

# Complementizer Choice and Relative Belief: On Swahili Complementizer Variation

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## Complementizers in variation

- Based on our current understanding of the clausal left-periphery, it is unclear whether complementizer choice . . .
  - ↪ is purely a result of syntactic factors like c-selection (Bresnan, 1970) a.o.
  - ↪ or if the meanings of the individual complementizers themselves play a role (Rizzi, 1997);(Vecchio, 2010) a.o
- Descriptively, Swahili is reported to use two complementizers, *kwamba* and *kuwa*, interchangeably to introduce a finite embedded clause (Ashton, 1944); (Thompson and Schleicher, 2006, 288) a.o.

(1) Mimi ni-na-jua *kwamba/kuwa* Tanzania  
1SG 1SG-PRES-know COMP/COMP 9.Tanzania  
i-ta-shinda  
9SM-FUT-win  
'I know that Tanzania will win.'

- The complementizers have distinct origins:
  - Kwamba* is (diachronically) related to 'say.'
  - Kuwa* is (synchronically) related to 'be.'

## Methodology

- We investigate the issue of complementizer choice via a regression-based analysis of Swahili embedding data (n=26,065) (extracted from Helsinki Corpus of Swahili 2.0).
- We focus our investigation on two factors reported to influence complementizer choice cross-linguistically:

**Predicate Class:** Predicate class has been reported to affect complementizer choice (Kiparsky and Kiparsky, 1971; Hooper and Thompson, 1973; Noonan, 2007; Roussou, 2010), a.o. We split the embedding predicates in the data into two categories

↪ **Attitude Predicates** include those predicates that entail the existence of an attitude holder (e.g. *-fikiri*, 'think')

↪ **Reportative Predicates** include those predicates that do not entail the existence of an attitude holder (e.g. *-sema*, 'say')

**Person of Matrix Subject:** Person of the main clause subject has been shown to influence complementizer choice in neighboring Kinyarwanda (Givón and Kimenyi, 1974); the use of the hearsay complementizer *kongo* is only available with 3rd person.



## Results

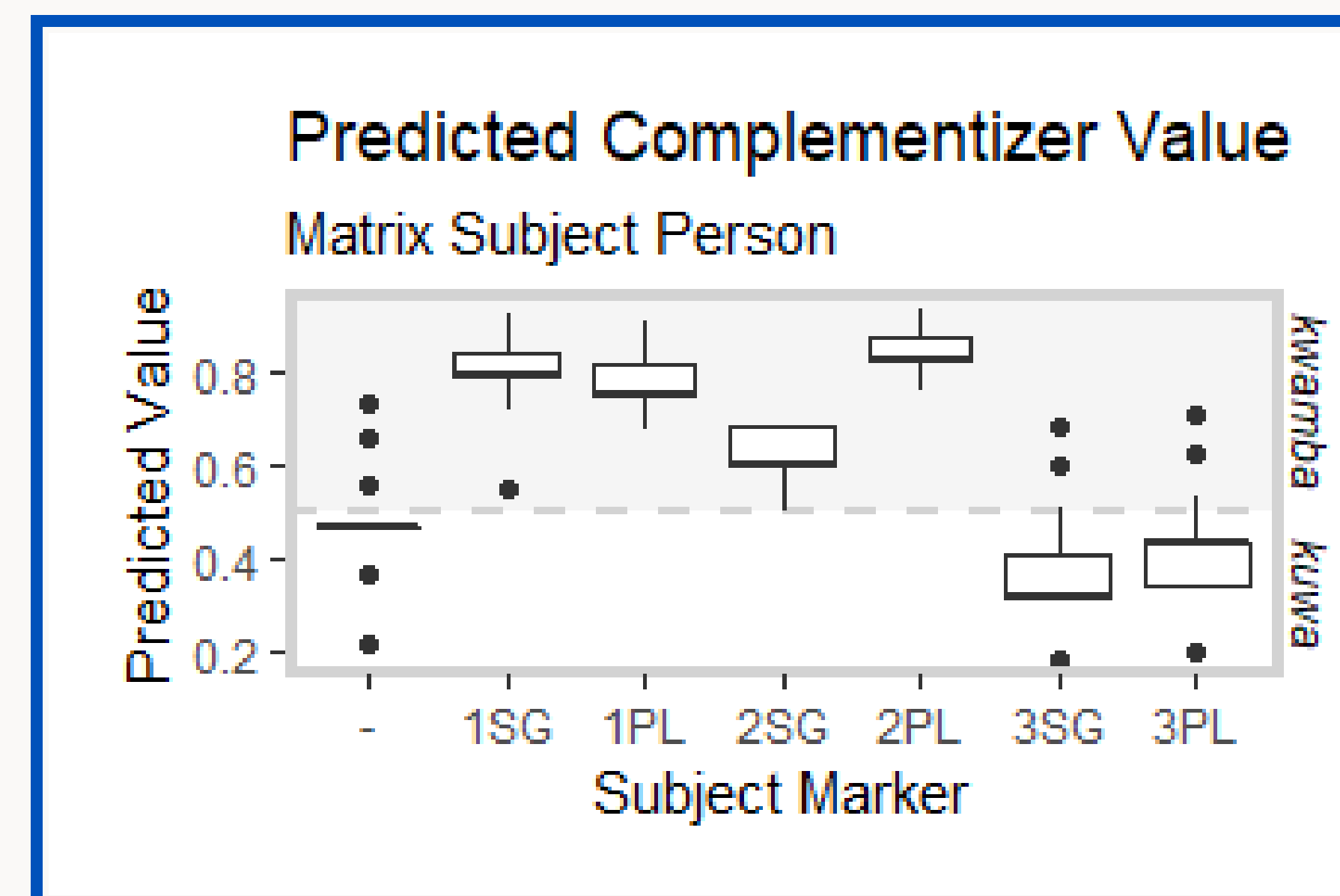


Figure 1. Predicted complementizer given matrix subject morphology based on a likelihood scale from 0 (*kuwa*) to 1 (*kwamba*).

### Matrix Subject Person:

- Matrix Subject Person found to be the strongest individual predictor in the model.
- First-person* subjects correlate with the use of *kwamba*, while *third-person* subjects correlate with use of *kuwa*.

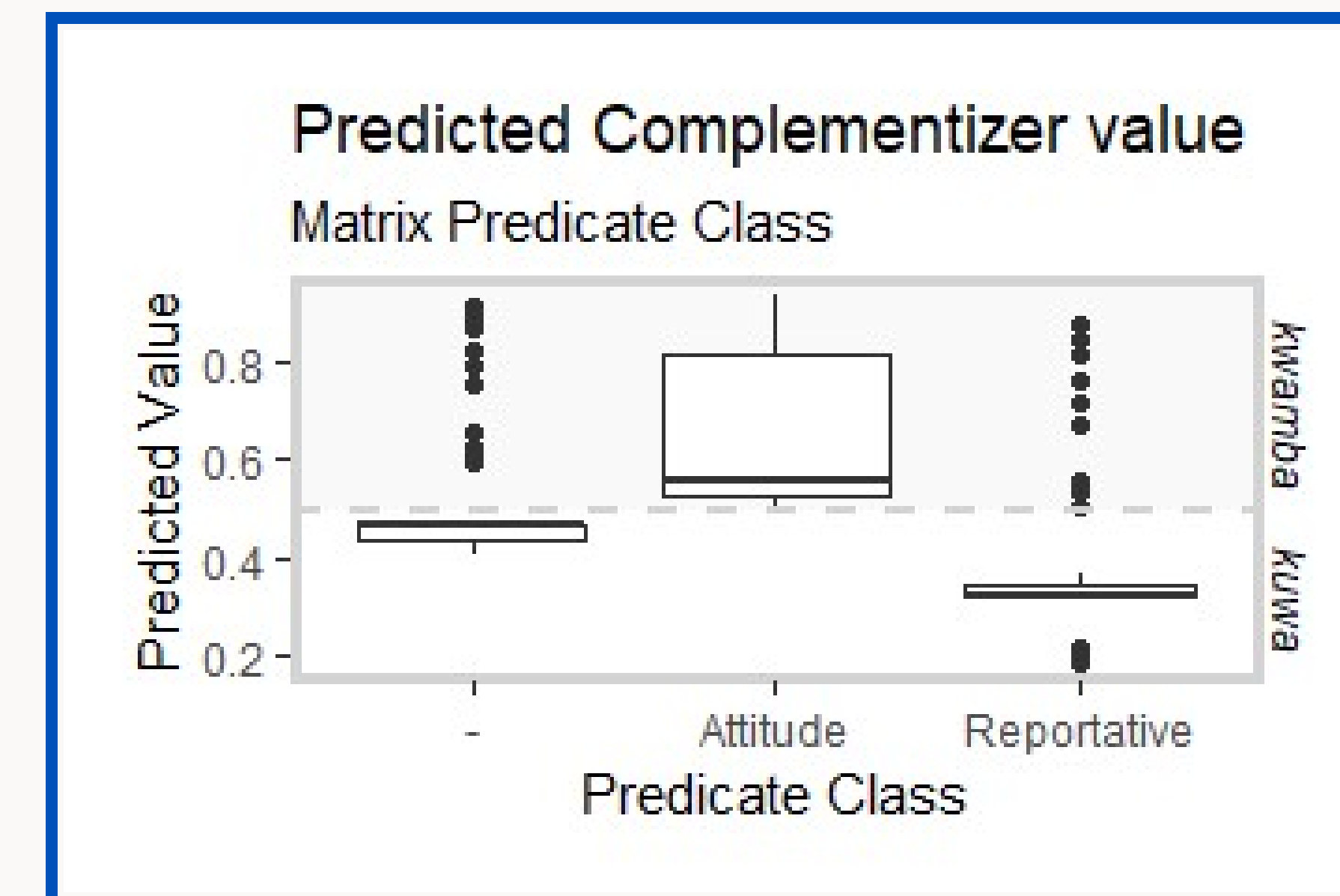


Figure 2. Predicted complementizer given matrix predicate class based on a likelihood scale from 0 (*kuwa*) to 1 (*kwamba*).

### Predicate Class:

- Matrix Predicate Class found to be second strongest predictor in the model.
- ATTITUDE predicates (e.g. *-fikiri*, 'think') shown to correlate with *kwamba*, while REPORTATIVE predicates (e.g. *-sema*, 'say') instead correlate with *kuwa*.

## Correlations

### Factors correlating with *kwamba*

*first-person subjects*, ATTITUDE predicates

### Factors correlating with *kuwa*

*third-person subjects*, REPORTATIVE predicates

## Elicited Speaker Judgements

Similar to the findings of our corpus search, native speaker judgments indicate an “evidential” distinction between *kwamba* and *kuwa*:

Only *kuwa* is felicitous in a context where P is almost assuredly true (2).

*We're watching Tanzania play in a football [soccer] match. There is five minutes left to play, and Tanzania is up by 3.*

(2) i-na-onekan-a *kuwa*/#kwamba Tanzania  
9SM-PRES-seem-FV COMP/COMP 9Tanzania  
i-ta-shind-a  
9SM-FUT-win-FV  
'It seems like Tanzania will win.'

In contrast, only *kwamba* is felicitous in a context P being true much less certain (3).

*We're watching Tanzania play in a football [soccer] match. It's halftime, and Tanzania is up one to nil.*

(3) i-na-onekan-a *kwamba*/#kuwa Tanzania  
9SM-PRES-seem-FV COMP/COMP 9Tanzania  
i-ta-shind-a  
9SM-FUT-win-FV  
'It seems like Tanzania will win.'

## Analysis

- Given the particular factors shown to predict each complementizer, we propose that complementizer choice in Swahili encodes *relative belief*.
  - kwamba* (from 'say') anchors the embedded clause to an individual; P is evaluated relative to their thoughts, beliefs, knowledge, etc.
    - The correlation with ATTITUDE predicates arises because these predicates generally invoke the subject's doxastic modal base.
    - The correlation with *first-person* arises from the fact that a speaker is intrinsically aware of their own beliefs.
  - kuwa* (from 'be') anchors the embedded clause to a situation; there is some situation relevant to the evaluation of P.
    - The correlation with REPORTATIVE predicates arises because these predicates make reference to a reported discourse situation.
    - Speakers use *kuwa* with *third-person* subjects to indicate speaker knowledge about how the subject acquired their beliefs.
    - The “evidential” meaning in (2) is an implicature; the relevant situation has pertinent information to conclude that P.

## Summary

- Taken with speaker judgement data, the results of our corpus analysis suggest that the free-variation analysis of *kwamba/kuwa* is insufficient.
- Instead, we propose an analysis in which the complementizers differ in how they anchor the embedded clause:
  - kwamba* anchors embedded clauses to an individual.
  - kuwa* anchors embedded clauses to a situation.

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