resultative | + | + | + | + | + |
| Anteriority | + | + | + | + | + |
| Experiential | + | + | + | + | + |
| Universal | + | + | + | - | + |
| Hot news | - | - | - | + | + |
| Change of state | + | + | + | + | + |
| Expectedness | $-/+$ | - | $-/+$ | - | $?$ |
| Duality | $-/+$ | $-/+$ | $-/+$ | $?$ | $?$ |
| Temp. adverb | $-/+$ | $+/ ?$ | $?$ | - | $?$ |

## The spread of perfect-like functions in Melanesia

Table 5: Perfect values in Nafsan and other Oceanic languages (+ attested, ? unclear, - not attested, -/+ restricted to certain environments, e.g. needing to occur with another marker)

| Meanings | Nafsan | Toqabaqita | Unua | Niuean | Maori |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | pe | naqa | $j u /$ goj $n u$ | kua | $k u a$ |
| Resultative | + | + | + | + | + |
| Anteriority | + | + | + | + | + |
| Experiential | + | + | + | + | + |
| Universal | + | + | + | - | + |
| Hot news | - | - | - | + | + |
| Change of state | + | + | + | + | + |
| Expectedness | $-/+$ | - | $-/+$ | - | $?$ |
| Duality | $-/+$ | $-/+$ | $-/+$ | $?$ | $?$ |
| Temp. adverb | $-/+$ | $+/ ?$ | $?$ | - | $?$ |

## Change of state in Nafsan

(38) Malfane nal-u-k $\boldsymbol{k i}=\boldsymbol{p e}$ taar.
now hair-v-1sG.DP 3sG.PRF=PRF white
'My hair is blond now.' (AK1-146-03, 00:03:31.991-00:03:33.853)
(39) $k u=l e k$ faat ne faat nen $\boldsymbol{i}=\boldsymbol{t o p}$
$2 \mathrm{sG}=$ look stone this stone that $3 \mathrm{sG}=\mathrm{big}$
'You look at that stone. That stone is big.' (015.033)

- Koontz-Garboden (2007) notes the meaning of change of state easily arises with the perfect in languages without any change-of-state morphology
- property concepts denoting states can be aspectually coerced into changes of states in languages which do not distinguish adjectives from verbs in the predicate position (Koontz-Garboden, 2005)


## Change of state in Nafsan

(40) Context: all the kids in the classroom are misbehaving: Teplaksok $\boldsymbol{i}=$ maet pelpel. teacher 3sG=angry quickly
'The teacher got angry quickly.' (Lionel Emil, 28/11/2018)
(41) teplaksok ki=pe maet.
teacher 3sG.PRF=PRF angry
'The teacher got angry.' (Lionel Emil, 28/11/2018)
teplaksok ki=pe maet.


## Blocking principles



Figure 14: Semantic map of the perfect in red for Nafsan, Toqabaqita, and Unua and the markers expressing hot news in blue

## Blocking principles: Nafsan

(42) (Talking about a teenager who didn't come home on time) Max JUST COME (Veselinova, 2018:NQ 53)
Max i=po mai kia.

Max 3sG=PSP.REAL come DET
'Max has just come.' (AK1-156)


Figure 15: Semantic map of the perfect kua in Maori

## Meaning compatibility in Nafsan



Figure 16: Semantic map of the Nafsan Perfect in red and the perfective su in dashed yellow outline signalizing the perfect functions with which it combines

## Meaning compatibility in Nafsan

(43) Kineu kai=pe pag-ki ntaf i=skei su.

1SG 1SG.PRF=PRF climb-TR mountain 3SG=one PFV
'I have climbed a mountain.' (AK1-147-04, 00:00:57.590-00:01:01.796)
(44) Kineu kai=pe maa ntal su.

1SG 1SG.PRF=PRF grate taro PFV
'I have grated the taro.' (AK1-146-02, 00:02:32.335-00:02:41.410)

## Perfect: Conclusion

- based on the data from Nafsan and other Oceanic languages I argued that iamitives do not have an operational semantic definition
- aspectual coercion in languages with underspecified verbal aspect can explain the presence of change of state
- paradigmatic blocking can explain the lack of some perfect functions
- compatibility in meaning can explain certain overlaps in distribution between perfect and already


## Introduction

Is realis/irrealis a meaningful cross-linguistic category? (Bybee, 1998; de Haan, 2012; Cristofaro, 2012)

- I take up the idea by Cristofaro (2012) that subject marking can be semantically and/or morphologically distinguished from the realis/irrealis category even when it is classified as "portmanteau"
- I argue that one of the two categories (realis or irrealis) is not necessarily semantically expressed by the subject markers
- the TMA interpretations of subject markers underspecified for mood are derived from a competition with true portmanteau subject markers, which are specified for mood


## Realis/irrealis: a definition



Figure 17: Braching-times model by von Prince (2018b); Krifka (2016), based on Thomason (1984)

## Realis/irrealis debate

Problematic categories in typology and description:
(1) Irrealis

- "polifunctionality" of modal markers: irrealis is often interrelated with other TAM categories, such as future tense (see Velupillai, 2016)
(2) Realis
- problematic classifications: "realis" is often found in modal contexts, such as future (Chafe, 1995), directives (Mauri \& Sansò, 2012), or counterfactuals


## Problematic portmanteau markers: Wogeo

Table 6: Subject markers in Wogeo (Exter, 2012:181), in their forms as they would appear with the verb lako 'go’

|  | Realis | Irrealis |
| :--- | :--- | :---: |
| 1sG | $o^{-}$ | go- |
| 2SG | go-, | ko- |
| go- |  |  |
| 3sG | $e^{-}$ | de- |
| 1DU | to- | tog- |
| 2DU |  | kad $^{-}$ |
| 3DU | do- | dog- |
| 1PC | to- | tog- |
| 2PC |  | $k o t o^{-}$ |
| 3PC |  | doto- |
| 1PL |  | ta- |
| 2PL |  | $k a-$ |
| 3PL |  | da- |

## Problematic portmanteau markers: Wogeo

a. m-o-lako

FUT-1sG.REAL-go
b. mo-go-lako

FUT-1SG.IRR-go
'I will/can/may go.' (Exter, 2012:182)
(46) s-e-vá iko sa-k-lako, katé

CF-3sG.REAL-happen you CF-2sG.REAL-go thus
mo-la-moet
FUT.2SG.REAL-INCH-disappear
'If you had gone, you would have been lost.' (Exter, 2012:186)

## Nafsan subject markers

Table 7: Subject proclitics in Nafsan by Thieberger (2006:150)

|  | General (realis) | Irrealis | Perfect-agreeing |
| :---: | :---: | :---: | :---: |
| 1sg | $a=$ | $k a=$ | kai= |
| 2sg | $k u=$ | $\tilde{p} a=$ | kui= |
| 3 sg | $i=$ | $\boldsymbol{k} \boldsymbol{e}=$ | $k \boldsymbol{i}=$ |
| 1du (incl) | $t a=$ | tak= | takai= |
| 1du (excl) | $r a=$ | rak= | rakai= |
| 2 du | $r a=$ | rak= | rakai= |
| 3 du | $r a=$ | rak= | rakai=, rai= |
| 1 pl (incl) | $t u=$ | $t u \boldsymbol{k}=$ | tui=, tukoi= |
| 1 pl (excl) | $u=$ | $\boldsymbol{k o}=$ | $u \boldsymbol{i}=$, $k o \boldsymbol{i}=$ |
| 2 pl | $u=$ | $\boldsymbol{k o}=$ | koi= |
| 3 pl | $r u=$ | $r u \boldsymbol{k}=$ | $r u i=, r u k u i=$ |

## Realis/irrealis in Nafsan

(47) Komam rak=tap fam mau me rak=to.

1PL.EXCL 1DU.IRR=NEG eat.IRR NEG2 but 1DU.IRR=stay
We won't eat, but we'll stay. (Thieberger, 2006:164)
(48) Nanom pog, u=mai praktis. yesterday night 1pl.EXCL=come practice
Yesterday evening we came to practice. (Thieberger, 2006:151)


## Distribution of subject proclitics in Nafsan



Figure 19: Co-occurrences of subject proclitics and TMA markers in two Nafsan corpora

## General (realis) in Nafsan

Malnen $\tilde{p} a=l e r, \quad \boldsymbol{a}=\boldsymbol{p e} \quad$ mtir natus su. when 2SG.IRR=return 1SG=PRF write letter PFV 'When you come back, I will have finished writing the letter.' (AK1-083-01, based on Dahl 2000a:FQ 17)
(50) If it BE COLD tomorrow, we STAY at home. (Dahl, 2000a:FQ 67) Naor i=fla tok mlanr matol, ka=fo tok esum̃. place $3 \mathrm{sG}=$ might stay cold tomorrow 1sG.IRR=PSP.IRR stay house 'If it's cold tomorrow, I will stay at home.' (AK1-103-01)

## Conditional clauses

Table 8: Storyboard results for conditional clauses
Conditional type Gen/irr ratio

Past counterfactual | general $31 \%$, |
| :---: |
| irrealis $69 \%$ |

Present counterfactual general $100 \%$
Future counterfactual general $22 \%$, irrealis 78\%

Present possibility general $100 \%$
Future possibility
general $25 \%$, irrealis 75\%

## Interchangeability of general and irrealis proclitics

(51) $\boldsymbol{a}=\boldsymbol{f} \quad$ mer mes matol, go nfag nen kin $a=$ tai 1SG=COND CF play tomorrow and sore REL COMP 1SG.REAL=cut nakn-i-k $k e=f o \quad$ mer makot finger-v-1sG.poss 3sG.IRR=PSP.IRR again break 'If I played tomorrow, the sore I cut on my finger would bleed again.' (AK1-098-01, 00:03:39.185-00:03:57.063)
(52) $\boldsymbol{k a}=\boldsymbol{f}$ mer mes volibol matol, nakn-i-k 1SG.IRR=COND CF play volleyball tomorrow finger-v-1sG.Poss $k e=f o \quad m r a$
3SG.IRR=PSP.IRR bleed
'If I played volleyball tomorrow, my finger would bleed.' (AK1-004-01, 00:03:27.921-00:03:33.286)

Frame from the story
"Competitions" (von Prince, 2018a)


## Phonological restrictions

Table 9: Combinations of $f$ with proclitics

|  | General | Irrealis |
| :--- | :--- | :--- |
| 1 sg | $a=f$ | $k a=f$ |
| 2 sg | $k u=f$ | $\tilde{p} a=f$ |
| 3 sg | $i=f$ | $k e=f$ |
| $1 \mathrm{du}(\mathrm{incl})$ | $\boldsymbol{t a}=\boldsymbol{f}$ | ${ }^{*} t a k=f$ |
| $1 \mathrm{du}(\mathrm{excl})$ | $\boldsymbol{r a} \boldsymbol{a} \boldsymbol{f}$ | ${ }^{*} r a k=f$ |
| 2 du | $\boldsymbol{r a}=\boldsymbol{f}$ | ${ }^{*} r a k=f$ |
| 3 du | $\boldsymbol{r a}=\boldsymbol{f}$ | ${ }^{*} r a k=f$ |
| $1 \mathrm{pl}(\mathrm{incl})$ | $\boldsymbol{t u} \boldsymbol{u}=\boldsymbol{f}$ | ${ }^{*} t u k=f$ |
| $1 \mathrm{pl}(\mathrm{excl})$ | $u=f$ | $k o=f$ |
| 2 pl | $u=f$ | $k o=f$ |
| 3 pl | $\boldsymbol{r u}=\boldsymbol{f}$ | ${ }^{*} r u k=f$ |

## Interchangeability of general and irrealis proclitics

(53) [Context: Why did you bring a hat yesterday?]

Nlaken $\boldsymbol{i}=s \boldsymbol{a}$ kin nlag $\boldsymbol{i}=f u u$.
because 3sG=bad comp wind 3sG=blow
'It would be bad if wind had blown.' (AK1-039-01, 00:05:33.556-00:05:35.681)
(54) [Context: the same as (53)]

I=sa kin nlag ke=sisi.
$3 \mathrm{sG}=\mathrm{bad}$ COMP wind $3 \mathrm{sG} . \mathrm{IRR}=$ blow
'It would be bad if wind had blown.' (AK1-018-01,
00:13:13.680-00:13:19.216)


## The mechanism of deriving realis meanings

How can we account for the appearance of "realis" in non-actual contexts?

- I propose that "realis" in Nafsan is only a person and number marking semantically unmarked for TMA values.
- Realis and irrealis are interchangeable in non-actual contexts with other modal markers, such as the conditional $f$ or counterfactual mer in Nafsan. Thus, these elements determine the modal interpretations.
- the modal expressions can either agree with the irrealis subject markers in modal features, or simply attach to the unmarked subject markers


## The mechanism of deriving realis meanings

If the "realis" paradigm is underspecified for TMA, how can we explain that the unmarked subject marking in the absence of modal marking has realis interpretations?

- I argue that the realis meaning in sentences with past/present reference is derived pragmatically by contrasting the underspecified subject markers with the specified irrealis subject marking category.
(55) Maximize Presupposition: Make your contribution presuppose as much as possible! (Heim, 1991)
(56) [There are black clouds in the sky.] It RAIN in the evening. (Dahl, 2000a:FQ 46)
Us i=fla wo kotfan./us ${ }^{*} \boldsymbol{i}=$ wo kotfan.
rain $3 \mathrm{SG}=$ might rain evening rain $3 \mathrm{sG}=$ rain evening
'It might rain in the evening.' (AK1-086-01)


## Irrealis



Figure 21: The domain of meaning expressed by irrealis proclitics in Nafsan)

## Modal flavors in Nafsan

Table 10: Occurrences of auxiliary and proclitic combinations in storyboards

| Meaning | TMA/Auxiliary | Irrealis procl. | General procl. |
| :---: | :---: | :---: | :---: |
| Circumstantial | tae | 0 | 9 |
| possibility | kano | 2 | 6 |
| Ability | kano | 1 | 7 |
| tae | $6(100 \%)$ | 0 |  |
| Epistemic | kano | $5(63 \%)$ | $3(37 \%)$ |
| possibility | mas | 2 | 0 |
|  | lakor | 4 | 7 |
|  | Irrealis with fo | 5 |  |
| Deontic | tae | $5(83 \%)$ | $1(16 \%)$ |
|  | kano | $14(61 \%)$ | $9(39 \%)$ |
|  | mas | 5 | 0 |
|  | Irrealis (other markers) | 8 |  |

## Modal flavors in Nafsan

(57) [Context: Mary's friends come and ask her to go play with them, but her mom ordered her to wash the dishes, so she says:, from TFS (2011a)]
Kineu $\boldsymbol{k a}=$ fo wano, $\boldsymbol{k} \boldsymbol{a}=f e i \quad$ was plet. 1SG 1SG.IRR=PSP.IRR cannot 1SG.IRR=first.IRR wash:BI PREP plate:BI
'I can't go, I have to wash the dishes first.' (20170816-AK-094, 00:00:57.995-00:01:07.171)
(58) [Context: Mary's friends come and ask her to go play with them, but she broke her leg, so she says:, from TFS (2011b)]

Kineu $\boldsymbol{a}=\boldsymbol{k a n o , ~ M a r y ~} i=t l-i-\varnothing$, nlaken $a=\tilde{p} a k o t$ 1sG 1SG=cannot Mary 3sG=say-Ts-3sG.ObJ because 1sG=break natu-o-k.
leg-v-1sg.DP
'I can't, says Mary, because I broke my leg.' (20170731-AK-016, 00:01:04.545-00:01:17.645)

## Mav̋ea

(59) imte $\boldsymbol{k} \boldsymbol{a}-\boldsymbol{v} \boldsymbol{k} \boldsymbol{a}$-va v̋alu-na ro me [...] m̈auri rarua if.cF 1sG.IRR-say 1sG.IRR-go to-3sG.poss then FUT life 3DU i-isav̋ai
3sG.IRR-how
'Suppose I had stayed with him [...] how would our life have been?" (VG20171047.056-058, von Prince et al. 2019:197)
(60) ka-mo-lo-to tuan me ḿauri-ku i-pal sa 1sG.IRR-COND-IPFV-stay with FUt life-1sG.Poss 3sG.Irr-like what 'if I had stayed with Peri how would my life have been?' (VG20171060.031-032, von Prince et al. 2019:198)

## Mav̌ea and Nafsan



Figure 22: The irrealis domain in Nafsan and Mav̌ea, solid outline: irrealis subject proclitics; dashed outline: optional counterfactual mer and imte, from von Prince et al. (2019:198)

## North Ambrym

(61) Jon, bone fō ktu, lo mwen-amrō teere nyer $\boldsymbol{e}$-ve John time 2sg.IRR take then Gen.cl-2du.poss child pl pot-cop.IRR lol. plenty
'If you marry John, you will have many children.' (ib1-fortune-na.35, von Prince et al. 2019:198)
(62) He e-na-ø plei,lo ge rrang e-b gurr mōl mōn if pot-1sg-IRr play then sub blood pot-IRr.3sg flow back again 'If I played then the blood would flow again.' (ib1-lafet-na.27, von Prince et al. 2019:198)
(63) $\bar{o}$ to yene Adam lo mwena-mrō mane te lam. 2sG cF marry Adam then poss.cl-2du.poss money nrec.pst.3sg big 'If you had married Adam, you two would have been rich.' (at1-fortune-na.24, von Prince et al. 2019:198)

## North Ambrym



Figure 23: The irrealis domain in North Ambrym, Solid outline: irrealis; dashed outline: counterfactual (past/present); dotted outline: non-recent past, from von Prince et al. (2019:200)

## Irrealis domains

FUT.POSS


Figure 24: Semantic areas of past counterfactual PST.CF, present counterfactual PRS.CF, future counterfactual FUT.CF, and possible future meaning fut.poss, based on von Prince et al. (2019)

## Irrealis and future



Figure 25: The domain of meaning expressed by future tense on the left and irrealis mood on the right

## Conclusion

The study of perfect and realis/irrealis in Nafsan and comparison with other Oceanic languages made contributions to the semantics and typology of these categories:

- there are semantic explanations for additional functions or the lack of functions associated with the perfect
- it is not necessary to postulate the iamitive category
- the realis/irrealis distinction is a valid linguistic category whose debated features can be resolved by:
- semantic underspecification
- inherent meanings of irrealis related to other categories, e.g. future

