

# Investigating the semantics of tense-aspect markers in Jula

StuTS 71, Leeuwarden  
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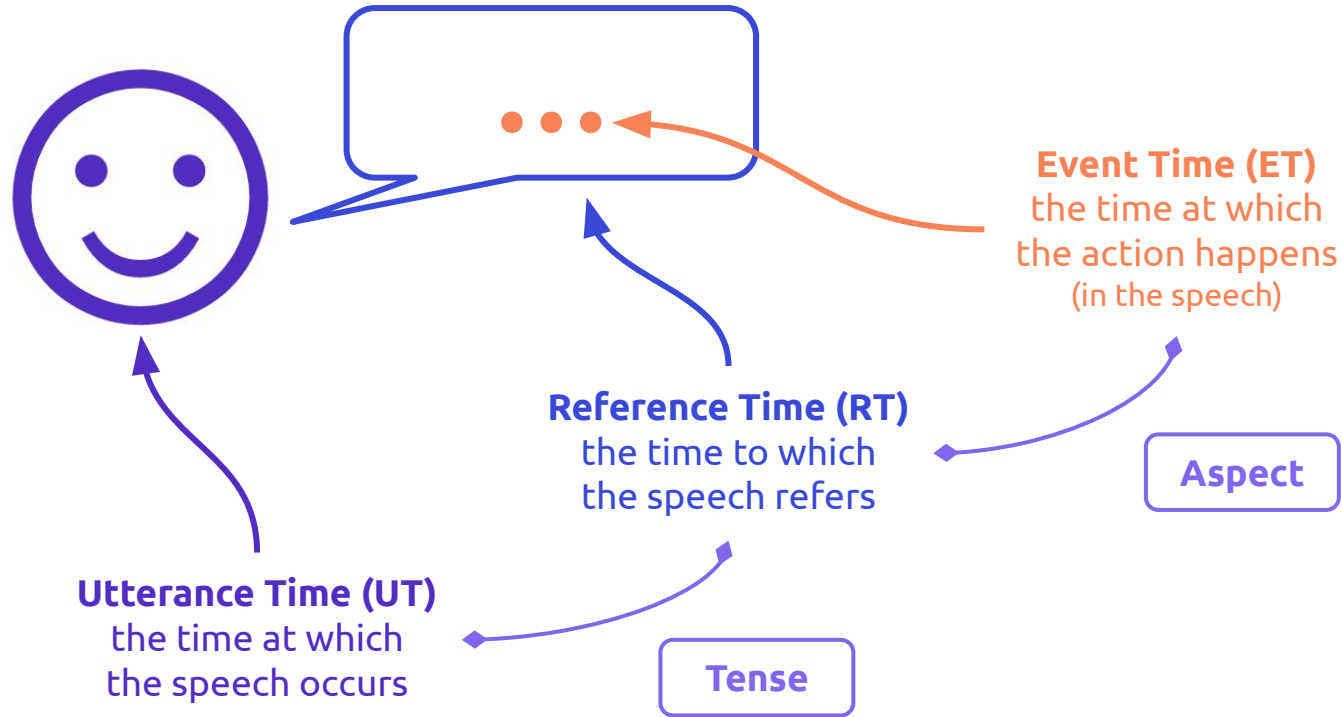
Jeanne Lecavelier ([lecavelierde@uni-potsdam.de](mailto:lecavelierde@uni-potsdam.de))

Irina Stroescu ([stroescu.irina@yahoo.com](mailto:stroescu.irina@yahoo.com))

**University of Potsdam**



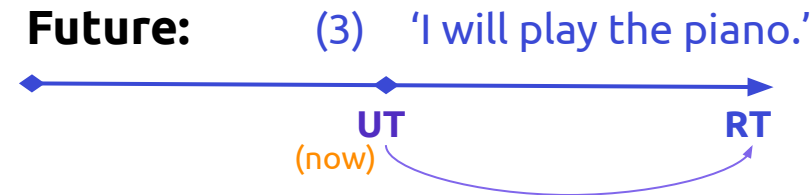
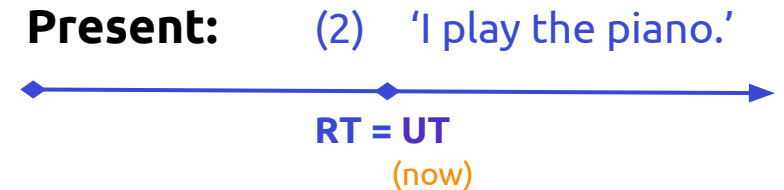
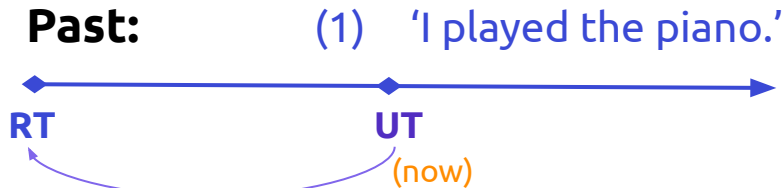
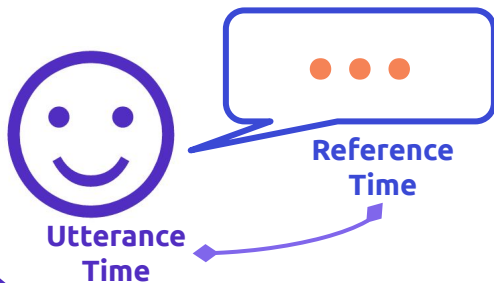
1. How to model tenses and aspects?
2. A first sketch of the tense-aspect system of Jula



## Tense

'It serves to locate the situation in relation to the "now" of the speech act.' (Klein, 2009)

⇒ relation between **UT** & **RT**

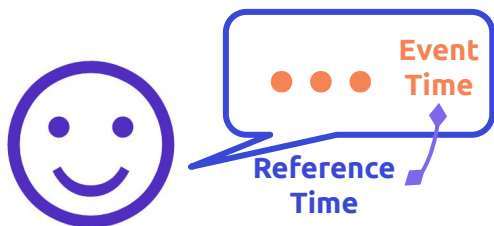


## Aspect:

'It serves to "present" a situation from a particular viewpoint, for example as on-going or as completed.'

*(Klein, 2009)*

⇒ relation between **RT** & **ET**



## Perfect(ive):

(4) 'I have played the piano.'



## Prospective:

(5) 'I am going to play piano.'

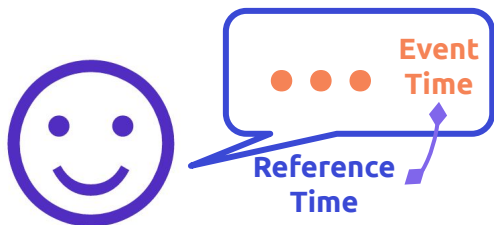


## Aspect:

'It serves to "present" a situation from a particular viewpoint, for example as on-going or as completed.'

*(Klein, 2009)*

⇒ relation between **RT** & **ET**



## Imperfective:

(6) **[Progressive]** 'I am playing the piano.'



(7) **[Habitual]** 'I (usually) play the piano.'



- It is also **possible to combine different tense and aspects**, e.g.:

(9) [Past + Perfect] 'I had eaten.'



(10) [Future + Progressive] 'I will be playing piano (for one hour).'



- We consider that a language has tenses or aspects if **it encodes them on the verb**
  
- Of course, **time can also be encoded through particles, adverbials, etc.**, which are especially useful for tenseless languages!

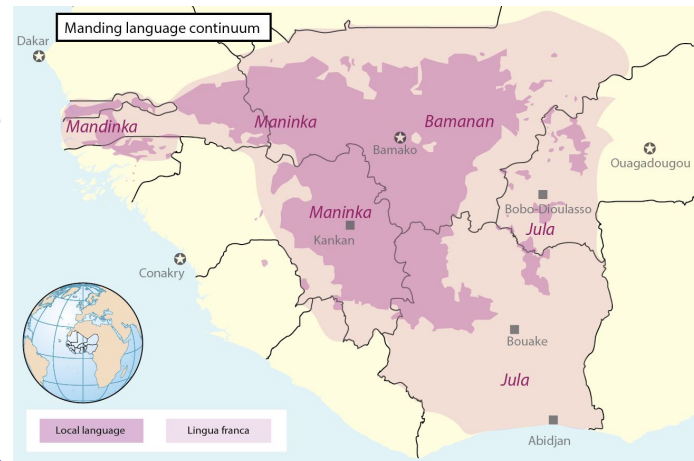
e.g. 'before', 'after', 'already', 'still'...



## Jula (or Dyula, Dioula, Julakan)

- belongs to **the Mande language family**
  - mutually intelligible with Bambara and Malinke
- spoken in Burkina Faso, Ivory Coast and Mali
- may be written in Latin, Arabic or N'ko script
- almost 7 millions of native speakers
- **SOV language**

<https://www.ankataa.com/blog/2019/4/30/bambara-and-dioula>



*designed for the  
Manding languages*

# How to investigate Jula?

- **Almost no written grammar**
- Data coming from 3x1h30 with **a native speaker**  
⇒ 110-130 sentences
- **Elicitations**
- **Acceptability judgements & translations**

- **Elicitations**

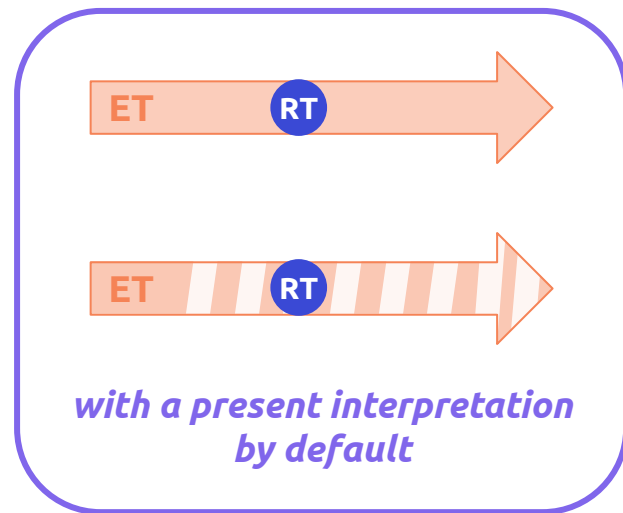
- with various verbs (transitive/intransitive, telic/atelic, stative...)
- with simple contexts (such as 'yesterday', 'regularly'...)
- with complex sentences (before/after, when...)

- **Acceptability judgements & translations**

- To check for underspecification
- To test marker combinations

- Imperfective is marked by **the particle 'be'**

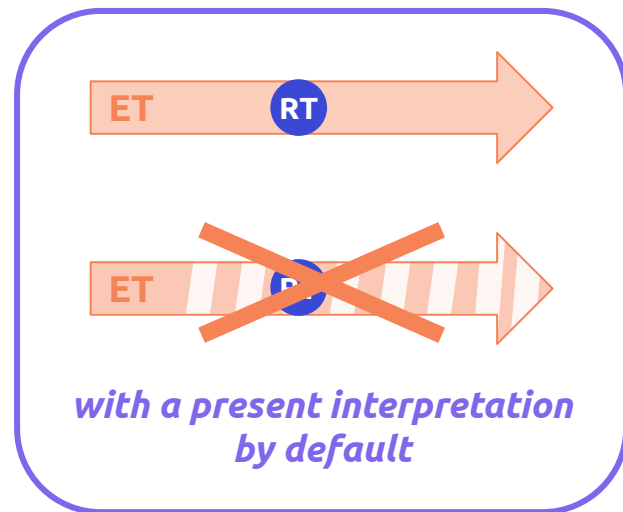
- (11) a. Jakuma **be** sunôgô.  
cat **IPFV** sleep  
'The cat sleeps (regularly).'
- b. Hawa **be** Fofana kanu.  
Hawa **IPFV** Fofana loves  
'Hawa loves Fofana.'



- 'be' + the suffix '-na'/'-la' expresses a sub-aspect: **the progressive**

(12) a. Fofana **be** se-la.  
Fofana **IPFV** arrive.there-**PROG**  
'Fofana is arriving.'

b. Zan **be** zurnali-w kalan-na.  
John **IPFV** newspaper-PL read-**PROG**  
'John is reading newspapers.'



- **When negated** the particle ‘be’ changes to ‘**te**’

(13) a. Mariam        **te**                farini                dumu.  
Mary                **IPFV.NEG**        cookies                eat  
‘Mary does not eat cookies.’

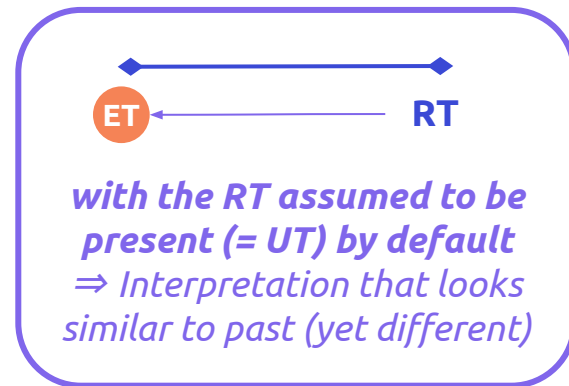
b. Hawa        **te**                farini                dumun-**na**  
Hawa        **IPFV.NEG**        cookie                eat-**PROG**  
‘Hawa is not eating cookies.’

## Interim conclusion

- **Distinction** (or **sub-aspect**) within the imperfective aspect: **PROG** which is expressed with an additional suffix
  - When the IPFV appears without a PROG suffix it is interpreted as **[+IPFV] [-PROG]**  
⇒ Therefore raising a **habitual interpretation** for pragmatic reasons
- **Allomorphy of suffixes** for unknown reasons: **-na/-la**

- Perfect(ive) is **marked differently** depending on whether the verb is **transitive** or **intransitive**
  - **Transitive verbs** trigger **the particle 'ye'**

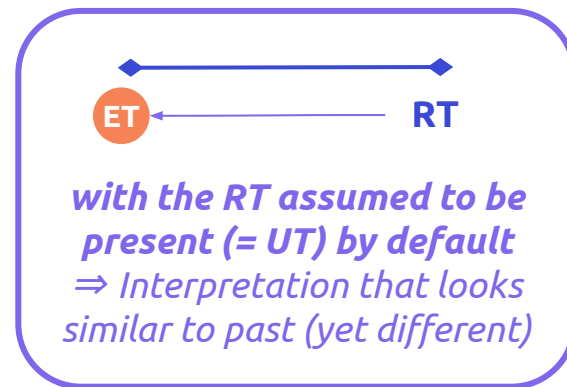
(14) Zan      **ye**      zurnali      kalan      kunu.  
John      **PFV**      newspaper      read      yesterday  
'John read the newspaper yesterday.'





- Perfective is **marked differently** depending on whether the verb is **transitive** or **intransitive**
  - **Intransitive verbs** trigger **the suffix '-na'/'-la'**

- (15) a. Hawa      ticun-**la**      kunu  
Hawa      sneeze-**PFV**      yesterday  
'Hawa sneezed yesterday.'
- b. Zan      na-**na**.  
John      arrive.here-**PFV**  
'John (had) arrived.'



- **When negated** the perfective is expressed through **the particle ‘ma’** for both transitive and intransitive verbs

(16) a. Hawa    **ma**                    farini    dumu.

Hawa    **PFV.NEG**    cookie    eat

‘Hawa hasn’t eaten cookies.’

b. Hawa    **ma**                    ticun.

Hawa    **PFV.NEG**    sneeze

‘Hawa hasn’t sneezed.’

## Perfect or perfective?

- Perfective indicates that **the ET is bounded** to some point in the time
  - ⇒ Hence **completed by the RT**
  - ⇒ Usually **restricted to past interpretation** in its typical use



- Perfect indicates that **the ET precedes the RT**
  - ⇒ Usually **close to a past interpretation**



## Perfect or perfective?

- Both are very close...
- But **perfective cannot be combined with imperfective**, contrary to perfect

(17) I      **have been**      **playing**      piano.  
          *PERF*                    *IPFV*

(18) \*Hawa    **ye**      **be**      zurnaliw      kalan-na  
      Hawa    **PFV**      **IPFV**      newspaper-PL read-**PROG**  
      *intended: 'Hawa has been reading newspapers.'*

## Interim conclusion

- Perfect(ive) marking is **different for transitive and intransitive verbs** in positive sentences
- **Allomorphy of suffixes** for unknown reasons: **-na/-la/-ra**
  - Without more data, it is impossible to determine whether the PROG and PFV suffixes for intransitive verbs are the same affix

## Some syncretism?

- Both **the PROG affix** and **the PFV affix** (for transitive verbs in positive contexts) exhibit **a similar allomorphy: -la/-na/(-ra)**
- However, this allomorphy seems to be triggered **differently** for both affixes

	-la	-na	-ra
PROG	kalan ( <i>to read</i> ) se ( <i>to arrive there</i> )	kalan ( <i>to read</i> ) na ( <i>to arrive here</i> )	?
PFV	ticun ( <i>to sneeze</i> ) se ( <i>to arrive there</i> ) taga ( <i>to go</i> )	ticun ( <i>to sneeze</i> ) na ( <i>to arrive here</i> )	taga ( <i>to go</i> )

- Prospective is marked by **the particle ‘bena’**

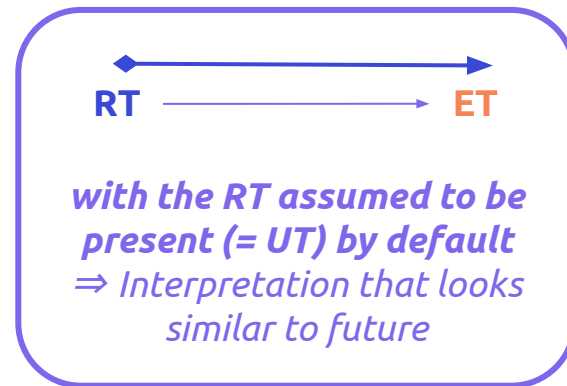
(19) Hawa    **bena**    zurnali-w    kalan.  
Hawa    **PROS**    newspaper-PL    read  
‘Hawa will read newspapers.’



*with the RT assumed to be present (= UT) by default  
⇒ Interpretation that looks similar to future*

- **When negated**, the prospective is then marked by the particle **'tena'**

(20) Fofana **tena**            mômili    ko.  
Fofana **PROS.NEG**    car        clean  
'Fofana won't clean the car.'





## A possible origin

- **'bena'/'tena'** could be decomposed in two parts:
  - **'be'/'te'** which is the **IPFV** marker
  - **'na'** which is **the verb 'to arrive (there)'**
- It is crosslinguistically common to have **a motional verb grammaticalized into future-like meaning**
- It is also crosslinguistically common to get **future-like readings from IPFV**

(21) I am going to read the next slide.

- All aspects can have their RT shifted to the past with the tense particle 'tun'

- (22) a. Hawa    **tun**        **bená**        zurnali-w        kalan        kunu...  
Hawa    **PAST**        **PROS**        newspaper-PL    read        yesterday  
'Hawa was about to read newspapers yesterday... (*when something happened*)'
- b. Hawa    **tun**        **\*(be)**        zurnali-w        kalan  
Hawa    **PAST**        **IPFV**        newspaper-PL    read  
'Hawa used to read newspapers.'
- c. Cê    **tun**        **be**        farini        dumu-**na**    kunu  
Man   **PAST**        **IPFV**        cookie        eat-**PROG**    yesterday  
'He was eating cookies yesterday.'

- All aspects can have their **RT shifted to the past** with the tense particle ‘tun’

(23) Tuma min na Hawa **tun** **be** zurnali kalan-**la**, Mariam  
Time REL PostP Hawa **PAST** **IPFV** newspaper read-**PROG** Mary  
**tun** **ye** farini dun ka ban.  
**PAST** **PFV** cookie eat INF finish  
‘When Hawa was reading the newspaper, Mary ate the cookies.’

- The negation is beared by the aspect, not ‘tun’

(24) Hawa **tun ma** ticun  
Hawa **PAST PFV.NEG** sneeze  
‘Hawa hadn’t sneezed.’

- **Complex sentences allow to test for embedded temporalities**  
⇒ e.g. situations in which **the UT/RT relationship (tense) is the reverse of the RT/ET relationship (aspect)**

- (25) a. *Context 1: Mary **baked a cake yesterday**, but she kept it and she plans to eat it tomorrow evening.*
- b. *Context 2: Mary **has planned to bake a cake tomorrow morning**, so that she can eat it later that day.*
- c. Sini            wulafê        Mariam        **bona** farini        dun a        **(tun)**        **ye**    min    tobi.  
Tomorrow evening    Mary        **PROS** cookie        eat    3SG    **(PAST)**        **PFV**    REL    bake  
**'Tomorrow evening, Mary will eat a cake that she (had) baked.'**

- **Complex sentences allow to test for embedded temporalities**  
⇒ e.g. situations in which **the UT/RT relationship** (tense) **is the reverse of the RT/ET relationship** (aspect)

- (26) a. *Context 1: Yesterday morning, Mary baked a cake for her birthday party, **which is tomorrow.***
- b. *Context 2: Yesterday morning, Mary baked a cake for her birthday party, **which was in the evening.***
- c. Kunu        Mariam **ye**        farini   tobi    min a    **tun    bona**    dun a    ka    wolofêti la  
yesterday Mary    **PFV**        cookie bake    REL 3SG **PAST FUT**    eat 3SG her birthday PostP  
**'Yesterday, Mary baked the cake she would eat for her birthday.'**

- **Tenses & aspects are two different things**
  - Sometimes a 'past' is actually a perfect(ive), and a 'future' is actually a prospective
  - It is actually not so difficult to come up with some tests to distinguish between them!
  
- **Jula is mainly aspectual**
  - Three main aspects: imperfective (+ progressive), perfective & prospective
  - One past particle
  - ... and many other puzzles to investigate further!