

Temporal Reference in Vietnamese

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Outline

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Phenomenon

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Tense Center of a large body of literature focusing on temporal reference.

Tenseless Many languages:

- Kalaallisut (Bittner 2005)
- Lillooet (Matthewson 2006)
- Mandarin (Lin 2006)
- Guarani (Tonhauser 2011)
- Hausa (Mucha 2013)

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- No overt grammaticalized expressions that impose constraints on the temporal relation between the Reference Time and the Utterance Time (Matthewson 2006).
- Contribute to the literature on temporal reference
 - Present detailed theoretical analyses
 - Determine how tenseless languages are similar and how they may vary from one another.

Goal

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- Investigate how temporal reference is determined in Vietnamese
 - Bare verb predicates
 - Preverbal aspectual particles
 - Their interaction with one another
- Advance understanding of cross-linguistic variation on the semantics of tense and aspect

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A 3-way distinction (Reichenbach 1947):

Utterance Time The time at which the sentence is uttered

Reference Time The time about which the claim is made

Event Time The time for which the predicate holds of the subject

Tense

Tense provides info about the location of the RT and its relation to the UT (Klein 1994):

Past Tense The RT precedes the UT ($RT < UT$)

- (1) At the time of the conference, Zheng **was** in Budapest.

Present Tense The RT surrounds the UT ($UT \subseteq RT$)

- (2) At the time of the conference, Zheng **is** in Budapest.

Future Tense The RT follows the UT ($UT < RT$)

- (3) At the time of the conference, Zheng **will be** in Budapest.

Viewpoint Aspect

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Aspect contributes info regarding the relationship between the ET and the RT (Klein 1994):

Imperfective Aspect The ET surrounds the RT ($RT \subseteq ET$)

- (4) When Ethan was in the kitchen, Jon Ander **was making** a sandwich.

Perfective Aspect The RT surrounds the ET ($ET \subseteq RT$)

- (5) When Ethan was in the kitchen, Jon Ander **made** a sandwich.

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Bare Verb Predicates

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- Verbs are not overtly marked with tense info.
- No obligatory grammaticalized expressions that impose constraints on the temporal relation between the RT and the UT (Matthewson 2006).

Bare Verb Predicates

Out of the blue, bare verb sentences are only compatible with past and present time adverbials, but not future time adverbials:

- (6) a. Hom qua Becky **day** **Ngon ngu hoc.**
yesterday Becky teach Linguistics
'Becky taught Linguistics yesterday.'
- b. Bay gio Becky **day** **Ngon ngu hoc.**
now Becky teach Linguistics
'Becky teaches Linguistics now.'
- c. #Nam sau Becky **day** **Ngon ngu hoc.**
year after Becky teach Linguistics
(*Intended*: 'I will teach Linguistics next year.')

Preverbal Particles

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- Future eventualities can only be described when the preverbal particle *se* appears in the sentence:

- (7) a. Nam sau Becky **se** lam gi?
year after Becky SE do what
'What will you do next year?'
- b. Becky **se** day Ngon ngu hoc.
Becky SE teach Linguistics
'Becky will teach Linguistics.'

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- Vietnamese verbs can also be marked for aspect.
- Clauses containing the preverbal particle *dang* are compatible with progressive aspectual reference, where the ET properly contains the RT.

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SITUATION: Jon Ander began making his sandwich at 2 PM. At 2:10, Ethan went into the kitchen to get a knife. At 2:15, Ethan walked out of the kitchen with his knife, and Jon Ander was still in the middle of making his sandwich.

- (8) Luc Ethan o trong bep, Jon Ander **dang**
When Ethan locate in kitchen Jon Ander PROG
lam banh mi.
make sandwich
'When Ethan was in the kitchen, Jon Ander was making a sandwich.'

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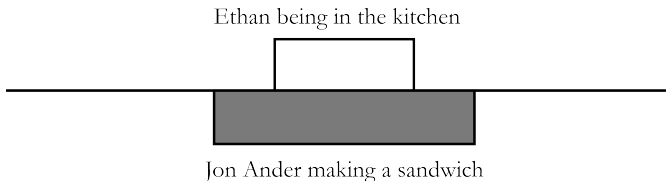
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- *Dang* places the time of Ethan being in the kitchen inside the time of Jon Ander making a sandwich.



- This sentence is then consistent with the sandwich-making still continuing at present, and thus it is true for the given situation.

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- On the other hand, when the verbs are not marked with any overt aspectual marking, the viewpoint aspect can be interpreted as perfective.

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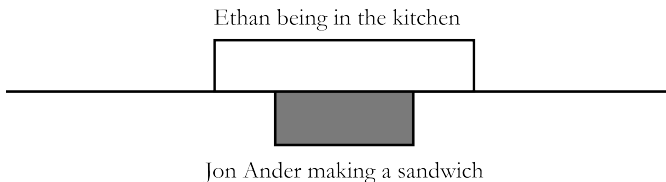
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SITUATION: Ethan was in the kitchen from 2 PM to 3 PM. At 2:10, Jon Ander walked into the kitchen to make a sandwich. At 2:15, he walked out of the kitchen with his freshly made sandwich.

- (9) Luc Ethan o trong bep, Jon Ander Ø
When Ethan locate in kitchen Jon Ander PFV
lam banh mi.
make sandwich
'When Ethan was in the kitchen, Jon Ander made a sandwich.'

- Compared to (8), (9) has the reversed inclusion between the ET and the RT, where the time of the sandwich-making is placed inside the time of Ethan being in the kitchen.



- This clause with no marking entails that the sandwich-making does not continue into the present, and thus it is true for the given situation.

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Duffied (1999, 2007):

- Vietnamese expresses assertion independently of tense or aspect.
- 3 functional categories above VP in Vietnamese:
 - Topic Phrase
 - Tense Phrase
 - Assertion Phrase

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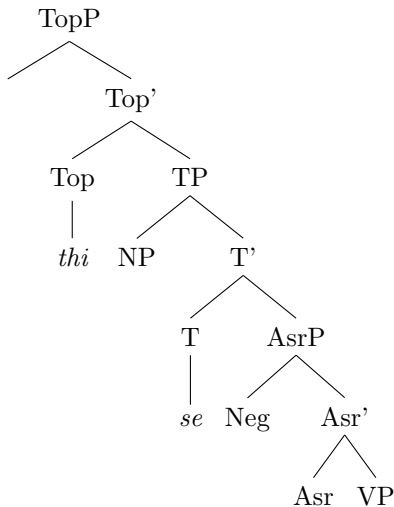
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(10)

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- Tense marking in Vietnamese is “almost always” optional, which contrasts with the obligatory presence of tense morphology in English.
 - *se* = Future tense
- This claim is based on the fixed position of *se* in matrix clauses.
 - *Se* directly follows the subject.
 - *Se* precedes the sentential negation *khong*.

Reasoning

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- Since *se* is argued to be a future tense morpheme in this account, *se* imposes a precedence relation between the UT and the RT.
- This explains why *se* appears to play a role in excluding the *se* past and present time reference from the matrix clauses.
 - Clauses containing *se* are true in situation denoting a future time eventuality.

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Non-future Interpretation

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- Duffield did not account for the fact that a bare verb predicate can receive either a past or a present, but not a future interpretation.
- While Duffield argues for *se* being an overt optional tense in Vietnamese, his analysis do not explain for this contrast between non-future and future interpretations.
 - Non-future interpretations can be obtained with no overt tense marker.
 - Future interpretations can only be obtained with an overt tense marker

'Future in the Past' Interpretation

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- Besides the ordinary future readings, *se* also gives rise to 'future in the past' readings
- If *se* functions as a future tense that requires a predicate to be interpreted after the UT, then the fact that *se* can also give rise to 'future in the past' readings cannot be accounted for.

'Future in the Past' Interpretation

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SITUATION: Zheng is going to go to Germany in a week.

- (11) Tuan sau Zheng se di Duc.
week after Zheng SE go Germany
'Zheng will go to Germany next week.'

SITUATION: Zheng was going to go to Germany last week, but his flight was cancelled.

- (12) Tuan truoc Zheng se di Duc.
week before Zheng SE go Germany
'Zheng was going to go to Germany last week.'

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- Under a neo-Reichenbachian framework, (11) and (12) will have the following relations among the ET, the RT, and the UT:

(13) a. (13): $UT < RT, ET$

b. (14): $RT < UT \ \& \ RT < ET$

- Duffield (1999, 2007) only predicted the precedence relation between the UT and the RT, and thus fails to account for cases in which the $RT < UT$.

Progressive Interpretation

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- Duffield failed to capture all the readings that a clause containing *se* and *dang* can get.
- His account predicted that *se dang* gives rise to future progressive readings.
 - *Se* was proposed to be a future tense.
 - *Dang* was proposed to be a progressive aspect.

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Ordinary future progressive reading is not the only interpretation that sentences like (14) can get:

- (14) Becky **se dang** day LING 201.
Becky SE PROG teach LING 201
'Becky will be / would be teaching LING 201.'

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SITUATION: It is April 2018. Becky is going to teach Linguistics next year.

- (15) Nam sau Becky **se dang** day Ngon ngu hoc.
year after Becky SE PROG teach Linguistics
'Becky will be teaching Linguistics next year.'

SITUATION: It is April 2018, and I am telling you Becky's life story. In April 2015, she found out that she was assigned to teach Linguistics in April 2016.

- (16) Nam sau Becky **se dang** day Ngon ngu hoc.
Year after Becky SE PROG teach Linguistics
'Becky would be teaching Linguistics next year.'

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Under the view of Duffield (1999, 2007), *se* is a future tense, and thus the combination of this morpheme with the PROG *dang* cannot get the desired ‘future in the past’ progressive reading for situations like (16) above.

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- Duffield neither discussed the perfective aspect nor proposed formal semantics for viewpoint aspects.
- His analysis did not address the contrast in the ability to cover both past and present RTs between the progressive aspect *dang* and the phonologically empty perfective aspect.

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- A bare verb predicate with the PFV \emptyset is compatible with both a past-time sub-event and a present-time sub-event simultaneously, while a clause containing the PROG *dang* is not.

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SITUATION: Ethan and Jon Ander are taking a cooking class, and they wanted to each make a sandwich. Ethan was making his an hour ago, but he stopped and never worked on it again. Jon Ander is currently in the middle of his.

- (17) a. Ethan va Jon Ander \emptyset lam banh mi.
Ethan and Jon Ander PFV make sandwich
'Ethan and Jon Ander make / made sandwiches.'
- b. #Ethan va Jon Ander **dang** lam banh mi.
Ethan and Jon Ander PROG make sandwich
'Ethan and Jon Ander are / were making sandwiches.'

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- The possibility of (17a) in the paired scenario shows that a bare predicate like *lam banh mi* ‘make sandwiches’ can be used in one-and-the-same sentence to apply to both past and present events.
- Curiously, the impossibility of (17b) in this same scenario shows that adding the progressive particle *dang* defeats this possibility.
- This curious contrast is not accounted for by Duffield (1999, 2007).

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The pronominal approach to tense semantics (Kratzer 1998):

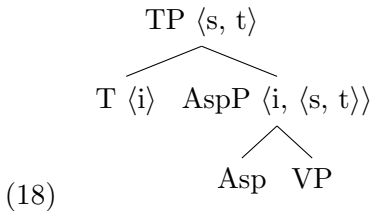
- The Tense head, which is of type i , is sister to the Aspect Phrase, which denotes a property of times.
- This AspP in turn takes the VP as complement.

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The whole TP denotes a proposition:



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- Instead of projecting a temporal argument, verbs project an event argument.
- The lexical entry for verbs like ‘teach’ will be as follows:

$$(19) \quad \llbracket \text{teach} \rrbracket^{w, t, g, c} = [\lambda x_e : [\lambda y_e : [\lambda e_\varepsilon : \text{teach}(e)(w) \& \text{Agent}(e)(w) = x \& \text{Theme}(e)(w) = y]]]]$$

‘In world w , e is an event of teaching whose agent is x and whose theme is y .’

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- Aspect heads are of type $\langle\langle\varepsilon, t\rangle, \langle i, t\rangle\rangle$.
- They take as argument a predicate of events, which is the denotation of the VP, and return a predicate of times, which then goes on to combine with the T head.
- The lexical entry for the imperfective (IMPFV) aspect:

$$(20) \quad \llbracket \text{IMPFV} \rrbracket^{w, t, g, c} = [\lambda P_{\langle\varepsilon, t\rangle} : [\lambda t'_i : \exists e . t' \subseteq \tau(e) \ \& \ P(e) = T]]$$

‘The time t' is contained within the ‘temporal trace’ of an event of P.’

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- Since i is the type of time interval, the tense morpheme itself introduces a variable over time intervals.
- The variable in T corresponds to the RT , and receives its value from the contextually determined assignment function.
- The lexical entries of the tense morphemes introduce presuppositions restricting the RT (Heim 1994)

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The lexical entry for the past (PST) tense morpheme:

- (21) $\llbracket \text{PST}_i \rrbracket^{w, t, g, c}$ is only defined if $g(i) < t_c$
If defined, then $\llbracket \text{PAST}_i \rrbracket^{w, t, g, c} = g(i)$

‘The past tense morpheme is only defined if the context c provides a time interval $g(i)$ that precedes the UT.’

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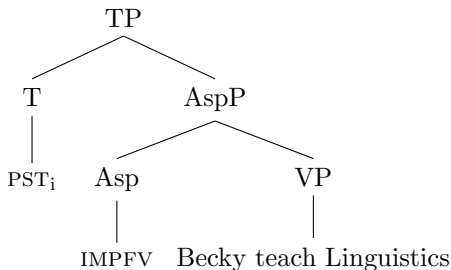
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The denotation of a simple sentence like ‘Becky was teaching Linguistics’ will be as follows:

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(22) a.



b. $\llbracket (22a) \rrbracket^{w, t, g, c} = [\lambda w : [\exists e : [\text{teach}(e)(w) \ \& \ \text{Agent}(e)(w) = \text{Becky} \ \& \ \text{Theme}(e)(w) = \text{Linguistics} \ \& \ g(i) \subseteq \tau(e)]]]$ (where $g(i) < t_c$)

‘There is an event e of Becky teaching Linguistics, whose running time τ includes the contextually salient past time $g(i)$.’

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- Vietnamese also employs this same functional structure of the clause.
- Moreover, similar to how the English PAST introduces a time interval that precedes the UT, the Tense head in Vietnamese also serves to narrow down possible RTs.
- The only difference is that the Vietnamese non-future tense morpheme is less restrictive than the English past tense morpheme shown earlier.

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- Bare verb sentences in Vietnamese can be used to describe past and present, but not future eventualities.
- Following Matthewson's (2006) analysis for Lillooet, I propose that such non-future temporal reference are contributed by a phonologically empty tense morpheme, NONFUT.
- All finite clauses in Vietnamese introduce a variable over time intervals, and the values for that variable are restricted to times that are not temporally located after the UT.

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- Then, while the English past tense morpheme restricts possible values for the RT to being past, the Vietnamese non-future one restricts such values to being non-future:

(23) $\llbracket \text{NONFUT}_i \rrbracket^{w, t, g, c}$ is only defined if $\neg(t_c < g(i))$
If defined, then $\llbracket \text{NONFUT}_i \rrbracket^{w, t, g, c} = g(i)$

‘The non-future tense morpheme is only defined if it is not the case that the context c provides a time interval $g(i)$ that follows the UT.’

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- As shown earlier, with the presence of *dang*, the ET properly contains the RT.
- Duffield's (1999, 2007) suggested that *dang* is a progressive aspect.

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- Therefore, I propose the following semantics for the preverbal particle *dang*:

$$(24) \quad \llbracket \text{DANG} \rrbracket^{w, t, g, c} = [\lambda P_{\langle \varepsilon, t \rangle} : [\lambda t'_i : \exists e . t' \subset \tau(e) \ \& \ P(e) = T]]$$

‘The time t' is properly contained within the ‘temporal trace’ of an event of P .’

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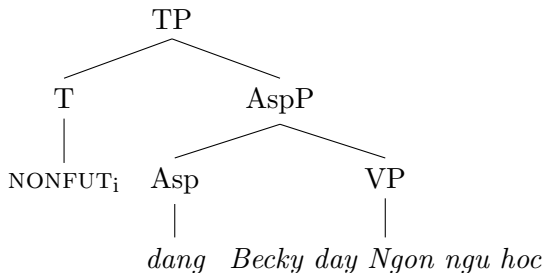
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Under the proposed semantics, the denotation of the sentence following sentence will be as follows:

- (25) Becky **dang** day Ngon ngu hoc.
Becky PROG teach Linguistics
'Becky is / was teaching Linguistics.'

Progressive Aspect



- b. $\llbracket \text{TP} \rrbracket^{w, t, g, c} = [\lambda w : [\exists e : [\text{teach}(e)(w) \ \& \ \text{Agent}(e)(w) = \text{Becky} \ \& \ \text{Theme}(e)(w) = \text{Linguistics} \ \& \ g(i) \subset \tau(e)]]]$ (where $\neg(t_c < g(i))$)

‘There is an event e of Becky teaching Linguistics, whose running time τ properly includes the contextually salient non-future time $g(i)$.’

Imperfective Aspect

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- While the progressive aspect is marked overtly with the preverbal particle *dang*, not all semantic aspectual distinctions receive overt morphological expression.
- A sentence with no overt marking of viewpoint aspect can get a perfective reading.

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The semantics of this phonologically empty viewpoint aspect is proposed to be as follows:

$$(27) \quad \llbracket \emptyset \rrbracket^{w, t, g, c} = [\lambda P_{\langle \varepsilon, t \rangle} : [\lambda t'_i : \exists e . \tau(e) \subseteq t' \ \& \ P(e) = T]]$$

‘The time t' contains the ‘temporal trace’ of an event of P .’

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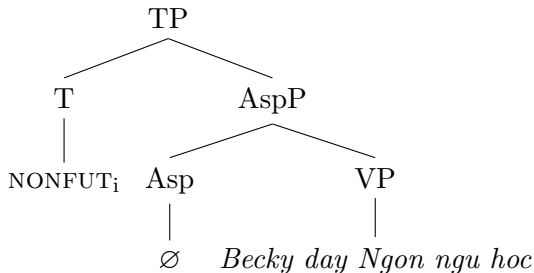
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Under the proposed semantics, the denotation of the sentence following sentence will be as follows:

- (28) Becky day Ngon ngu hoc.
Becky teach Linguistics
'Becky teaches / taught Linguistics.'

Imperfective Aspect



- b. $[[\text{TP}]]^w, t, g, c = [\lambda w : [\exists e : [\text{teach}(e)(w) \ \& \ \text{Agent}(e)(w) = \text{Becky} \ \& \ \text{Theme}(e)(w) = \text{Linguistics} \ \& \ \tau(e) \subseteq g(i)]]]$ (where $\neg(t_c < g(i))$)

‘There is an event e of Becky teaching Linguistics, whose running time τ is included in the contextually salient non-future time $g(i)$.’

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- This proposed semantics captures the fact that sentences with no overt markings of tense and aspect can get both present perfective and past perfective interpretations.
- Therefore, it accounts for the non-future perfective readings as well as the contrast between the clause containing *dang* and the one with the null PFV.

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SITUATION: Ethan and Jon Ander are taking a cooking class, and they wanted to each make a sandwich. Ethan was making his an hour ago, but he stopped and never worked on it again. Jon Ander is currently in the middle of his.

- (30) a. Ethan va Jon Ander lam banh mi.
Ethan and Jon Ander make sandwich
'Ethan and Jon Ander make / made sandwiches.'
- b. #Ethan va Jon Ander **dang** lam banh mi.
Ethan and Jon Ander PROG make sandwich
'Ethan and Jon Ander are / were making sandwiches.'

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- The semantics proposed for the PROG *dang* and the PFV \emptyset above also account for the aspectual asymmetry.
- Only the clause containing the PFV \emptyset , but not the PROG *dang*, is true for situations in which there exist both past-time and present-time sub-events.
- The structures with the PFV and the PROG are as follows:

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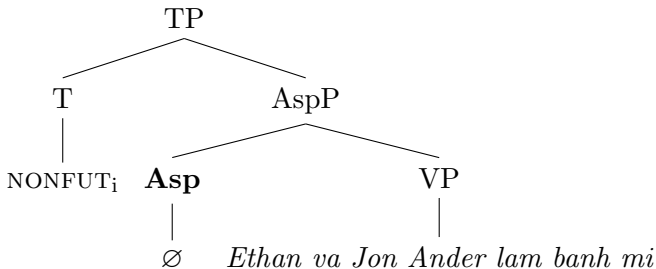
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- (31) Ethan va Jon Ander lam banh mi.
Ethan and Jon Ander make sandwich
'Ethan and Jon Ander make / made sandwiches.'



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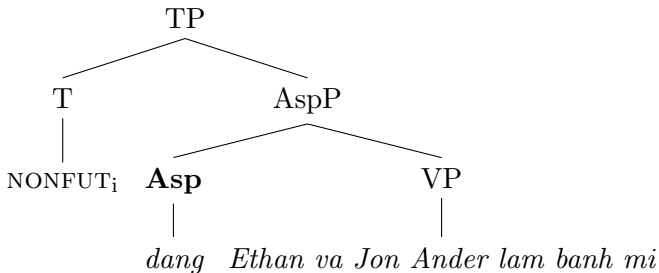
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- (32) Ethan va Jon Ander **dang** lam banh mi.
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- The only difference between the 2 structures is the Asp head.
- When the NONFUT tense is combined with the PFV \emptyset , it can provide an RT interval for both Ethan's and Jon Ander's sandwich-making sub-events.
- However, when it is combined with the PROG *dang*, the RT interval provided cannot cover these same sub-events.

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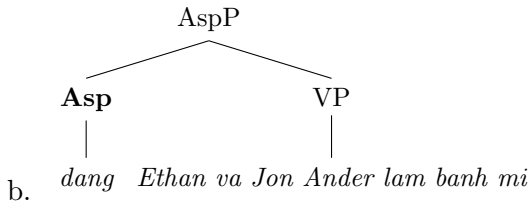
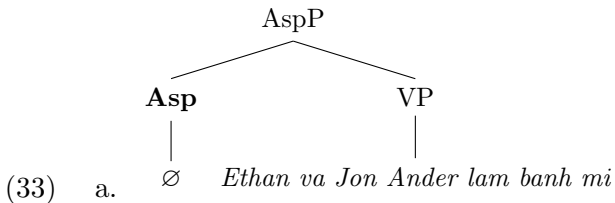
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Before taking a closer look at this difference in temporal interaction, I will discuss the event plurality observed in the VP.

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- Both (33a-b) have cumulative predication in the sense that there are a total of 2 people working separately on the making of their own sandwiches, and a total of 2 sandwiches are made.
- In this case, the predicate contains two sub-events:

	EVENT	AGENT	THEME
(34)	e_1	Ethan	sandwich ₁
	e_2	Jon Ander	sandwich ₂

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In order to propose the semantics for the VPs in (33) above, we first need consider the domains of entities and of events.

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Link (1983):

- Firstly, the domain of entities D_e should contain both singular and plural individuals.
- If D_e is assumed to be cumulative, then certain subsets of D_e are also cumulative.

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- Such cumulativity can be extended to those sets' characteristic functions, which are the members of $D_{\langle e, t \rangle}$:

$$(35) \quad \text{CUMULATIVITY (Properties of Individuals):}$$
$$[\lambda P_{\langle e, t \rangle} : [\forall x_e [\forall y_e : [[P(x) \ \& \ P(y)] \rightarrow P(x + y)]]]]]$$

- Whenever x and y are in D_e , the sum of x and y , which is $x + y$, is so in D_e .

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- Secondly, this sum operation is also defined for events, and, consequently, D_s can also be assumed to be cumulative.
- Cumulativity for the members of $D_{\langle s, t \rangle}$ will then be as follows:

$$(36) \quad \text{CUMULATIVITY (Properties of Events):}$$
$$[\lambda P_{\langle s, t \rangle} : [\forall e_s [\forall e'_s : [[P(e) \ \& \ P(e')] \rightarrow P(e + e')]]]]]$$

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Landman (2000):

- The basic verb and thematic role predicates of the logical representations are singular predicates that are pluralized with a *-operator that maps properties and relations into their smallest cumulative extensions.

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Kratzer (2008):

- Lexical verbs like ‘make’ are relations between events and themes, and they are inherently pluralized.

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Putting all the key ingredients together, the semantics for the VPs in (33) ('Ethan and Jon Ander make sandwiches') is proposed to be as follows:

- (37) $\llbracket \text{VP} \rrbracket^{w, t, g, c} = [\lambda w : [\exists e : [* \text{make}(e)(w) \ \& \ * \text{Agent}(e)(w) = \text{Ethan} + \text{Jon Ander} \ \& \ * \text{Theme}(e)(w) = \text{sandwich}_1 + \text{sandwich}_2]]]$

'In world w , there is an event e such that e is a plural event of making whose cumulative agent is the sum of Ethan and Jon Ander and whose cumulative theme is the sum of two sandwiches.'

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- The truth-conditions above are satisfied in the given situation, as they are witnessed by the plural event $e_1 + e_2$, the plural entity Ethan + Jon Ander, and the plural entity sandwich₁ + sandwich₂.
- Under the proposed semantics, the denotation of the clause containing the PFV \emptyset will then be calculated as follows:

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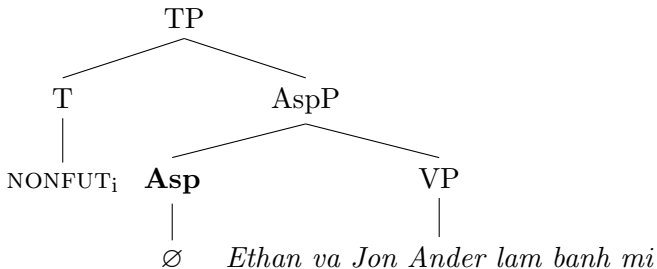
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- (38) Ethan va Jon Ander lam banh mi.
Ethan and Jon Ander make sandwich
'Ethan and Jon Ander make / made sandwiches.'



- (39) a. $\llbracket \text{AspP} \rrbracket^{w, t, g, c} = [\lambda t : [\lambda w : [\exists e : [$
 $\text{*make}(e)(w) \ \& \ \text{*Agent}(e)(w) = \text{Ethan} + \text{Jon}$
 $\text{Ander} \ \& \ \text{*Theme}(e)(w) = \text{sandwich}_1 +$
 $\text{sandwich}_2 \ \& \ \tau(e) \subseteq t]]]$
- b. $\llbracket \text{TP} \rrbracket^{w, t, g, c} = [\lambda w : [\exists e : [\text{*make}(e)(w) \ \&$
 $\text{*Agent}(e)(w) = \text{Ethan} + \text{Jon Ander} \ \&$
 $\text{*Theme}(e)(w) = \text{sandwich}_1 + \text{sandwich}_2 \ \& \ \tau(e)$
 $\subseteq g(i)]]]$ (where $\neg(t_c < g(i))$)
- ‘There is a plural event e of Ethan making a sandwich and Jon Ander making a sandwich, whose running time τ is included in the contextually salient non-future time $g(i)$.’

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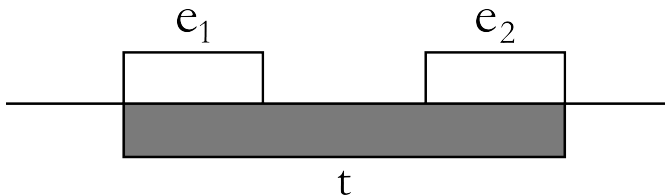
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The PFV \emptyset existentially quantifies over the event variables, and situate the ETs (the times of Ethan making a sandwich and of Jon Ander making a sandwich) inside an evaluation interval (the RT).



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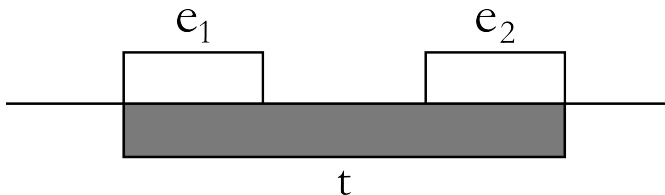
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The sum of the time of each of these sub-events is still contained within the time span of the non-future RT (the interval running from a salient point in the past up until the UT).



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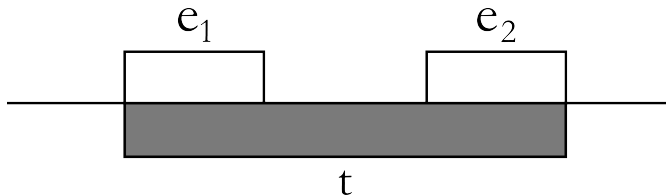
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Then, the combination of the NONFUT tense and the PFV \emptyset provides an RT large enough to cover both the past-time sub-event and the present-time one simultaneously.



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The presence of the PROG *dang* flips the inclusion relation of these time intervals, and thus the denotation of the clause containing *dang* will then be calculated as follows:

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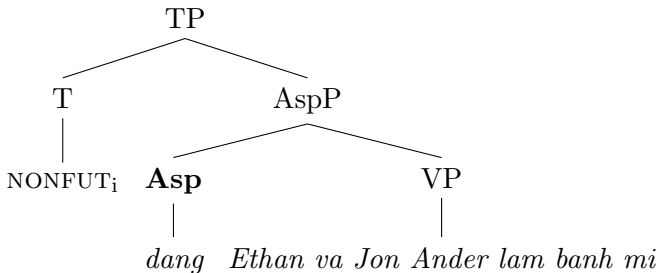
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- (40) Ethan va Jon Ander **dang** lam banh mi.
Ethan and Jon Ander PROG make sandwich
'Ethan and Jon Ander are / were making sandwiches.'



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- (41) a. $\llbracket \text{AspP} \rrbracket^{w, t, g, c} = [\lambda t : [\lambda w : [\exists e : [$
*make(e)(w) & *Agent(e)(w) = Ethan + Jon
Ander & *Theme(e)(w) = sandwich₁ +
sandwich₂ & $t \subset \tau(e)$]]]
- b. $\llbracket \text{TP} \rrbracket^{w, t, g, c} = [\lambda w : [\exists e : [$ *make(e)(w) &
*Agent(e)(w) = Ethan + Jon Ander &
*Theme(e)(w) = sandwich₁ + sandwich₂ & $g(i)$
 $\subset \tau(e)$]]] (where $\neg(t_c < g(i))$)
- ‘There is a plural event e of Ethan making a sandwich and Jon Ander making a sandwich, whose running time τ properly includes the contextually salient non-future time $g(i)$.’

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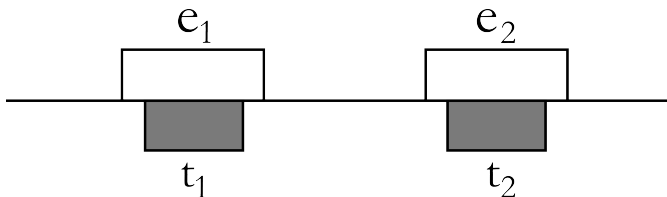
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Since the PROG puts the RT inside the ET, the proposed semantics shows that for each of the sub-events' running times, there is an RT properly contained within it.



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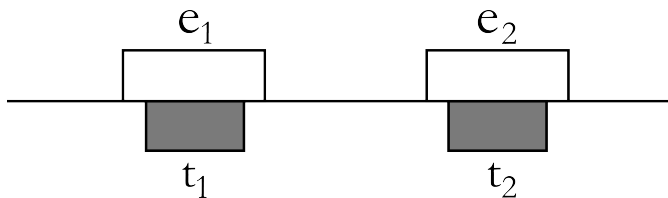
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Since the sub-events e_1 and e_2 of Ethan making a sandwich in the past and of Jon Ander making a sandwich in the present are disjoint in time, the RTs contained within these time spans cannot form an interval.



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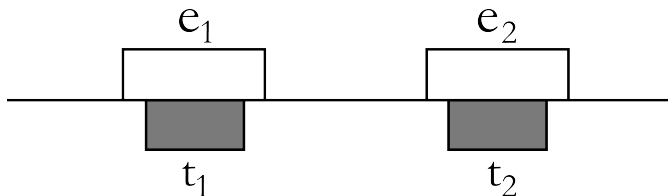
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Then, there is no evaluation interval that can cover both a stretch of time in the past as well as the UT.



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Se can give rise to both ordinary future and ‘future in the past’ readings:

SITUATION: Zheng is going to go to Germany in a week.

- (42) Tuan sau Zheng **se** di Duc.
week after Zheng SE go Germany
‘Zheng will go to Germany next week.’

SITUATION: Zheng was going to go to Germany last week, but her flight was cancelled.

- (43) Tuan truoc Zheng **se** di Duc.
week before Zheng SE go Germany
‘Zheng was going to go to Germany last week.’

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- *Se* is the Vietnamese overt sell-out of the English WOLL, originally proposed by Abusch (1985).
- This WOLL operator is the hypothetical untensed root underlying ‘will’ and ‘would’ in English.
- The surface forms ‘will’ and ‘would’ are then proposed to each contain WOLL plus tense, which is either present or past, respectively.

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- Equivalently to the English WOLL, the Vietnamese *se* can then combine with the phonologically empty NONFUT tense morpheme, which picks out a non-future RT.

- The semantics of *se* is proposed to be as follows:

$$(44) \quad \llbracket SE \rrbracket^{w, t, g, c} = [\lambda P_{\langle i, t \rangle} : [\lambda t' : [\exists t'' . t'' > t' \& P(t'') = T]]]$$

‘There is an interval t'' that follows t' .’

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- Future time reference in Vietnamese is achieved by the co-occurrence of the obligatory null NONFUT tense morpheme with *se*.
- I propose that *se* takes a high Asp head, which is above the one that the viewpoint aspects occupy, but lower than the Tense head.

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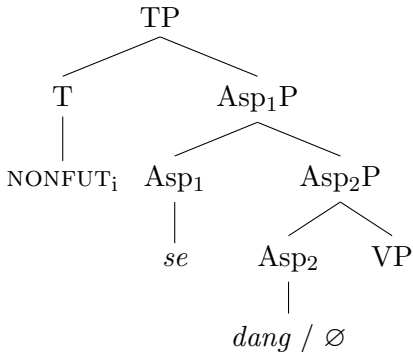
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Under the proposed semantics and syntax, the denotation of a clause containing *se* is then calculated as follows:

- (46) Becky **se** day Ngon ngu hoc.
Becky FUT teach Linguistics
'Becky will / would teach Linguistics.'

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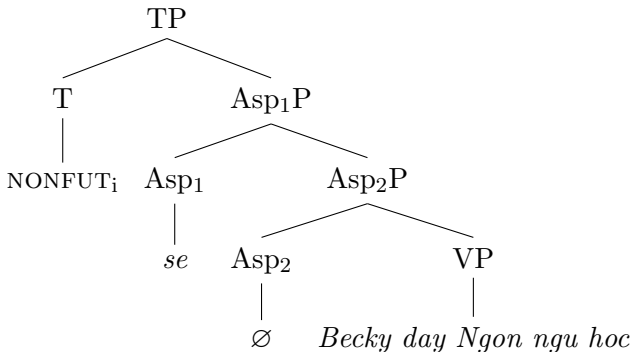
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- (48) $\llbracket \text{TP} \rrbracket^{w, t, g, c} = [\lambda w : [\exists t' : [g(i) < t' \ \& \ \exists e [\text{teach}(e)(w) \ \& \ \text{Agent}(e)(w) = \text{Becky} \ \& \ \text{Theme}(e)(w) = \text{Linguistics} \ \& \ \tau(e) \subseteq t']]]]$ (where $\neg(t_c < g(i))$)

‘There is an event e of Becky teaching Linguistics, whose running time τ is included in a time t' which follows the contextually salient non-future time $g(i)$.’

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The discussion has focused on how temporal reference in Vietnamese is determined with different preverbal particles:

- Every bare verb predicate in the language possesses an obligatory phonologically empty NONFUT tense morpheme, which restricts the RT to being non-future.
- Contrary to the previous account, *se* is not a future tense, but it is an overt spell-out of WOLL-operator, respectively.
- The combination of *se* and this null tense yields both ordinary future and ‘future in the past’ interpretations.

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- The RT provided from the combination of the NONFUT tense with the null PFV is compatible with both past-time and present time sub-events simultaneously.
- Meanwhile, NONFUT + PFV cannot yield an RT large enough to cover these sub-events at the same time.
- The discussion relates directly to recent approaches to temporal reference in ‘tenseless’ languages.
- It offers data from Vietnamese to the debate on semantic variation on tense and aspect across languages.

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- Abusch, D. 1985. *On Verbs and Time*. Doctoral Diss., UMass Amherst.
- Bittner, M. 2005. Future Discourse in a Tenseless Language. *Journal of Semantics* 22: 339–87.
- Duffield, N. 2007. Aspects of Vietnamese Clausal Structure: Separating Tense from Assertion. *Linguistics* 45: 765–814.
- Heim, I. 1994. Comments on Abusch's Theory of Tense. Ms., MIT.
- Klein, W. 1994. *Time in Language*. London: Routledge.

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- Kratzer, A. 1998. More Structural Analogies between Pronouns and Tense. *Proceedings of SALT 8*: 92–110. Ithaca: CLC.
- Kratzer, A. 2008. On the Plurality of Verbs. *Event Structures in Linguistic Form and Interpretation*: 269–300. Berlin: de Gruyter.
- Landman, F. 2000. Events and Plurality. *The Jerusalem Lectures*. Dordrecht: Kluwer.
- Lin, J. 2006. Time in a Language without Tense: The Case of Chinese. *Journal of Semantics* 23: 1–53.

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- Link, G. 1983. The Logical Analysis of Plurals and Mass Terms: A Lattice-Theoretic Approach. *Meaning, Use, and Interpretation of Language*: 302–323. Berlin: de Gruyter.
- Matthewson, L. 2006. Temporal Semantics in a Supposedly Tenseless Language. *Linguistics and Philosophy* 29: 673–713.
- Mucha, A. 2013. Temporal Interpretation in Hausa. *Linguistics & Philosophy* 36: 371–415.
- Pancheva, R. & A. von Stechow. 2004. On the ‘present perfect puzzle’. *Proceedings of NELS* 34: 469–84. Amherst: GLSA.

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- Pancheva, R. 2004. Another Perfect Puzzle. *Proceedings of WCCFL 23*: 621–34. Somerville: Cascadilla.
- Rothstein, B. 2008. *The Perfect Time Span: On the Present Perfect in German, Swedish and English*. John Benjamins.
- Reichenbach, H. 1947. *Elements of Symbolic Logic*. Berkeley: UCP.
- Tonhauser, J. 2011. Temporal Reference in Paraguayan Guarani. *Linguistics and Philosophy* 34(3): 257–303.