SYNOPSIS

▸ Operators: an evolutionary approach

▸ Operator projections: implications

▸ Unified theories of TAM

▸ The proper treatment of TAM in RRG

▸ Summary

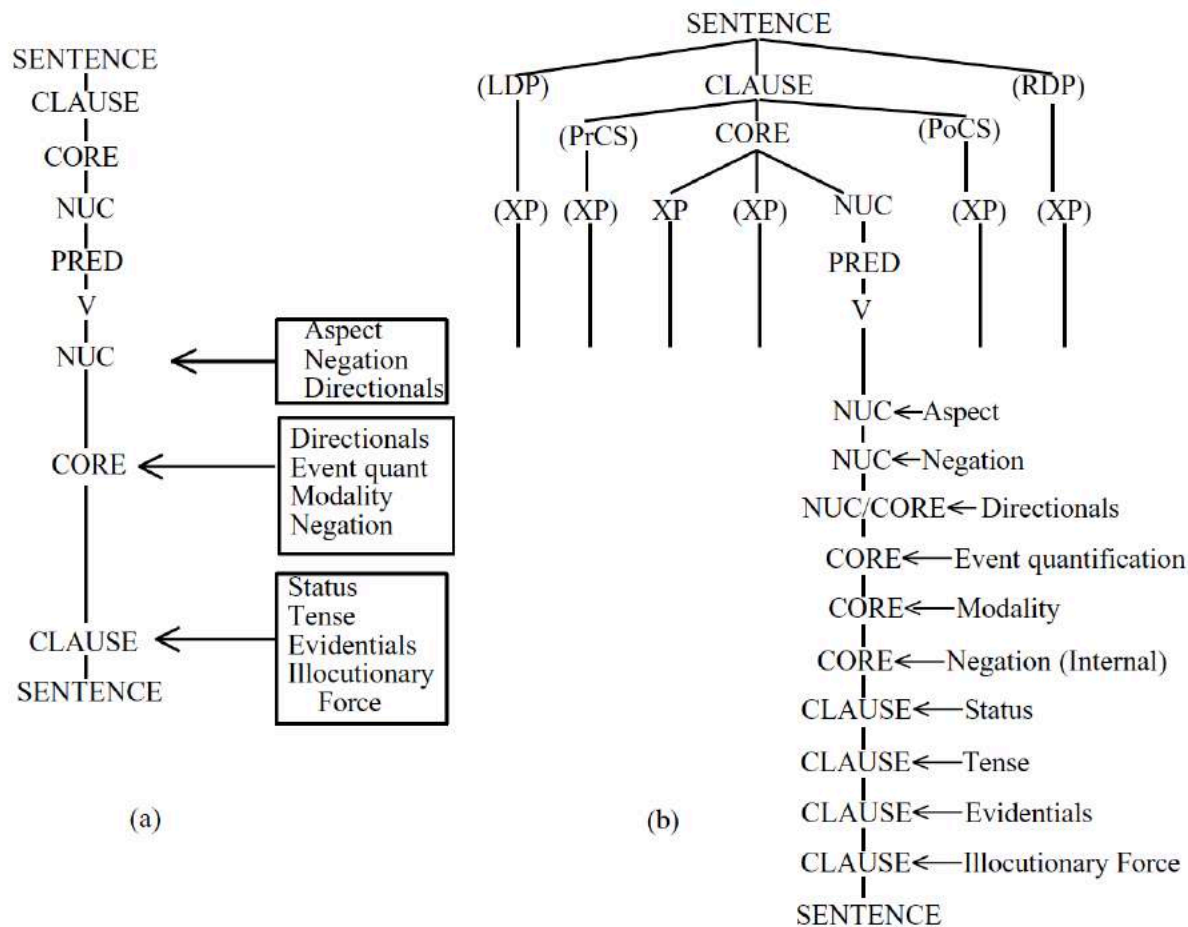# THE PROPER TREATMENT OF TAM IN RRG

‣ the current treatment

Figure 4.1. *Layered structure of the clause with constituent and operator projections (Van Valin 2005: 12)*

‣ desiderata

  ‣ event quantification, negation, modality could also be encoded in the CP, since they are functors

  ‣ missing: mood (but there is 'status');
    viewpoint aspect vs. aktionsart

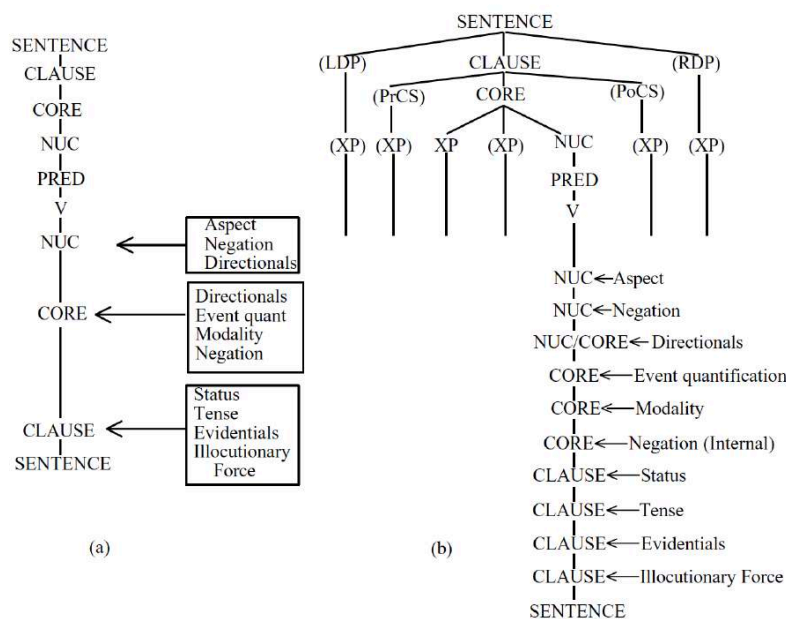 ‣ I'm going to propose treating finiteness as an operator

Figure 4.1. *Layered structure of the clause with constituent and operator projections (Van Valin 2005: 12)*

‣ evidence bearing on the position of operators in the OP

   ‣ the operator's surface position
      relative to that of other operators (e.g., Bybee 1985)

      ‣ *yes, but* - surface order being potentially mismatched
         with semantic composition is the very reason

         ‣ for postulating OPs in the first place!

   ‣ the semantic type of the operand

   ‣ the operator's association with CP layers
      of certain distributional properties

   ‣ the operator's input and output variables

▸ the type of the operand: an informal type system
  for the Layered Structure of the Clause

Table 4.1. *Semantic types associated with the LSC layers*

Layer	Semantic type	Example
Nucleus	Event *type* description (Parsons 1990)	**Forget one's cue**
(Verbal) core	Generic or individual event description	**Floyd forgetting his cue** *irritates Sally /* **Floyd forgetting his cue last Friday** *irritated Sally*
(Finite) clause	Proposition concerning the realization of an individual event (except for generics)	*Sally believed* **that Floyd had forgotten/would forget his cue**
Sentence	Speech act	**Did Floyd forget his cue?**

▸ the proper treatment of tense

  ▸ the most compact layer at which tense contrasts are expressed is the clause

(4.1) Infinitival cores: no tense contrast expressible

   a. **Floyd forgetting his cue** *irritates Sally*
   b. **Floyd forgetting his cue last Friday** *irritated Sally*

(4.2) Finite complement clauses: tense contrast expressible

   a. *Sally believed* **that Floyd had forgotten his cue**
   b. *Sally believed* **that Floyd would forget his cue**

▸ the proper treatment of tense (cont.)

    ▸ this makes sense morphologically since tense is a finiteness feature in Indo-European languages

    ▸ it also makes sense semantically since deictic/absolute tense constrains topic time vis-à-vis utterance time

        ▸ and topic time is a "discourse-level" variable in the sense that

            ▸ every utterance is understood to have a unique topic time/situation at the speech act level

                ▸ with the exception of generics

            ▸ topic situations/times are tracked anaphorically in discourse

▸ the proper treatment of viewpoint aspect

  ▸ viewpoint aspect relates the times of the situations described by nuclei and cores to the topic time

    ▸ so it stands to reason that viewpoint aspect is expressed lower/closer to the nucleus than tense

      ▸ and this is reflected in Minimalist adaptations of Klein's theory

        ▸ such as Demirdache & Uribe-Etxebarria 2007 and Stowell 2007
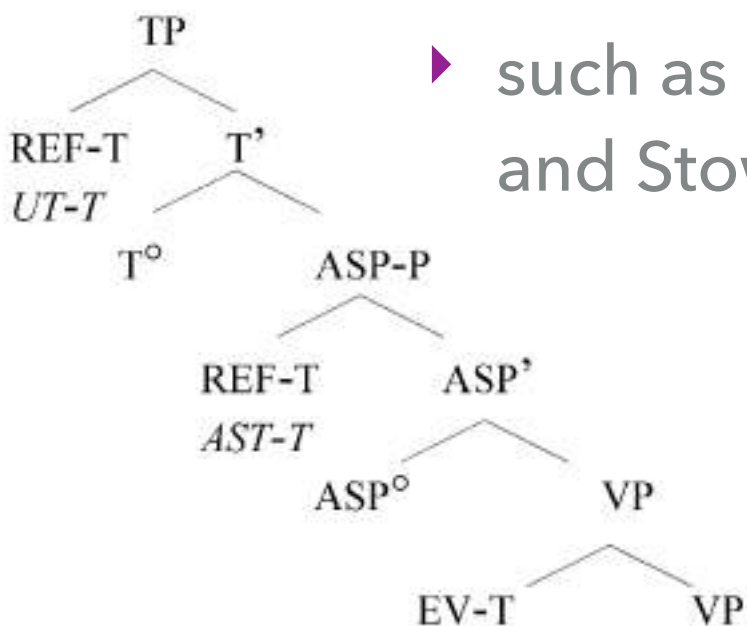
TP
REF-T   T'
UT-T
  T°   ASP-P
      REF-T   ASP'
      AST-T
          ASP°   VP
                EV-T   VP

Figure 4.2. '"Isomorphic syntax of tense and aspect" (Demirdache & Uribe-Etxebarria 2007: 333)*

▸ the proper treatment of viewpoint aspect (cont.)

    ▸ viewpoint aspect cannot be a nuclear-layer operator

        ▸ since it operates on a complete event description

            ▸ which is only encoded at the core layer

(4.1) *Floyd was eating three apples*
when his phone rang and he stopped

    ▸ at the topic time of (4.1), any of the stages in Figure 4.3 may hold
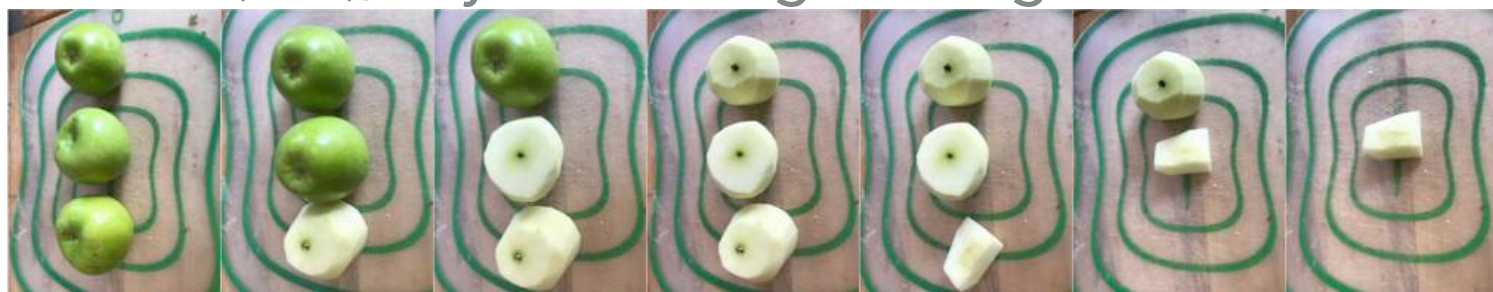
Figure 4.3. *A tale of three apples*

time

    ▸ the issue here is not the order of operations

        ▸ but the fact that the correct interpretation of (4.1) requires application of the progressive=imperfective to the entire core

▸ so how did the idea originate
that (viewpoint) aspect might be a nuclear operator?

    ▸ could this have something to do with the typologically
rather unusual aspect system of Slavic languages?

▸ excursus: aspect in Russian

    ▸ the traditional picture

        ▸ perfective aspect is expressed
by a large set of verbal prefixes

        ▸ unprefixed verbs are imperfective

        ▸ prefixed verbs can express a 'secondary imperfective'
by suffixation with *-iv/-yv*

▸ excursus: aspect in Russian (cont.)

   ▸ prefixation is clearly lexical in terms of which prefixes are available with which verb bases

   ▸ Janda et al. (2013, 2017): the prefixes are 'verbal classifiers'

Table 4.2. *Semantic profiles of five common aktionsart prefixes in Russian (Janda et al. 2017: 242); SANDS = Sounds and speech; CHAGEST = Change of state/feature; IMPACT = physical impact)*

	Meanings in Attracted Classes	Meanings in Neutral Classes	Meanings in Repulsed Classes
pro-	sound penetration, perdurative (SANDS)	penetrating surfaces, making holes (IMPACT)	saturation, penetration through holes (CHANGEST)
po-	factitive, delimitative, resultative (CHANGEST, SANDS)	factitive, resultative, delimitative (BEHAV)	resultative, delimitative (IMPACT)
za-	covering, filling, fixed states, attachment (IMPACT, CHANGEST)	———	fixed states (SPEECH, BEHAV)
s-	resultative, semelfactive (BEHAV)	resultative, semelfactive, together, down (CHANGEST, SPEECH, IMPACT)	———
na-	accumulation on surface (IMPACT, BEHAV)	accumulation of behavior (SPEECH)	accumulation that fills a volume (CHANGEST)

▸ **excursus: aspect in Russian (cont.)**

   ▸ **reanalysis: Klein (1995), Bohnemeyer & Swift (2004)**

Verb stem class	Examples	Traditional analysis	Bohnemeyer & Swift 2004
Unprefixed stems w/o suppletive partners	*Kolot'* 'prick', *kryt'* 'cover', *igrat'* 'play', *pisat'* 'write'	Imperfective	Atelic, compatible w/ both imperfective and perfective interpretations
Unprefixed stems w/ suppletive partners	*Brosit'* 'throw', *dat'* 'give', *končit'* 'end', *past'* 'fall'	Stem suppletion expresses (im)perfective aspect	Stem suppletion expresses telicity; atelic stems are interpreted imperfectively, telic stems perfectively
Prefixed stems	*Vy-kolot'* 'thrust out', 'tattoo'; *ot-kryt'* 'open'; *pro-igrat'* 'lose'; *pere-pisat'* 'copy'	Perfective	Prefixes express aktionsart; most prefixes express telicity; telic verb stems are interpreted perfectively
Prefixed stems + *-iv/-yv*	*Vy-kal-yv-at'* 'be thrusting out/tattooing' *ot-kr-yv-at'* 'be opening'; *pro-igr-yv-at'* 'be losing'; *pere-pis-yv-at'* 'be copying'	'Secondary imperfective'	The suffix *-iv/-yv* is the only primary morphological expression of viewpoint aspect in Russian

Table 4.3. *Heterodoxy: Bohnemeyer & Swift's (2004) reanalysis of the Russian aspect system*

‣ **excursus: aspect in Russian (cont.)**

  ‣ **on Bohnemeyer & Swift's analysis, viewpoint aspect is not lexical - not even in Russian**

  ‣ **caveat: the nexus b/w telicity and perfectivity appears to be stronger than in Dutch and German**

    ‣ **where B&S argue it to be an implicature**

    ‣ **imperfective interpretations with prefixed verbs are strictly unavailable w/o the imperfective suffix**

▸ the proper treatment of viewpoint aspect (resumed)

    ▸ English core junctures do not generally permit the expression of aspectual contrasts

(4.2) a. *Floyd started to dance*

     b. **Floyd started to be dancing*

     c. **Floyd started to have danced*

(4.3) a. *Sally tried to open the door*

     b. *??Sally tried to be opening the door when Sue arrived*

     c. *?Sally tried to have opened the door by the time Sue arrived*

(4.4) a. *Sally forced Floyd to open the door*

     b. *?Sally forced Floyd to be opening the door when Sue arrived*

     c. *?Sally forced Floyd to have opened the door by the time Sue arrived*

▸ the proper treatment of viewpoint aspect (cont.)

  ▸ there are marginal exceptions in English

(4.5) *'Tis better to have loved and lost*
      than never to have loved at all

  ▸ I'm unsure what to make of (4.5)

    ▸ so for the time being, I will refer to it
      as the **Lord Alfred Exception** (**LAE**)

  ▸ it's possible to translate (4.5) literally
    into German and Spanish

Figure 4.4. *Lord Alfred*

    ▸ but not into Russian and Yucatec

      ▸ so my hypothesis is that the LAE hinges on the availability
        of a perfect aspect auxiliary inflected for tense

▸ the proper treatment of viewpoint aspect (cont.)

  ▸ a more systematic exception: direct perception

(4.6) a. *Floyd saw Sally walking across the street,*
        when suddenly she stopped midway and turned

     b. *Floyd saw Sally walk across the street,*
        ?when suddenly she stopped midway and turned

  ▸ it seems that the event perception construction specifically allows expression of the aspectual contrast

    ▸ and utilizes the morphological contrast between gerund and infinitive for this purpose

‣ the proper treatment of viewpoint aspect (cont.)

   ‣ Russian appears to be more accommodating
toward expressing aspectual contrasts in dependent cores

      ‣ due in part to the nexus
among perfectivity, telicity, and semantic definiteness

(4.7) a. Mužchin-a zastavi-l   devušk-u pakova-t' vešč-i.

    man-NOM.SGM force-PAST.SGM girl-ACC.SGF   pack-INF   thing-PL

    'The man forced the girl to pack things.'

   b. Mužchin-a zastavi-l   devušk-u **u-**pakova-t' vešč-i.

    man-NOM.SGM force-PAST.SGM girl-ACC.SGF   **TEL-**pack-INF   thing-PL

    'The man forced the girl to pack the things / things completely.'

   c. Mužchin-a zastavi-l   devušk-u **u-**pakov-**yv**-at' vešč-i.

    man-NOM.SGM force-PAST.SGM girl-ACC.SGF   **TEL-**pack-**IMPF-**INF   thing-PL

    'The man forced the girl to pack the things repeatedly / by some protracted, repetitive process.'

‣ the proper treatment of viewpoint aspect (cont.)

(4.8) a. Ona   pyta-l-as' otkry-t' dver'.

       she(NOM) try-PAST-REFL.F open-INF   door(ACC.SGF)

     'She tried to open the door.'

   b. Ona   pyta-l-as' otkry-**yv**-at' dver'.

       she(NOM) try-PAST-REFL.F open-**IMPF**-INF   door(ACC.SGF)

     'She tried to open the door' = 'She tried to see whether the door would open even slightly'

‣ however, this isn't always possible

(4.9) a. Ej   u-da-l-o-s'   otkry-t' dver'.

       she.DAT TEL-give-PAST-N-REFL open-INF   door(ACC.SGF)

     'She managed to open the door.'

   b. ?Ej   u-da-l-o-s'   otkry-**yv**-at' dver'.

       she.DAT TEL-give-PAST-N-REFL open-**IMPF**-INF   door(ACC.SGF)

     (intended: 'She managed to be opening the door.')

▸ the proper treatment of viewpoint aspect (cont.)

  ▸ direct/event perception constructions
    take clausal complements in Russian

  ▸ even if it is possible to some extent in English and Russian
    to express viewpoint aspect in the core

    ▸ it's not obvious that this happens more than marginally

      ▸ aside from direct perception in English

    ▸ corpus evidence may be needed to evaluate
      the status of core-layer viewpoint marking further

- the proper treatment of viewpoint aspect (cont.)

  - Yucatec Maya likewise disallows the expression of viewpoint aspect contrasts in core junctures

In matrix clauses, aspect is marked in two positions: by a verbal **prefix** or auxiliary, and by a verbal **suffix**.

In non-finite cores, only the **suffix** appears

(4.8)　　**T**-inw=il-**ah**　　　　　　　　　a=lúub-**ul**

　　　　PRV-A1SG=see-CMP(B3SG)　　A2=fall-INC

　　　　'I saw you fall(ing)'

Selection of the suffix category is fixed by construction and transitivity of the complement (cf. Bohnemeyer 2009)

‣ the proper treatment of viewpoint aspect (cont.)

  ‣ more Yucatec examples

(4.9)   Le=òok'ol=o'   t-u=mèet-ah   u=ch'a'-b-**al**
         DEF=steal=D2   PRV-A3=make-CMP(B3SG)   [A3=take-PASS-**INC**

         le=ta'kin   tuméen   Pedro=o'
         DEF=money   CAUSE   Pedro]=D2

         'The thief, (s)he made Pedro take the money (lit. made the money
         be taken by Pedro)'

(4.10) Le=pàal=o',   t-u=ts'a'-ah   u=báah   k'àay-∅.
          DEF=child=D2 PRV-A3=put-CMP(B3SG)   A3=self   [sing\ATP-**INC**]

         'The child, (s)he tried to sing'

▸ interim conclusions

  ▸ the relation between topic time and event/situation time is a necessary part of the interpretation of the clause

    ▸ even in languages that don't express viewpoint aspect, such as German and Finnish (Bohnemeyer & Swift 2004)

    ▸ although it may of course be left undetermined, e.g., in shallow processing

  ▸ the ability to express viewpoint aspect in the core is language- and construction-specific

    ▸ this kind of flexibility is perhaps not so surprising given the relational nature of viewpoint aspect

      ▸ mediating b/w situation time (core) and topic time (clause/sentence/discourse)

‣ a final twist: finiteness

  ‣ Klein (2006, 2009): finiteness should be considered an operator in its own right (in present terms, a restrictor)

    ‣ in line with the INFL/"I" head of more traditional versions of GB/P&P/MP

"More importantly, many structural phenomena are clearly associated with the presence or absence of finiteness, a fact which is **clearly reflected in the early stages of first and second language acquisition**. In syntax, these include **basic word order rules**, **gapping**, the **licensing of a grammatical subject** and the **licensing of expletives.** In semantics, the **specific interpretation of indefinite noun phrases** is crucially linked to the presence of a finite element. These phenomena are surveyed, and it is **argued that finiteness (a) links the descriptive content of the sentence (the 'sentence basis') to its topic component (in particular, to its topic time), and (b) it confines the illocutionary force to that topic component.**" (Klein 2006: 245; emphasis *JB*)

▸ a final twist: finiteness (cont.)

　▸ my take

　　▸ finiteness is a morphosyntactic distinction with variable semantic impact

　　▸ it can be treated as an operator "shell"

　　　▸ into which different languages project true restrictors appropriate for the particular language

　　　　▸ English: tense + subject agreement

　　　　▸ Yucatec: viewpoint aspect, modality, temporal remoteness

　　　　▸ Wogeo (Austronesian; PNG): mood? (Exter 2012) + subject agreement

▸ a final twist: finiteness (cont.)

  ▸ the Yucatec facts: recap

In matrix clauses, aspect is marked in two positions: by a verbal **prefix** or auxiliary, and by a verbal **suffix**.

In non-finite cores, only the **suffix** appears

(4.8)   **T-**inw=il**-ah**   a=lúub**-ul**

             PRV-A1SG=see-CMP(B3SG)   A2=fall-INC

             'I saw you fall(ing)'

  ▸ the preverbal marker occurs only in matrix clauses and RCs

    ▸ Bohnemeyer (2002, 2009) argues against
      the existence of embedded complement clauses in the language

  ▸ it expresses, in a single paradigm of 15 mutually exclusive markers,
    viewpoint aspect, modality, and temporal remoteness

  ▸ the language is tenseless (Bohnemeyer 2002, 2009)

  ▸ the presence/absence of the preverbal marker is the best candidate for an
    expression of finiteness in Yucatec

▸ the revised operator hierarchy

Table 4.4. *Operators in the layered structure of the clause - revised edition*

Layer	Restrictors	Functors/relators
Nucleus	Aktionsart	Negation
		Directionals
Core		Event quantification
	Viewpoint aspect	Modality
		Negation (internal)
Clause		
Sentence	Status	
	Tense	
	Evidentials	
	Illocutionary Force	

‣ **how it works**

Figure 4.5. *Sample tree illustrating the revised operator projection (ignoring finiteness, with gratuitous neo-Davidsonian formalization of Klein's (1994) tense-aspect semantics ($\tau(e)$: time of situation e; t_{top}^c = topic time at context c; t_u^c = utterance time at context c)*
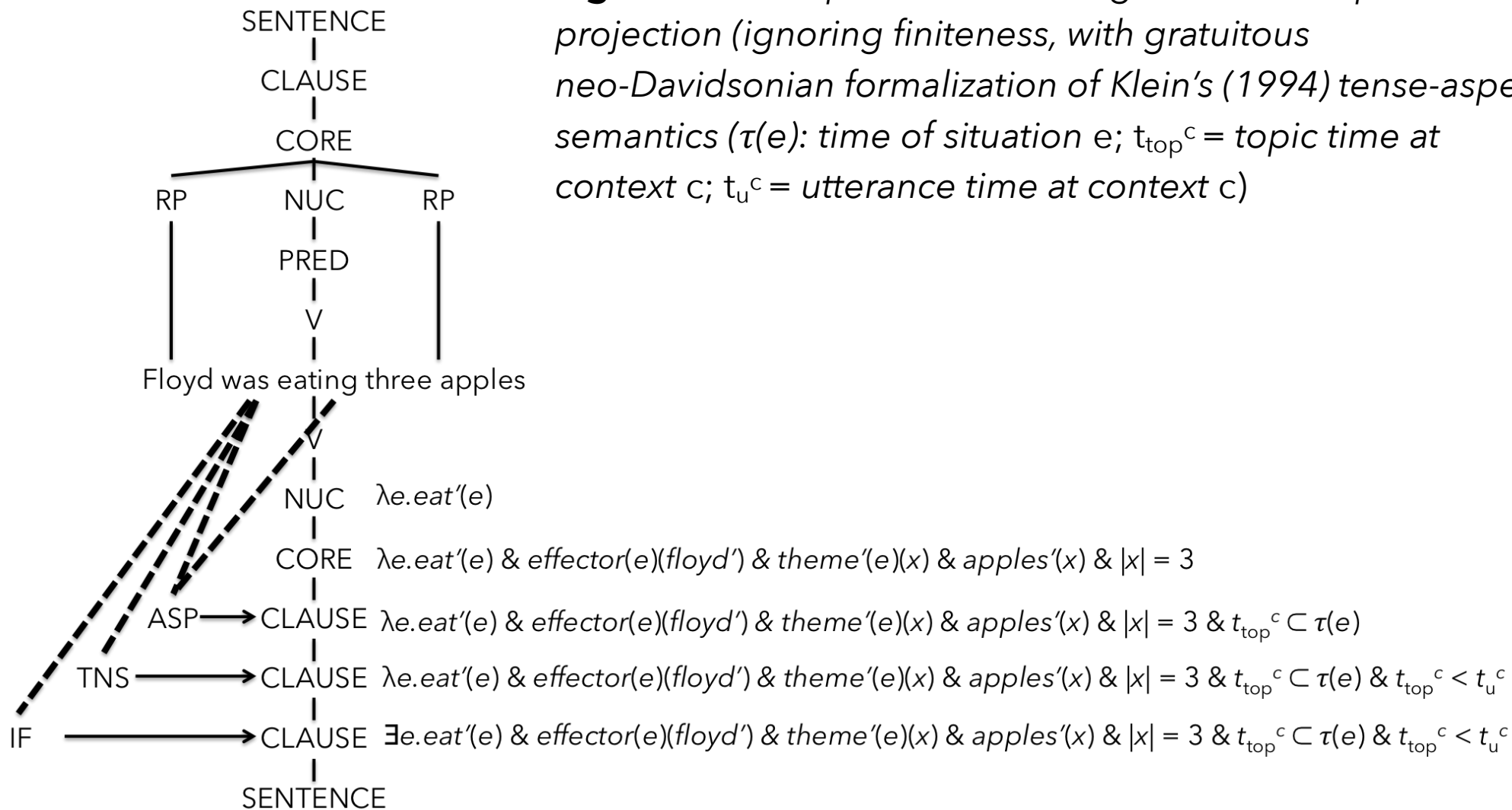
SENTENCE

CLAUSE

CORE

RP   NUC   RP

PRED

V

Floyd was eating three apples

V

NUC $\lambda e.eat'(e)$

CORE $\lambda e.eat'(e)$ & $effector(e)(floyd')$ & $theme'(e)(x)$ & $apples'(x)$ & $|x| = 3$

ASP → CLAUSE $\lambda e.eat'(e)$ & $effector(e)(floyd')$ & $theme'(e)(x)$ & $apples'(x)$ & $|x| = 3$ & $t_{top}^c \subset \tau(e)$

TNS → CLAUSE $\lambda e.eat'(e)$ & $effector(e)(floyd')$ & $theme'(e)(x)$ & $apples'(x)$ & $|x| = 3$ & $t_{top}^c \subset \tau(e)$ & $t_{top}^c < t_u^c$

IF → CLAUSE $\exists e.eat'(e)$ & $effector(e)(floyd')$ & $theme'(e)(x)$ & $apples'(x)$ & $|x| = 3$ & $t_{top}^c \subset \tau(e)$ & $t_{top}^c < t_u^c$

SENTENCE

SYNOPSIS

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SUMMARY

‣ operators can be classified into

   ‣ placeholders, which represent a referent that's part of the speaker's intended message

      ‣ by specifying a search domain that is not

   ‣ functors and relators, which represent parts of the speaker's intended message

      ‣ that have combinatorial properties
        distinct from those of lexical category members

   ‣ restrictors, which are inherently backgrounded

      ‣ and serve to facilitate comprehension
        by reducing the hearer's inference load

‣ the typological distribution of restrictors shows much greater variation than the distribution of the other operator types

‣ restrictors also exhibit considerably greater evidence of grammaticalization from distinct sources

‣ both of these properties can be account for by their pragmatic and psycholinguistic properties

   ‣ in combination with an evolutionary model

‣ viewpoint aspect, as distinct from aktionsart,
is not a nuclear operator

> ‣ it is most commonly expressed at the clause layer

> ‣ core-layer expression of viewpoint contrasts
> is language- and construction-specific

‣ with this modification, RRG is compatible with state-of-the-art
unified theories of tense-aspect semantics

‣ the RRG operator projection lends itself to compositional
event-semantic analyses of the semantics of TAM operators

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