

# The meaning of the potential and future prefixes in Teotitlan Zapotec

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# Introduction

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- Teotitlan Zapotec makes use of two prefixes to denote future events: POT and FUT (aka *definite*, Munro 2006)

(1) *xhí*      *z-æ*      *Jwáyn xkwíly.*  
tomorrow FUT-go Juan school  
'Juan will go to school tomorrow.'

(2) *xhí*      *tx-æ*      *Jwáyn xkwíly.*  
tomorrow POT-go Juan school  
'Juan will go to school tomorrow.'

## Research question:

- determine the meaning of the prefixes

## Proposal:

- FUT-prefix marks biased future events without salient alternatives
- POT-prefix marks future events which have contextually salient non-biased alternatives

1. Teotitlan Zapotec: background information
2. Bias and passed events: prefix  $n\bar{i}$ -
3. The use of FUT and POT prefixes
4. The meaning of FUT and POT prefixes
5. Conclusions and outlook

# 1. Teotitlan Zapotec: background information

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## 1.1. About the language

- Teotitlán Zapotec is spoken in Teotitlán del Valle, Oaxaca, Mexico
- Otomanguan Family
- VSO-word order
- Head-marking language
- Obligatory TAM-marking on the verb

## 1.2. TAM-morphology overview

### Seven TAM-prefixes in Teotitlán Zapotec:

TAM prefix	Example	Translation
<b>FUTURE</b>	<b>zi-tyuug</b>	<b>(s/he) will cut</b>
<b>POTENTIAL</b>	<b>∅-tyûug</b>	<b>(s/he) will cut</b>
HABITUAL	ri-tyuug	(s/he) cuts
PROGRESSIVE	ká-tyuug	(s/he) is cutting
STATIVE	n-aga'	(s/he) is laying down
<b>COMPLETIVE</b>	<b>gu-tyuug</b>	<b>(s/he) cut</b>
<b>COUNTERFACTUAL</b>	<b>nī-tyuug</b>	<b>(s/he) would have cut</b>

Gutierrez Lorenzo (2021); Munro (2006)



## 2. Bias and past events: TAM-marker $n\bar{i}$ -

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## 2.1. The use of *nī-*

1. Simple negated clauses

(*She didn't drink water (after all)*)

2. Final adverbial clauses and other sentences related to the expression of purpose

(*She watered the plants so they grow (but they didn't)*)

3. Complement clauses

(*She forgot to water the plants*)

4. 'Instead of'-adverbial clauses, which express alternative events

(*She went for a walk instead of doing her homework*)

5. Counterfactual conditionals

(*If I had gone to Pedro's house, I would have been late (on my schedule).*)

## 2.2. The meaning of $n\bar{i}$ -

**Proposal** (Levina and Gutiérrez 2024):

- $n\bar{i}$ - expresses that from two alternative events,  $p$  and  $\neg p$ , the non-biased one played out.

*She didn't drink water **after all**.* → **Epistemic bias**: she would drink water

- But it doesn't tell us which one. For that we need to know which of the two events is biased.

## 2.2. The meaning of $n\bar{i}$ -

### What is meant:

- There are several possibilities of how the future might develop or how the past might have had developed
- Having their beliefs, speakers are not always neutral towards the probability of particular events to occur; they may commit to some propositions more than to the other (epistemic bias vs. epistemic neutrality) (cf. Giannakidou and Mari 2018a,b, 2021; Liu et al. 2021)
- $n\bar{i}$ - expresses that among a set of alternative events ( $p$  and  $\neg p$ ), not biased one played out →  $n\bar{i}$ - requires a set of alternative events
- However, it doesn't tell us which one: bias has to be recovered from the contextual clues

## 2.2. The meaning of $n\bar{i}$ -

We need to distinguish:

**Sources of alternative events** in the sentence → contexts in which  $n\bar{i}$ - appears

and

**Sources of epistemic bias** → clues that allow us to recover information about bias, so we know which of alternative events occurred

## 2.3. *nī-* and the modal ‘want’

### The modal *-kaaz-* ‘want’

(3) *ri-kaaz=an*                      *nī-æ=(a)n*                      *stúblád.*  
HAB-want=3SG.INF   *nī-go=3SG.INF* US  
‘S/he **wanted** to go to the US (**but s/he didn’t go**).’

(4) *ked=ri-kaaz=di=an*                      *nī-æ=(a)n*                      *stúblád.*  
NEG=HAB-want=NEG=3SG.INF   *nī-go=3SG.INF* US  
‘S/he **didn’t want** to go to the US (**but s/he went**).’

**Alternatives:** (3) = (4)

$p = \llbracket \text{She went to the US} \rrbracket$                        $\neg p = \llbracket \text{She didn’t go to the US} \rrbracket$

**Source of alternatives** (3) = (4): intention

## 2.3. *nī-* and the modal ‘want’

### The modal *-kaaz-* ‘want’

(3) *ri-kaaz=an*                      *nī-æ=(a)n*                      *stúblád.*  
HAB-want=3SG.INF   *nī-go=3SG.INF* US  
‘S/he **wanted** to go to the US (but s/he **didn’t** go).’

(4) *ked=ri-kaaz=di=an*                      *nī-æ=(a)n*                      *stúblád.*  
NEG=HAB-want=NEG=3SG.INF   *nī-go=3SG.INF* US  
‘S/he **didn’t want** to go to the US (but s/he **went**).’

**Bias:** (3)  $\neq$  (4)

in (3): desire to go to US  $\Rightarrow$  biased event is  $p \Rightarrow \neg p$  played out

in (4): lack of desire to go to the US  $\Rightarrow$  biased event is  $\neg p \Rightarrow p$  played out

### **3. The use of FUT and POT prefixes**

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## 3.1. The use of FUT

1. Simple affirmative clause  
(Juan **will go to school tomorrow**)
2. Complement clauses with knowledge and believe CTPs  
(Juan realized that Pedro **would come tomorrow**)
3. Apodosis of conditional sentences  
(If it rains (later), I **will stay at home**)
4. Protasis of conditional sentences  
(If **you'll go**, I'll go too)

## 3.2. The use of POT

1. Simple negated clauses  
(She **won't drink water**)
2. Clauses with constituent focus  
(MIGUEL<sub>FOC</sub> **will sell the car**)
3. Final clauses and other clauses expressing purposes  
(She waters the plants **so they grow**)
4. Protasis of conditional sentences  
(If **you'll go**, I'll go too)

## **4. The meaning of FUT and POT**

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## 4.1. Previous research on FUT in POT in other varieties of Zapotec

### Zapotec San Lucas Quiaviní (Lee 1999; Munro 2006):

- FUT is used when the speaker is certain about what is going to occur in the future.

**Problem:** doesn't explain interaction of POT and negation

### Zapotec Sierra Norte (Toosarvandani 2023):

- POT as a VERUM-operator used when the knowledge about future events between the two speech act participants is uneven

**Problem:** Differences in distribution of FUT- and POT-markers between Zapotec Sierra Norte and Teotitlan Zapotec

## 4.2. The meaning of FUT and POT

### Proposal:

- FUT- and POT-prefixes mark future events
- FUT-prefix marks events anchored in the present, past or in another future event (biased events; no salient event alternatives)
- POT-prefix marks future events which have contextually salient alternatives

## 4.3. POT: Negated clauses

Negation requires POT-marking:

(5) *ked=tx-æ=di*      *Jwáyn xkwíly xhí.*

NEG=POT-go=NEG Juan school tomorrow  
'Juan won't go to school tomorrow'

(6) \**ked=z-æ=di*      *Jwáyn xkwíly xhí.*

NEG=FUT-go=NEG Juan school tomorrow  
Int.: 'Juan won't go to school tomorrow'

## 4.3. POT: Negated clauses

Negation requires POT-marking:

- (5) *ked=tx-æ=di*      *Jwáyn xkwíly xhí.*  
NEG=POT-go=NEG Juan school tomorrow  
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## 4.3. POT: Negated clauses

**Negation requires POT-marking:**

- (5) *ked=tx-æ=di*      *Jwáyn xkwíly xhí.*  
NEG=POT-go=NEG Juan school tomorrow  
'Juan won't go to school tomorrow'

**Source of alternatives:** negation

**Alternative events:** { $e_1$ : Juan will go to the cinema;  $e_2$ : Juan will stay home;  $e_3$ : Juan will go to the ICL...}



## 4.4. POT: Clauses with constituent focus

- In Zapotec, the preverbal position is associated with constituent focus (Lee 1999; Beam de Azcona 2004; Munro 2006; López Nicolás 2016)

(6) Who sold the car?

a. [*Gyély*]<sub>FOC</sub> *ba-ta'w* *kamyún*.

Miguel COMPL-sell car

'Miguel sold the car.'

b. #*ba-ta'w* *Gyély* *kamyún*.

COMPL-sell Miguel car

'Miguel sold the car.'

## 4.4. POT: Clauses with constituent focus

**Clauses with constituent focus require POT-marking:**

(7) Who will sell the car?

a. [Gyély]<sub>FOC</sub> *gu-ta'w* *kamyún*.

Miguel POT-sell car

'Miguel will sell the car.'

b. #[Gyély]<sub>FOC</sub> *zu-ta'w* *kamyún*.

Miguel FUT-sell car

Int: 'Miguel will sell the car.'

**Source of alternatives:** focus

**Alternative events:** { $e_1$ : Pedro sold the car;  $e_2$ : Pablo sold the car;  $e_3$ : Gustavo sold the car...}

## 4.5. POT: Final clauses

### Final clauses require POT-marking:

- (8) *gu-da'=(an)                      nis    yag té    g-agâ'=in.*  
COMPL-pour=3SG.INF water tree SUB POT-sprout=3SG.INAN  
'She watered the plant so it sprouts.'
- (9) \**gu-da'=(an)                      nis    yag té    z-aga'=in.*  
COMPL-pour=3SG.INF water tree SUB FUT-sprout=3SG.INAN  
Int.: 'She watered the plant so it sprouts.'

## 4.5. POT: Final clauses

**Final clauses require POT-marking:**

- (8) *gu-da'=(an)                      nis    yag té    g-agâ'=in.*  
COMPL-pour=3SG.INF water tree SUB POT-sprout=3SG.INAN  
'She watered the plant so it sprouts.'

**Source of alternatives:** intention (likewise in clauses subordinated under modals  
'want' and 'must')  
*p*: the plant will sprout

**Alternative event:**  $\neg p$ : the plant won't sprout

## 4.6. FUT: Simple affirmative clauses

Simple affirmative clauses w/o constituent focus require FUT-marking:

- (9) **Context:** Juan's father wants to take Juan to the city with him but Juan's father clarifies that it won't be possible because Juan will have to go to school. He says:

- a. *xhí*        *z-æ*        *Jwáyn xkwíly.*  
tomorrow FUT-go Juan school  
'Juan will go to school tomorrow.'

## 4.6. FUT: Simple affirmative clauses

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- (9) **Context:** Juan's father wants to take Juan to the city with him but Juan's father clarifies that it won't be possible because Juan will have to go to school. He says:
- a. *xhí z-æ Jwáyn xkwíly.*  
tomorrow FUT-go Juan school  
'Juan will go to school tomorrow.'
- b. *#xhí tx-æ Jwáyn xkwíly.*  
tomorrow POT-go Juan school  
Int.: 'Juan will go to school tomorrow.'  
'It's tomorrow that Juan will go to school.'

## 4.6. FUT: Simple affirmative clauses

Simple affirmative clauses w/o constituent focus require FUT-marking:

- (9) **Context:** Juan's father wants to take Juan to the city with him but Juan's father clarifies that it won't be possible because Juan will have to go to school. He says:

- a. *xhí z-æ Jwáyn xkwíly.*  
tomorrow FUT-go Juan school  
'Juan will go to school tomorrow.'

Simple affirmative clauses do not introduce event alternatives. → FUT-marking required

## 4.7. FUT: Complement clauses with knowledge and believe CTPs

Knowledge and believe CTPs require FUT-marking:

- (10) a. *b-yakbææ Jwáyn teky z-ææd Bæd xhí.*  
COMPL-realize Juan SUB FUT-come Pedro tomorrow  
'Juan realized that Pedro would come tomorrow.'
- b. \**b-yakbææ Jwáyn teky g-ææd Bæd xhí.*  
COMPL-realize Juan SUB POT-come Pedro tomorrow  
Int.: 'Juan realized that Pedro would come tomorrow.'

Knowledge and believe predicates do not introduce event alternatives.

→ FUT-marking required



## 4.8. FUT: Apodosis in conditionals

### Apodosis in conditionals requires FUT-marking

- (11) a. *bæll z-æ=u, z-â'.*  
COND FUT-go-2SG.INF FUT-go.1SG  
'If you go, I will go.'
- b. *bæll tx-æ=u, z-â'.*  
COND POT-go-2SG.INF FUT-go.1SG  
'If you go, I will go.'

Given the occurrence of the event in protasis, there are no event alternatives to the event in the apodosis. → FUT-marking required

Protasis in conditionals allows both FUT- and POT-markers

## 4.9. FUT vs. POT: Conditional clauses

**FUT-marking:** event expressed in the protasis is bound in the context

- (12) **Context:** Pedro and Juan planned to go to a party tonight but Pedro is dubious because his parents asked him to help them with something. He shares this information with Juan. Juan says that if Pedro goes to the party as originally planned, he will go too. He says:

- a. *bæll z-æ=u, z-â'.*  
COND FUT-go-2SG.INF FUT-go.1SG  
'If you go, I will go.'
- b. *#bæll tx-æ=u, z-â'.*  
COND POT-go-2SG.INF FUT-go.1SG  
'If you go, I will go.'

## 4.9. FUT vs. POT: Conditional clauses

**POT-marking:** event expressed in the protasis is alternative to the one bound in the context

- (13) **Context:** Pedro and Juan planned to go to a party tonight. Instead, Pedro suggests to go to the movie cinema. Juan says that if Pedro, against the original plan, decides to go to the movies, he will come along too. He says:

- a. *#bæll z-æ=u, z-â'.*  
COND FUT-go-2SG.INF FUT-go.1SG  
'If you go, I will go.'
- b. *bæll tx-æ=u, z-â'.*  
COND POT-go-2SG.INF FUT-go.1SG  
'If you go, I will go.'

**Problem:** Protasis seems to introduce alternatives in both cases (bound or not bound at the speech act time) → This issue requires further research.

## **5. Conclusions and outlook**

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## 5.1. Conclusions: Future and past events in Teotitlan Zapotec

We have considered future and past TAM-marking in Teotitlan Zapotec and proposed that the concept of alternative events is crucial for capturing the meaning of respective TAM-prefixes

### Past events:

- **COMPL**: events occurred in the passed
- **nī-**: takes event alternatives and indicates that from these alternatives, the non-biased event occurred

## 5.1. Conclusions: Future and past events in Teotitlan Zapotec

We have considered future and past TAM-marking in Teotitlan Zapotec and proposed that the concept of alternative events is crucial for capturing the meaning of respective TAM-prefixes

### Future events:

- **FUT**: future events without salient event alternatives; biased events in the future
- **POT**: indicates the existence of non-biased event alternatives and, in conditional clauses, marks the non-biased event

## 5.2. Outlook

Open questions and next steps:

- We have presented the initial analysis of future and past marking in Teotitlan Zapotec based on the observed occurrences of the prefixes. Exploration of further contexts where these TAM-markers occur stands out.
- What are valid sources of alternatives which licence the use of **nī-** and POT?
- What are valid sources of bias interpretation which allow us to interpret sentences with **nī-** as well as conditionals with POT-marker in the protasis?
- How alternatives to the present tense are coded?
- Formalization of the meaning of the prefixes.

**Thank you!**



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## Simple negated clauses: truth conditions

*nī-* appears in simple clauses with negation where it doesn't induce counterfactual interpretation:

- (14) *ked=nī-æ'=di=an*                      *nis.*  
NEG=**nī**-drink-NEG-3SG.INF water  
'S/he didn't drink water.'

- ✓ Past
- ✗ Irrealis
- ✗ Polarity reversal

## Simple negated clauses: truth conditions

*nī-* appears in simple clauses with negation where it doesn't induce counterfactual interpretation:

- |     |                                   |             |                     |
|-----|-----------------------------------|-------------|---------------------|
| (2) | <i>ked=nī-æ'=di=an</i>            | <i>nis.</i> | ✓ Past              |
|     | NEG= <b>nī</b> -drink-NEG-3SG.INF | water       | ✗ Irrealis          |
|     | 'S/he didn't drink water.'        |             | ✗ Polarity reversal |
| (3) | <i>ked=<b>gu</b>-æ'=di=an</i>     | <i>nis.</i> | ✓ Past              |
|     | NEG=COMPL-drink-NEG-3SG.INF       | water       | ✗ Irrealis          |
|     | 'S/he didn't drink water.'        |             | ✗ Polarity reversal |

- Sentences (2) and (3) have same truth conditions
- We need to consider contexts in which they can(not) be uttered felicitously

- Structures most commonly considered in relation to counterfactuality are hypothetical conditionals

(16) Teotitlán Zapotec (TZ)

*bæll*      *nī-â'*      *liz*      *Bæd* *zi-nnæz*      *gudxi na.*  
COND:SUB **CTF**-go:1SG house.of Pedro FUT-catch late 1SG

'If I had gone to Pedro's house, I would have been late (on my schedule).'

- nī-* has been considered and labeled as a counterfactual prefix because it necessarily appears in this kind of construction (Pafnuncio 2015; Gutierrez Lorenzo 2021; Beam de Azcona 2023)

- Three established **meaning components of counterfactuality**: tense (past/present), irrealis, polarity reversal
- There is a discussion about **sources of counterfactuality**, i.e., where the mentioned meaning components come from: past tense, irrealis, modality, conditionality are discussed sources



## Proposal:

- In Teotitlán Zapotec, the source of the counterfactual interpretation is conditional in combination with the prefix *nī-*.
- The meaning of *nī-* does not include irrealis or polarity reversal and therefore, this prefix does not encode counterfactuality.
- The meaning contribution of *nī-* is to indicate that from a set of possible events ( $p$  and  $\neg p$ ), the non-biased event occurred.
- Conditionality and past are crucial for the counterfactual interpretation of propositions.

1. Background information about Teotitlán Zapotec
2. The use of *nī-*
3. The meaning of *nī-*
4. Discussion

## **Teotitlan Zapotec: background information**

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## About the language

- Teotitlán Zapotec is spoken in Teotitlán del Valle, Oaxaca, Mexico;
- It belongs to the Otomanguean Family;
- It has VSO-word order;
- It is a head-marking language;
- Verbs in this language require a TAM-marker.

## Seven TAM-prefixes in Teotitlán Zapotec:

TAM prefix	Example	Translation
HABITUAL	ri-tyuug	(s/he) cuts
COMPLETIVE	gu-tyuug	(s/he) cut
POTENTIAL	∅-tyûug	(s/he) will cut
FUTURE	zi-tyuug	(s/he) will cut
PROGRESSIVE	ká-tyuug	(s/he) is cutting
<b>COUNTERFACTUAL</b>	<b>nī-tyuug</b>	<b>(s/he) would have cut</b>
STATIVE	n-aga'	(s/he) is laying down

Gutierrez Lorenzo (2021); Munro (2006)

## The use of the prefix *nī-*

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## Context in which this prefix appears

1. Simple negated clauses  
(*She **didn't** drink water*)
2. Final adverbial clauses and other sentences related to the expression of purpose  
(*She watered the plants **so they grow** (but they didn't)*)
3. Complement clauses  
(*She forgot to **water the plants***)
4. 'Instead of'-adverbial clauses, which express alternative events  
(*She went for a walk instead of **doing her homework***)
5. Counterfactual conditionals

## Context in which this prefix appears

### **Assumption:**

There is a unified meaning of the prefix *nī-*.

### **In what follows:**

We'll determine the meaning of the prefix *nī-* by deriving it from its occurrences in simple clauses and review how this meaning contributes to other contexts in which *nī-* occurs.



## Simple negated clauses: truth conditions

*nī-* appears in simple clauses with negation where it doesn't induce counterfactual interpretation:

- (17) *ked=nī-æ'=di=an*                      *nis.*  
NEG=**nī**-drink-NEG-3SG.INF water  
'S/he didn't drink water.'

- ✓ Past
- ✗ Irrealis
- ✗ Polarity reversal

## Simple negated clauses: truth conditions

*nī-* appears in simple clauses with negation where it doesn't induce counterfactual interpretation:

- |     |                                   |             |                     |
|-----|-----------------------------------|-------------|---------------------|
| (2) | <i>ked=nī-æ'=di=an</i>            | <i>nis.</i> | ✓ Past              |
|     | NEG= <b>nī</b> -drink-NEG-3SG.INF | water       | ✗ Irrealis          |
|     | 'S/he didn't drink water.'        |             | ✗ Polarity reversal |
| (3) | <i>ked=gu-æ'=di=an</i>            | <i>nis.</i> | ✓ Past              |
|     | NEG=COMPL-drink-NEG-3SG.INF       | water       | ✗ Irrealis          |
|     | 'S/he didn't drink water.'        |             | ✗ Polarity reversal |

- Sentences (2) and (3) have same truth conditions
- We need to consider contexts in which they can(not) be uttered felicitously

## Simple negated clauses: epistemic bias

### Proposal:

*nī-* expresses that the event that occurred was not expected by the speaker, i.e., speaker had a bias towards another alternative event which did not occur.

As in the example from English below:

*She didn't drink water **after all**.* → **Epistemic bias:** she would drink water

### What is meant:

- There are several possibilities of how the future might develop or how the past might have had developed
- Having their beliefs, speakers are not always neutral towards the probability of particular events to occur; they may commit to some propositions more than to the other (epistemic bias vs. epistemic neutrality) (cf. Giannakidou and Mari 2018a,b, 2021; Liu et al. 2021)
- *nī-* expresses that among a set of alternative propositions ( $p$  and  $\neg p$ ), not biased one played out (but it doesn't tell us which one)

## Simple negated clauses: epistemic bias - an example

**Context A:** epistemic bias

Ana's daughter, Laura, had fever and was thirsty. Ana put a glass of water on Laura's night stand but Laura didn't drink it.

- Ana expected Laura to drink water.

**Epistemic bias:** Laura will drink water.

**Occurred non-biased event:** Laura didn't drink water.

(19) Later Ana reports the situation to Laura's father:

*ked=nī-/#gu-æ'=di=an nis.*

NEG=**nī**/COMPL-drink-NEG-3SG.INF water

'S/he didn't drink water.'

## Simple negated clauses: no epistemic bias - an example

**Context B:** epistemic neutrality

Ana's daughter, Laura, was thirsty and had water and tea on her night stand, the two things she usually drinks when she's thirsty. Ana is aware of Laura's habits. Laura had tea.

- Ana is neutral towards whether Laura will drink water or not.

**Epistemic neutrality (no bias):** Laura will drink water.

**Epistemic neutrality (no bias):** Laura won't drink water.

(20) Later Ana reports the situation to Laura's father:

*ked=#nī-/gu-æ'=di=an nis.*

NEG=#nī-/COMPL-drink-NEG-3SG.INF water

'S/he didn't drink water.'

## Simple negated clauses: negation

- **Interim conclusion:**

*nī-* expresses that the event occurred in the past was non-biased

- **A further observation:**

*nī-* cannot appear in a simple indicative clause without negation

- **Next question:**

Why negation?

### Our proposal:

*nī-* requires a set of alternative events

- epistemic bias and epistemic neutrality requires alternative events
- alternative events can come from a variety of sources, one of which is **negation**
- other contexts in which *nī-* occurs also introduce alternative events (final clauses, 'instead of' clauses, conditionals, etc.)
- simple affirmative clauses do not introduce alternative events



## Sources of alternative events: simple negated clause

### Negation in a simple clause

- (21) *ked=nī-æ'=di=an*                      *nis.*  
NEG=**nī**-drink-NEG-3SG.INF water  
'S/he didn't drink water.'

### Alternative events:

$p = \llbracket \text{she drank water} \rrbracket$                        $\neg p = \llbracket \text{she didn't drink water} \rrbracket$

- **nī**–: from two alternative events,  $p$  and  $\neg p$ , the non-biased one played out.
- But it doesn't tell us which one. For that we need to know which of the two events is biased.

**We need to distinguish:**

**Sources of alternative events** in the sentence → contexts in which  $n\bar{i}$ - appears

**and**

**Sources of epistemic bias** → clues that allow us to recover information about bias, so we know which of alternative events occurred

### The modal *-kaaz-* 'want'

(22) *ri-kaaz=an*                      *nī-æ=(a)n*                      *stúblád.*  
HAB-want=3SG.INF   *nī-go=3SG.INF* US  
'S/he **wanted** to go to the US (**but s/he didn't go**).'

(23) *ked=ri-kaaz=di=an*                      *nī-æ=(a)n*                      *stúblád.*  
NEG=HAB-want=NEG=3SG.INF   *nī-go=3SG.INF* US  
'S/he **didn't want** to go to the US (**but s/he went**).'

**Alternatives:** (22) = (8)

$p = \llbracket \text{She went to the US} \rrbracket$                        $\neg p = \llbracket \text{She didn't go to the US} \rrbracket$

**Source of alternatives** (22) = (8): intention

## Sources of epistemic bias: desires and intentions

### The modal *-kaaz-* 'want'

(7) *ri-kaaz=an*                      *nī-æ=(a)n*      *stúblád.*  
HAB-want=3SG.INF   *nī-go=3SG.INF* US  
'S/he **wanted** to go to the US (but s/he didn't go).'

(8) *ked=ri-kaaz=di=an*                      *nī-æ=(a)n*      *stúblád.*  
NEG=HAB-want=NEG=3SG.INF   *nī-go=3SG.INF* US  
'S/he **didn't want** to go to the US (but s/he went).'

**Bias:** (22)  $\neq$  (8)

in (22): desire to go to US  $\Rightarrow$  biased event is  $p \Rightarrow \neg p$  played out

in (8): lack of desire to go to the US  $\Rightarrow$  biased event is  $\neg p \Rightarrow p$  played out

## Meaning of $n\bar{i}$ -

- From a set of alternative events, the non-biased one played out.
- Which event played out depends on the bias supplied by the context.

Similarly in further contexts in which **nī-** occurs:

### Final clauses

- (24) *kwa'=(a)n*                      *nis té= nī-æ'*    *Laura*.  
COMPL:get=3SG.INF nis SUB= **nī**-drink Laura  
'S/he bought water for Laura to drink (but she didn't drink it).'

**Source of alternatives:** intention; there was an alternative event

**Biased event:** Laura drank water

**Event played out:** Laura didn't drink water

### 'Instead of'-adverbial clauses

- (25) *x-læt          nī-usææd=(a)n,    gu-zut=an.*  
POSS-place **nī**-study=3SG.INF COMPL-play=3SG.INF  
'Instead of studying, s/he played.'

**Source of alternatives:** 'instead of'; one event happened where other event might have had happened

**Biased event:** she studied

**Event played out:** she didn't study

## Discussion

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## Counterfactuals: *nī-* in counterfactuals

(26) *bæll nī-â' liz Bæd zi-nnæz gudxi na.*  
COND:SUB *nī-go*:1SG house.of Pedro FUT-catch late 1SG  
'If I had gone to Pedro's house, I would have been late (on my schedule).'

- *nī-* doesn't tell us whether the event expressed in the clause took place or not → clauses with *nī-* do not have truth conditions
- *nī-* cannot possibly express counterfactuality
- *nī-* contributes to the counterfactual interpretation of the sentence past tense: whichever event alternative played out, it was in the past (along the lines of Dahl 1997)

## Counterfactuals: sources of counterfactual interpretation

- Given this meaning contribution of  $n\bar{i}$ -, there must be yet another element in the sentence that contributes to the counterfactuality
- We propose that this **other source is the conditional quality of the protasis**: the event described in the sentence must be assumed to be true for the conditional relationship between protasis and apodosis to hold (along the lines of Karttunen and Peters 1977).
- **Irrealis inference**: factual events cannot be assumed because they are true  $\Rightarrow$  if we assume something in the past, we can infer that it is not true.
- **Polarity reversal inference**: if  $p$  is not true, than  $\neg p$  is true.

## Summary

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1. We have argued that the prefix *nī-* does not bear counterfactual meaning
2. Proposed meaning: *nī-* expresses that among a set of alternative events ( $p$  and  $\neg p$ ), non-biased one played out (but it doesn't tell us which one).
3. Which event played out can be recovered based on the information about bias
4. Two sources that contribute to the counterfactual interpretation of hypothetical conditionals: conditional relationship between protasis and apodosis and past tense supplied by *nī-*