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Preface

The 18th International Conference on Role and Reference Grammar (RRG 2025) was held at Rokkodai 2nd Campus, Kobe University, Japan on July 14-15, 2025, hosted by the Graduate School of Humanities, Kobe University. The major objective of this conference was to offer a forum for discussing original research in Role and Reference Grammar (Van Valin and LaPolla 1997; Van Valin 2005, 2023; Bentley, Mairal Usón, Nakamura, and Van Valin 2023), dealing with morphology, syntax, semantics, information structure, as well as language processing and language change. The present volume includes 15 papers, which represent the outcomes of RRG 2025.

We would like to acknowledge the following linguists who served on the scientific committee: Sergio Ibáñez (Universidad Nacional Autónoma de México), Ranko Matasović (University of Zagreb), Wataru Nakamura (Tohoku University), Rainer Osswald (Heinrich Heine University), Luis Paris (Universidad Nacional de Cuyo/CONICET), and Joy Wu (National Taiwan Normal University). The conference was supported (as a NINJAL international symposium) by the National Institute of Japanese Language and Linguistics. The publication of the proceedings was supported by the JSPS Grant-in-Aids for Scientific Research (C) (Grant no. 24K03840).

January 5, 2026

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The structure of simple sentences in Breton - Arguments for an RRG treatment*

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Université Sorbonne Nouvelle

1. Introduction

One important insight of RRG is the parallel architecture framework (Jackendoff 2002, Van Valin 2023) that links different modules which are independent, but interact with one another. Those modules comprise syntax, semantics and discourse pragmatics. In this paper I focus on the syntax-discourse interplay in a relatively under-studied language, Breton, which displays an unusual syntax and defies typological classification. One important assumption of RRG is that “grammar includes both general principles that have cross-linguistic or cross-constructional validity and an inventory of Constructional Schemas, which provide construction-specific instructions” (Bentley 2024: 252). Two RRG general principles that are relevant for this paper are:

1) the absence of a special status for the notions of subject or D.O., which are construction-specific, with discourse directly relevant for the choice of word order (Shimojo 2024); Breton offers a striking illustration of this principle: the notion of subject as PSA does not hold in this language, contrary to French or English.

2) as noted by Van Valin, “the pervasive role of discourse-pragmatics in grammar” (Van Valin 2005: 182), which directly influences the selection of syntactic templates taking place in the linking of semantics to syntax. For a given propositional content, Breton has five different syntactic templates, none of which is derived from or more basic than the other.

In accounting for the choice of those syntactic templates, we use the information-structure notion of salience (Shimojo 2024, Charcos 2009), which concerns “the relationships between how the information is coded in sentences and the linguistic contexts in which the sentences are used” (Shimojo 2024:1), and we develop the notion of addressee-oriented salience in particular.

Breton is a continental Celtic minority language, spoken in the west of France (Brittany). It is known for its different sentence patterns to express a similar propositional content. In the first part, we present the sentence patterns or syntactic templates, which raises the issue of grammatical relations in that language. In the second part, we turn to the discourse-pragmatic motivations for the different templates, relying on the concept of salience of information. In the last part, we show the result of a corpus study in order to zero in on the discourse motivations for those syntactic patterns. In sum, the goal of this paper is to wonder to what extent the syntax of the Breton sentence benefits from an RRG treatment.

2. Inventory of sentence patterns (syntactic templates) in Breton.

2.1. The PSA

French and English exemplify SVO languages in which the first slot in the information-neutral assertive declarative sentence is the subject, which is aligned with the Actor role, and the object, aligned with the Undergoer role, as in (1).

* This paper was presented at *The 18th International Conference on Role and Reference Grammar (RRG)* held on July 14 and July 15, 2025, hosted by the Graduate School of Humanities, Kobe University.

- (1) a. *I eat an apple every morning*
 b. *Je mange une pomme tous les matins*
 Subject V Object Adverbial/ Adjunct

The subject in (1a,b) is the *Privileged Syntactic Argument*, i.e. the “argument that is the controller or pivot of a restricted neutralization of semantic roles for grammatical purposes, generally referent tracking (i.e. keeping track of who is doing what in discourse). [The PSA in French or English is the] Actor of transitive V, of intransitive V, Undergoer of intransitive, Undergoer of transitive – passive” (La Polla 2023: 272). Even if the adverbial can be fronted, as in (2), the subject remains pre-verbal.

- (2) a. *Every morning I eat an apple.*
 b. *Tous les matins je mange une pomme.*

In terms of discourse-pragmatics, (1a, b) can serve as felicitous answers to many questions: *What do you do every morning? What do you eat every morning? When do you eat an apple?*, etc.

2.2. The syntactic templates of Breton

Now, for each of these discourse situations, Breton has a different sentence type. Breton is described as a language in which word order is free; the first slot can be anything: the subject, the direct or indirect object, an adverbial/adjunct, even the non-finite form of the verb. The only requirements are that the inflected verb be second (it is a “tense-2” language) and that two verbal particles, *A* or *E* occupy the immediate pre-verbal position. Breton has no case morphology like nominative, accusative, dative, etc. So, the sentences “*I eat an apple every morning / Je mange une pomme tous les matins*” can be expressed in five different ways, none of which is more basic or frequent than the other; these are not information-packaging variants:

- **Pattern I** has an obligatorily expressed (pro)nominal subject first, followed by the *A* particle; the verb has to remain uninflected for person.

- (3) *Me a zebr-Ø un aval bep mintin*
 1SG *A* eat an apple every morning

- **Pattern II** has the D.O. first¹; the verb bears a person and tense inflection (1st person present -*an* in the example), and the personal pronoun subject must not be expressed; again, the *A* particle is present.

- (4) *Un aval a zebr-an bep mintin*
 an apple *A* eat -SG.PR every morning

In (3) and (4), the *A* particle immediately precedes the verb; *A* encodes an obligatory syntactic relation between the pre-verbal constituent and the verb. But other syntactic functions than subject and D.O. are involved, which makes it difficult to state a generalization in terms of semantic argument. The grammars of Breton recognize another syntactic function, called “anticipated complement”, placed pre-verbally (5, 6, 7).

¹ Of course, this pattern is not available in the case of intransitive verbs (see the example in table 1 below).

- (5) Ma breur *a* *bren-in* *al* *levre-se* evitañ
 my brother *A* buy-1SG.FUT this book for-him
 ‘I’ll buy this book for my brother.’
- (6) Pêr *a* *zo melen* *e* vlev
 Pêr *A* be yellow his hair
 ‘Peter’s hair is yellow / Peter has yellow hair.’
- (7) An tele *a* *blij-Ø* *d’ar vugale* *sellout* outañ.
 the television *A* please to-the-children look at-it
 ‘The children like to watch TV.’

In (5), *ma breur*, “my brother”, is the recipient argument and an indirect object; in (6), *e vlev*, “his hair”, is the possessed entity and head of a noun complement; in (7), *an tele*, “the TV”, is a target/goal argument and a prepositional object. Those NPs are called anticipated complements (Desbordes 1983, Urien 1987) because they are fronted (in first position) and have an obligatory (anaphoric) syntactic relation with a final constituent, underlined in the examples. In all the examples from (3) to (6), the first slot NPs need not be macrorole direct core arguments, but the *A* particle sets up a particular type of grammatical relation, which is an obligatory/anaphoric type of relation; therefore, neither the subject nor the D.O have a special status in Breton. We will see in section 2 that “it is the identification of the [...] pragmatic role of the referent in an event or state of affairs that is relevant to the concept of grammatical relations. ...grammatical relations are conventionalized associations of position of the referring expression, etc.” (Lapolla 2023: 270–271).

But the story does not end here: the first slot can be filled by the main verb in the infinitive, with the *A* particle before the tensed auxiliary, and that is pattern III:

- **Pattern III** is called the “auxiliary conjugation”; the lexical verb *debriñ*, “eat”, is in the infinitive form; the person and tense inflections are carried by the dummy auxiliary *ober* (*ran*), “do”, preceded by the *A* particle.

- (8) *Debriñ* *a* *r-an* *un aval* *bep* *mintin*.
 eat *A* do-1SG.PR an apple every morning

The fact that we find the *A* particle again shows that grammatical relations in Breton can be expressed in terms of semantic macrorole argument only in a very broad sense: *A* implies a core argument/complement, but not necessarily Actor or Undergoer, as in example (8) the infinitive verb is the complement of the verb “do”. In this paper, we do not explore the semantics-to-syntax linking in detail, but focus on the syntax-to-discourse linking; suffice it to say that the *A* particle occurs in particular syntactic templates, in which a core syntactic relation is present. This differentiates it from the *E* particle, to which we turn now, with pattern IV.

- **Pattern IV** has an adjunct (a non-core argument) in the first slot, with the verb bearing the person and tense inflection (*-an*); the personal pronoun subject must not be expressed, and this time the particle is *E*.

- (9) *Bep mintin* *e* *tebr-an* *un aval*.
 every morning *e* eat-1.SG.PR an apple

Interestingly, examples (5), (6), and (7) can be alternatively expressed using this pattern, if we choose to front the indirect complement/predicative complement/prepositional complement.

(5') *Evid ma breur e pren-in al levr-se*
for my brother *e* buy -1SG.FUT this book

(6') *Melen e-o vlev Pêr*
yellow *e*-be hair Pêr

(7') *Ouzh an tele e plij d'ar vugale sellout.*
at the television *e* please to the children look

To round up the discussion on how to say *I eat an apple (every morning)* in Breton, a fifth pattern is available:

- **Pattern V** is a non-finite serial construction with the main verb in the infinitive, introduced by the preposition/particle *da*, “to”, and the subject preceded by the coordinating conjunction *ha*, “and”; this pattern is particularly frequent in narration.

(10) *Ha me da debriñ un aval...*
and I to eat an apple
'Then I ate an apple...'

To recapitulate: a given propositional content, in a declarative transitive sentence, can be expressed by using five syntactic templates, which are all truth-conditionally equivalents.

Pattern I > *Int a zebr-Ø un aval bep mintin*
they *A* eat-Ø an apple each morning

Pattern II > *Un aval a zebr-ont bep mintin*
an apple *A* eat- 3PL.PR each morning
Pêr a zo vlev e melen
Peter *A* be yellow his hair

Pattern III > *Debr-iñ a r-eont un aval bep mintin*
eat-INF *a* do-3PL.PR an apple each morning
OR:
Debr-iñ un aval a r-eont
Eat- INF an apple *a* do-3PL.PR

Pattern IV > *Bep mintin e tebr-ont un aval*
each morning *e* eat-3PL.PR an apple

Pattern V > *Ha me da debriñ un aval*
and I to eat an apple

Tables 1 and 2 below are more complete, as they include the syntactic templates with the semantic macroroles in the 2nd column:

Slot 1 : syntactic core	semantic role : macrorole core argument	Parti cle <i>A</i>	T2 constraint : verb	Other elements
(1) core element : → (pro)nominal subject <i>Me / Yann</i> I/ Yann <i>Un aval</i> an apple <i>Un aval</i> an apple	Actor of transitive V Undergoer of intransitive V Undergoer of transitive passive	<i>A</i>	<i>zebr-Ø</i> eat - Ø <i>gouezhas</i> fell- Ø <i>vez debret</i> be- Ø eaten	<i>un aval bep mintin</i> an apple each morning <i>bep mintin</i> each morning
(2) core element (DO, IO, AC): <i>An aval</i> an apple <i>Ma breur</i> my brother <i>Pêr</i> Peter	Undergoer : - Patient - Benefactive - Possessor	<i>A</i>	<i>zebr-an</i> eat-1SG.PR <i>bren-in</i> buy-1 SG.FUT <i>zo</i> be-Ø	<i>bep mintin</i> each morning <i>al levr-se evitañ</i> this book for-him <i>melen e vlev</i> yellow his hair
(3) core element : → verbal noun (infinitive) <i>Debr-iñ</i> eat-INF	No semantic role : Event ?	<i>A</i>	<i>r-an</i> do-1SG.PR	<i>un aval bep mintin</i> an apple each morning

Table 1: syntax, semantics and sentence structure with particle *A*

Slot 1 : syntactic oblique/non-core	Semantic role : non-macrorole oblique argument	Particle <i>E</i>	T2 constraint : verb	Other elements
(4) oblique element : <i>Mat</i> Good <i>Bep mintin</i> each morning <i>Er gegin</i> in the kitchen <i>Buan</i> quickly	- pred. cplt with <i>be</i> -time / frequency - place - manner, etc.	<i>E</i>	<i>(e)o</i> is <i>tebr-an</i> eat -1SG.PR <i>tebr-an</i> eat -1SG.PR <i>tebr-an</i> eat -1SG.PR	<i>an aval</i> the apple <i>un aval</i> an apple <i>un aval</i> an apple <i>un aval</i> an apple
(5) Subordinate adjunct clause <i>Pa'z ae da di e vamm</i> whenver he went to his mother's	- time	<i>E</i>	<i>tebr-e</i> eat -1SG.IMP	<i>un aval</i> an apple
(6) Progressive construction <i>O tebriñ un aval</i> PROG eat an apple	- in progress	<i>E</i>	<i>oa-n</i> be-1SG.IMP	

Table 2: syntax, semantics and sentence structure with particle *E*

3. The discourse-pragmatic motivations for these templates

The issue at this stage of the discussion is what motivates these different syntactic templates. RRG insists on the pervasiveness of discourse-pragmatics in the different word orderings that are found across languages. Breton is a striking illustration of that principle. Pedagogical grammars of Breton have observed that the element occupying the first slot in the sentence is the “leader”, the “point of departure”, the “key word” or “most important element” of the sentence, and determines the choice of the pattern. Several scholars have shown that the immediate pre-verbal constituent (the first slot) is called an “addressee-oriented focal (*focale allocutive*” in French, Bottineau 2010), which is taken to mean that Breton syntax constrains the speaker to hierarchize the informational chain according to (what the speaker believes are) the expectations of the addressee (Denez 1986); any semantic element can be a focal, as we have shown in the presentation of the templates, and its semantic status (core or non-core argument) is encoded by means of the two verbal particles. Again, paraphrasing LaPolla, we can say that “It is the identification of the semantic and/or pragmatic role of the referent in an event or state of affairs that is relevant to the concept of grammatical relations.” (LaPolla 2023: 270–271, our underlining). To give an idea of the notion of addressee-oriented focal and the impression of syntax being constructed “on-line” in Breton, consider example (6) again:

- (6) *Pêr a zo melen e vlev*
Peter a be yellow his hair

The meaning of the whole sentence can be interpreted only when the addressee gets to the final part of the sentence and can reconstruct *vlev Pêr*, “Peter’s hair”; it is the speaker that is responsible for the dislocation of the complement, and the choice of placing *Pêr* in the first slot; this sentence would be used if *Pêr* is in focus, in a description of the character, for example.

The concept of salience status (in the sense of “cognitive prominence of information”, Shimojo 2024: 8) in relation with constituent ordering is crucial in this discussion. According to Shimojo, pragmatic influence on word ordering concerns the selection of appropriate syntactic templates for the target sentence; “of particular relevance [...] is the assumption that the speaker’s choice of certain linguistic forms is systematically related to the speaker’s assumptions about the relative salience of discourse entities in the hearer’s consciousness.” (Shimojo 2024: 8–9). Three types of saliences are distinguished: being in focus or focus of attention (givenness) corresponds to the *backward-looking center* in Centering Theory (Shimojo 2024: 9); with imposed salience, or *forward-looking salience*, “the speaker is directing the hearer with regard to how central an entity will be, or will continue to be, in the discourse” (Mulkern 2007: 120; Shimojo 2024: 10). Shimojo argues in favor of a third type of salience, which he calls *forward-looking non-salience* (*ibid.* 11), i.e. one in which a referent not previously salient (new), nevertheless becomes the center of attention in subsequent sentences. We will try to show that the concept of forward-looking (non-)salience is relevant in discussing reasons for the choice of some of the Breton syntactic templates.

4. Addressee-oriented salience and corpus observation

Therefore, in order to zero in on this concept of addressee-oriented focal, we need to turn to our corpus, with the following issues to be resolved:

- What are the contexts which favor these different syntactic templates?
- Is there a preferred word order pattern?
- What is exactly an “addressee-oriented focal”?

Our corpus is a translation (parallel) corpus and includes two novels and their translations: the second volume of J. K. Rowling’s *Harry Potter* (English-Breton) and a classic novel by R. Hemon, *Mari Vorgan* (Breton-French).

4.1. Pattern I – S a V

- (10) [I] *Souezhus e voe efed ar gerioù-se war ar peurrest eus an tiegezh,*
surprising E was effect these words on the rest of the family
ma oa diaes da grediñ:
that was difficult to believe
‘The effect of this simple sentence on each member of the family was incredible.’

- [II] *Dudley a laoskas ur c’harvadenn damvouget hag a gouezhas diwar e gador*
Dudley A let.out a cry choking and A fell from his chair
en ur ober kement a cholori ken na grenas ar gegin gantañ;
while doing such racket so.that shook the kitchen because.of.it
‘Dudley gasped and fell off his chair with a crash that shook the whole kitchen;’

- [III] *an itron Dursley a reas ur griadennig hag a stardas he daou zorn war e genoù;*
Mrs. Dursley A did a small.cry and A pressed her two hands on her mouth
‘Mrs Dursley gave a small scream and clapped her hands to her mouth;’

- [IV] *evit an aotrou Dursley a savas en un taol-kont war e dreid,...*
as.for Mr. Dursley A rose in an instant on his feet...
‘Mr. Dursley jumped to his feet, ...’

After saying that Harry's simple sentence had an impact on the characters, the speaker/narrator assumes that that creates an expectation in the hearer's mind to hear about each member of the family. The family members are well-known to the reader, of course, but what the latter expects to hear at this point in the discourse is what each of them did, because sentence [I] has created an information gap. This triggers pattern I for all the sentences [II, III, IV] in the discourse, with the Subject occupying the preverbal slot, but without any emphasis on the referents; it may be akin to a case of forward-looking non-salience, with the characters, who are already well-known to the reader, becoming the center of attention in all four sentences.

4.2. Pattern III – V *a ober* ('do')

The following sentence illustrates pattern III, with the auxiliary conjugation and the infinitive verb being promoted to the first slot, with the *A* particle again.

- (11) [I] *Evit Filomena, ne ouie na skrivañ na lenn.*
 as.for Filomena NEG knew neither write nor read.
 'As regards Filomena, she couldn't either read or write.'
- [II] *Pezh a ouie, avat, A oa kontañ istorioù.*
 thing *a* she.knew, however, *a* was tell stories
 'What she could do, however, was tell stories.'
- [III] *Kontañ istorioù a rae, bep tro ma ranke chom azezet,*
 tell stories *A* she.did each time that she.had.to stay seated
o tibluskañ legumaj pe o nezañ.
 peeling vegetables or sewing
 'So she told stories, each time she had to remain seated, peeling vegetables or sewing.'

The beginning of this discourse [sentence I] describes what the character Filomena could or could not do; she was illiterate, and the only thing she could do was tell stories. So at this point, the speaker (narrator) expects that the addressee (reader) will want to hear more about that ability of telling stories; so the whole verb phrase ("tell stories") occupies the first slot. It is not the entity that is salient here (Filomena), but the event; it seems to be a case of forward-looking salience of information: the speaker is directing the hearer's attention to the attendant circumstances of her telling stories (when she was peeling vegetables, etc.).

4.3. Pattern IV – Oblique *e* V

- (12) [I] *Ha te, ma faotr, emezañ da Harry, diwall na glevfen e vijes*
 And you my fellow, he.says to Harry, be.careful that I.could.hear *E* you.'d
bet o tirenkañ da voereb e-keit ma vo o naetaat an ti.
 be disturbing your aunt while that she.will.be cleaning the house
 "And you", 'he [Mr. Dursley] snarled at Harry, "you stay out of your aunt's way while she's cleaning."
- [II] *Dre an nor a-drek ec'h eas Harry e-maez an ti.*
 through the door back *E* went Harry out-of the house
 'Harry left through the back door.'
- [III] *Sklaer e oa an oabl, splann an heol.*
 clear *E* was the sky, bright the sun
 'It was a brilliant, sunny day.'

Sentence [I] sets the stage: Harry must leave the place. So, what the reader expects to read about next is where he went [II], so the preverbal constituent is the directional complement (“through the door”), which triggers the *E* particle and the finite verb. And once he is outside, what becomes salient in [III] is the weather: the predicate is fronted because that is the salient information at this point.

What is crucial for the selection of the appropriate syntactic template is the information gap created by the speaker/narrator in view of what s/he believes is the addressee/reader’s expectation; in that respect, examples (10, 11, 12) are straightforward. But in many cases, the choice of the template seems to be the speaker’s choice. Example (13) is a good illustration.

- (13) [i] *Harry, Ron ha Hermione, a deuas a-benn d’en em silañ e-barzh al levr di.*
 Harry Ron and Hermione *A* managed to slip into the bookshop.
 ‘Harry, Ron and Hermione squeezed inside.’
 [ii] *A-hed moger ar stal e oa ur pezh lostad tud,*
 along wall of.the shop *E* was a long queue of.people
 ‘A long queue wound right to the back of the shop,’
 [iii] *hag er pellañ edo Gilderoy Lockhart o sinañ e levrioù.*
 and at the end *E*.was Gilderoy Lockhart signing his books
 ‘where Gilderoy Lockhart was signing his books.’

In (13), in sentence [ii], the main information is objectively that there is a long queue of people waiting; the location where the action is taking place (the bookshop) is not salient at all, but it becomes the center of attention in sentence [II] with the choice of pattern IV (Oblique *E* V); this looks like Smimojo’s forward-looking non-salience. In fact, sentence [i] has raised expectations from the addressee that more needs to be said about the place, because the next center of attention in sentence [iii] is the location of the best-selling author G. Lockhart signing his book. In fact, the attention has shifted from what each of the familiar characters did ([i], to the bookshop where most of the action is going to happen from this point on. The concept of “addressee-oriented focal” starts to make sense: the focal is what the speaker/narrator believes the addressee/reader is expecting to hear about, but not what is objective new, focal information.

4.4. Cases of conventionalization.

Further careful analysis of the corpus has shown that there are cases of conventionalization for the choice of the template. We introduce two cases: very often, pattern II (D.O. *A* V) is used with light verb constructions (*give a smile, cast a look, take a bow*, as in 14i), and pattern IV (Oblique *E* V) whenever a specific manner is highlighted, as in (14ii).

- [The creature on the bed suddenly changed positions]
 (14) [i] *A-ruz e revr e tiskennas ar c’hrouadur eus ar gwele*
slipping on posterior *e* descended the creature from the bed
 ‘The creature slipped off the bed’
 [ii] *hag ur stouadenn ken izel a reas ma stokas ouzh an tapis*
 and a bow so low *A* he-did that he-hit on the carpet
gant beg e fri hir.
 with end of.his nose long
 ‘and bowed so low that the end of his nose touched the carpet.’

These cases deserve more attention; in the paragraph preceding sentence [i], the main referent (the little creature on Harry’s bed) has been introduced (*The little creature on the bed had large...*), so it is not discourse-new, hence the choice in [i] of fronting the manner in which it

got off the bed; the focus is the strange behavior of the creature, and not the description of the creature per se. That could also explain the choice of pattern II in sentence [ii], with the D.O. fronted, with the focus being on the curious behavior again (the bow) of the character. Space prevents us from developing these cases further.

5. Conclusion

This paper had two goals: showing the nature of grammatical relations in Breton, and the discourse-pragmatic motivation for the existence of several truth-conditionally equivalent syntactic templates. As regards grammatical relations, the subject has no special status in the choice of Breton sentences; neither its position nor its marking matters, but the choice of two pre-verbal particles account for the syntax of the sentences: particle *A* sets up a core relation between the verb and the constituent in the first slot, whereas particle *E* signals a non-core (oblique) relation; the first-slot element can semantically be anything - an Actor, an Undergoer, a Recipient (patterns I & 2), a time/place/manner Adjunct [pattern IV], or a verb in the infinitive (pattern III); therefore, the notions of Subject or Direct Object do not have special status. Not unlike Yimas, in Breton we see “[...] no evidence for a PSA such as subject in English or the *ang* phrase in Tagalog. Different constructions target different constituent types, and no one type emerges as privileged across the wide range of constructions” (Foley 2023: 874).

Our second objective was to explore the motivations for the syntactic templates: we have suggested that it is the pragmatic role of the first-slot referent that matters. Following the linguistic tradition in Breton, we have shown that the pre-verbal slot hosts an addressee-oriented focal, which has grammatical status; it is the element singled out for a special syntactic treatment (hence the templates), as well as a pragmatic status, as it is what constitute the salient piece of information in the clause. The concepts of forward-looking (non)salience (Shimojo 2024) have been tentatively applied to Breton, but they need to be refined. Breton thus appears as a language where grammatical relations are pragmatically-driven and dependent on the requirement of the first-slot focal. This, and the lack of nominal morphology, accounts for the impression that syntactic relations in Breton are constructed “online”, as it were: in the sentence *Pêr a zo melen e vlev*, (literally, ‘Peter is yellow his hair’), *Pêr* is a provisional subject until the addressee hears the final constituent “his hair” and is able to reconstruct the message ‘Peter has yellow hair’. This surprising feature has consequences in clause linkage marking (CLM): Breton has no dedicated relative pronoun, and a sentence such as (15) reads like two coordinated sentences with particle *A*.

(15) *Fred a oa o paouez peurlenn e roll-eñ hag a daolas ur sell ouzh lizher Harry.*

Fred *A* was finishing read.through his list and *A* cast a look list of.Harry

‘Fred, who had finished his own list, peered over at Harry’s.’

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Semantic representation of grammaticalization: A case study of the verb 'bei²𢦏' in Cantonese within the RRG framework¹

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1. Introduction

The verb “give” is frequently attested as a passive marker or agent marker in passive constructions. This phenomenon is commonly found in Chinese languages, where the verb “give” undergoes grammaticalization and changes from a major to a minor category (deverbalization) (Yap and Iwasaki 2007; Hashimoto 1988; Matthews, Xu and Yip 2005; Xu 1994). The deverbalized morpheme is referred to as a “coverb” (Li and Thompson 1974; Yin 2023). The grammaticalization process is sometimes found to be complicated by occurrences of bridging contexts or intermittent variants.

The prevalence of the phenomenon may shed light on the relationship between sense shift in grammaticalization and cognition. Focusing on the dative verb *bei² 𢦏* in (Yue) Cantonese, I aim to address the following two questions:

- i. Should the source verb GIVE and its grammaticalized variants be represented as multiple entries in the lexicon, or should they be represented as a single lexical construct?
- ii. How can this relation be captured in the lexicon?

The rationale for choosing the dative verb *bei² 𢦏/俾* in Cantonese as the case study is twofold: First, besides the more commonly attested passive use, grammaticalized variants of the Cantonese dative verb *bei² 𢦏* exhibit a broader range of uses, including permissive and prepositional use. Second, ambiguous interpretation between permissive and passive uses of *bei² 𢦏* provides linguistic evidence for the development of the morpheme from a lexical to a grammatical form. This supports the construction of a lexical representation of the verb that not only denotes the polysemous uses but also captures the internal linkage among them.

The rest of the paper is structured as follows: Section 2 provides a brief review of the representation of lexical structure in the Role and Reference Grammar theory (Van Valin, 2023). In Section 3, explanations for why the verb “give” is a favorable candidate for consideration as the source verb in the process of grammaticalization will be presented. Section 4 describes, with examples, the polysemous use of grammaticalized variants of the dative verb *bei² 𢦏* from Cantonese and propose lexical structures for each use. Drawing on the idea of parallel architecture of lexicon from Jackendoff and Audring (2020), I will propose the use of lexical schemas within Role and Reference Grammar to capture the relatedness of grammaticalized variants in Section 5. Finally, a conclusion will be provided in Section 6.

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2. Lexical representation in RRG

Role and Reference Grammar (RRG) adopts the system of lexical decomposition proposed by Dowty (1979). Following the formalization of Aktionsart categories, meaning is represented in logical structures (LSs). Built on the four basic Aktionsart categories, namely states, activities, achievements and accomplishments, changes have been made to the decomposition system to better capture the internal structure of predicates and the contrast between different types of actions. The revised lexical representations for Aktionsart categories, cited in Van Valin (2023, p.100), are shown below:

Verb class	Logical Structure
STATE	predicate' (x) or (x, y)
ACTIVITY	do' (x, [predicate' (x) or (x, y)])
ACHIEVEMENT	INGR predicate' (x) or (x, y)
SEMELFACTIVE	SEML do' (x, [predicate' (x) or (x, y)])
PROCESS	PROC being.consumed'/created' (y) or (x, y)
	PROC becoming.higher/lower.on.[a]scale' (x)
	PROC moving(.direction)' (x)
	PROC covering.path.distance' (x, (y))
ACCOMPLISMENT	BECOME predicate' (x) or (x, y), where BECOME = PROC $\wedge$ FIN
ACTIVE ACCOMPLISMENT	
	do' (x, [pred' (x, y)]) $\wedge$ PROC being.consumed' (y) $\wedge$ FIN consumed' (y)
	do' (x, [pred' (x, y)]) $\wedge$ PROC being.created' (y) $\wedge$ FIN exist' (y)
	do' (x, [pred' (x, y)]) $\wedge$ PROC covering.path.distance' (x, (y)) $\wedge$ FIN be-loc' (z, x)

Table 1. Lexical representations for Aktionsart classes

Several key points are worth noting in this approach. First, meaning is constructional in nature. The lexical semantic content of verbs is fundamentally composed of state and activity predicates. Achievement, accomplishment, and other more complex meanings are constructed by adding elements to state and/or activity predicates. An important feature of state and activity predicates is that each takes more than two arguments. Accordingly, three-placed argument predicates such as *put*, *teach*, and *tell* are represented with more than one basic predicate.

Second, causation, which is one of the lexical primitives in Dowty's lexical decomposition system (1979), has been factored out as an independent parameter. According to Van Valin (2005), causatives are constructional; usually consisting of an (unspecified) activity as the first argument and combining with another LS to represent the full meaning. Therefore, causation is understood as a variation of Aktionsart types instead of a basic one on its own.

3. "Give" — A favorable candidate for grammaticalization

Central to the idea of RRG is the view that language is a cognitive construct. The representation of any linguistic phenomenon should address the cognitive aspects of the human mind and seek to maximize the psychological adequacy of the account. In this section, I will explain, from both cognitive and semantic perspectives, why the verb *GIVE* is a favourable candidate as the source of sense shift in grammaticalization.

3.1 Cognitive motivation

From a cognitive perspective, the change of possession of objects involves manipulation of objects and transferal of energy from one participant to another. Langacker (1991) proposed the model of energetic interactions to account for the motivation behind using transfer verbs as grammatical markers to indicate interactive relations between participants. In this model, the two ends of transferal—referred to as the HEAD and TAIL—correspond to the canonical agent (AG) and patient (PAT), respectively. Energy is transferred from the agent to the patient via an instrument.

The motion of energy transfer (transitivity) involved makes dative verbs like *GIVE* favourable candidates for the extraction of abstract image-schematic structures (Sweetser 1988). This process results in meanings such as permissive (where possession of control is transferred from one participant to another), and functions as prepositions denoting direction of transferal, as well as case markers denoting relations and status of participants (Rice 1987).

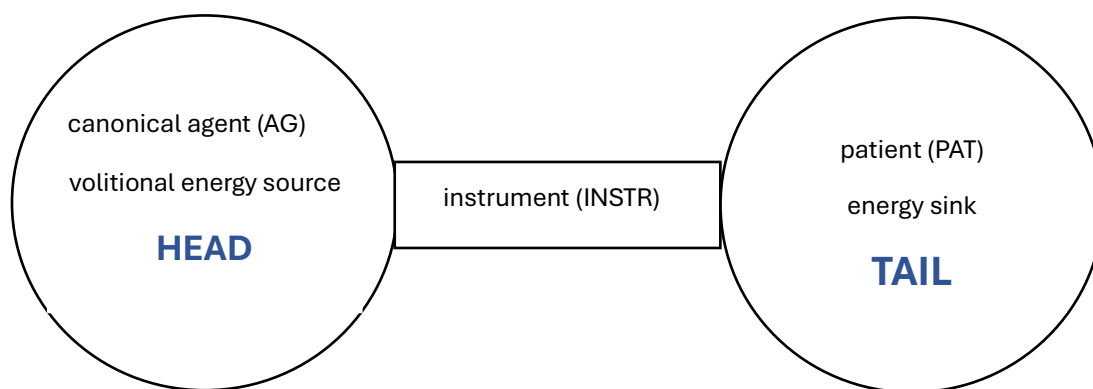


Fig 1. Energetic interaction (Langacker, 1991)

3.2 Semantic motivation

Brugman (1988) (cited in Sweetser (1988)) suggests that verbs with more specific semantic content are less likely sources of grammaticalization: “verbs which highlight areas of semantic of motion which cannot be mapped onto time would be less likely sources for tense markers ...”. This is evidenced by the contrast between *go* and *lumber*. *Lumber*, denoting movement in a slow and effortful manner, is less likely to be a source of grammaticalization because its meaning highlights more specific features of traversal, compared with *go*, which denotes only a traversal between two points.

Bybee, Perkins and Pagliuca (1994) make a similar claim about the requirement of the semantic content of a possible grammaticalization source, pointing out that “it is lexical items of the degree of generality...that enter into grammaticalization”. Lexical items with more general meaning are more suitable candidates for grammaticalization. A similar generalization is also made by Hopper and Traugott (1997), i.e. “action morphemes with more general meaning or action morphemes which are generic terms of a hypernym relation to other action morphemes are more likely to be grammaticalized”.

*Bei*² 畀, meaning *give*, denotes a change in possession. The entities involved in the change of possession are usually physical objects, though abstract nouns such as *seon*³ *sam*¹ 信心 (confidence) and *jung*⁵ *hei*³ 勇氣 (courage) are also possible objects in a *bei*² 畀 (give) construction.

The action predicate *bei² 畀* (give) is a hypernym of the members of its class. Other ‘transfer’ predicates in Cantonese include *gei³ 寄* (mail), *sung³ 送* (give something as a gift), *cyun⁴ 輸* (pass), *je² 借* (lend/borrow), *zou¹ 租* (rent), *mai⁶ 賣* (sell), etc. Though they are all dative verbs, these predicates are semantically more specific than *bei² 畀* (give). Their meaning carries certain connotations. The semantic ‘non-specificity’ of *bei² 畀* provides a suitable ground for semantic bleaching (Sweetser 1988), resulting the radiation of various meanings and uses which include serving as the lexical verb ‘let’ (i.e. permissive), the benefactive marker/preposition, and the passive marker.

Accordingly, the lexical structure of the verb *bei² 畀* should capture the meaning of the predicate and the favorable semantic features for grammaticalization. It should also illustrate the different ways in which subparts of the literal meaning of GIVE is extracted or metaphorically extended to apply other semantic fields (Fagerli 2001).

4. The many uses of *bei² 畀* and their lexical representations

In this section, I will describe, with examples, the polysemous uses of *bei² 畀* in Cantonese and provide a lexical structure for each use.

i. Dative use

Bei² 畀 is originally a ditransitive dative verb, taking an indirect object (i.e. the object being transferred) and a direct object (i.e. the patient or recipient). (1) illustrates the dative use of *bei² 畀*, followed by its corresponding lexical representation based on lexical decomposition in (2).

- (1) *Roger bei² bun² syu¹ Sophia*
Roger 畀 本 書 Sophia
 Roger give CL book Sophia
 Roger gave Sophia a/the book.

- (2) Lexical structure of dative use:
 [do' (x, [act.on' (x, y))] CAUSE (y, [go' (y, [from' (x) to' (z)])]) ^ (z, [have' (z, y)])]

The lexical representation involves three core arguments (x, y and z), comprising of the arguments from the action predicate *act.on'* and the state predicate *have'*. x is the active participant responsible for the change of possession, indicated by *do'* in the representation; in other words, the ACTOR. y is the UNDERGOER, i.e., the affectee. The lexical structure can be read as: x volitionally acts on y (usually an object) and causes y to go from x to z, resulting in z possessing y.

ii. Permissive use

The change-of-possession verb *bei² 畀* carries the meaning of permission as a result of sense shift, more specifically, metaphorical mapping of the general image-schematic topological structure. To grant permission for someone to do something implies possession or control over the decision. Sense shift from *bei² 畀* to permissive-*bei² 畀* is made possible through metaphorical inferences mapping:

- (i) Possession of an object is mapped onto possession of permission.

- (ii) Transferral of an object between two participants is mapped onto the transferral of permission between two participants.

(3) shows the permissive use of *bei²* 畀, followed by the corresponding lexical representation shown in (4):

- (3) *ngo⁵ bei² zek³ gau² sik⁶ saai³ di¹ faan⁶*
 我 畀 隻 狗 食 晒 啲 飯
 1stsg let CL dog eat all Det rice
 I let the dog eat all the rice.

- (4) Lexical structure of permissive use:
 [**do'** (x, $\emptyset$) CAUSE (y, [**have'** (y, right-of-[**do'** (y, [**pred'** ...])])])]

Like (1), the action involves an active agent, as denoted by *do'*, and the unspecified action $\emptyset$ brings about a change in possession, as indicated by *CAUSE*. However, unlike (1), the possession of entity is now changed to possession of the right of doing something, represented by *right-of-[do' (y, [pred' ...])]*. The lexical structure can be read as *x actively causing y to possess the right or permissive to do something*.

iii. Passive marker

As mentioned, the passive use is one of the commonly attested grammaticalized functions of *bei²* 畀. In Cantonese, the meaning of passive is expressed by the structure *bei²* 畀 + *agent* + *verb*. Unlike English, there is no auxiliary verb or verb inflection. Additionally, there is no valance reduction, i.e. the agent is not suppressed, see (5) and (6):

- (5) *Roger bei² lou⁵po⁴ naau⁶*
 Roger 畀 老婆 鬧
 Roger PASS wife scold
 Roger was scolded by his wife.
- (6) **Roger bei² naau⁶*
 Roger 畀 鬧
 Roger PASS scold
 (intended meaning: Roger was scolded.)

While the permissive use of *bei²* 畀 retains its verbal status, its verbal features of *bei²* 畀 as a passive marker are lost. This is evidenced by the ungrammaticality of *bei²* 畀 in a V-NEG-V structure in formation of yes-no interrogative constructions (see (7) and (8)). Formation of yes-no questions with *bei²* 畀 as a passive marker requires the insertion of “*yau⁵-mou⁵*”, literally means “have-not have”.

- (7) *Roger yau⁵-mou⁵ bei² lou⁵po⁴ naau⁶*
 Roger 有無 畀 老婆 鬧?
 Roger have-not have PASS wife scold
 Was Roger scolded by his wife?

- (8) *Roger bei²-m⁴ bei² lou⁵po⁴ naau⁶
 *Roger 畀-唔-畀 老婆 鬧?
 Roger PASS -NEG- PASS wife scold

An important feature of the passive use of bei² 畀 is its potential ambiguity with the permissive use. Consider (3) again (repeated below). The sentence allows two possible interpretations:

- (3) ngo⁵ bei² zek³ gau² sik⁶ saai³ di¹ faan⁶
 我 畀 隻 狗 食 晒 啲 飯
 1st sg let CL dog eat all DET rice

Permissive reading: I let the dog eat all the rice.

Passive reading: I suffered from the event that all my rice was eaten by the dog.

The ambiguity reflects a bridging stage between the lexical meaning GIVE and the more grammaticalized passive meaning of the word. An account for this sense shift is proposed below.

In the permissive use, when x permits y (i.e. **do'** + CAUSE) to do something, x is the HEAD of the energetic interaction (Langacker 1991). From the perspective of 'transferal,' x is negatively affected by giving away or losing control. The action that is given permission to perform becomes the action that acts upon x. Take (3) as an example, in the permissive reading, i.e., I let the dog eat all the rice, by granting the dog permission to eat all the rice, 'I' am also affected by the action 'the dog eaten all the rice.' In the passive reading, the 'permitted' event becomes the action negatively imposed on x. Thus, x functions as the argument of a state indicated by *affected'*; and the action becomes the cause of x's suffering.

The proposed lexical structure of the passive meaning of bei² 畀 is shown below.

- (9) Lexical structure of passive use:
 [**affected'** (x) BY **do'** (y, **act.on'** [y, x])]

It is worth noting that *do'* which denotes the meaning of volitional action is absent in the lexical representation of passive use.

iv. Preposition

The fourth use of bei² 畀 illustrates a case of deverbalization as a result of semantic bleaching. The verbal meaning of change-in-possession is lost, retaining only the semantic component of direction derived from the transferal action. Examples of bei² 畀 as a preposition meaning *TO* and as a preposition meaning *FOR* (or as a beneficiary marker) are shown in (10) and (11), respectively.

The lexical structure of this use is shown in (12). (13) shows the semantic representation of (11) in which bei² 畀 functions as a preposition meaning *FOR*.

- (10) Roger gei³ bun² syu¹ bei² Sophia
 Roger 寄 本 書 畀 Sophia
 Roger mail CL book TO Sophia

Roger mailed a book to Sophia.

- (11) *Roger coeng³ sau² go¹ bei² Sophia teng¹*
Roger 唱 首歌 畀 Sophia 聽
 Roger sing CL song FOR Sophia listen
 Roger sang a song for Sophia.

- (12) Lexical structure of preposition use:
 (y, [**go'** (y, [**from'** (x) **to'** (z))])

- (13) Representation of constructional meaning of (11):
 [**do'** (Roger, [**sing'** (Roger, song)]) CAUSE (song, [**go'** (song, [**from'** (Roger) **to'** (Sophia))])] ^ (Sophia, [**listen'** (Sophia, song)])]

5. Constructing the Lexical Schema of GIVE

Grammaticalization from GIVE → CAUSATION/PERMISSIVE → PASSIVE in Chinese dialects and South Asian languages has been widely attested in the literature (Lord et al. 2002, Chappell 2015; Szeto 2019). Despite the prevalence of the phenomenon, discussions often focus on the reasons why it is cognitively favourable. However, this observation has seldom been, if ever, formally represented. One possible reason for this missing piece of puzzle is that the occurrence of the phenomenon seems occasional and accidental, and meaning of the grammaticalized variants are often viewed as idiosyncratic (Spencer 2013; Chomsky 1965). The study of the polysemous uses of *bei² 畀*, however, suggests otherwise.

In this section, I am going to address this gap in the study of grammatical structure. Borrowing from the idea of lexical schema proposed by Jackendoff and Audring (2020), I propose a non-productive schema to capture the conceptual-semantic relatedness of grammaticalized variants of *bei² 畀*. These schemas are not used generatively to produce novel forms like the plural schema. Rather, they express the commonalities within the lexicon. The schema functions in a relational role to link the lexical structures of the variants shown below:

The lexicon structures of polysemous *bei² 畀*:

- (15) GIVE
 [**do'** (x, [**act.on'** (x, y)]) CAUSE (y, [**go'** (y, [**from'** (x) **to'** (z))])] ^ (z, [**have'** (z, y)])]
- (16) PERMISSIVE
 [**do'** (x, ∅) CAUSE (y, [**have'** (y, right-of-[**do'** (y, [**pred'** ...])])])]
- (17) PASSIVE
 [**affected'** (x) BY **do'** (y, **act.on'** [y, x])]
- (18) PREPOSITION
 (y, [**go'** (y, [**from'** (x) **to'** (z))])

i. Linking GIVE and PERMISSIVE

Compare the lexical structure of GIVE and PERMISSIVE below ((15) and (16) repeated below).

- (15) GIVE
 $[\mathbf{do}'(x, [\mathbf{act.on}'(x, y)]) \text{ CAUSE } (y, [\mathbf{go}'(y, [\mathbf{from}'(x) \text{ to}'(z)]))] \wedge (z, [\mathbf{have}'(z, y)])]$
- (16) PERMISSIVE
 $[\mathbf{do}'(x, \emptyset) \text{ CAUSE } (y, [\mathbf{have}'(y, \text{right-of-}[\mathbf{do}'(y, [\mathbf{pred}' \dots])])])]$

Instead of a concrete object, the entity being transferred is permission, i.e., right-of- $[\mathbf{do}'(y, [\mathbf{pred}' \dots])]$. Moreover, the action of transferal in PERMISSIVE use is lost. Instead of the ACTOR volitionally acting on an object in GIVE and causing a change of possession, the action in PERMISSIVE is unspecified, i.e., $\mathbf{do}'(x, [\mathbf{act.on}'(x, y)]) \rightarrow \mathbf{do}'(x, \emptyset)$.

Despite the above differences, the core meaning of transferal is retained in PERMISSIVE. The relation is evident in the shared components in the two lexical structures. To represent this relation, the shared components are indicated by co-indexation, forming a relational link between the lexical items. (17) shows a combined representation of the two meanings. The lexical structure of GIVE is shown in full structure, indicating the source of this grammaticalization process. In PERMISSIVE, only the differing components are spelt out, while shared components are indicated with "... " and under scripted co-index " ...₁". The parts not marked with any co-indexes represent the meaning lost in sense shift.

- (17) Give: $[\mathbf{do}'_{\underline{1}}(x, [\mathbf{act.on}'(x, y)])_{\underline{1}} \text{ CAUSE}_{\underline{1}} (y, [\mathbf{go}'(y, [\mathbf{from}'(x) \text{ to}'(z)])_{\underline{1}})] \wedge (z, [\mathbf{have}'(z, y)])_{\underline{1}}]$
 Permissive: $[\dots_{\underline{1}}(\dots, \emptyset)_{\underline{1}} \dots_{\underline{1}}(\dots, [\dots(\dots, \text{right-of-}[\mathbf{do}'(y, [\mathbf{pred}' \dots])])_{\underline{1}})]_{\underline{1}}]$

ii. Linking PERMISSIVE and PASSIVE

As discussed in Section 3, the ambiguous interpretation of the PERMISSIVE and PASSIVE reading suggests that PERMISSIVE serves as a bridging context along the grammaticalization path from GIVE to PASSIVE, i.e. $\text{GIVE} \rightarrow \text{PERMISSIVE} \rightarrow \text{PASSIVE}$. Similar to above, the shared constituents of the two lexical structures are indicated by the co-index "2", as shown in (18).

- (18) Permissive: $[\dots_{\underline{1}}(\dots, \emptyset)_{\underline{1}} \dots_{\underline{1}}(\dots, [\dots(\dots, \text{right-of-}[\mathbf{do}'_{\underline{2}}(y, [\mathbf{pred}' \dots])_{\underline{2}}])_{\underline{1}})]_{\underline{1}}]$
 Passive: $[\mathbf{affected}'(x) \text{ BY } (\dots_{\underline{2}}(\dots, [\dots]_{\underline{2}}))_{\underline{2}}]$

iii. Linking GIVE and PREPOSITION

Unlike PASSIVE, there is no evidence indicating that the PREPOSITION use of *bei*² 界 results from further grammaticalization of other grammaticalized variants. Therefore, the relational link between PREPOSITION *bei*² 界 and the source meaning GIVE is established directly. The PREPOSITION use of *bei*² 界 is extracted from the lexical structure of GIVE. These two lexical structures are related by co-indexing the extracted component from GIVE and the PREPOSITION meaning, i.e. the co-index "3", as shown in (19).

- (19) Give: [**do'**₁ (x, [**act.on'** (x, y))]₁ CAUSE₁ (y, [**go'** (y, [**from'** (x) **to'** (z))])₃ ^ (z, [**have'** (z, y))]₁)
Preposition: ...₃

iv. The unified lexical schema of *bei*²𠵿

Central to the idea of a lexical scheme is that meanings derived from grammaticalization (or other morphological processes) are also part of the lexicon and should be adequately represented. Hence, the lexical representation of *bei*²𠵿 should be conceived as an interrelated multi-structure construct, rather than as independent structures. By combining the sub-structures above, a unified lexical schema of *bei*²𠵿 is shown in (20) below:

- (20) [Give: [**do'**₁ (x, [**act.on'** (x, y))]₁ CAUSE₁ (y, [**go'** (y, [**from'** (x) **to'** (z))])₃ ^ (z, [**have'** (z, y))]₁)
Permissive: [...₁ (... , $\emptyset$)₁ ...₁ (...₁(..., [... (... , right-of-[**do'**₂ (y, [**pred'** ...])₂])₁)]₁)
Passive: [**affected'** (x) BY (...₂ (... , [...]₂)]
Preposition: ...₃]

6. Conclusion

The paper aims to propose a structural representation for a widely acknowledged and long-studied linguistic phenomenon in South Asian languages, particularly among Chinese dialects, namely grammaticalization. Instead of representing the grammaticalized forms with independent lexical structures, I propose a lexical representation in the form of a lexical schema. The advantages of a lexical schema are twofold. First, it captures the relatedness among grammaticalized forms and delineates the sense shift along the grammaticalization path of the lexical item. Second, it facilitates cross-linguistic comparison, which may contribute to a deeper understanding of the interaction between language use and conceptualization of the world. Using the Cantonese verb *bei*²𠵿 as an example, it is hoped that the proposed lexical schema will enrich the descriptive adequacy of the modular structure of grammar.

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Apprehensive modal marker 别 *bie*³⁵ ‘don’t’ in Mandarin Chinese*

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1. Introduction

Since the seminal work by Lichtenberk (1995), cross-linguistic literature has identified *apprehensive expressions* as a valid grammatical category that encodes the modality of undesirable possibility, including works by Verstraete (2005), Schmidtke-Bode (2009: 129-144), Angelo and Schultze-Berndt (2016), Vuillermet (2018), and Smith-Dennis (2021). Evidence has also been presented in a few studies that apprehensive markers may share the identical or similar forms with negative imperatives (or prohibitives) (see e.g., Packendorf and Schalley 2007, Smith-Dennis 2021).

In Mandarin Chinese, the morpheme 别 *bie*³⁵ ‘don’t’ is commonly recognized as a negative imperative marker.^{1,2} Expression (1) exemplifies this fundamental function of *bie*³⁵. That is, to take a verb phrase and form a prohibitive. This expression is intended to be a request or a command directed to the hearer, which is understood to be the subject of the expression and is omitted.

- (1) *Bie*³⁵ *da*⁵¹*sheng*⁵⁵ *shuo*⁵⁵*hua*⁵¹!
don’t be.loud speak
‘Don’t speak loudly!’

In addition to the canonical use as a negative imperative marker, *bie*³⁵ is also found

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¹ The morpheme *bie*³⁵ is commonly recognized as a phonological fusion of the negative morpheme *bu*⁵¹ ‘not’ and *yao*⁵¹ ‘want, will’ (Zhu 1982: 65, 206; Li and Thompson 1989: 458; Jiang 1991).

² The lexical category of *bie*³⁵ is a topic that has been under debate. It is treated either as an auxiliary verb (Zhu 1982: 64) or as an adverb (Gao 2003; Shao and Luo 2004; Lü 1999: 83). For the purpose of the present paper, we focus on the functions of this morpheme and use the terms *negative imperative marker* and *apprehensive modal marker*.

in the expressions that convey a sense of conjecture made on the part of the speaker that an undesirable event will happen. This use of *bie*³⁵ is illustrated by (2), which indicates the speaker's apprehension in the form of a warning.

- (2) *Ni*²¹⁴ *bie*³⁵ *shuai*⁵⁵ *zhe*⁰.
 you don't fall PFV³
 'Be careful that you might fall.' (Literally: 'you don't fall [and get hurt].')
 (Zhu 1982: 65)

Notably, the imperative use and the apprehensive use of *bie*³⁵ can share the identical surface form "*bie*³⁵+ verbal expression". As shown by expression (3), what follows *bie*³⁵ is the same string of words, including the verb *jie*³⁵*hun*⁵⁵ 'be married (to)' and the Chinese morpheme *le*⁰. With the same surface form, the expression can be interpreted in two ways, including a request that the hearer should not do something (prohibitive interpretation a.) and an expression of fear that something unwanted might have happened (apprehensive interpretation b.).

- (3) *Bie*³⁵ *jie*³⁵*hun*⁵⁵ *le*⁰.
 don't marry LE
 a. 'Don't get married.'
 b. 'Let her not be married.' (Literally: '[I fear that s/he] might have been married.')
 (cited in Shao and Luo 2004: 20; free translation is ours.)

In the previous literature, the apprehensive use of *bie*³⁵ receives a brief description in the discussions by Zhu (1982: 65), Lü (1999: 83), and Shao and Luo (2004), whose focus, however, is the negative imperative *bie*³⁵. Unlike them, Gao (2003) explicitly considers *bie*³⁵ 'don't' in expression (2) as an independent marker of apprehensional – epistemic modality, following Lichtenberk (1995). Despite their research attention to various linguistic characteristics of the apprehensive *bie*³⁵ in Mandarin Chinese, why the two types of *bie*³⁵ and their constructions behave in a contrastive way is still worth investigation. In this paper, we show that their array of differences follows from their distinct hierarchical positions in the clause (or sentence) in light of the Layered Structure of the Clause (LSC) envisaged by RRG (e.g., Van Valin and LaPolla 1997, Van Valin 2005).

The remainder of the paper is structured as follows. Section 2 introduces our research question. Section 3 discusses the presence of an actor in the event indicated by the post-*bie*³⁵ expression. Section 4 analyzes the structural position of the actor argument with respect to the apprehensive *bie*³⁵. Section 5 discusses the constraints on the time of the event indicated by the post-*bie*³⁵ expression. Section 6 concludes the paper.

³ The abbreviations used in the paper are: CLF: classifier; CM: comparative marker; EXP: experiential aspect; NMLZ: nominalizer; GEN: genitive; PFV: perfect aspect; PL: plural; PROG: progressive aspect; SFP: sentence-final particle; SG: singular; SUB: subordinator.

2. Research question

A few studies have noted that the negative imperative *bie*³⁵ and the apprehensive *bie*³⁵ mark different types of verbs. For example, taking a lexicalist approach, Shao and Luo (2004) argue that the negative imperative *bie*³⁵ is compatible with verbs that are characterized semantically as denoting actions that can be controlled by an actor, while the apprehensive *bie*³⁵ is followed by the verbs that denote uncontrollable events. Though their analysis holds when expressions such as (1) and (2) are considered, expression (3) exists as a counterexample to this verb-centered approach, as the two distinct types of *bie*³⁵ are followed by the same verb. More examples, such as (11)–(14) in Section 4, show that the apprehensive expressions marked by *bie*³⁵ can be followed by transitive clauses, whose verbs indicate controllable actions or events.

Unlike Shao and Luo (2004), our observation of (3) suggests that the constituency of the expression marked by the negative imperative *bie*³⁵ and the one marked by the apprehensive *bie*³⁵ differs. The former is represented as [*bie*³⁵-verb]-*le*⁰, while the latter is *bie*³⁵-[verb-*le*⁰]. Correlating with these distinct structures, the negative imperative *bie*³⁵ negates the action denoted by its following verb, and the sentence-final *le*⁰ does not contribute any aspectual meaning; contrastively, the apprehensive *bie*³⁵ does not negate an action-denoting verb. Instead, its scope of function seems to be the constituent *jie*³⁵*hun*⁵⁵ *le*⁰ ‘have been married’ formed by the verb and the perfect aspect marker *le*⁰, which indicates that the married state has been reached and will continue.

Our observation of this particular example leads to a hypothesis that the negative imperative *bie*³⁵ is a core-level operator and the apprehensive *bie*³⁵ a clause-level operator within the RRG framework (Van Valin and LaPolla 1997, Van Valin 2005). Precisely, the negative imperative *bie*³⁵ is a deontic modal marker, which marks modality of obligation (Palmer 2001: 70), and the apprehensive *bie*³⁵ is an epistemic modality marker, which marks propositional modality (Palmer 2001: 24) or the speaker’s epistemic commitment to the possibility of a situation (see e.g. Angelo and Schultze-Berndt 2016). In light of the LSC, the deontic modal marker operates at the core level, and the epistemic modal marker operates at the clause level. Related to this hypothesis, the present research question that we need to address is: in what way(s) does the apprehensive *bie*³⁵ differ from the negative imperative *bie*³⁵?

In the following sections, we will show that correlating with their distinct positions in the LSC, the apprehensive *bie*³⁵ and the negative imperative *bie*³⁵ differ from each other in three aspects, including: a. whether the event indicated by the post-*bie*³⁵ expression includes an actor (or *necessary presence of an actor*); b. structural position of the actor argument; c. constraints on the time of the event indicated by the post-*bie*³⁵ components.

3. Necessary presence of an Actor

There is a contrast between the negative imperative *bie*³⁵ expressions and the apprehensive *bie*³⁵ expressions in the presence of an actor. We will show in this section that the former operates at a core, whose event description involves an actor argument, whereas the latter operates at a clause, which may or may not have an actor argument.

Zhu (1982: 205-206) states that the subject of Chinese imperatives can only be second-person (singular or plural) or first-person plural (inclusive), suggesting that the subject of imperatives must include at least the hearer. A similar opinion is held by Li and Thompson (1989: Chapter 14). In our case, as a core-level operator, the negative imperative *bie*³⁵ has a scope of the core, whose canonical structure is *actor argument-verb(-patient argument)*. In terms of the function, the negative imperatives give instructions, requests, or commands to the hearer that s/he should not do something. That is to say, the prohibitives manifested by negative imperatives marked by *bie*³⁵ require an actor, who must act as the speaker requests. Expression (1), repeated in (4) below, is directed to an actor who must stop speaking loudly, as requested by the speaker. This actor is understood to be the hearer *ni*²¹⁴ ‘you (singular)’ or *ni*²¹⁴*men*³⁵ ‘you (plural)’, whose presence in the syntax is not obligatory.

- (4) *Bie*³⁵ *da*⁵¹*sheng*⁵⁵ *shuo*⁵⁵*hua*⁵¹!
 don’t be.loud speak
 ‘Don’t speak loudly.’

In line with Zhu’s (1982) observation, when the actor argument is made explicit in the syntax of the negative imperatives marked by *bie*³⁵, it must be the second-person (singular or plural) or the first-person inclusive.⁴ As illustrated by (5), the first-person singular pronoun *wo*²¹⁴ ‘I’, the third-person pronouns *ta*⁵⁵ ‘s/he’ and *ta*⁵⁵*men*³⁵ ‘they’, and the third-person nominal phrase *na*⁵¹*xie*⁵⁵ *ren*³⁵ ‘those people’ cannot function as the actor of the negative imperative expression marked by *bie*³⁵.

- (5) *Ni*²¹⁴(*men*³⁵)/**wo*²¹⁴/*wo*²¹⁴*men*³⁵/**ta*⁵⁵(*men*³⁵)/**na*⁵¹*xie*⁵⁵*ren*³⁵
 2SG(PL)/1SG/1PL/3SG(PL)/those people
*bie*³⁵ *da*⁵¹*sheng*⁵⁵ *shuo*⁵⁵*hua*⁵¹.
 don’t be.loud speak

From the above, we see that the negative imperative *bie*³⁵ sentences do not diverge from the common types of imperatives in Mandarin Chinese in terms of the presence of an actor and its person. That is, an actor is present in the event or action denoted by *bie*³⁵

⁴ Li and Thompson (1989: 458-460) analyze a set of negative imperative *bie*³⁵ expressions that seem to take the first- or third- person singular actor, superficially contradicting our observation made here. It should be noted that their analysis is made based on the sentences where negative imperative *bie*³⁵ expressions are embedded in a main clause and form a part of a control structure. For example, in one of their examples that we repeat below, the imperative-like expression *wo*²¹⁴ *bie*³⁵ *da*²¹⁴ *lan*³⁵ *qiu*³⁵ ‘lit. I should not/don’t play basketball.’ is embedded in the main clause, whose verb is *ming*⁵¹*ling*⁵¹ ‘order’.

(i) *(*Ta*⁵⁵ *ming*⁵¹*ling*⁵¹) *wo*²¹⁴ *bie*³⁵ *da*²¹⁴ *lan*³⁵ *qiu*³⁵.
 s/he order I don’t play basketball
 ‘S/he ordered me not to play basketball.’

imperatives. The person of the actor argument in *bie*³⁵ imperatives is restricted to the second person (singular or plural) or the first-person plural (inclusive). The second-person actor argument is optional in the syntax of the negative imperatives marked by *bie*³⁵.

Behaving differently, the apprehensive marker *bie*³⁵ operates at the clause, whose description of an event may not involve any actor. Take expression (2) to illustrate. It involves a potential undergoer *ni*²¹⁴ ‘you’, who may unfortunately fall over. Other typical examples of this kind include those that indicate the occurrence of natural phenomena, such as *di*⁵¹*zhen*⁵¹ ‘earthquake’ in (6) and *xia*⁵¹*yu*²¹⁴ ‘rain’ in (7), where no actors are involved (also see Gao 2003: 101).

- (6) *Fang*³⁵*zi*⁰ *huang*⁵¹ *de*⁰ *na*⁵¹*me*⁰ *li*⁵¹*hai*⁵¹, *bie*³⁵ *di*⁵¹*zhen*⁵¹ *le*⁰.
house shake SUB like.that hard don’t earthquake SFP
‘The house shakes so hard! (I fear that) it is an earthquake.’
(cited in Shao and Luo 2004: 20)

- (7) (*Di*⁵¹*shang*⁵¹ *zhe*⁵¹*me*⁰ *shi*⁵⁵.) *Bie*³⁵ *gang*⁵⁵ *xia*⁵¹ *guo*⁵¹ *yu*²¹⁴ *ba*⁰!
on.the.ground like.this be.wet don’t just.now fall EXP rain SFP
‘It is so wet on the ground. It might have rained just now.’

In the apprehensive expressions that involve an actor argument, this actor argument can be the first-, second-, or third- person, regardless of singularity or plurality. It can be seen in (8) that the apprehensive *bie*³⁵ clause takes a wider range of actors than those taken by the negative imperatives shown in (5).

- (8) *Wo*²¹⁴(*men*³⁵)/*ni*²¹⁴(*men*³⁵)/*ta*⁵⁵(*men*³⁵)/*lao*²¹⁴*nian*³⁵*ren*³⁵
1SG(PL)/2SG(PL)/3SG(PL)/senior.citizen
*ke*²¹⁴ *bie*³⁵ *shuai*⁵⁵ *zhe*⁰.
just don’t fall PFV
‘Be careful that I/we/you/s/he/they/the senior citizens might fall.’

Our observations made in the present section are summarized and presented in Table 1. The main difference between them lies in the first-person actor, the third-person actor, and the obligatory presence of an actor in the event semantics.

Person of Actor	Negative imperative <i>bie</i> ³⁵	Apprehensive <i>bie</i> ³⁵
1 st person	plural (or inclusive) only	√
2 nd person	√	√
3 rd person	X	√
Necessary presence of an Actor	√	X

Table 1. Distinction in the actor between *bie*³⁵ marked negative imperatives and apprehensives

4. Structural position of the Actor argument

We have discussed in earlier sections that the negative imperatives marked by *bie*³⁵ require an actor in their semantics, who is deemed to act in the way requested by the speaker. If the actor must be present in the syntax, it must occur before the imperative marker *bie*³⁵ and the remainder of the core, forming [*actor-bie*³⁵...]_{CORE}. As shown by expression (9), constructed based on (1), the second-person actor *ni*²¹⁴*men*³⁵ ‘you(plural)’ can optionally occur before the negative imperative marker *bie*³⁵ if explicitly expressed, and it should not occur after *bie*³⁵.

- (9) (*Ni*²¹⁴*men*³⁵) *bie*³⁵ (**ni*²¹⁴*men*³⁵) *da*⁵¹*sheng*⁵⁵ *shuo*⁵⁵*hua*⁵¹!
 you.PL don’t you.PL be.loud speak
 ‘(You) don’t speak so loudly.’

As mentioned above, the apprehensive expressions do not require an actor to occur in their semantics or syntax. For example, the sentence-initial pronoun *ni*²¹⁴ ‘you’ in expression (2) is a potential undergoer that may be involved in the event of falling over (and getting hurt). If an event-related argument must be added to expression (3) with interpretation b, the role of the argument is better described as an undergoer as well, whose state has changed into that of being married. By uttering expression (10), constructed based on (3), the speaker estimates the marital situation of *na*⁵¹ *ge*⁵¹ *nü*²¹⁴*sheng*⁵⁵ ‘that girl’, which must occur before the apprehensive *bie*³⁵. The speaker’s estimation of the situation is reinforced by the sentence-final particle *ba*⁰.

- (10) *Na*⁵³ *ge*⁵¹ *nü*²¹⁴*sheng*⁵⁵ *bie*³⁵ *jie*³⁵*hun*⁵⁵ *le*⁰ (*ba*⁰)!
 that CLF girl don’t get.married PFV SFP
 ‘Let that girl not be married!’

A few more examples, such as (11) – (14), show that when present in the semantics and the syntax of the apprehensive expressions, the actors of the related event, including *ni*²¹⁴ ‘you’, *ta*⁵⁵ ‘he’, and *pai*⁵¹*chu*⁵⁵*suo*²¹⁴ ‘police station’, can follow the apprehensive marker *bie*³⁵ after its presence in the sentence.

- (11) *Bie*³⁵ *dao*⁵¹ *lao*²¹⁴ *le*⁰
 don’t arrive be.old PFV
*ni*²¹⁴ *cai*³⁵ *fa*⁵⁵*xian*⁵¹ *zi*⁵¹*ji* *yi*⁵⁵*wu*³⁵*suo*²¹⁴*you*²¹⁴.
 you just realize self have.nothing
 ‘(I fear that) you won’t realize that you have nothing until too old.’

- (12) *Kan*⁵⁵ *hao*²¹⁴ *ni*²¹⁴*men*³⁵ *nan*³⁵*peng*³⁵*you*²¹⁴ *de*⁰ *qian*³⁵*bao*⁵⁵,
 watch be.good you.PL boyfriend GEN wallet
*bie*³⁵ *ta*⁵⁵ *you*⁵¹ *ba*²¹⁴*chi*³⁵*bu*³⁵*zhu*⁵¹ *mai*²¹⁴ *xin*⁵⁵ *tou*³⁵*kui*⁵⁵.
 don’t he again out.of.control buy new helmet
 ‘Mind your boyfriend’s wallet. He might go out of control and buy a new helmet.’

- (13) *Ni*²¹⁴ *hai*³⁵*shi*⁵¹ *shen*⁵¹*zhong* ⁵¹ *dian*²¹⁴,
 you might.as.well be.careful a.little
*bie*³⁵ *ta*⁵⁵ *you*⁵¹ *yu*⁵¹*dao*⁵¹ *bi*²¹⁴ *ni*²¹⁴ *hao*²¹⁴ *de*⁰,
 don't he again meet CM you be.good NMLZ
*bu*³⁵ *yao*⁵¹ *ni*²¹⁴ *le*⁰.
 will.not want you SFP
 'You'd better be careful. He might meet someone better than you again and dump you.'⁵

- (14) *Jie*⁵⁵*fang*⁰ *shuo*⁵⁵ *dian*²¹⁴ *xian*³⁵*hua*⁵¹ *dao*⁵¹ *mei*³⁵ *guan*⁵⁵*xi*⁰,
 neighbors talk some gossip rather have.not matter
*bie*³⁵ *hui*³⁵*tou*³⁵ *pai*⁵¹*chu*⁵⁵*suo*²¹⁴ *zhao*²¹⁴ *wo*²¹⁴*men*³⁵ *jia*⁵⁵ *qu*⁵¹.
 don't later police.station look.for we home go
 'It does not matter that the neighbors gossip, I fear that later the police may get to us.' (*Wo*²¹⁴ *shi*⁵¹ *ni*²¹⁴ *ba*⁵¹*ba*⁰; cited in Shao and Luo 2004: 21)

Contrasting to the behavior of the undergoer listed in (2) and (10), as can be shown by (15)–(18), the actor listed above can also be placed before the apprehensive marker *bie*³⁵ without affecting the acceptability of the sentence and its general meaning. For example, the apprehensive expression in (11)–(14) can be uttered alternatively in the form of (15)–(18) by placing the actor *ni*²¹⁴ 'you', *ta*⁵⁵ 'he', and *pai*⁵¹*chu*⁵⁵*suo*²¹⁴ 'police station' before the apprehensive marker *bie*³⁵.

- (15) *Ni*²¹⁴ *bie*³⁵ *dao*⁵¹ *lao*²¹⁴ *le*⁰
 you.SG don't arrive be.old PFV
*cai*³⁵ *fa*⁵⁵*xian*⁵¹ *zi*⁵¹*ji*²¹⁴ *yi*⁵⁵*wu*³⁵*suo*²¹⁴*you*²¹⁴.
 just realize self have.nothing
- (16) ...*ta*⁵⁵ *bie*³⁵ *you*⁵¹ *ba*²¹⁴*chi*³⁵*bu*³⁵*zhu*⁵¹ *mai*²¹⁴ *xin*⁵⁵ *tou*³⁵*kui*⁵⁵.
 he don't again out.of.control buy new helmet
- (17) ...*ta*⁵⁵ *bie*³⁵ *you*⁵¹ *yu*⁵¹ *dao*⁵¹ *bi*²¹⁴ *ni*²¹⁴ *hao*²¹⁴ *de*⁰,
 he don't again meet arrive CM you be.good NMLZ
*bu*³⁵ *yao*⁵¹ *ni*²¹⁴ *le*⁰.
 not want you SFP
- (18) ...*pai*⁵¹*chu*⁵⁵*suo*²¹⁴ *bie*³⁵ *hui*³⁵*tou*³⁵ *zhao*²¹⁴ *wo*²¹⁴*men*³⁵ *jia*⁵⁵ *qu*⁵¹.
 police.station don't later look.for we home go

⁵ Expression (12) is the heading of a video blog posted on the website of *Tencent Video*. Expression (13) is a reply message posted on *Baidu Zhidao*, an online Q and A platform in China.

From the above discussion, we can see that when the actor argument is realized in the syntax, it must occur before the negative imperative *bie*³⁵. Differently, in the apprehensive expressions, what occurs before the apprehensive marker *bie*³⁵ can be either an undergoer or an actor, whose structural position with respect to the apprehensive marker *bie*³⁵ seems to follow the pattern that the undergoer occurs before *bie*³⁵, whereas the actor can occur either before it or after it. However, it should be noted that our observation is made on a very small amount of data, and a more robust generalization should be generated when a large set of natural utterances is collected and thoroughly analyzed.

5. Temporality

Deontic modality is future-oriented (Narrog 2008). The negative imperative *bie*³⁵ as a deontic modal marker occurs in prohibitive expressions that indicate the termination of an (ongoing) action or event from taking place in the future. For example, expression (1) can be uttered in the scenario that the speaker stops someone who is speaking loudly in the office from continuing to do so, or it can be uttered after someone speaks loudly in the office.

The range of temporal settings indicated by the apprehensive *bie*³⁵ sentences is wider. It has been noticed by Gao (2003: 101) and Shao and Luo (2004: 20) that the action or event described by the apprehensive *bie*³⁵ clause can be located temporally in the past, the present, or the near future. The apprehensive *bie*³⁵ expression (7), which is repeated in (19), introduces the speaker's conjecture of a past event that it just rained. The apprehension-causing clause in expression (20) includes an event of rain that is hypothesized to be ongoing at the moment of speaking. Expression (21) includes a hypothesized event that the hearer will make the same mistake again in the future, if s/he cannot be more careful.

- (19) (Di⁵¹shang⁵¹ zhe⁵¹me⁰ shi⁵⁵.) Bie³⁵ gang⁵⁵ xia⁵¹ guo⁵¹ yu²¹⁴ ba⁰!
on.the.ground like.this be.wet don't just.now fall EXP rain SFP
'It is so wet on the ground. It might have rained just now.'

- (20) Wo²¹⁴ mei³⁵ dai⁵¹ san²¹⁴, bie³⁵ hai³⁵ zai⁵¹ xia⁵¹ yu²¹⁴ ba⁰!
I have.not bring umbrella don't still PROG fall rain SFP
'I didn't bring any umbrella. I fear that it might still be raining.'

- (21) Zi²¹⁴xi⁵¹ dian²¹⁴r! Bie³⁵ zai⁵¹ nong⁵¹ cuo⁵¹ le⁰.
be.careful a.little don't again do be.wrong SFP
'Be more careful! I fear that (you) will make mistakes again.'

The wide range of temporal settings observed with the apprehension-causing situation is compatible with the general semantic meaning conveyed by the overall expressions. It only indicates an undesired situation hypothesized by the speaker, which is not necessarily anchored in a particular temporal point. This function is akin to the epistemic

marking. The distinction in temporality in the two types of expressions marked by *bie*³⁵ is presented in Table 2.

Temporality of event	Negative imperative <i>bie</i> ³⁵	Apprehensive <i>bie</i> ³⁵
past	X	√
present	X	√
future	√	√

Table 2. Event's temporality in *bie*³⁵-marked negative imperative and apprehensive expressions

6. Conclusion

This study has examined the two distinct uses of the morpheme *bie*³⁵ in Mandarin Chinese, i.e., as a negative imperative marker and as a marker of apprehensive-epistemic modality. By adopting the RRG framework and its Layered Structure of the Clause (LSC), we have demonstrated that the array of differences between them stems from their differing hierarchical positions within the LSC.

We have formed a hypothesis that the negative imperative *bie*³⁵ operates at the core level in the LSC, as it is a deontic modal marker that marks requests directed to the hearer, instructing him/her to act as required by the speaker. In contrast, the apprehensive *bie*³⁵ operates at the clause level as an epistemic modal marker, scoping over an entire proposition to convey the speaker's apprehension about an undesirable situation. The distinction made in terms of their position in the LSC can account for three sets of contrasting behaviors of the negative imperatives and the apprehensives, both marked by *bie*³⁵.

First, the negative imperative *bie*³⁵ requires an actor in its event semantics, restricted typically to the second-person or the first-person (inclusive). The apprehensive *bie*³⁵ imposes no such requirement, allowing clauses with actors of any person, undergoers, or to indicate events without an actor (e.g., in the cases of natural phenomena).

Secondly, with the negative imperative, any actor argument that is made explicit in the syntax must precede *bie*³⁵. With the apprehensive, the actor (when present) demonstrates flexible positions in the expressions, being able to occur either before or after the marker *bie*³⁵, which seems to be a characteristic consistent with its status as a clause-level operator.

Thirdly, the deontic and future-oriented nature of the negative imperative *bie*³⁵ restricts the event that it modifies to a future or immediately ongoing action that can be prohibited. However, the epistemic apprehensive *bie*³⁵ exhibits no such constraint, having its scope over propositions situated in the past, present, or future, reflecting the speaker's conjecture about a state of affairs.

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Yaqui contributions to Role and Reference Grammar

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1. Introduction

Yaqui belongs to the Southern branch of the Uto-Aztecan language family, one of the largest and most widespread language families in the Americas, with representative languages spoken from the western United States all the way to southern Mexico. There are fewer than 1,000 Yaqui speakers in Arizona, USA, and approximately 19,376 speakers in Sonora, Mexico. I began documenting and studying the Sonora Yaqui language in 1996, while I also discovered and adopted Role and Reference Grammar [RRG]. Since then, I have explored aspects of simple and complex sentences in Yaqui based on this framework. The goal of this paper is to revisit some Yaqui studies dealing with three distinctive features of RRG (Foley and Van Valin 1984, Van Valin and LaPolla 1997, Van Valin 2005, 2023): double-object constructions and the actor-undergoer hierarchy (§2.1), complex constructions and the theory of clause linkage (§2.2), and passive voice and the notion of privileged syntactic argument (§2.3).

2. RRG studies on Yaqui

Yaqui is an agglutinating, dependent-marking, head-final, primary object language (Dedrick and Casad 1999, Guerrero 2006, 2019, 2022). Yaqui distinguishes between direct and oblique core arguments. The single argument of syntactically intransitive verbs and the first argument of transitive verbs (A) are flagged by nominative (unmarked -Ø) case, while the second argument of most transitive verbs (P) is flagged by accusative case *-ta* when the NP is singular; when the NP is plural, they are flagged by the plural suffix *-(i)m*. The P argument of some transitive verbs is flagged by oblique (postpositional) case, e.g., *-u* ‘to’, *-t* ‘at’. In Yaqui, only direct core arguments receive macroroles. Following the Actor-Undergoer Hierarchy (AUH), the leftmost argument (A) in the logical structure of canonical transitive predicates (S, A) corresponds to the actor, and rightmost argument (P) to the undergoer. Oblique core arguments are non-macrorole.

2.1. Double-object constructions

One of the key features of RRG is its effort to account for the universal properties of clauses without imposing categories onto languages where there is no evidence for them, e.g., grammatical relations. The so-called ‘double-object’ constructions are a good example of this variation, because there are two non-actor core arguments competing to be selected as the undergoer. Yaqui is especially interesting since it was considered a primary object language (Rude 1996) but it shows multiple double-object constructions with different undergoer selection patterns (Guerrero and Van Valin 2004). Yaqui has three types of underived ditransitive verbs. Type A verbs (1) take two accusative core arguments, the theme (T) and the recipient (R). These verbs follow the primary object pattern, such as the second highest argument of the AUH is selected as the undergoer: the R argument. In passive constructions, R serves as the passive subject, e.g., ‘Lupe was

given the hen' for (1a).¹

- (1) a. *Aurelia-Ø Lupe-ta toto 'i-ta miika-k.*
 Aurelia-NOM Lupe-ACC hen-ACC give-PFV
 'Aurelia gave Lupe the hen'.
 a'. [**do'** (*Aurelia*, Ø)] CAUSE [BECOME **have'** (*Lupe*, *toto 'i*)]
 b. *Aurelia-Ø Lupe-ta u-ka ili usi-ta bittua-k.*
 Aurelia-NOM Lupe-ACCDET-ACC little child-ACC show-PFV
 'Aurelia showed Lupe the child.'
 b'. [**do'** (*Aurelia*, Ø)] CAUSE [BECOME **see'** (*Lupe*, *usi*)]

Type B verbs (2) take one direct core argument (P) and one oblique core argument (R) flagged by *-u* 'to'. These verbs follow the secondary object pattern, such as the lowest argument of the AUH is selected as the undergoer: the T argument. In passive constructions, T serves as the passive subject, e.g., 'The hen was sold to Lupe' for (2a).

- (2) a. *Aurelia-Ø Lupe-ta-u toto 'i-ta nenka-k.*
 Aurelia-NOM Lupe-ACC-DIR hen-ACC sell-PFV
 'Aurelia sold the hen to Lupe'.
 a'. [**do'** (*Aurelia*, Ø)] CAUSE [BECOME **have'** (*Lupe*, *toto 'i*)]

Type C verbs (3) take one direct core argument (P) and one oblique core argument (R), but T and R can alternate the coding. In (3a) T is flagged accusative, and R oblique (locative), whereas in (3b) T is flagged oblique (instrumental) and R accusative. Consequently, these verbs also alternate the undergoer selection: the accusative R or T. The passive version for (3a) would be 'The coffee was sprinkled on the table', and for (3b) would be 'The table was sprinkled with the coffee'.

- (3) a. *Aurelia-Ø kafe-ta mesa-po chijakta-k.*
 Aurelia-NOM coffee-ACC table-LOC sprinkle-PFV
 'Aurelia sprinkled the coffee on the table'.
 b. *Aurelia-Ø kafe-ae mesa-ta chijakta-k.*
 Aurelia-NOM coffee-INST table-ACC sprinkle-PFV
 'Aurelia sprinkled the table with the coffee'.
 c. [**do'** (*Aurelia*, [sprinkle' (*Aurelia*, *kafe*)])] CAUSE [BECOME **be-on'** (*mesa*, *kafe*)]

Van Valin and LaPolla (1997: 387) provided the following explanation: the undergoer does not correspond to the lowest (second) argument of **have'** (y, z) but to the y (first) argument **have'** (y, z), and then, double-object constructions like those in (1) show a "marked" undergoer selection. Two factors may also play a role: case marking (in some languages, only direct core arguments are macroroles), and the animacy principle (if there is an animate (human) argument as a potential undergoer, then it must be the undergoer). Yaqi data has important implications for the AUH since the undergoer selection patterns

¹ The morphological glossing follows the Leipzig Glossing Rules, except for the following additions: CLM = clause linkage marker; DIR = directional, POT = potential, PURP: purpose.

cannot be explained solely in terms of case marking or animacy –there are two humans in (1b)–, and consequently, the markedness pattern is not valid universally (Guerrero and Van Valin 2004, Van Valin 2005, 2023: 140-145). This cross-linguistic variation required a reformulation of the undergoer selection principles in the AUH (Figure 1). There are two principles: some languages may follow principle A –with T serving as the undergoer– and others may choose R; in some languages (like in Yaqui), both principles are operative since some lexical verbs or clauses may take one principle, but others the other.

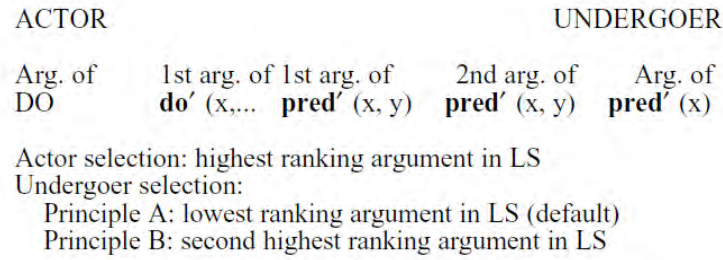


Figure 1. The Actor-Undergoer Hierarchy revised (Van Valin 2005: 126)

2.2. Complex constructions

A second distinctive feature of RRG is the theory of clause linkage which highlights the syntactic-semantic correlation between the linked units in complex constructions. This theory is grounded in the layered representation of the clause structure. Since the syntactic linkages are language-independent (abstract) constructions, it is possible to account for both cross-linguistic variation and variation within the same language. The Interclausal Relations Hierarchy (IRH) involves two sub-hierarchies. The Syntactic Relations Hierarchy includes the theory of juncture (nucleus, core, clause, sentence) and the theory of nexus (coordination, subordination, and cosubordination); the syntactic combinations are ranked in terms of the strength of the syntactic bond between the two units. The Semantic Relations Hierarchy lists several semantic relations ranked in terms of the semantic cohesion between the propositional units. There is a basic iconic principle linking the two sub-hierarchies: the tightest syntactic linkage type in a language will instantiate the closest semantic relationship.

Complement-taking predicates in Yaqui present interesting challenges to the basic iconic principle that underlines the IRH because there is a lot of syntactic variation (Guerrero 2006). On one hand, the tighter syntactic structure (V-V) that is assumed to express closer semantic relations at the top end of the hierarchy has been extended down to express looser relations. The main predicate may be bound to the dependent verb in direct causation (4a), phase (4b), psych-action (4c), jussive (4d), direct perception (4e), cognition (4f), and even indirect discourse constructions (4g).

- (4) a. *Ivan-Ø Flor-ta tubukti-tua-k.*
 Ivan-NOM Flor-ACC jump-cause-PFV
 ‘Ivan made / let Flor jump.’
- b. *U-Ø kape-Ø sebe-taite-Ø.*
 DET-NOM coffee-NOM be_cold-begin-PRS
 ‘The coffee begins to become cold.’
- c. *Empo Joan-ta et-po ania-roka-n.*
 2SG.NOM John-ACC sown_field-LOC help-promise-IPFV
 ‘You promised to help Juan in the sown field.’

- d. *Nepo Goyo-ta toto 'i-ta jinu-ne-sae-Ø.*
 1SG.NOM Goyo-ACC hen-ACC buy-POT-order-PRE
 'I will order Goyo to kill the hen.'
- e. *Aurelia-Ø enchi laaben-ta pona-jikka-k.*
 Aurelia-NOM 2SG.ACC violin-ACC play-hear-PFV
 'Aurelia heard you playing the violin.'
- f. *Ne Peo-ta kaba 'i-ta jinu-ka-t-'ea-n.*
 1SG.NOM Peter-ACC horse-ACC buy-PFV-CLM-think-IPFV
 'I thought Pedro bought a horse.'
- g. *Peo-Ø Goyo-ta tuuka kaba 'i-ta etbwa-k-tia-Ø.*
 Peter-NOM Goyo-ACC yesterday horse-ACC steal-PFV-say-PRS
 'Peter says Goyo stole the horse yesterday.'

On the other hand, at the middle portion of the scale, most complement-taking predicates show alternative syntactic linkages, one grammatical structure being syntactically tighter than the others. The examples in (5-7) show different syntactic linkages of psych-action predicates, direct and indirect perception, respectively.

(5) Psych-action predicates (actor control)

- a. Nuclear cosubordination
Ne kaa yi 'i-bae-Ø.
 1SG.NOM NEG dance-want-PRS
 'I don't want to dance.'
- b. Core cosubordination
Empo Joan-ta et-po ania-roka-n.
 2SG.NOM John-ACC sown field-LOC help-promise-IPFV
 'You promised to help Juan in the sown field.'
- c. Core cosubordination
Tuuka beako Lupe-Ø teenku-k [Peo-ta kuna-kai].
 yesterday_night Lupe-NOM dream-PFV Peter-ACC marry-CLM
 'Last night, Lupe dreamed (of herself) marrying Pedro.'
- d. Core subordination
Nepo [Peo-ta enchi kuna-ka-m-ta] teenku-k.
 1SG.NOM Peter-ACC 2SG.ACC marry-PFV-NMLZ-ACC dream-PFV
 'I dreamed of Pedro marrying you!'

(6) Direct perception

- a. Core cosubordination
Aurelia-Ø enchi laaben-ta pona-jikka-k
 Aurelia-NOM 2SG.ACC violin-ACC play-hear-PFV
 'Aurelia heard you playing the violin.'
- b. Core subordination
Aurelia-Ø [enchi laaben-ta pona-ka-m-ta] jikka-k.
 Aurelia-NOM 2SG.ACC violin-ACC play-PFV-CLM-ACC hear-PFV
 'Aurelia heard you play the violin.'

(7) Indirect perception

a. Core subordination

Maria-Ø [enchi kaba'i-m jinu-ka-'u] bicha-k
 Maria-NOM 2SG.ACC horse-PL buy-PFV-CLM see-PFV
 'Maria saw that you bought the horses.'

b. Clausal subordination

Aurelia-Ø a_i bicha-k [enchi laaben-ta pona-kan-'u]_i
 Aurelia-NOM 3SG.ACC see-PFV 2SG.ACC violin-ACC play-IPFV-CLM
 'Aurelia saw it, that you played the violin.'

c. Sentential subordination

Aurelia-Ø enchi bicha-k [enchi laaben-ta pona-kan-'u]
 Aurelia-NOM 2SG.ACC see-PFV 2SG.ACC violin-ACC play-IPFV-CLM
 'Aurelia saw you, that you played the violin.'

RRG recognizes that some complement-taking predicates may have different basic senses and choose different syntactic linkages, e.g., *persuade*. In Yaqui, the syntactic alterations are also observed in some adverbial constructions. Purpose clauses are a good example of this. In purpose relations, one action is done with the intent of realizing another state of affairs. Syntactically, a purpose relation can be coded in different adverbial linkage types with different degrees of integration. Languages usually use different syntactic structures to encode "same subject" vs. "different subject" purpose clauses. Semantically, purpose clauses share certain meanings with other adverbial sentences such as consequence (reason/cause clauses), and future-oriented (sequential clauses), but they also share the notion of intention with some complement sentences (modal clauses). It has been argued that purpose clauses do not logically entail the participants of the dependent unit, and that the performer (actor) of the main event may but not necessarily controls the realization of the dependent event (Cristofaro 2003: 157), although "typical purposive situations are bound to their matrix event via subject-binding" (Schmidtke-Bode 2009: 50).

In Yaqui, there are four syntactic non-subordinate clause linkages to express "same subject" clauses (Guerrero 2017, 2023). Hence, Yaqui is consistent with the typological pattern that favors "same-subject" purpose clauses since they are overwhelmingly more frequent (and tightly integrated) than "different subject" clauses. However, having different "subjects" does not mean a lack of coreference. In fact, Yaqui purpose clauses demand coreferential arguments, and obligatory shared arguments make use of special lexical coding, i.e., referential control (Jones 1991, Stiebels 2007). When the controller is the actor, there is structural control, meaning that the controllee must be covert. See the examples in (8).

(8) a. Motion-cum-purpose

Peo-Ø_i totoi-ta __i jinu-se-k.
 Peter-NOM hen-ACC buy-move.PURP.SG-PFV
 'Peter went to buy a hen.'

b. Purpose of motion

Peo-Ø_i a'abo=yepsa-k [totoi-ta __i jinu-se-kai].
 Peter-NOM here=arrive.SG-PFV hen-ACC buy-move.PURP.SG-CLM
 'Peter came here to buy a hen (lit. moving to buy).'

- c. Purpose of intention
Peo-Ø_i totoi-ta_j jinu-k [a_j _i bwa-bae-kai].
 Peter-NOM hen-ACC buy-PFV 3SG.ACC eat-want-CLM
 ‘Peter bought a hen to eat (lit. wanting to eat it).’
- d. Finality
Peo-Ø_i totoi-ta_j jinu-k [a_j _i bwa-ne-betchi’ibo].
 Peter-NOM hen-ACC buy-PFV 3SG.ACC eat-want-CLM
 ‘Peter bought a hen to eat.’

When the controller is the undergoer, there is inherent control, that is, the controllee is overt and coded by a co-indexed pronoun. Note that it is possible to have two control relations. In addition to actor control, there is undergoer control in (8c-d) and (9a-b). In (9c), the main undergoer controls the reference of the linked actor.

- (9) a. Purpose of intention
Peo-Ø_i totoi-ta_j jinu-k [a_j _i bwa-bae-kai].
 Peter-NOM hen-ACC buy-PFV 3SG.ACC eat-want-CLM
 ‘Peter bought a hen to eat (lit. wanting to eat it).’
- b. Finality
Peo-Ø_i totoi-ta_j jinu-k [a_j _i bwa-ne-betchi’ibo].
 Peter-NOM hen-ACC buy-PFV 3SG.ACC eat-want-CLM
 ‘Peter bought a hen to eat.’
- c. *Peo-Ø_i enchi_j a’abo=bittua-k [enchi_j tekipanoa-ne-betchi’ibo].*
 Peter-NOM 2SG.ACC here=send-PFV 2SG.ACC work-POT-CLM
 ‘Peter sent you here in order for you to work.’

In an elicitation context, when asking for a purposive situation without shared argument, my consultants provide a structurally different clause (10a), but not a typical purpose clause. As a matter of fact, the special lexical coding of the controllee is the same in purpose clauses and constructions taking control verbs. In Yaqui, actor control verbs (phase, modal, and desiderative verbs) demand a covert controllee (10b), while undergoer control verbs (causative, jussive verbs) take overt controllee (10c).

- (10) a. *Inepo lus-ta tu’ucha-k*
 1SG.NOM light-ACC turn.off-PFV
[bweituk/pake ili uusi-Ø kot-ne].
 CLM/CLM little child-NOM sleep-POT
 ‘I turned the lights off in order to/since/so that the child would sleep.’
- b. *Empo_i Joan-ta_j et-po _i (*enchi/*empo) ania-roka-n.*
 2SG.NOM Joan-ACC field-LOC 2SG.NOM/2SG.ACC help-promise-IPFV
 ‘You promised to help John in the field.’
- c. *Maala-Ø u-ka o’ou-ta_i sawe-k*
 mother-NOM DET-ACC man-ACC order-PFV
[teopo-ta a_i=tu’ute-ne-’u].
 church-ACC 3SG.ACC=fix-POT-CLM
 ‘The mother ordered that the man clean the church.’

RRG proposes that the semantic bond between the linked units is motivated by the interaction of some semantic subhierarchies. To explain the different juncture-nexus types in Yaqui involving psych-action perception, propositional attitude, cognitive and saying verbs, on one hand, and purposive clauses, on the other, it was necessary to revise the semantic subhierarchies proposed in Van Valin (2005): first, the participant's mental disposition subhierarchy was updated to capture the nature of complement-taking verbs (11c), and then, a new sub-hierarchy dealing with control constructions was added (11e).

(11) Revised semantic sub-hierarchies (Guerrero 2006, 2009, 2013, 2023):

- a. Temporal hierarchy:
phases of a single event > simultaneous events > sequential events > unspecified
- b. Causal hierarchy:
physical > verbal > underspecified_[non-defeasible] > inferred_[defeasible]
- c. Participant's mental disposition:
Intention > internal/direct experience > mental experience: commitment > mental experience: reasoning > non-mental experience: report
- d. Necessarily shared participant hierarchy:
Yes > No
- e. Referential control hierarchy:
main actor > main undergoer > another main core argument > there is no control relation

2.3. Voice constructions

A third defining feature of RRG is the notion of privileged syntactic argument (PSA) and the treatment of voice constructions. It is well known that grammatical voice is a complex phenomenon that denotes a particular semantic-syntactic relationship of clauses which may be pragmatically motivated. Voice relates the notions of transitivity, valency, and diathesis, as they contrast a basic (non-changed) clause with an alternative (changed) clause, e.g. passive, impersonal, antipassive, causative, applicative. Passive voice has been a prominent topic of multiples syntactic theories and typological studies because the syntactic functions of the semantic core arguments are shifted from the active counterpart. The grammatical subject of the passive clause (S_p) corresponds to the patient (P) of the active clause –it triggers verb-agreement in (12b), whereas the agent (A) of the active clause corresponds to an oblique phrase in the passive. Notably, the agent can be easily omitted (12c). In terms of RRG, the PSA changes from the A argument in the active voice, to the P argument in the passive voice.

(12) English

- a. John broke the pots.
- b. The pots were broken by John.
- c. The pots were broken.

Some languages may have more than one passive-like clause. Spanish is a good example. In the periphrastic passive in (13b), there is an explicit passive subject, and the agent is optionally coded as an oblique NP. In the *se*-passive (13c) there is also a passive-PSA but the agent must be omitted; in (13d), there is no passive-PSA –the P argument does not

trigger verb agreement; finally, in (13e) the active verb agrees with an unexpressed third-person plural participant, while P maintains its status of object.

(13) Spanish

- a. *Juan quebró la-s olla-s.*
John break.3SG.PFV DET-PL pot-PL
'John broke the pots.'
- b. *La-s olla-s fueron quebradas (por Juan).*
DET-PL pot-PL be.3PL.PFV break.PTCP by John
'The pots were broken (by John).'
- c. *Se quebraron la-s olla-s (*por Juan).*
PASS break.3PL.PFV DET-PL pot-PL by John
'The pots have been broken (*by John).'
- d. *Se quebró la-s olla-s (*por Juan).*
PASS break.3SG.PFV DET-PL pot-PL by John
'The pots have been broken (*by John).'
- e. *Quebraron la-s olla-s.*
break.3SG.PFV DET-PL pot-PL
'(Someone) broke the pots.'

Previous works on voice constructions have proposed different passive-like clauses depending on the functions of the P argument. (i) Personal passives: P serves as the passive-S_p (it triggers verb-agreement); A is coded as an oblique/adjunct or it is omitted, and there is special voice marking. This is the case of (12b), (13b-c). (ii) Impersonal passives: P does not act as the grammatical subject (it does not trigger verb-agreement), but instead it remains as the object, and there is special voice marking. This is the case of (13d). (iii) Simple impersonal: P remains as the object, but there is no A. This is the case of (13e). Clauses in which P serves as a passive-PSA are considered canonical passive constructions, while clauses without passive-PSA are non-canonical passives.

Yaqui has personal passives, impersonal passives and simple impersonals, which demand covert agents (A-demotion), e.g., agentless clauses. Each of these agentless constructions has their own morphosyntactic properties (optional P-promotion), and they are used in different discourse contexts depending on the referentiality of the human, but unexpressed agent (Guerrero and Belloro 2024, Guerrero in press). Voice clauses in (14b-d) involve obligatorily A-demotion: the agent must be omitted. Passive clauses are marked by the suffix *-wa*, and *wa*-clauses can be personal or impersonal depending on the functions of the P argument: in (14b) P serves as the passive-PSA, but in (14c) there is no passive-PSA, but P remains accusative. In the unmarked voice clause in (14d), A is omitted, and P remains accusative. Unlike the implicit coding of S/A continuous topic in oral texts, the missing A argument within simple impersonal clauses is unknown (non-identified, so it cannot be coded by a co-indexed pronoun).

(14) a. Active clause

- Empo u-ka soto 'i-ta jamta-k.*
2SG.NOM DET-ACC pot-ACC break.TR-PFV
'You broke the pot.'

- b. *Wa*-personal passive (with S_p)
U-Ø soto 'i -Ø jamta-wa-k.
 DET-NOM pot-NOM break.TR-PASS-PFV
 ‘The pot was broken.’ (Sp. *La olla se quebró*)
- c. *Wa*-impersonal passive (without S_p)
U-ka soto 'i-ta jamta-wa-k.
 DET-ACC pot-ACC break.TR-PASS-PFV
 ‘The pots were broken.’ (Sp. *Se quebró la olla*)
- d. Simple impersonal (without A)
Ø u-ka soto 'i-ta jamta-k.
 DET-ACC pot-ACC break.TR-PFV
 ‘(Someone) broke the pot.’ (Sp. *Quebraron la olla*)

Table 1 shows the distribution of agentless clauses in Yaqui oral texts. Note that passive and impersonal *wa*-clauses are almost twice as frequent as unmarked clauses. Previous cross-linguistic studies have mentioned that personal passives (with P-promotion) are more frequent than impersonal passives (without P-promotion) (Kittilä and Zúñiga 2019), but not in Yaqui. Table 2 shows that non-promotional clauses, both passives and simple impersonals, are more prominent in Yaqui texts compared to promotional passives.

	#clauses in texts	<i>wa</i> -clauses personal/impersonal		unmarked clauses simple impersonal	
Personal stories	1964	208	10.6%	26	1.3%
Fables	1617	55	3.4%	12	0.74%
Formulaic	370	43	11.6%	130	35%
Conversations	277	12	4.3%	11	3.9%
	4,228	318	7.5%	179	4.2%

Table 1. Agentless clauses in Yaqui oral texts

	<i>wa</i> -clauses personal/impersonal			unmarked clauses simple impersonal	
	P-promotional	No P-promotional	#	No P-promotional	#
Personal stories	71	128	208	26	26
Fables	20	35	55	12	12
Formulaic	15	27	43	130	130
Conversations	3	9	12	11	11
	121	197	318	179	179

Table 2. Yaqui agentless clauses as not necessarily P-promotional

Therefore, Yaqui prefers non-canonical passive clauses: they may but not necessarily promote the P argument, but they must demote the A (obligatory omission). Accordingly, passive and impersonal clauses are not about the P argument, but the A participant. Most studies on passive/impersonal voice constructions focus on the P argument, while the status of A is less consistent: it must be covert (Shibatani 1985, Keenan and Dryer 2007), it must be overt (Kulikov 2011), it can be omitted but there is always the option of including it (Haspelmath 1990, Siewierska 2013), if present, A usually takes locative, instrumental, or genitive oblique/ adpositional marking (Keenan and Dryer 2007).

In an ongoing study, I examine voice-changed construction in which the agent performing the action is not selected as the PSA but is instead coded in the periphery or left unexpressed. In 23 different languages spoken in north, central and south America, I have observed a strong preference to omit the agent (A-demotion) over passive subject (P-promotion). In other words, even when the presence and nature of the agent allow the distinction between passives from impersonal and other voice constructions (Siewierska and Bakker 2012), languages prefer to omit the agent. i.e., agentless voice constructions (Guerrero, in press).

The fact that voice constructions in RRG are defined in terms of macroroles and PSA selection (instead of “subject” and “object”), allows the analysis of languages/constructions with different alignments and morphosyntactic features. The RRG description of an English active-passive pair goes as follows. The two-place predicate *eat* takes two semantic participants: the agent *Chris*, the 1st argument of the active predicate **do'** in the logical structure (15a), and the patient *bagel* is the 2nd argument of **eat'** (x, y) and single argument of **consumed'** (x). According to the AUH, *Chris* is selected as the actor, and *the bagel* as the undergoer. In the syntax, the two participants are coded as direct core arguments in the active voice (15b), and the actor is the default choice for PSA, while the undergoer remains as a direct core argument. In the passive (15c), the undergoer is the marked choice for passive-PSA (*S_p* or derived-S in RRG's terms), whereas the actor is a semantic argument of the passive verb but occurs as an adjunct in the periphery.

- (15) a. **do'** (Chris, [**eat'** (Chris, bagel)]) & INGR **consumed'** (bagel)
- b. Chris ate the bagel.
- c. The bagel was eaten by Chris.

It is then assumed that passive voice constructions usually (but not always) involve two steps: the marked choice of the PSA (16a), and the demotion of the actor (16b).

- (16) General characterization of basic voice constructions (Van Valin 2005: 116)
 - a. PSA modulation voice: permits an argument other than the default argument in terms of Privileged Syntactic Hierarchy to function as the PSA.
 - Active: default choice is the actor
 - Passive: marked choice is the undergoer
 - b. Argument modulation voice: gives non-canonical realization to a macrorole argument
 - Active: the actor is coded as a direct core argument (e.g., NOM or ERG)
 - Passive: the actor is omitted or is coded as an oblique phrase in the periphery

The general characterization of voice constructions (16) has changed very little since its original formulation (Van Valin 1980, 1993, 2005, 2023, Foley and Van Valin 1984, Van Valin and LaPolla 1997). As is, the general characterization of voice constructions neatly capture canonical personal passives since it seems to favor P-promotion (the marked choice of PSA) over A-demotion. This characterization says nothing about other strategies to demote the agent (argument modulation). Nevertheless, Yaqui and several other Amerindian languages make use of different morphosyntactic strategies to demote A, while P can remain a direct core argument (no-PSA). Therefore, I propose to consider

argument modulation voice as the primary effect of passives and impersonals, and PSA modulation voice as a secondary (and optional) effect. I also suggest indicating the different mechanisms languages use to demote the agent.

(17) General characterization of passive/impersonal voice constructions (revised):

- a. Argument modulation voice: gives non-canonical realization to the actor argument.
 - i. it is omitted, or
 - ii. it is coded as a peripheral adjunct (e.g., adposicional phrase), or
 - iii. it is coded as an indefinite (generic) NP (e.g., *one*, *you*, *someone*)
- b. PSA modulation voice: permits an argument other than the default argument in terms of PSA hierarchy to function as the privileged syntactic argument [PSA].
 - i. no arguments are selected as the PSA (e.g., passive impersonal, simple impersonal)
 - ii. a non-actor argument is selected as the PSA (e.g., personal passive)

This description highlights the fact that argument modulation is the primary syntactic and pragmatic function of canonical and non-canonical passive/impersonal clauses cross-linguistically. Whether or not the undergoer (or other core argument) is selected as the PSA is a language-specific property that can be defined in a constructional schema (if needed).

3. Final comments

The syntactic, semantic, and pragmatic study of the Yaqui language has been made possible thanks to the principles that characterize Role and Reference Grammar and to its recognition that individual languages may privilege different arguments depending on their coding and behavioral properties, and that the same semantic relationship can be expressed through different syntactic structures for specific pragmatic purposes.

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On resultative V-V compounds in Japanese*

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1. Introduction

Japanese abounds with compound verbs formed with two verbs. In Japanese, lexical compound verbs have a number of different uses, and researchers have proposed different classifications (Kageyama 1993, Matsumoto 1995, Yumoto 2005, etc.). The discussion in this paper will focus on lexical V-V compounds that express resultative meanings, as in (1).

- (1) *Ken-ga doa-o osi-ake-ta.*
Ken-NOM door-ACC push-open-PAST
'Ken pushed open the door.'

In resultative V-V compounds, the first verb expresses the causing event, and the second verb the caused event. Given this, the resultative V-V compounds can be viewed as possessing the Logical Structures (LSs) that express a causative relation between two subevents, which are connected by CAUSE. In other words, the LSs for resultative V-V compounds express the meaning that some activity ends up with a certain resultant state.

Resultative V-V compounds display a number of argument realization patterns depending on the types of component verbs, i.e. V1 and V2. I suggest that the argument realization patterns of resultative V-V compounds are semantically motivated, which can be expected on the basis of their LS. Japanese resultative V-V compounds are divided into the transitive and intransitive types. In this paper, I will show that in transitive resultative V-V compound verbs, the argument referring to the initial causer is realized as actor, the argument referring to the final result as undergoer, and that the single argument of intransitive resultative V-V compound verbs is construed as undergoer even if it is interpreted as the agent of V1.

The discussion of the present paper proceeds as follows. Section 2 shows that resultative V-V compounds are categorized into the transitive and intransitive types depending on the transitivity of V2. Section 3 shows that in transitive resultative V-V compounds, the causer arguments are construed as actors, and the arguments of the final resultant states undergoers. Then I will discuss intransitive resultative V-V compounds, showing that their single arguments are construed as undergoers. A conclusion is presented in Section 4.

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2. Argument realization patterns of resultative V-V compounds

Resultative V-V compounds are categorized into transitive and intransitive types, which are generally determined by the transitivity of V2. Moreover, transitive V-V compounds show a number of distinct argument realization patterns depending on the nature of the component verbs. In many resultative V-V compounds, V1 and V2 share both subjects and objects. But there are cases in which they do not. My discussion centers around the latter cases, since they provide us with an important key to understanding how the arguments of resultative compound verbs are realized.

2.1. Transitive resultative V-V compounds

Transitive resultative compounds comprise transitive V2, but V1 can be either transitive or intransitive. They are classified into six types according to how the objects of the component verbs are realized.

(A) **Intransitive V1 + Transitive V2**: For this type of transitive V-V compound, the object of V2 is realized for the obvious reason that V1 does not select any object. One representative example is given in (2).

- (2) *Mari-ga me-o naki-harasi-ta.*
Mari-NOM eye-ACC cry-swell-PAST
'Mari cried and her eyes got swollen.'

There are a number of V-V compounds showing this pattern of argument realization, which include *naki-otosu* 'cry-drop(tr.)' and *kati-toru* 'win-take'.

(B) **Transitive V1 + Transitive V2**: This type of transitive V-V compound shows three distinct patterns of argument realization.

Pattern 1: A first case of argument realization pattern is that the object of V2, not the object of V1, is realized.

- (3) *Ken-ga Mari-o ii-makasi-ta.*
Ken-NOM Mari-ACC talk-defeat-PAST
'Ken talked Mari down.'

Other compound verbs showing the same argument realization pattern include *kui-tubusu* 'eat-crush' and *nomi-tubusu* 'drink-crush'.

Pattern 2: Another pattern of argument realization is that the object of the whole compound corresponds to the object of V2, and the object of V1 is realized as an oblique argument.

- (4) *Hahaoya-ga hanmoku-kara kodomo-o huri-otosi-ta.*
mother-NOM hammock-ABL child-ACC shake-drop(tr.)-PAST
'Mother shook the child off the hammock.'

In (4), the object of V1 cannot be realized as the object of the whole lexical compound. Other V-V compounds showing this pattern include *hineri-dasu* ‘squeeze-come.out’ and *arai-otosu* ‘wash-run.off’.

Pattern 3: A third pattern of argument realization is that either the object of V1 or the object V2 is realized as the object of the V-V compound.

- (5) a. *Ken-ga (kaidan-kara) asi-o humi-hazusi-ta.*
 Ken-NOM stairs-ABL leg-ACC step.on-take.off-PAST
 ‘Ken lost his footing from the stairs.’
 b. *Ken-ga kaidan-o humi-hazusi-ta.*
 Ken-NOM stairs-ACC step.on-take.off-PAST
 ‘Ken missed a step on the stairs.’

Only a handful of resultative V-V compounds show this pattern, which include *nomi-hosu* ‘drink-dry’ and *yomi-toku* ‘read-solve’.

2.2. Intransitive resultative V-V compounds

When V2 is intransitive, intransitive V-V compounds are formed. In this case, two combinatory patterns of V1 and V2 are found, i.e. “intransitive V1 + intransitive V2” and “transitive V2 + intransitive V1”.

(C) Intransitive V1 + Intransitive V2: Neither V1 nor V2 selects an object in this type of resultative V-V compound. Accordingly, the intransitive V-V compound does not take any object.

- (6) *Eri-ga aruki-tukare-ta.*
 Eri-NOM walk-get.tired-PAST
 ‘Eri walked too much and got tired.’

V-V compounds such as *zure-otiru* ‘slide(intr.)-drop(intr.)’ and *warai-kokeru* ‘laugh-fall’ show this argument realization pattern.

(D) Transitive V1 + Intransitive V2: This type of V-V compound is intransitive, so no object is realized even though transitive V1 takes an object.

- (7) *Ano hito-ga (*osake-o) nomi-tubure-ta.*
 that man-NOM alcohol-ACC drink-collapse-PAST
 ‘That man got drunk too much.’

Other V-V compounds displaying this argument realization pattern include *mati-kurabireru* ‘wait-get.tired’, *ki-bukureru* ‘put.on-get.big’, and *humi-todomaru* ‘step.on-remain’.

2.3. Summary

Resultative V-V compounds show (at least) six argument realization patterns which are largely determined depending on the nature of their component verbs. In the next section,

I will provide an RRG account for how the arguments are realized in resultative V-V compounds.

3. Logical structures and argument realization

The argument realization patterns of resultative V-V compounds can be accounted for on the basis of their Logical Structures (LSs) (see e.g. Van Valin and LaPolla 1997, Van Valin 2023). I will argue that in resultative V-V compounds, the causer (or agent) argument of the initial activity predicate in the LS is identified as the actor and the theme argument of the predicate indicating the final resultant state is identified as the undergoer.

3.1 RRG

Let us first look at the simplest case where both subject and object of V1 and V2 are construed as the subject and the object of the resultative V-V compound. Consider the example in (8).

- (8) *Ken-ga doa-o osi-ake-ta.*
 Ken-NOM door-ACC push-open-PAST
 ‘Ken pushed open the door.’

The first question is how the LSs are formed in resultative V-V compounds. Since the meaning of the entire compound can generally be constructed from the meanings of the component verbs that form part of it, it is reasonable to assume that the LS of a resultative V-V compound is created by combining the LSs of V1 and V2.

In RRG, the Aktionsart classes, which play a crucial role in characterizing the grammatical relations of arguments in clauses, include state, achievement, accomplishment, activity, etc.

- (9) a. State: **predicate'** (x) or (x, y)
 b. Activity: **do'** (x, [**predicate'** (x) or (x, y)])
 c. Achievement: INGR **predicate'** (x) or (x, y)
 d. Accomplishment: BECOME **predicate'** (x) or (x, y)
 e. Process: PROC **predicate'** (x) or (x, y)
 f. Causative: α CAUSE β , where α and β are LS of any type.

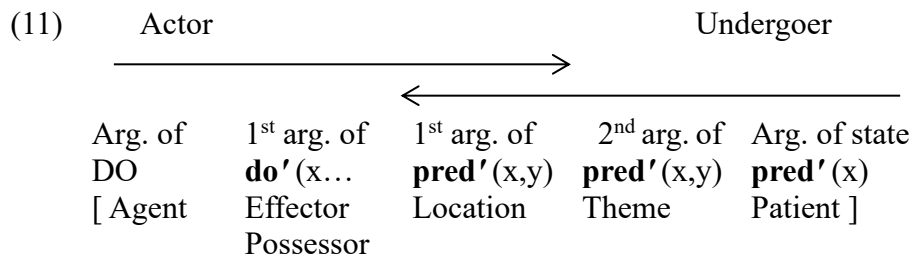
The LSs for the verbs *osu* ‘push’ and *akeru* ‘open’ are given in (10a) and (10b), respectively. (10c) is the LS of the V-V compound *osi-akeru* ‘push-open’ in (8), created by combining the LSs of V1 and V2.

- (10) a. *osu*: DO (x, [**do'** (x, [**push'** (x, y)])])
 b. *akeru*: [**do'** (x, $\emptyset$)] CAUSE [BECOME **open'** (y)]
 c. *osi-akeru*: [**do'** (x, [**push'** (x, y)])] CAUSE [BECOME **open'** (y)]

Note that a language-specific restriction is imposed on the formation of the LS of the lexical V-V compounds (including resultative V-V compounds under investigation). Matsumoto (1998) argues that lexical compounds generally have the requirement that the subject of V1 be identified with the subject of V2—the requirement called the Principle of Subject Sharing. This suggests that the first arguments in the LSs of V1 and V2 are identified. In addition, V1 and V2 for the V-V compound *osi-akeru* share objects. Thus,

the theme argument of **push'** and the theme argument of **open'** are identified, and they serve as co-arguments. The combined LS in (10c) signifies that Ken's act of pushing the door causes the door to be open.

The macrorole statuses of the arguments are determined according to the Actor-Undergoer Hierarchy in (11).



The general rule for transitive resultative V-V compounds is that the causer (or agent) argument of the activity predicate contained in the causing event part of the LS is identified as actor and the theme argument of the predicate indicating the final resultant state is undergoer. In the resultative V-V compound in (2), *Ken* is the actor and *doa* 'door' is the undergoer.

Morphological case marking is fixed by case assignment rules. Japanese is a nominative-accusative language. The case marking on the direct core arguments of non-stative predicates is regulated by the direct case assignment rules in (12).¹

- (12) Direct case assignment rules:
- a. The highest ranking macrorole argument is assigned nominative case.
 - b. The other macrorole argument is assigned accusative case.
 - c. Non-macrorole direct core arguments are assigned dative case (as their default case).

Additionally, non-core arguments, if any, are assigned oblique case marking in accordance with oblique case assignment rules. For present purposes, it suffices to define the oblique *kara* assignment rule, as in (13).

- (13) The oblique *kara* assignment rule:
 The oblique case *kara* is assigned to the argument x in the LS segment ...
 BECOME NOT **be-LOC'** (x, y).

The locative, which is the first argument of BECOME NOT **be-LOC'**, is realized with the oblique *kara* when it is a non-macrorole argument. The default dative case assignment rule in (12c) does not apply to the argument which bears an oblique marker. In (8), the actor argument is assigned nominative case, and the undergoer argument accusative case according to the direct case assignment rule in (12).

¹ In Japanese, stative verbs are subject to different direct case assignment rules, but they are not relevant for the present paper.

3.2 Transitive compounds

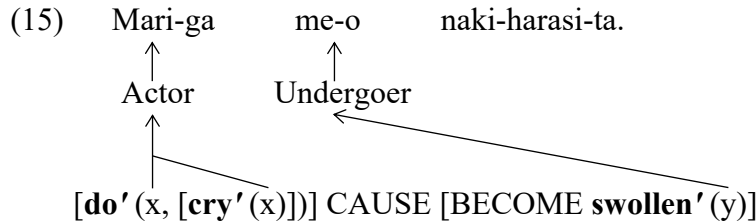
As noted in section 2, the transitivity of lexical compound verbs is determined by V2. Resultative V-V compounds where V2 is transitive are transitive, and thus take two direct core arguments. They can have three distinct combinations of the component verbs, and show six different argument realization patterns.

(A) Intransitive V1 + Transitive V2

The LS in (14b) is obtained for the resultative V-V compound *naki-harasu* ‘cry-swell’, derived by combining the LSs for the component verbs in (14a).

- (14) a. *naku*: **do'**(x, [**cry'**(x)])
 + *harasu*: [**do'**(x, Ø)] CAUSE [BECOME **swollen'**(y)]
 b. *naki-harasu*: [**do'**(x, [**cry'**(x)])] CAUSE [BECOME **swollen'**(y)]

Since V2 is transitive, the entire V-V compound counts as transitive. Accordingly, *naki-harasu* has the argument linking illustrated in (15).



With *naki-harasu* in (2), *Mari*, which appears in the nominative case, is identified as the actor and *me* ‘eye’, which is marked with accusative case, is identified as the undergoer.

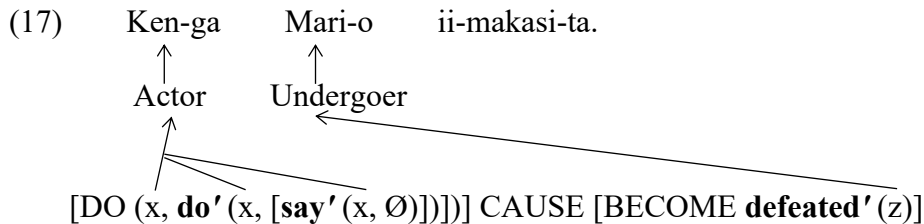
(B) Transitive V1 + Transitive V2

Pattern 1

The sentence in (3) with the compound verb *ii-makasu* ‘say-beat’ has the combined LS in (16b) derived from the LSs in (16a).

- (16) a. *iu*: DO (x, [**do'**(x, [**say'**(x, y)])])
 + *makasu*: [**do'**(x, Ø)] CAUSE [BECOME **defeated'**(z)]
 b. *ii-makasu*: [**do'**(x, [**say'**(x, Ø)])] CAUSE [BECOME **defeated'**(z)]

For *ii-makasu*, V1 is a transitive, and the object of V2, but not the object of V1, is expressed in the V-V compound. The sentence in (3) with *ii-makasu* thus has the argument linking in (17).



In (3), *Ken* is the actor and the *Mari* is the undergoer. The object of V1 *iu* ‘say’ is not realized in (3), since the object of V1 does not represent the causer or the theme of the resultant state. (The theme argument of V1 is marked $\emptyset$ in the LS.)

Pattern 2

The LS of *huri-ototsu* ‘swing-drop’ in (4) is given in (18b), which is derived by combining the LSs of V1 and V2 in (18a).

- (18) a. *huru*: DO (x, [**do'** (x, [**shake'** (x, y))])]
 + *otosu*: [**do'** (x, $\emptyset$)] CAUSE [BECOME NOT **be-at'** (z, y)]
 b. *huri-otosu*: [DO (x, [**do'** (x, [**shake'** (x, y))])]) CAUSE [BECOME NOT
 be-at' (z, y)]

This type of resultative V-V compound selects three arguments owing to the fact that V2 includes a locative predicate **be-at'**, which takes the locative x and the theme y. The theme argument of **shake'** is identified with the theme argument y of **be-at'**. The resultative V-V compound *huri-otoru* thus has the argument linking in (19).

- (19) Hahaoya-ga hanmoku-kara kodomo-o huri-otosi-ta.
 ↑ ↑ ↑
 Actor Abl Undergoer
 / / /
 [DO (x, [**do'** (x, [**shake'** (x, y))])]) CAUSE [BECOME NOT **be-at'** (z, y)]

In (4), *hahaoya* ‘mother’ is the agent, and is identified as the actor. *Kodomo* ‘child’ is the theme argument of the locative predicate, and thus counts as the undergoer. The locative *hanmoku* ‘hammock’ is assigned the ablative case, since **be-at'** is preceded by the negative BECOME NOT. The locative argument of **be-at'** is a co-argument of the theme argument of **shake'**. Thus the argument marked with *kara* is interpreted as the object of V1.

Pattern 3

The resultative V-V compound of this type allows two distinct argument realization patterns. As seen in (20) (=5)), either the object of V1 or the object V2 may be realized as an accusative argument.

- (20) a. *Ken-ga kaidan-kara asi-o humi-hazusi-ta.*
 Ken-NOM stairs-from leg-ACC step.on-take.off-PAST
 ‘Ken lost his footing from the stairs.’
 b. *Ken-ga kaidan-o humi-hazusi-ta.*
 Ken-NOM stairs-ACC step.on-take.off-PAST
 ‘Ken missed a step on the stairs.’

Two distinct argument realization patterns can emerge if V1 and V2 are accomplishments, which specify some resultant states. The generalization is that when the two resultant states are understood to emerge simultaneously, either the object of V1 or the object of V2 can be realized as the object of the resultative V-V compound.

The LS for the resultative V-V compound is formed with reference to the LSs of the component verbs. The LS in (21b) obtained for *humi-hazusu* ‘step.on-take.off’ has the connective $\wedge$, which connects the two resultant states. The LS for *humi-hazusu* signifies that the resultant state of having a step off the stairs arises concomitantly with the resultant state of the stairs not having the step on them.

- (21) a. *humu*: [**do'** (x, $\emptyset$)] CAUSE [BECOME **stepped.on'** (y)]
 + *hazusu*: [**do'** (x, $\emptyset$)] CAUSE [BECOME NOT **be-at'** (z, y)]
 b. *humi-hazusu*: [**do'** (x, $\emptyset$)] CAUSE [BECOME NOT [**stepped.on'** (y) $\wedge$ **be-at'** (z, y)]]

I suggest that the resultative V-V compound *humi-hazusu* ‘step.on-take.off’ has only the LS in (21b) even though two distinct argument realization patterns are possible.

Two distinct linking patterns are available for *humi-hazusu* depending on which predicate signifying the resultant state is selected for assessing the macrorole statuses of the arguments. I suggest that in the linking algorithm to determine macrorole status, only one of the predicates indicating a result is visible for the purpose of determining the macroroles assigned to the arguments of the V-V compound in accordance with the Actor-Undergoer hierarchy in (11).

To be concrete, (20a), where *asi* ‘leg’ appears as the object, represents the case where the locative predicate **be-at'** (z, y) rather than **stepped.on'** (z) enters into the algorithm to determine the actor and the undergoer. (The part of the LS enclosed in the box indicates that this LS segment does not enter into the algorithm for macrorole assignment.)

- (22) Ken-ga kaidan-kara asi-o humi-hazusi-ta.
 ↑ ↑ ↑
 Actor Abl Undergoer
 ↑
 ↑
 [**do'** (x, $\emptyset$)] CAUSE [BECOME NOT [**stepped.on'** (z) $\wedge$ **be-at'** (z, y)]]]

In (22), *Ken* is the actor, and the theme argument of **be-at'**, i.e. *asi* ‘leg’, is identified as the undergoer, and hence is realized as the object of the V-V compound.

In contradistinction, *kaidan* ‘stairs’ is realized as the object in (20b). (20b) represents the case where **stepped.on'** (z) enters into the algorithm to determine the macrorole statuses of the arguments.

- (23) Ken-ga kaidan-o humi-hazusi-ta.
 ↑ ↑
 Actor Undergoer
 ↑
 ↑
 [**do'** (x, $\emptyset$)] CAUSE [BECOME NOT [**stepped.on'** (z) $\wedge$ **be-at'** (z, $\emptyset$)]]

In (23), the undergoer is *kaidan* ‘stairs’ and is realized as the object, since it is the theme of the predicate **stepped.on'** (z).

This type of argument alternation is not possible when the LS describes two resultant states that do not emerge simultaneously. This can be confirmed by the resultative V-V compound *odosi-toru* ‘threaten-take.off’, as in (24).

- (24) a. *Ano hito-ga roozin-kara okane-o odosi-tot-ta.*
 that man-NOM old.man-ABL money-ACC threaten-take.off-PAST
 ‘That man threatened the old man and took money from him.’
 b. **Ano hito-ga roozin-o odosi-tot-ta.*
 that man-NOM old.man-ACC threaten-take.off-PAST
 ‘That man threatened and took the old man.’

The absence of an argument alternation with *odosi-toru* can be accounted for in terms of the LS for *odosi-toru* in (25b), derived by combining the LS of V1 and V2 in (25a).

- (25) a. *odosu*: [DO (x, **do'** (x, Ø))] CAUSE [BECOME **threatened'** (y)]
 + *toru*: [**do'** (x, Ø)] CAUSE [BECOME NOT **be-at'** (y, z)]
 b. *odosi-toru*: [DO (x, [**do'** (x, Ø)])] CAUSE [BECOME **threatened'** (y) &
 BECOME NOT **be-at'** (y, z)]

In (25b), the final result state is represented by the locative predicate **be-at'** (z, y), which appears to the right of &, but not **threatened'** (y). In this case, only BECOME **be-at'** (z, y) can enter into the algorithm to determine the macrorole status of the arguments, which means that only one type of linking in (26) is allowed for *odosi-toru*.

- (26) *Ano hito-ga roozin-kara okane-o odosi-tot-ta.*
-
- [DO (x, [**do'** (x, Ø)])] CAUSE [**BECOME threatened'** (y) & BECOME NOT **be-at'** (y, z)]

In (26) with the resultative V-V compound *odosi-toru* ‘threaten-take.off’, the actor is *ano hito* ‘that man’ and the undergoer is *okane* ‘money’.

One conceivable alternative may be derived from Van Vailin’s (2005: 12) suggestion on the two principles for undergoer choice.

- (27) a. Principle A: Lowest ranking argument in LS (default).
 b. Principle B: Second highest ranking argument in LS.

Given these principles, one might say that either Principle B or Principle A applies to the LS in (21b) posited for the compound *humi-hazusu* ‘step.on-take.off’, so that the two forms are derived.

This alternative falls short of accounting for the Japanese facts, as it stands, however. If the choice of undergoer is simply a matter of selecting Principle A or Principle B, it remains a mystery why *odosi-toru* ‘threaten-take.off’ can have only one choice for the undergoer. Since the choice of undergoer depends on whether the argument represents the participant of the final resultant state, I maintain the present proposal taking some parts of the LS to be invisible to the algorithm for the actor-undergoer determination.

3.3. Intransitive compounds

In this section, I will turn to intransitive resultative V-V compounds, where V2 is an intransitive predicate. I suggest that the single direct core argument of intransitive resultative V-V compounds counts as the undergoer rather than the actor on the grounds that the LS of V1 representing the causing event is invisible for the purpose of the actor-undergoer determination.

(C) Intransitive V1 + Intransitive V2

When both V1 and V2 are intransitive, no object is realized, since the component verbs are intransitive. The LS for the V-V compound *aruki-tukareru* ‘walk-get.tired’ is given in (28).

- (28) a. *aruku*: DO (x, [**do'** (x, [**walk'** (x))])]
+ *tukareru*: [BECOME **exhausted'** (x)]
b. *aruki-tukareru*: [DO (x, [**do'** (x, [**walk'** (x))])]) CAUSE [BECOME **exhausted'** (x)]

The subjects of V1 and V2 are shared in the case of *aruki-tukareru*. Note that *aruki-tukareru* has the combination of the unergative *aruku* and the unaccusative *tukareru*, and that the well-formedness of these V-V compounds poses a problem on Kageyama's (1993) Transitivity Harmony Principle, which excludes the combination of “unergative V + unaccusative V”.

The intransitive *aruki-tukareru* takes only one argument. The question that immediately arises is whether the single argument is identified as actor or undergoer. In RRG, when an intransitive predicate takes one macrorole, its nature is determined by the principle in (29).

- (29) For verbs which take one macrorole,
1. If the verb has an activity predicate in its LS, the macrorole is actor.
2. If the verb has no activity predicate in its LS, the macrorole is undergoer.
(Van Valin and LaPolla 1997:153)

If *aruki-tukareru* has the LS in (28b), its sole argument should, other things being equal, be the actor, since it contains an activity predicate. Nevertheless, the sole argument of *aruki-tukareru* ‘walk-get.tired’ has the status as the undergoer. This fact can be confirmed by way of the behavior of a resultative predicate like *hetoheto-ni* ‘to exhaustion’.²

- (30) *Eri-ga koreizyoo ugoke-nai hodo hetoheto-ni aruki-tukare-ta.*
Eri-NOM anymore can.move-NEG extent exhaustion-to walk-get.tired-PAST
‘Eri walked and got tired to the extent that she cannot move anymore.’

² Resultative predicates normally describe the endpoint of a scale (cf. Goldberg 1995), and thus, it seems necessary to add a qualifying expression like *koreizyoo ugokenai hodo* to indicating a scale boundary for the V-V compound construction with *aruki-tukareru* to be natural with the resultative predicate *hetoheto-ni*.

In (30), the resultative predicate is predicated of the single argument of *aruki-tukuareru*. In this connection, observe that the single argument of *aruku* ‘walk’ in (31), which has an LS containing an activity predicate, is the actor, and *hetotoi-ni* cannot be predicated of its single argument.

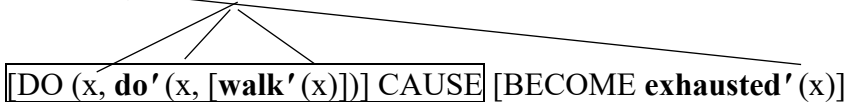
- (31) **Eri-ga koreizyoo ugoke-nai hodo hetoheto-ni arui-ta.*
 Eri-NOM anymore can.move-NEG extent exhaustion-to walk-PAST
 ‘Eri walked to exhaustion to the extent that she cannot move anymore.’

In addition, (32) shows that the resultative predicate can be predicated of the single argument of *tukareru* ‘get tired’. The LS for *uketoru* does not include an activity predicate, and thus the single argument is construed as the undergoer.

- (32) *Eri-ga koreizyoo ugoke-nai hodo hetoheto-ni tukare-ta.*
 Eri-NOM anymore can.move-NEG extent exhaustion-to get.tired-PAST
 ‘Eri was exhausted to the extent that she cannot move anymore.’

As often discussed, resultative predicates are predicated of internal arguments (see Levin and Rapoport 1995; for Japanese, see Kishimoto 2024). In the present perspective, this means that resultative predicates can be predicated of “undergoer” arguments. Since *aruki-tukareru* patterns with *tukareru* with regard to resultative predication, it is fair to say that the single argument of *aruki-tukareru* assumes a undergoer macrorole.

The question is how the argument of *aruki-tukareru* is identified as the undergoer despite the fact that it includes an activity predicate in the LS, as in (28b). I suggest that this is due to the fact that the causative event is rendered invisible for the algorithm to determine the macrorole status of the argument.

- (33) Eri-ga aruki-tukare-ta.
 ↑
 Undergoer


In (33), the LS of *aruki-tukareru* characterizes the meaning of walking but the activity predicate does not count for the purpose of fixing a macrole status of the argument. Thus the sole argument of *aruki-tukareru* ‘walk-get.tired’ is identified as the undergoer, which can be the target of resultative predication.

The present analysis can capture the fact that the single argument is understood to be the agent of *aruku* ‘walk’ and the theme argument of *tukareru* ‘get tired’ at the same time despite the fact that the undergoer role is assigned to the sole argument of *aruki-tukareru*.

(D) Transitive V1 + Intransitive V2

Essentially, the same fact is observed for the resultative V-V compound *nomi-tubureru* consisting of transitive V2 + intransitive V2.

- (34) *Ano hito-ga nomi-tubure-te i-ta.*
 that man-NOM drink-collapse-GER be-PAST
 ‘That man got dead drunk.’

The V-V compound in (34) has the LS in (35b), which is derived by combining the LSs of the two verbs in (35a).

- (35) a. *nomu*: **do'**(x, [**drink'**(x, y)]) + *tubureru*: [BECOME **collapsed'**(x)]
 b. *nomii-tubureru*: [**do'**(x, [**drink'**(x, y)])] CAUSE [BECOME **collapsed'**(x)]

The V-V compound *nomi-tubureru* ‘drink-collapse’ allows a resultative predicate *guden-guden-ni* ‘dead drunk’ to be predicated of the subject, as in (36).

- (36) *Ano hito-ga guden-guden-ni nomi-tubure-te i-ta.*
 that man-NOM dead.drunk-to drink-collapse-GER be-PAST
 ‘That man got dead drunk.’

Note that *guden-guden-ni* can be associated with *tubureru* ‘collapse’, but not with *nomu* ‘drink’, as shown in (37).

- (37) a. **Ano hito-ga guden-guden-ni non-de i-ta.*
 that man-NOM dead.drunk-to drink-GER be-PAST
 ‘That man was drinking dead.’
 b. *Ano hito-ga guden-guden-ni tubure-te i-ta.*
 that man-NOM dead.drunk-to collapse-GER be-PAST
 ‘That man collapsed completely.’

The sole argument of the intransitive *nomi-tubureru* counts as the undergoer. It is reasonable to posit the argument linking for *nomi-tubureru* in (38), where the causing event is backgrounded.

- (38) *Ano hito-ga nomi-tubure-ta.*
-
- Undergoer
- [**do'**(x, [**drink'**(x, Ø)])] CAUSE [BECOME **collapsed'**(x)]

In (38), the theme argument is unspecified because it is not manifested as an object on the ground that the compound verb is intransitive.

4. Concluding remarks

In this paper, I have argued that the argument realization patterns of resultative V-V compounds are expected on the basis of their LSs. It has been shown that in transitive resultative V-V compounds, the argument counting as the initial causer is realized as the actor, and the argument related to the final result as the undergoer. I have also argued that the sole argument of intransitive resultative V-V compounds is the undergoer.

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Perspectivization in argument representation for serial verbs in Taiwan Sign Language

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1. Introduction

Taiwan Sign Language (TSL) is the natural language of Taiwan's Deaf community and is used by approximately 100,000 individuals across the country. In 2018, the National Languages Act officially recognized TSL as one of Taiwan's national languages, prompting the government to implement preservation and promotion initiatives aimed at protecting this endangered linguistic system.

This study analyzes the interaction between perspectivization and event representation in TSL, aiming to elucidate how perspective is systematically encoded in the grammar of signed languages. Perspectivization refers to the mental process through which meaning is construed and expressed from a particular point of view, shaped by how a speaker or signer conceptualizes a given situation (Vogels et al. 2023). It is a cognitive process that allows language users to frame events from specific viewpoints, thereby influencing how information is linguistically organized. As Verhagen (2010) notes, perspectivization plays a crucial role in syntax, as it determines how different viewpoints are foregrounded or backgrounded in grammatical structure.

Perspectivization is closely related to syntactic representation and semantic interpretation. For instance, the English preposition “out” may yield contrasting interpretations depending on the observer's vantage point. In general, out encodes a movement from the interior to the exterior of a bounded space. When the observer is positioned outside the container, out is interpreted as appearance, as illustrated in (1a). Conversely, when the observer is located inside the container, it is interpreted as disappearance, as shown in (1b).

- (1) a. The sun came out. (out = appear)
b. The fire went out. (out = disappear)

(Lee 2001)

The present study investigates how perspectivization operates within the visual-gestural modality, forming serial verbs in TSL as the case of analysis. Specifically, the study addresses three research issues. First, it explores how perspectivization is represented through the visual-gestural channel, that is, how signers use manual and nonmanual means to encode viewpoint. Second, it examines how foregrounded and backgrounded nominal arguments—that is, actors and undergoers—are manipulated within serial verb constructions to reflect the signer's perspective. Third, it investigates how syntactic structure and referential loci are organized in signing space so as to conform to the perspective taken. This study adopts Role and Reference Grammar (RRG) (Van Valin, 2005) as a research framework to explore how macrorole arguments are manipulated and linked to syntactic representation, as well as what constructional schemas are involved in accounting for perspective manipulation of verbs.

2. Strategies for perspectivization

Perspectivization influences argument alternation by determining how participants are foregrounded or backgrounded in syntactic representation (Verhagen 2010). In sign languages, perspectivization is typically realized through role shift (Padden 1986), a discourse-level strategy that extends across utterances and functions similarly to direct quotation in spoken languages. However, this study shows that perspectivization may also occur within a single clause, expressed through specific manual and nonmanual manipulations. This study found that, in TSL, three strategies are commonly employed to represent different perspectives: (1) the selection of proform, (2) the adoption of constructed action, and (3) the implementation of role shift.

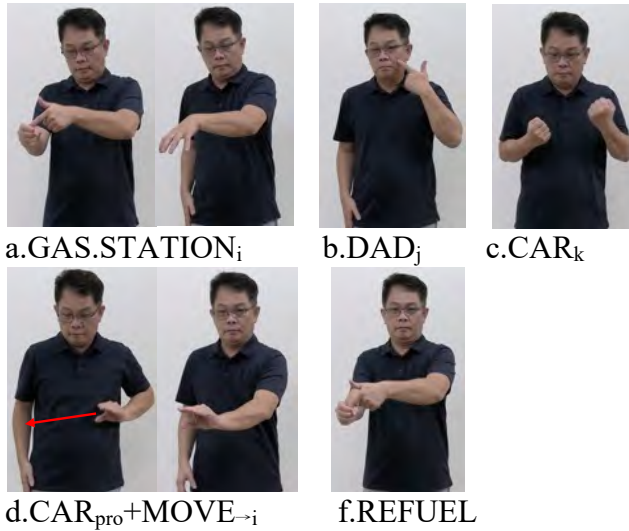
2.1. The selection of proform

This study adopts the term “proform” (Chang et al. 2005, Lin and Chang 2021) to reinterpret the so-called “classifier” morpheme, viewing it as a superordinate form that serves referential and anaphoric functions in syntax and discourse. In sign languages, proforms are manually articulated representations that can be manipulated through different handshapes to refer to previously mentioned participants or entities. They typically co-occur with verb predicates, depicting the spatial and semantic relations among participants within an event. Sutton-Spence and Woll (1999) identified four major types of proforms in sign languages: (1) semantic proforms, which handshapes correspond to the general shape of referent classes; (2) handling proforms, which depict the configuration of the hand as it moves or manipulates an object; (3) size-and-shape proforms, which trace the contours of objects; and (4) body-part proforms, which represent body parts of humans or other animate entities. Building on this typology, Benedicto and Brentari (2004) further demonstrated that handling and body-part proforms are typically employed to foreground the actor (i.e., the agent), whereas semantic and size-and-shape proforms tend to background the actor, thereby reflecting the signer’s perspectivization strategy.

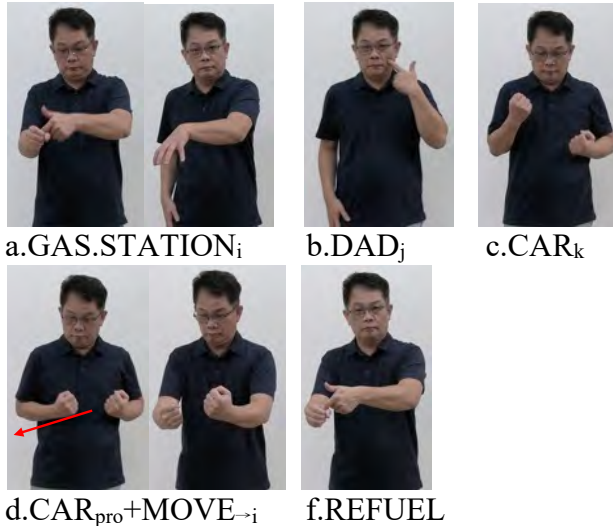
Sentences (2) and (3) describe the same event via serial verb constructions. As in (2), at the beginning of the sentence, the goal and the two NP arguments are first expressed. The signer then selected a handshape functioning as a semantic proform referring to the NP argument CAR, as shown in (2d). This proform was incorporated into the verb MOVE, which moved from the left side of the signer, associated with Dad, to the right locus, associated with the gas station. In contrast, the signer selected a handshape functioning as a handling proform referring to the same NP argument CAR, as shown in (3d). This handling proform adopts the handshape associated with the referent and was used to articulate the verb MOVE, depicting a left-to-right movement that simultaneously foregrounds the actor’s involvement in the event.

- (2) GAS.STATION_i DAD_j CAR_k CAR_{pro}+MOVE_{→i} REFUEL.¹
‘Dad drove to the gas station to refuel.’

¹The abbreviation *pro* stands for proform. The abbreviation *pro* stands for proform. The subscripts *i*, *j*, and *k* indicate referential relations, whereas the subscript arrow denotes the movement of the verb.



- (3) GAS.STATION_i DAD_j CAR_k CAR_{pro}+MOVE_{→i} REFUEL.
 ‘Dad drove to the gas station to refuel.’



In (2), a semantic proform is used to represent the movement of the car, whereas in (3), a handling proform is employed to foreground the actor.

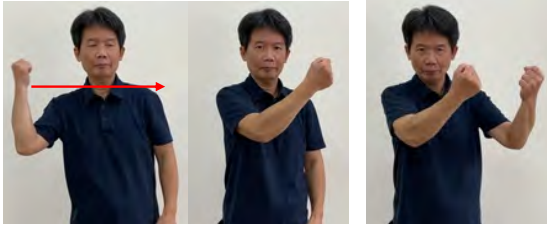
Sentences (4) and (5) illustrate the contrast between a default sentence and one that foregrounds the undergoer. In (4), the two NP arguments are expressed on the left and right sides of the signing space, respectively, thereby establishing two referential loci. The NP argument WINDOW is represented as a semantic proform at the left locus, while the verb HIT is articulated as a movement from the right locus toward this proform, indicating that the person hits the window, as shown in (4c). The second verb BREAK is then articulated at the same left-side locus associated with the NP argument WINDOW, depicting the window being broken as in (4d). In contrast, the sentence in (5) employs a semantic proform to foreground the undergoer’s change of state. The NP argument WINDOW is represented as a semantic proform at the left locus, and the verb HIT moves from the right locus toward this proform, indicating that the person hits the window. The proform then remains at the locus to depict the window’s state change, from cracked to shattered on the ground.

- (4) WINDOW_i HE_j HIT_{j→i} BREAK.
 ‘He broke the window.’



a. WINDOW_i

b. HE_j



c. HIT_{j→i}

d. BREAK

- (5) WINDOW_i HE_j WINDOW_{pro}+HIT_{j→i}.
 WINDOW_{pro}+CRACK WINDOW_{pro}+BREAK WINDOW_{pro}+SHATTER.
 ‘He hit the window. As a result, it cracked and then broke and shattered.’



a. WINDOW_i

b. HE_j

c. WINDOW_{pro}+HIT_{j→i}.



d. WINDOW_{pro}+CRACK e. WINDOW_{pro}+BREAK. f. WINDOW_{pro}+SHATTER

With respect to constructional schemas involving the use of proforms, when a proform is employed to foreground a macrorole argument—either the actor or the undergoer—the relevant constructional patterns can be represented as in (6). The privileged syntactic argument (PSA) tends to occur immediately before the first verb. Actor foregrounding is typically implemented in the first verb, where the signer manipulates an appropriate proform to represent the actor. In contrast, undergoer foregrounding is generally realized in the subsequent verbs within a serial verb construction, highlighting the undergoer’s change of state or degree of affectedness.

- (6) Constructional schema of applying proform
 NP+PSA+[V1]_{actor}+ [V2]

NP+PSA+[V1] +[V2]_{undergoer}
 NP+PSA+[V1]_{actor} +[V2]_{undergoer}

2.2. The adoption of constructed action

Constructed action is defined as a strategy in which the signer enacts a participant involved in an event by depicting the actions, utterances, thoughts, attitudes, or emotions of referents other than the narrator (Lillo-Martin, 2012). Lillo-Martin (2013) introduced the concept of the “point-of-view predicate” in American Sign Language (ASL), a notion closely related to formalist approaches to the representation of utterances, thoughts, and actions. In the present study, it was found that, in motion events, signers often add a manner verb through constructed action to depict how the actor performs the action, thereby enhancing the vividness and embodiment of the event.

The sentence in (7) illustrates a neutral situation without specific perspectivization. The location NP HOUSE is expressed first, followed by two NP arguments, with Mr. Li assigned to the right and Mr. Zhang to the center of the signing space, as shown in (7b) and (7c). Subsequently, the NP argument Mr. Li is represented as a semantic proform incorporated into the verb DRAG. The verb DRAG moves from right to left, indicating that Mr. Zhang drags Mr. Li toward the house. Finally, the verb ENTER is articulated to denote the arrival at the destination.

- (7) HOUSE_i MR.LI_j MR.ZHANG_k MR.LI_{pro}+DRAG_{j→i} ENTER _{→i}
 ‘Mr. Zhang dragged Mr. Li into the house.’



The sentence in (8) conveys the same conceptual content as that in (7). The two sentences differ only in that (8) adopts the perspective of profiling the actor. The signer adds a manner verb through constructed action to depict how Mr. Zhang drags Mr. Li. As a result, the verb is articulated twice: the first verb designates the manner of the action through constructed action that mimics the actor’s manner, as in (8d), while the second verb denotes the event itself, as in (8e). Notably, after constructed action, Mr. Zhang’s facial expression extends across the subsequent verbs, thereby highlighting actor perspectivization.

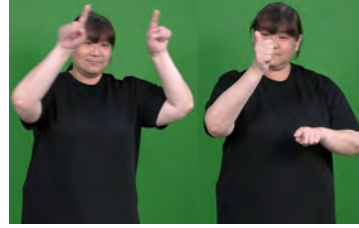
(8) HOUSE_i MR.LI_j MR.ZHANG_k DRAG_{CA-k}
 MR.LI_{pro}+DRAG_{j→i} ENTER_{→i}.²



a.HOUSE_i



b.MR.LI_j



c.MR.ZHANG_k



d. MR.ZHANG.DRAG_{CA}



e.MR.LI_{pro}+DRAG_{j→i}



f.ENTER

The sentence in (9) conveys the same conceptual content as that in (7) and (8). The two sentences differ only in that (9) adopts the perspective of profiling the undergoer. The signer incorporates a manner verb through constructed action to depict how Mr. Li being dragged by Mr. Zhang. As a result, the verb is articulated twice: the first verb designates the manner of the action through constructed action that mimics the undergoer's manner, as in (9d), while the second verb denotes the event itself, as in (9e). Notably, after constructed action, Mr. Li's facial expression extends across the subsequent verbs, thereby highlighting undergoer perspectivization.

(9) HOUSE_i MR.LI_j MR.ZHANG_k DRAG_{CA-j} MR.LI_{pro}+DRAG_{j→i} ENTER_{→i}
 'Mr. Zhang dragged Mr. Li into the house.'



a.HOUSE_i



b.MR.LI_j



c.MR.ZHANG_k

² The abbreviation CA refers to constructed action, and CA-k denotes constructed action adopted from the perspective of referent k.



d. MR.ZHANG.DRAG_{CA}



e. MR.LI_{pro}+DRAG_{j→i}



f. ENTER

As for constructed action, a manner verb being added is analyzed as Verb₁, where the manner verb constitutes a subevent of Verb₂ in a serial verb construction. Consequently, the reversed order of the manner verb and Verb₂ is also found to be grammatical in TSL. Notably, the perspective adopted—whether that of the actor or the undergoer—affects both the form in which the manner is expressed and the extent to which the signer’s facial expression extends across the subsequent verb. The construction schema is summarized in (10). When a manner verb specifies the manner of a certain verb (either V₁ or V₂), it tends to occur in close proximity to the verb it accompanies, either preceding or following it.

(10) Constructional schema of applying constructed action

NP+PSA+[MANNER VERB_{CA}] +[V₁] +[V₂]

NP+PSA+[V₁]+[MANNER VERB_{CA}] +[V₂]

2.3. The implementation of role shift

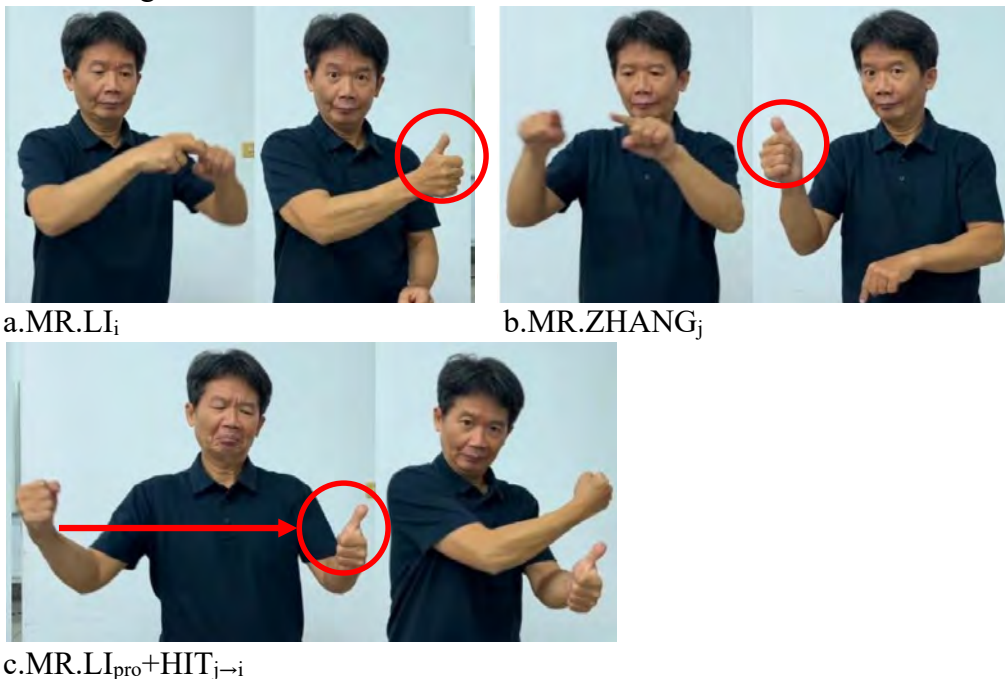
Role shift refers to the transition between narrative perspectives or characters in discourse. It does not depict the action or utterance itself but rather marks the boundary or shift between different represented roles (Quer 2018). Through role shift, the signer adopts the viewpoint of a specific character or participant, typically indicated by changes in body posture, head orientation, or gaze direction. This mechanism allows the signer to alternate between the narrator’s perspective and that of the character being represented.

In contrast, constructed action involves the signer embodying the referent by enacting the actions, expressions, or behaviors of a character or participant. While role shift signals a change in viewpoint, constructed action depicts the event itself. In other words, role shift manages perspective at the discourse level, whereas constructed action represents the manner and dynamics of the event at the clause level. The two phenomena often co-occur, but they differ functionally. Role shift indicates a change between characters or participants, marking a transition in narrative perspective. In contrast, constructed action depicts the referent’s actions, expressions, or behaviors, allowing the signer to physically embody the event being described.

The sentence in (10) illustrates a neutral situation without specific perspectivization. The two NP arguments are established on the left and right sides of the signing space, respectively, thereby creating two referential loci. The NP argument MR.LI is then

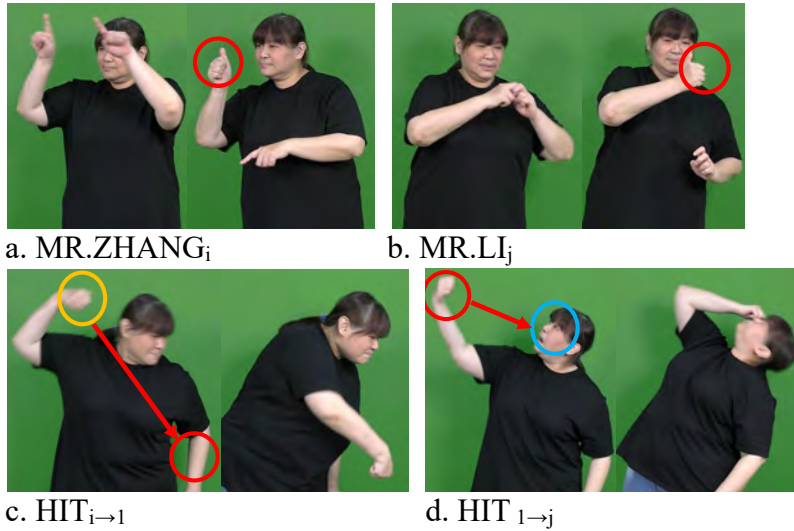
represented as a proform at the left locus, and the verb HIT moves from right to left—that is, toward the locus of the proform—indicating that Mr. Zhang hits Mr. Li. During the articulation of the verbal predicate, the NP argument MR.ZHANG is realized through the referential locus on the right, while Mr. Li is realized through the proform on the left. The grammatical relation between the two arguments is clarified by the movement of the verb HIT, whose starting point corresponds to the subject’s locus and whose endpoint corresponds to the object’s locus, as in (10c).

(11) MR.LI_i MR.ZHANG_j MR.LI_{pro}+HIT_{j→i}
 ‘Mr. Zhang hit Mr. Li.’



Different from (11), the sentence in (12) implements perspectivization. The two NP arguments are expressed and assigned to the right and left sides of the signing space, as in (12a) and (12b). While producing the verb HIT, the signer sequentially adopts both the actor’s and the undergoer’s perspectives. The verb HIT is expressed twice, and each occurrence is associated with a distinct perspectival manipulation, thereby forming a serial verb construction. The first instance of HIT adopts the actor’s perspective, moving from the signer’s body—representing the first person—toward the left referential locus, and is accompanied by the actor’s facial expression. The second instance adopts the undergoer’s perspective, moving from the right referential locus toward the signer’s body, again representing the first person, and is accompanied by the undergoer’s facial expression. Notably, these two verbs follow an iconic sequence in which the actor’s perspective precedes the undergoer’s; reversing this order would result in ungrammaticality. Further, the ellipsis of one of the verbs, which serves to foreground a particular perspective, is also grammatical in TSL.

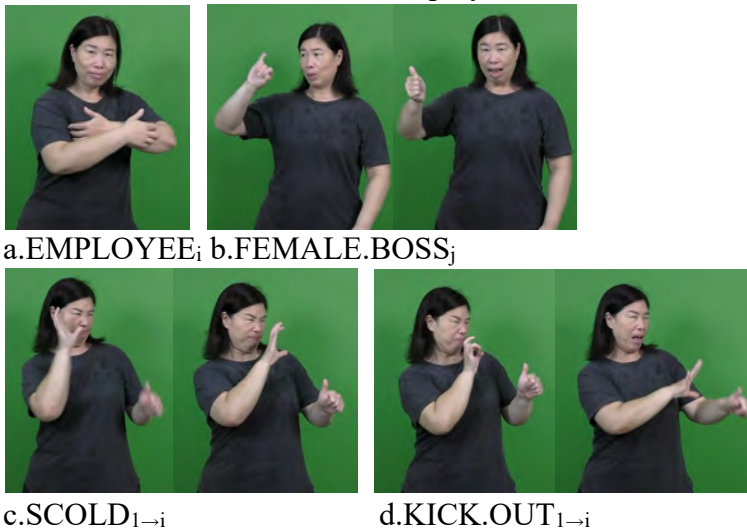
(12) MR.ZHANG_i MR.LI_j HIT_{i→1} HIT_{1→j}.
 ‘Mr. Zhang hit Mr. Li.’

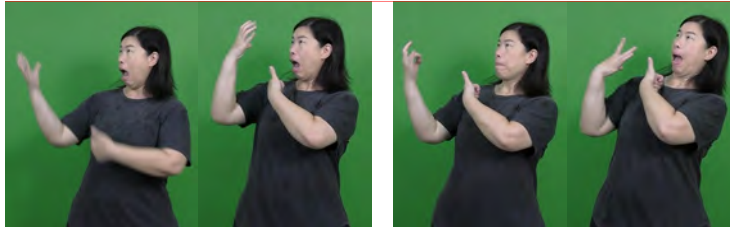


The sentence in (12) demonstrates that a single event can be represented from two distinct perspectives. As a result, two verbs adopting different role shifts are employed, forming a serial verb construction. The following sentence in (13) illustrates a similar condition, conveying the event “The female boss scolded the employee and kicked him out.” At the beginning of the sentence, the two NP arguments are expressed and assigned to the left and right sides of the signing space, respectively. The subsequent verbs SCOLD and KICK.OUT exhibit a causative relationship. Interestingly, these two verbs combine to form a single verbal predicate unit, which is expressed twice—first from the actor’s perspective and then from the undergoer’s perspective. From the actor’s perspective, the movement of both verbs proceeds from the signer toward the left referential locus, representing the female boss’s viewpoint, as shown in (13c) and (13d). From the undergoer’s perspective, the verb moves from the signer toward the right, indicating the employee’s viewpoint, as shown in (13e) and (13f).

(13) EMPLOYEE_i FEMALE.BOSS_j SCOLD_{1→i} KICK.OUT_{1→i} SCOLD_{j→1}
 KICK.OUT_{j→1}

‘The female boss scolded the employee and kicked him out.’





e.SCOLDJ_{j→1}

f.KICK.OUT_{j→1}

As for role shift, both verbs typically adopt the same perspective. When two perspectives are adopted, reduplication of both verbs is required. The perspective shift proceeds from the actor's perspective to the undergoer's perspective; reversing this order results in ungrammaticality. In other words, when employing role shift, the sequence of verbs must follow the temporal and iconic order of the depicted events. Reversing this order disrupts the temporal iconicity and leads to ungrammaticality. The possible constructional schemas are summarized in (14).

(14) Constructional schema of applying role shift

NP+PSA+[V1 +V2]_{actor}

NP+PSA+[V1 +V2]_{undergoer}

NP+PSA+[V1 +V2]_{actor}+ [V1 +V2]_{undergoer}

3. RRG account

In TSL, signers can select appropriate proforms, manipulate the manner associated with a designated NP argument, or shift a particular NP argument through role shift to enact a specific perspective. This study identifies two types of perspective modulation and summarizes the possible manual and nonmanual strategies employed to foreground either the actor, as in (15) or the undergoer, as in (16).

(15) Actor-perspective modulation:

- To select the proform, use a handling or body-part proform.
- To enact the actor, add a verb to depict the manner of the actor.
- To shift into the role of the actor, lean the body toward the actor's locus and gaze toward the locus of the undergoer, accompanied by the actor's nonmanual features.
- To modulate agreement, adjust the path movement of the verb so that it moves from the signer's body to the locus of the undergoer.

(16) Undergoer-perspective modulation:

- To select the proform, use a semantic or size-shape proform.
- To shift into the role of the undergoer, lean the body toward the undergoer's locus and gaze toward the locus of the actor, accompanied by the undergoer's nonmanual features.
- To modulate agreement, adjust the path movement of the verb so that it moves from the locus of the actor to the signer's body.

Based on the discussion above, the constructional templates for perspectivization in TSL are summarized in Table 1. In brief, three strategies—proform selection, constructed action, and role shift—are employed to foreground the actor, the undergoer, or both.

When the actor is foregrounded, V1 or both verbs may undergo actor-perspective modulation. Furthermore, a manner verb may be inserted to surround V1, depicting the actor's manner of action. When the undergoer is foregrounded, V1 or both verbs may undergo undergoer-perspective modulation, and a manner component may be inserted around V2 to express the undergoer's manner or state. Notably, both perspectives can be foregrounded within a single serial-verb construction. In such cases, V1 typically undergoes actor-perspective modulation, whereas V2 undergoes undergoer-perspective modulation. Alternatively, both verbs may be reduplicated, with the first copy showing actor-perspective modulation and the second showing undergoer-perspective modulation.

Table 1. Constructional templates for perspectivization

Foregrounding actor NP+PSA+[V1] _{actor} + V2 NP+PSA+[MANNER VERB] _{CA} +[V1]+[V2] NP+PSA+[V1+V2] _{actor}
Foregrounding undergoer NP+PSA+ V1+[V2] _{undergoer} NP+PSA+[V1]+[MANNER VERB] _{CA} +[V2] NP+PSA+[V1+V2] _{undergoer}
Foregrounding actor and undergoer NP+PSA+[V1] _{actor} + [V2] _{undergoer} NP+PSA+[V1+V2] _{actor} + [V1+V2] _{undergoer}

The linking principles, as proposed in (17), account for how the RP arguments in TSL comparatives are linked to syntactic representation.

(17) The linking principles for TSL serial verbs

Principle A: The actor of V₁ is linked to the PSA position is to be associated with a designated referential locus X.

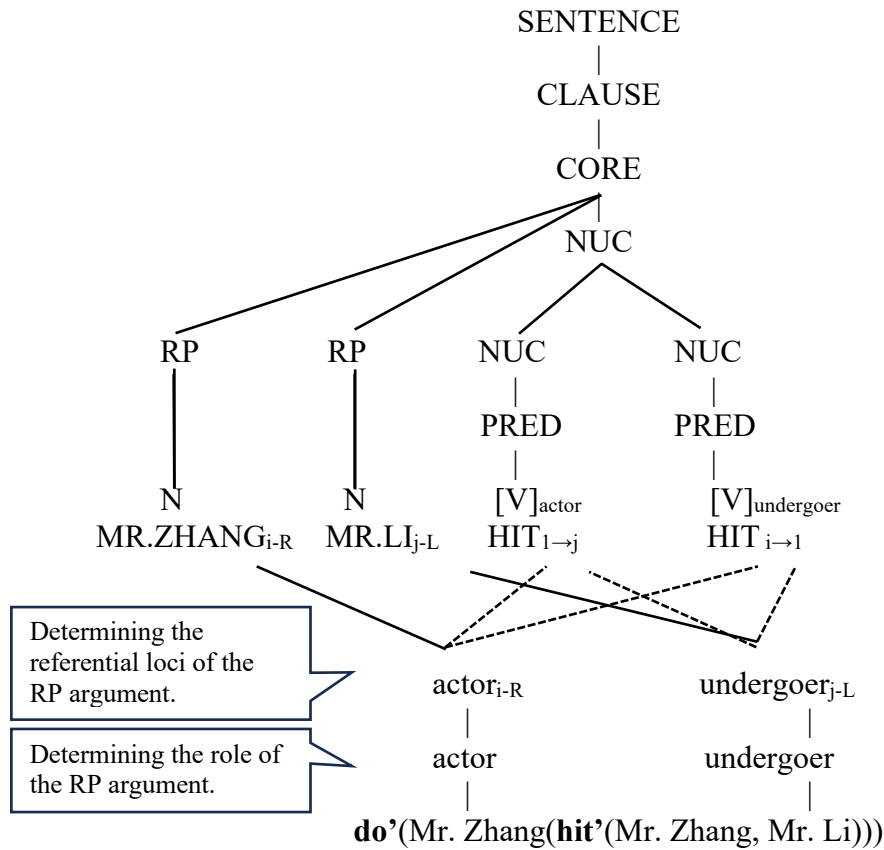
Principle B: The undergoer of V₁ is linked to a non-primary semantic argument (non-PSA) position that is adjacent to the PSA position, and it is associated with a designated referential locus Y.

Principle C: In actor-perspective modulation, the agreement verb moves from the signer body to the referential locus Y. In undergoer-perspective modulation, the agreement verb moves from the signer body to the referential locus X.

Following the Actor–Undergoer Hierarchy, the first argument of V1 (i.e., MR. ZHANG) is selected as the Actor, and the second argument (i.e., MR. LI) as the Undergoer. According to Linking Principle A, the Actor is assigned to a designated referential locus on the right side of the signing space and is linked to the PSA position. The Undergoer, in contrast, is assigned to the left side of the signing space and is linked to the position immediately adjacent to the PSA position.

Furthermore, the first verb HIT undergoes actor-perspective modulation, being articulated with a movement from the signer's body toward the left, as indicated by the dotted arrow in (18). In contrast, the second verb HIT undergoes undergoer-perspective modulation, being articulated with a movement from the right toward the signer's body, as illustrated by the dotted arrow in (18).

- (18) MR.ZHANG_i MR.LI_j HIT_{i→1} HIT_{1→j}.
 ‘Mr. Zhang hit Mr. Li.’



4. Conclusion

The present study demonstrates that perspectivization in TSL operates through visually systematic manipulation of verbal predicates within the visual–gestural modality. Signers encode viewpoint distinctions—such as those of the actor, undergoer, or both—by employing manual and nonmanual strategies that modulate perspective. Three primary strategies were identified: the selection of proforms, the adoption of constructed action, and the implementation of role shift. Each strategy contributes uniquely to argument linking by highlighting or foregrounding macroroles within serial verbs. The analysis further reveals that syntactic structure and referential loci in signing space are organized in accordance with the signer’s chosen perspective, reflecting two macro-level modes of perspectivization modulation. Together, these findings show that perspectivization in TSL is not merely a discourse-pragmatic phenomenon but a grammaticalized mechanism that systematically integrates syntax, spatial organization, and semantic interpretation in the representation of events.

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Exploring the scope of nuclear subordination: The case of restructuring and syntactic compound verbs

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1. Introduction

The notion of “nuclear subordination” is one of the 12 juncture-nexus types proposed by Van Valin (2005), although its precise characterization has remained somewhat unstable in the literature. The aim of this paper is to delineate its scope through two specific goals: first, to reaffirm the original definition of nuclear subordination as proposed by Van Valin (1993) and Van Valin and LaPolla (1997) by establishing a principled distinction between nuclear subordination and “ad-nuclear subordination”; and second, to demonstrate its analytical utility in the typology of “syntactic compound verbs [SCVs]” in Japanese.

The paper is structured as follows. Section 2 examines purposive constructions in Japanese and argues that they can be analyzed as instances of ad-nuclear subordination and that nuclear and ad-nuclear subordination can be distinguished in terms of whether the dependent (or subordinate) nucleus is predicative or not. Section 3 emphasizes the importance of nuclear subordination (as well as “nuclear cosubordination”) in accounting for the structural-functional classification of SCVs. Section 4 concludes the paper.

Before turning to these issues, it is useful to review the status of nuclear subordination in “Role and Reference Grammar [RRG]” (Van Valin 1993, 2005; Van Valin and LaPolla 1997). Together with other types of clause linkage, nuclear subordination constitutes part of the typology of complex sentences. Van Valin (1993) characterizes nuclear subordination as involving two nuclei: a matrix nucleus with predicative function and a dependent nucleus lacking it, which modifies the former. The primary role of the dependent nucleus is to determine the aspectual value of the matrix one, and it is structurally subordinated to it. Van Valin (1993) and Van Valin and LaPolla (1997) identify 9 types of complex sentences, to which Van Valin (2005) adds the notions of “ad-nuclear”, “ad-core”, and “ad-clausal subordination”, in which a dependent nucleus, dependent core, and dependent clause, respectively, function adverbially.

However, the distinction between nuclear and ad-nuclear subordination is not always straightforward. For instance, Van Valin (2005: 196) analyzes the Lakhota verb meaning ‘stand’, when used as a continuative aspect marker, as a modifier of the matrix nucleus and treats it as an instance of ad-nuclear subordination. However, the same construction can also be analyzed as an instance of nuclear subordination, according to the two criteria proposed by Van Valin and LaPolla (1997: 506): the dependent nucleus lacks predicative function and carries aspectual meaning (see also Hasegawa 1996 for an application of these criteria to *te*-constructions in Japanese). Van Valin’s (2005) reanalysis gives the impression that examples previously interpreted as typical cases of nuclear subordination in Van Valin (1993: 114-115) and Van Valin and LaPolla (1997: 506) were reanalyzed as instances of ad-nuclear subordination. Since no clear example of nuclear subordination is cited in Van Valin (2005), this move seems to have blurred, if not effectively eliminated, the distinction between nuclear and ad-nuclear subordination, even though both continue to be distinguished in the “interclausal relations hierarchy”.

2. Distinction between nuclear and ad-nuclear subordination

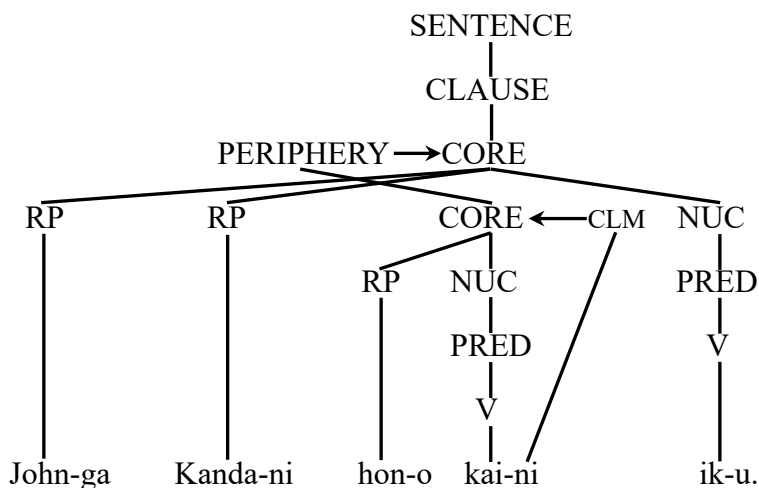
This section investigates Japanese purposive constructions illustrated by example (1), applying Miyagawa's (1987) diagnostics for monoclausality recast in RRG terms, and proposes a principled distinction between ad-nuclear subordination (illustrated by (1)) and nuclear subordination, with direct implications for the classification of SCVs.

- (1) *John-ga Kanda-ni hon-o kai-ni ik-u.*
 John-NOM Kanda-ALL book-ACC buy-PURP go-NPST
 'John goes to Kanda to buy a book.'

As demonstrated in Miyagawa (1987), (1) is syntactically ambiguous, depending on whether the purposive element *kai-ni* '(in order) to buy' combines first with the motion verb *ik-* 'go' or with the undergoer argument *hon-o* 'book'. The former interpretation combines the purposive element *kai-ni* with the motion verb to yield a complex predicate *kai-ni ik-* 'go to buy', which jointly selects an agent argument (e.g., *John-ga*), a goal argument (e.g., *Kanda-ni*), and a theme argument (e.g., *hon-o*). In contrast, the latter interpretation, shown in Figure 1 below, combines the purposive element *kai-ni* '(in order) to buy' with the undergoer argument *hon-o* to yield a purposive expression that serves as a modifier of the core and constitutes an instance of "ad-core subordination". The former and latter interpretations are shown in (2a,b), respectively.

- (2) **Restructuring predicate**
 a. *John-ga Kanda-ni hon-o [kai-ni ik]-u.*
 John-NOM Kanda-ALL book-ACC buy-PURP go-NPST
 'John goes to Kanda to buy a book.'
- Ad-core subordination**
 b. *John-ga Kanda-ni [hon-o kai-ni] ik-u.*
 John-NOM Kanda-ALL book-ACC buy-PURP go-NPST
 'John goes to Kanda in order to buy a book.'

Figure 1: Constituent structure of (2b) (ad-core subordination)



Miyagawa (1987) used a few diagnostics for monoclausality to distinguish these two interpretations. Although he couched these diagnostics within the generative framework, I will reinterpret two of them here in RRG terms. The first diagnostic involves the NPI

element *shika* ‘only,’ which requires a negative element within the same core. If *shika* can attach to either *Kanda-ni* or *hon-o* while the negative marker *nai* attaches to the motion verb *ik-*, then the construction can be diagnosed as monoclausal (given that the scope relation between *nai* and *shika* indicates that they belong to the same core).

- (3) a. *John-ga Kanda-ni-shika hon-o kai-ni ika-na-i.*
 John-NOM Kanda-ALL-only book-ACC buy-PURP go-NEG-NPST
 ‘John goes only to Kanda to buy a book.’
 b. *John-ga Kanda-ni hon-shika kai-ni ika-na-i.*
 John-NOM Kanda-ALL book-only buy-PURP go-NEG-NPST
 ‘John goes to Kanda to buy only a book.’

The second diagnostic involves the potential suffix *(rar)e-* ‘can’, which allows both nominative-accusative and dative/nominative-nominative case frames when it attaches to macrorole-transitive verbs, as illustrated by (4a,b).

- (4) a. *John-ga eigo-o hanas-e-ru.*
 John-NOM English-ACC speak-can-NPST
 b. *John-ni/ga eigo-ga hanas-e-ru.*
 John-DAT/NOM English-NOM speak-can-NPST
 ‘John can speak English.’

When the potential suffix *(rar)e-* attaches to the complex predicate *kai-ni ik-* ‘go to buy’ in (1), the undergoer argument *hon* can show up with either nominative or accusative case, as illustrated by (5).

- (5) *John-ga Kanda-ni hon-ga/o kai-ni*
 John-NOM Kanda-ALL book-NOM/ACC buy-PURP
ik-e-ru.
 go-can-NPST
 ‘John can go to Kanda to buy a book.’

These facts confirm that *kai-ni ik-* ‘go to buy’ serves as a monoclausal complex predicate in which the matrix nucleus is the motion verb *ik-* ‘go,’ and the dependent nucleus is the verb stem *kai-* ‘buy,’ which specifies the purpose of *ik-* at the nuclear level. Since a wide range of verbs can productively combine with *V-ni ik-* to yield similar purposive predicates (e.g., *tori/ai/asobi/tabe/nomi-ni ik-* ‘go to get/see/play/eat/drink’), this pattern represents a productive construction rather than an idiosyncratic collocation.¹

The remaining question is what nuclear juncture *kai-ni ik-* instantiates. Since *kai-ni* functions as a purposive modifier of the matrix nucleus, the construction cannot be classified as a non-subordinate type of nuclear juncture (i.e., nuclear cosubordination or coordination). I propose that it should be analyzed as an instance of ad-nuclear subordination. Figure 2 diagrams the constituent structure and operator projections of (2a), i.e., example (1) interpreted as involving ad-nuclear subordination:

¹ English has analogous purposive constructions (e.g., *go get/eat/drink/see/shop/dance, come get/eat/see/join/help/play*), but the matrix verbs in these constructions are typically restricted to motion verbs and they combine with a moderately constrained set of verbs, many of which denote physical activities.

Figure 2: Constituent structure and operator projection of (2a)

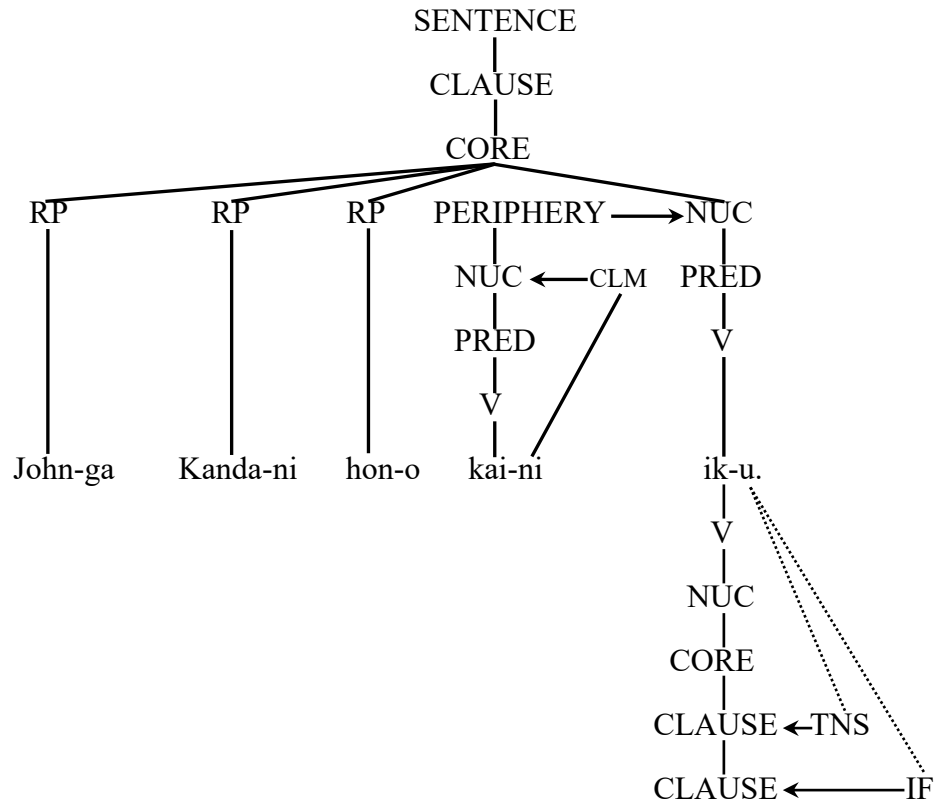
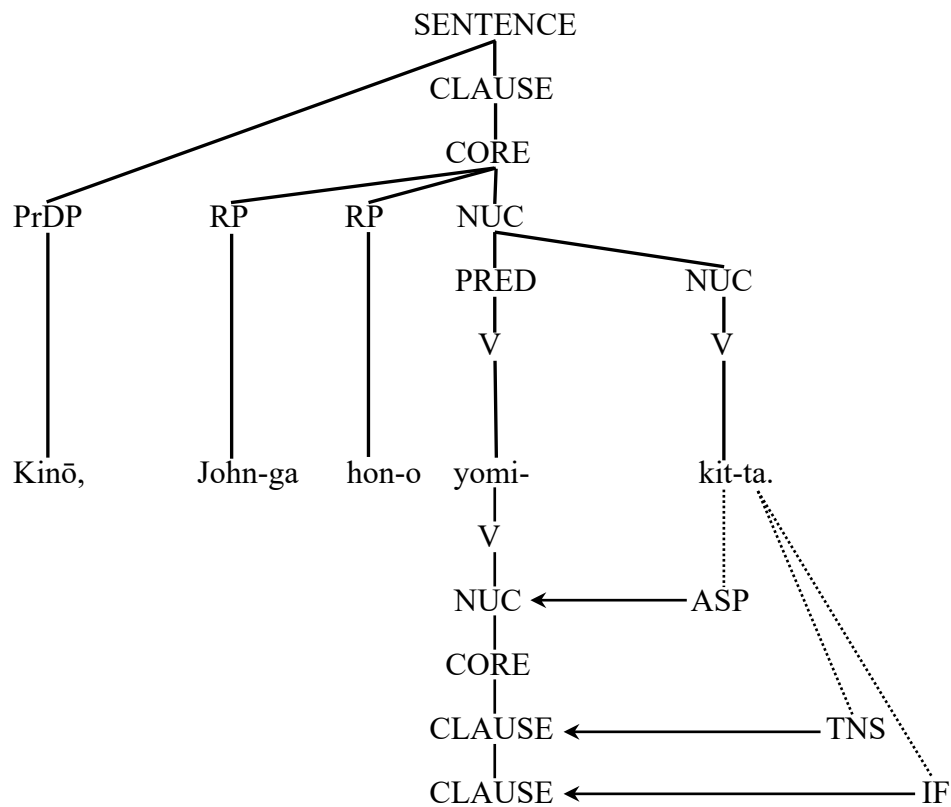


Figure 3: Constituent structure and operator projection of (6) (nuclear subordination)



Let us compare (2a) with (6), in which the matrix nucleus *yom-* ‘read’ combines with the completive verb *kir-* ‘finish’ to yield a complex nucleus *yomi-kir-*. (6) can be analyzed as an instance of “nuclear subordination”, according to the two criteria in Van Valin and LaPolla (1997): the completive verb *kir-* lacks predicative function and carries aspectual meaning. Figure 3 diagrams the constituent structure and operator projection of (6).

- (6) *Kinō, John-ga hon-o yomi-kit-ta.*
 yesterday John-NOM book-ACC read-COMPL-PST
 ‘Yesterday, John read the book through to the end.’

One might wonder why the completive verb *kir-* is construed as non-predicative. The reason is that it can occur with a transitive or an unaccusative verb and imposes no macrorole restriction on the verb it combines with.

The contrast between Figure 2 and Figure 3 comes down to whether the subordinate nucleus is predicative or not: the subordinate nucleus in Figure 2 is predicative, while the one in Figure 3 is not. From this, I propose to establish a distinction between nuclear subordination and ad-nuclear subordination, as summarized in (7).

- (7) a. **Nuclear subordination**
 A juncture-nexus type in which the subordinate nucleus lacks predicative function (e.g., the continuative aspect marker in Lakhota)
 b. **Ad-nuclear subordination**
 A juncture-nexus type in which the subordinate nucleus retains predicative function (e.g., the purposive restructuring predicate in Japanese)

This proposal essentially revives the definition of nuclear subordination in Van Valin and LaPolla (1997) (i.e., a juncture-nexus type that involves a non-predicative, typically aspectual nucleus), while extending the analysis to cases in which a predicative dependent nucleus modifies the matrix nucleus adverbially. By considering whether the dependent nucleus retains predicative function, nuclear subordination can be distinguished from ad-nuclear subordination, rather than being collapsed into it. This move enables the notion of nuclear subordination, together with other types of nuclear juncture, to be applied more productively to the classification of SCVs, as the following section will demonstrate.

3. Syntactic compound verbs in Japanese

Compound verbs (i.e. V_1 - V_2) in Japanese and their classification have attracted much attention in the Japanese linguistics literature (Kageyama 1993, Yumoto 2005, Kishimoto 2021). They are first divided into “lexical compound verbs [LCVs]” and SCVs on syntactic grounds (Kageyama 1993, 2021).² The first verb (V_1) of the SCV expresses the main lexical content of the whole predicate, while its second verb (V_2) contributes aspectual, negative, modal, and/or evaluative meaning. In other words, V_2 functions as a modifier that indicates how the event unfolds in time, specifically whether it is initiated,

² For example, one can apply the *sō-suru* (‘do so’) substitution to the V_1 of the SCV, but not to the V_1 of the LCV. This is illustrated by *tabe-hajime-* ‘begin eating’ (an SCV), which can be replaced with *sō-shi-hajime-* ‘begin doing so’, while the same substitution is not possible for LCVs (as illustrated by *tataki-kowas-* ‘break by hitting’, which can’t be replaced by **sō-shi-kowas-*).

continued, completed, repeated, negated, or evaluated. (7a,b) are a partial list of verbs used to form SCVs (Kageyama 1993, 2021, Toratani 2002, Yumoto 2005, Fukuda 2012, Kishimoto 2021).

- (8) a. Aspectual verbs
 Inception (e.g., *hajime*- ‘begin’, *das*- ‘start’, *kake*- ‘start but not complete’)
 Continuation (e.g., *tsuzuke*- ‘continue’),
 Termination (e.g., *owar*- ‘end’, *oe*- ‘finish’, *kir*- ‘finish’)
 b. Non-aspectual verbs
 Habit (e.g., *nare*- ‘get used to’, *tsuke*- ‘have a habit of’)
 Excessiveness (e.g., *sugi*- ‘exceed’)
 Reparation (e.g., *naos*- ‘redo’)
 Repetition (e.g., *makur*- ‘repeat excessively’)
 (In)ability (e.g., (*rar*)*e*- ‘can do’, *kane*- ‘cannot do’)
 Failure (e.g., *sokonaw*- ‘miss’, *wasure*- ‘forget’)

(9a) is an example of an LCV and describes the manner of collapsing, while (9b) is an example of an SCV that marks the completive aspect of the event and (9c) illustrates another type of SCV in which the verb *naos*- adds a reparative meaning to a transitive verb. What is peculiar about *oe*- and *naos*- is that they select telic transitive verbs with an agent argument, in contrast to (9d), which imposes no such thematic restriction; the verb *kir*- can combine with either a transitive or an unaccusative verb:

- (9) LCV
 a. *John-ga naki-kuzure-ta.*
 John-NOM cry-collapse-PST
 ‘John collapsed in tears.’
 Control-type SCV
 b. *John-ga e-o kaki-oe-ta.*
 John-NOM picture-ACC draw-finish-PST
 ‘John finished drawing a picture.’
 c. *John-ga tegami-o kaki-naoshi-ta.*
 John-NOM letter-ACC draw-redo-PST
 ‘John wrote the letter again.’
 Raising-type SCV
 d. *John-ga piza-o tabe-kit-ta.*
 John-NOM pizza-ACC eat-COMPL-PST
 ‘John finished eating the pizza/John ate up the pizza.’
 e. *Aisu-ga toke-kit-ta.*
 ice.cream-NOM melt-COMPL-PST
 ‘The ice cream has completely melted.’

Kageyama (1993) characterized SCVs such as (9b) as “control-type”, contrasting them with those in (9c,d), which he described as “raising-type”. The control-type SCVs impose semantic restrictions on their V_1 ; *oe*- ‘finish’ selects a telic transitive verb with an agent argument, while verbs such as *naos*- ‘redo’, *sokonaw*- ‘miss’, and *wasure*- ‘forget’ also require their V_1 to denote an agentive action. In contrast, the raising-type SCVs allow either an actor or undergoer argument to serve as the subject of their V_1 . For instance, *kir*-

‘finish’ can combine with an agentive transitive verb (as in (9c)) or an unaccusative verb whose subject is a patient argument (as in (9d)). In other words, the V₂ of control-type SVCs is predicative, while the V₂ of raising-type SVCs is non-predicative.

In addition to these two types, some SCVs (e.g., those formed with *hajime*- ‘begin’, *tsuzuke*- ‘continue’, *nare*- ‘get used to’, *sugi*- ‘exceed’, *makur*- ‘repeat excessively’) allow passivized verbs to occur as the complement of their V₂, as illustrated in (10).

- (10) Examples of SCVs formed with *hajime*- ‘begin’
- | | | | |
|----|---|----------------|-----------------------------|
| a. | <i>John-ga</i> | <i>Tom-o</i> | <i>naguri-hajime-ta.</i> |
| | John-NOM | Tom-ACC | hit-begin-PST |
| | ‘John began to hit Tom.’ (Transitive) | | |
| b. | <i>Kabe-ga</i> | <i>totuzen</i> | <i>taore-hajime-ta.</i> |
| | wall-NOM | suddenly | fall-begin-PST |
| | ‘The wall suddenly began to fall.’ (Unaccusative) | | |
| c. | <i>Tom-ga</i> | <i>John-ni</i> | <i>nagur-are-hajime-ta.</i> |
| | Tom-NOM | John-by | punch-PASS-begin-PST |
| | ‘Tom began to be punched by John.’ (Passive) | | |

The same alternation is observed with *tsuzuke*-, *nare*-, *sugi*-, and *makur*-.

Given that application of passivization presupposes the syntactic domain of the core and requires the presence of both an actor and an undergoer argument, it follows that the subject argument (*Tom-ga*) and the passivized verb *nagur-are* together constitute a single core. The next question, then, is how the aspectual verb *hajime*- ‘begin’ is related to this core. It would be misleading to regard *nagur-are* as part of the embedded core, since in genuine cases of core subordination, the embedded core functions syntactically as an argument within the matrix core, as illustrated by (11a,b).

- (11) English examples of core subordination
- | | |
|----|---|
| a. | John gave up [leaving the town] _{CORE} . |
| b. | [Washing the car] _{CORE} takes time. |

In contrast, *nagur-are-hajime*- in (10c) shows no such structural dependence: the two verbs share the same subject and form a morphologically and prosodically unified complex, despite the loss of their nuclear-level integration. Furthermore, *hajime*- does not subcategorize for any argument, but merely specifies the aspectual contour of the event denoted by *nagur-are*- ‘be punched’. These considerations suggest that *hajime*- does not take a subordinate core as its complement (cf. Toratani 2002), but rather functions as a grammaticalized aspectual operator within the same core (cf. Fukuda 2012, Nishiyama and Ogawa 2014: 79-88, Kageyama 2021: 37-43, Kishimoto 2021: 130-137).

We are now in a position to recast the three types of SCVs in RRG terms. First, control-type SCVs (as illustrated by those formed with *oe*- ‘finish’) instantiate nuclear cosubordination, since both V₁ and V₂ are predicative. Second, raising-type SCVs (as exemplified by those formed with *kir*- ‘finish’) embody nuclear subordination, since the dependent nucleus (V₂) is non-predicative. Finally, in “auxiliary-type SCVs”, the dependent nucleus (V₂) has been reanalyzed as a grammatical operator, and the nuclear-level integration of V₁ and V₂ has been lost, even though the reanalyzed verb retains the complete paradigm of verbal conjugation (despite the functional reanalysis it has undergone). (12) is a summary of the classification of SCVs in Japanese.

- (12) Three subtypes of SCVs in Japanese
- | | | |
|----|---------------------|---|
| a. | Control-type SCVs | Nuclear Cosubordination |
| b. | Raising-type SCVs | Nuclear Subordination |
| c. | Auxiliary-type SCVs | Reanalysis of V ₂ as an Operator |

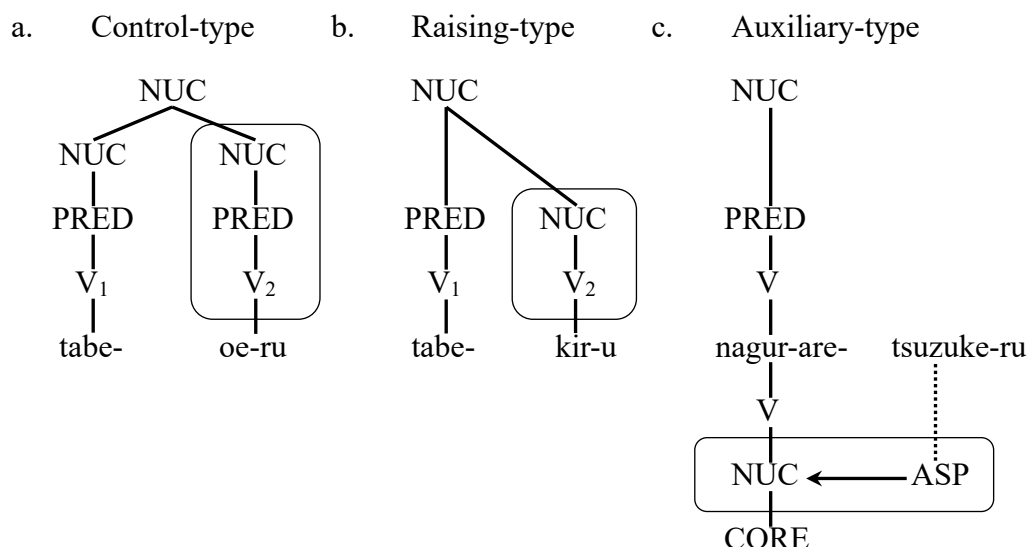
These three subtypes of SCVs can be operationally defined as in (13):

- (13) Operational definitions of control-, raising-, and auxiliary-type SCVs
- Control-type SCVs constrain the choice of the complement verb (V₁) with respect to its macrorole selection. For example, *oe-* ‘finish’ can only combine with macrorole-transitive verbs with agentive arguments.
 - Raising-type SCVs neutralize the macrorole distinction, allowing the subject of the complement verb (V₁) to correspond to either an actor or an undergoer argument. For example, *kir-* ‘finish’ can combine with either a transitive or an unaccusative verb, but crucially it cannot occur with passivized verbs.
 - Auxiliary-type SCVs allow the complement verb to undergo passivization. This process destroys the nuclear-level integration between V₁ and V₂, indicating that V₂ behaves as an auxiliary rather than as a lexical verb.

In short, dependent verbs in control-type SCVs impose macrorole restriction, those in raising-type SCVs neutralize the macrorole distinction, while auxiliary-type SCVs exhibit the loss of nuclear-level integration between the two verbs.

The three subtypes of SCVs defined in (13) are structurally distinct, but they can be viewed as forming a functional continuum. This continuum can be interpreted as reflecting a pathway of grammaticalization: the dependent nucleus (V₂) within the compound gradually loses its predicative function (marked as PRED in the constituent structure), followed by the loss of its status as a lexical verb. Finally, the nuclear-level integration between the two verbs is dissolved, leading to the reanalysis of the dependent nucleus as an auxiliary (operator) within the operator projection. Figure 4 highlights only the portions of the sentence structure that are directly relevant to the grammaticalization path leading from control-type through raising-type to auxiliary-type SCVs:

Figure 4: Grammaticalization from control-type through raising-type to auxiliary type



Before concluding this section, I briefly examine the contrast between SCVs formed with *oe-* ‘finish’ and those formed with *owar-* ‘end’. Both can reasonably be regarded as instantiating nuclear juncture, since each encodes an aspectual relation between two verbs in SCVs. However, they differ crucially in their event-structural integration, which, in turn, accounts for the contrast in their interpretive properties.

The contrast in semantic integration can be characterized as follows: SCVs formed with *oe-* adopt an “internal viewpoint” and allow access to the internal phases of the embedded event, while SCVs formed with *owar-* adopt an “external viewpoint” and refer only to the terminal boundary of the embedded event with no attention paid to the internal structure of the event. This perspectival difference systematically correlates with the range of compatible adverbial expressions, as illustrated in (14)-(16):

- (14) Compatibility of process adverbs with SCVs formed with *oe-/owar-*
- | | | | | |
|----|------------------|-------------------------------|---------------|----------------------|
| a. | <i>John-ga</i> | <i>nijuppun-kakete</i> | <i>piza-o</i> | <i>yaki-oe-ta.</i> |
| | John-NOM | twenty.minutes-spending | pizza-ACC | bake-finish-PST |
| b. | ? <i>John-ga</i> | <i>nijuppun-kakete</i> | <i>piza-o</i> | <i>yaki-owat-ta.</i> |
| | John-NOM | twenty.minutes-spending | pizza-ACC | bake-end-PST |
- ‘John finished baking the pizza after spending 20 minutes on it.’
- (15) Compatibility of adverbs expressing partial completion with SCVs formed with *oe-/owar-*
- | | | | | |
|----|------------------|---------------------------|---------------|----------------------|
| a. | <i>John-ga</i> | <i>hanbun-dake</i> | <i>piza-o</i> | <i>yaki-oe-ta.</i> |
| | John-NOM | half-only | pizza-ACC | bake-finish-PST |
| b. | ? <i>John-ga</i> | <i>hanbun-dake</i> | <i>piza-o</i> | <i>yaki-owat-ta.</i> |
| | John-NOM | half-only | pizza-ACC | bake-end-PST |
- ‘John finished baking half of the pizza.’
- (16) Compatibility of iterative adverbs with SCVs formed with *oe-/owar-*
- | | | | | |
|----|------------------|-------------------|---------------|----------------------------|
| a. | <i>John-ga</i> | <i>san-mai-no</i> | <i>piza-o</i> | <i>tsugitsugini</i> |
| | John-NOM | three-CLF-GEN | pizza-ACC | one.after.another |
| | | | | <i>yaki-oe-ta.</i> |
| | | | | bake-finish-PST |
| b. | ? <i>John-ga</i> | <i>san-mai-no</i> | <i>piza-o</i> | <i>tsugitsugini</i> |
| | John-NOM | three-CLF-GEN | pizza-ACC | one.after.another |
| | | | | <i>yaki-owa-ta.</i> |
| | | | | bake-end-PST |
- ‘John finished baking three pizzas one after another.’

These contrasts demonstrate that SCVs formed with *oe-*, which adopt an event-internal viewpoint, permit adverbial modification referring to processual or subeventive phases of the event, such as durative, partial-completion, and successive adverbial expressions, while SCVs formed with *owar-*, which encodes an external viewpoint, are incompatible with such modifiers, since they denote only the terminal boundary of the event. In other words, SCVs formed with *oe-* allow semantic access to the internal constitution of the event structure of the embedded verb, while SCVs formed with *owar-* merely assert that the event as a whole has reached completion, without reference to its internal progression. This asymmetry in adverbial compatibility, therefore, provides independent semantic evidence that the two types of SCVs do not differ in juncture level (i.e., nuclear vs. core juncture), but rather in event-viewpoint orientation (i.e., internal vs. external aspectual viewpoint) within the domain of nuclear juncture.

Furthermore, there is another related contrast between the two (Matsumoto 1996: 179-180, Fukuda 2012: 692-693), concerning how *oe-* ‘finish’ and *owar-* ‘end’ behave in subject-honorific constructions, as illustrated in (17).

- (17) Subject-honorific constructions
- | | | | | |
|----|--------------------|-----------------|------------------------|-----------------------------|
| a. | <i>Sensei-ga</i> | <i>tegami-o</i> | <i>o-kaki-ni</i> | <i>nari-owari-mashi-ta.</i> |
| | teacher-NOM | letter-ACC | HON-write-HON | become-end-POL-PST |
| b. | * <i>Sensei-ga</i> | <i>tegami-o</i> | <i>o-kaki-owari-ni</i> | <i>nari-mashi-ta.</i> |
| | teacher-NOM | letter-ACC | HON-write-end-HON | become-POL-PST |
| c. | * <i>Sensei-ga</i> | <i>tegami-o</i> | <i>o-kaki-ni</i> | <i>nari-oe-mashi-ta.</i> |
| | teacher-NOM | letter-ACC | HON-write-HON | become-finish-POL-PST |
| d. | <i>Sensei-ga</i> | <i>tegami-o</i> | <i>o-kaki-oe-ni</i> | <i>nari-mashi-ta.</i> |
| | teacher-NOM | letter-ACC | HON-write-finish-HON | become-POL-PST |
- ‘The teacher finished writing a letter.’

In the *o-V-ni-naru* construction, the subject-honorific marking is realized through a periphrastic form in which the main predicate is nominalized and embedded under the honorific auxiliary *nar-*. The honorific prefix *o-* attaches to the verb stem, and *nar-* agrees with the PSA in terms of honorification. The two verbs, *oe-* and *owar-*, are in contrast, in that *oe-* can combine directly with a stem of a transitive verb, while *owar-* cannot.

Although both *oe-* ‘finish’ and *owar-* ‘end’ can form nuclear junctures, they differ fundamentally in their event-viewpoint structure, and this difference determines whether the predicate can occur in subject-honorific constructions illustrated in (17). Specifically, *oe-* encodes an internal viewpoint, construing the event from within the sphere of action and presupposing deliberate control by the agent/actor. In such constructions, the agent/actor emerges as the controller who brings the event to completion. Therefore, an honorific expression such as *o-kaki-oe-ni naru* in (17d) sounds natural: it depicts the respected subject as having volitionally completed the action. The internally-oriented construal of *oe-* aligns with the agent/actor-centered event structure that the Japanese honorific system, in particular forms like *o-V-ni naru*, is designed to encode. In contrast, *owar-* adopts an external viewpoint that conceptualizes the event as completed from an observer’s perspective. The PSA is thereby objectified, serving as merely one component of a finished event, rather than as its controlling participant. Consequently, *owar-* denotes a natural termination that does not reflect the PSA’s volition or effort, and the PSA’s active involvement is pragmatically backgrounded. Because of this external perspective, *owar-* resists combination with honorific morphology such as *o-V-ni naru* (as shown by the infelicity of (17b)), which presupposes a socially prominent, agentive participant.³

³ It is worth considering whether the different degrees of semantic integration in SCVs formed with *oe-* and *owar-* also manifest themselves in syntax. A relevant diagnostic is “long distance passivization [LDP]”.

- (i) *John-ga* *piza-o* *tabe-oe/owat-ta.*
 John-nom pizza-acc eat-finish/end-PST
 ‘John finished eating the pizza.’

LDP is possible with *oe-* (as in *tabe-oe-rare-ta*), but not with *owar-* (**tabe-owar-are-ta*), even though both completive verbs form nuclear junctures when used in SCVs. I propose that this contrast follows from the difference in event perspective: *oe-* adopts an internal viewpoint, referring to the inner phases of the event and achieving the tighter integration,

To summarize this section, I have proposed the three-way classification of SCVs in RRG terms, (i) control-type, (ii) raising-type, and (iii) auxiliary-type SCVs, which are, respectively, instantiated by nuclear cosubordination, nuclear subordination, and the combination of a simple verb and an auxiliary. I have also shown that the notion of nuclear subordination (realized by raising-type SCVs) is indispensable for establishing this three-way typology and distinguishing SCVs from restructuring constructions as illustrated by (1) that instantiate ad-nuclear subordination and demonstrated, through the contrast between *oe-* and *owar-*, that even among SCVs involving nuclear juncture, the degree of semantic integration varies systematically with the event perspective expressed by the aspectual verb (i.e., internal in the case of *oe-* and external in the case of *owar-*).⁴

4. Conclusion

This paper has pursued two specific objectives, in order to delineate the scope of nuclear subordination in RRG. First, I have analyzed purposive constructions as illustrated by (1) as instances of ad-nuclear subordination, in which the matrix nucleus is adverbially modified by a predicative dependent nucleus. I have further argued that SCVs with a non-predicative aspectual nucleus instantiate nuclear subordination and that the distinction between nuclear subordination and ad-nuclear subordination lies in whether the dependent nucleus is predicative or not.⁵

Second, I have proposed the three-way classification of SCVs in RRG terms, (i) control-type, (ii) raising-type, and (iii) auxiliary-type, which correspond, respectively, to nuclear cosubordination, nuclear subordination, and the combination of a simple verb and an auxiliary. In proposing this three-way typology, I have shown that the notion of nuclear subordination (as originally formulated by Van Valin (1993) and Van Valin and LaPolla (1997)), exemplified by raising-type SCVs, is indispensable for establishing this typology and for distinguishing such SCVs with a non-predicative, (typically) aspectual nucleus from purposive constructions illustrated by (1), which embody ad-nuclear subordination.

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while *owar-* adopts an external viewpoint, referring only to the event boundary and yielding a (semantically) looser type of nuclear juncture that lacks internal event access. A detailed examination of whether this account extends to other control-type and raising-type SCVs must be left for future research.

⁴ Both nuclear and ad-nuclear subordination involve modification: the former represents grammatical modification, while the latter represents lexical (or adverbial) one.

⁵ See Paris (2018) and Fujinaga-Gordon (2024) for further illustrations of ad-nuclear subordination in Spanish gerund constructions and Japanese benefactive constructions. Special thanks are due to Luis Paris and Mitsuaki Shimojo for bringing these works to my attention.

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Types of ambiguity in reflexive constructions in German*

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1. Introduction

In German, ambiguity may arise in reflexive constructions which match the canonical pattern (with a transitive verb and an accusative pronominal object coreferential with the actor subject in nominative) if they contain a constituent which may describe a state, e.g. *schlau* 'clever'. In one reading, it pertains to a result/effect of the activity denoted by the verb. In another interpretation, it modifies the activity as a manner adverb, being optional and therefore omissible. In other words, reflexive clauses are unambiguous without such a constituent interpretable as a state description, e.g.:

- (1) a. *sich*¹ (*schnell*) *bewegen*
 REFL.PRON quick(ly) move(TR):INF
 'move (quickly/fast)'
 b. *sich* *schlau* *bewegen*
 REFL.PRON clever move(TR):INF
 'move {i} smartly / ii) and make oneself clever (or: become/get clever)'

For (1b.ii) a constituent like *schlau* is indispensable. At first glance, the ambiguity in (1b) is simply due to the fact that adverbs are not formally differentiated from their adjective counterpart in German. In sections 2 and 4 below it is argued that this is not the decisive factor but example (1b) has two different logical structures depending on resultativity. For (1b.ii) a complex layered structure is assumed whereas (1b.i) groups together with (1a) as an activity expression, containing an omissible manner adverb.

- (1) a/b.i. *sich* (*{schlau / schnell}*) *bewegen*
 REFL.PRON clever(ly) / quick(ly) move(TR):INF
 'move ({smartly / fast})'

While the reflexivity in the sense of coreferentiality between the subject and the formal verb object is maintained in (1) independently of resultativity, (2b) is ambiguous as to the referential identity of the undergoer of the activity denoted by the verb:

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¹ The reflexive pronoun *sich* is formally identical for dative and accusative. All examples in this paper contain *sich* in accusative exclusively.

- (2) a. *sich* (intensiv) *pflügen*
 REFL.PRON intensive(ly) care.for:INF
 ‘care for oneself (intensively)’
 b. *sich kaputt pflügen*
 REFL.PRON destroyed care.for:INF
 ‘care for {i) oneself (e.g. body) / ii) someone else}
 and ruin oneself (i.e. the own health)’

In (2b), only a resultative interpretation is possible due to the meaning of *kaputt*, which accepts no usage as a manner adverb. The reflexive pronoun *sich* nevertheless corresponds to two different roles: In (2b.i) it is, in the canonical way, the undergoer of the event described by the verb and coreferential with the actor subject, whereas in (2b.ii) the referential identity of the verb object is not explicit, not being overtly expressed. Despite this difference and the apparent parallelism with (2a), the pattern in (2b.i) is to be accounted for, together with (2b.ii), as a complex layered structure analogously to (1b.ii). This will be shown in sections 3 and 4 below.

2. Analysis of ambiguous reflexives with constant undergoer assignment

The following sentence exemplifies the ambiguous pattern (1b).

- (3) *Beweg dich schlau!* (Felix Neureuther’s slogan)²
 move(TR):IMPER.2.SG PRON.2.SG.ACC clever(ly)
 ‘Move {i) smartly / ii) and make yourself clever} !’

For both readings the status of the reflexively used pronoun is apparently constant as the formal object of the verb. However, compare (3) with the following unambiguous cases.

- (4) a. *Lauf* ({ *schlau* / *schnell* }) !
 walk:IMPER.2.SG clever(ly) / quick(ly)
 ‘Walk/Run ({smartly / fast}) !’
 b. *Lauf dich {schlau / gesund} !*
 walk:IMPER.2.SG PRON.2.SG.ACC clever(ly) / healthy
 ‘Walk/Run and make yourself {clever / healthy} !’

For a resultative expression like (4b) a reflexively used pronoun in accusative is needed though *laufen* ‘walk, run’ as such is a monovalent intransitive verb. In other words, its valency is shifted to a quasi-transitive frame in order to express resultativity. Furthermore, (4b) is unacceptable without a complement constituent describing a state like *schlau* or *gesund* (i.e. **Lauf dich!*) in contrast to (4a), where it is omissible.³ Now, the reflexive construction *sich bewegen* ‘move (intr.)’ is a kind of derived intransitive with affinity to

² The title of his book, 2014 (Nymphenburger), as well as his education program since 2020 (<https://bewegdichschlau.com/>), which inspired me to the topic of this paper.

³ This perfectly parallels English resultative constructions with an intransitive verb such as *he ran himself breathless* as described by Halliday (1967: 73), *he talked himself hoarse (in/for ten minutes)* by Van Valin (1990: 254f.) and ... *Sam ... had coughed himself into a haemorrhage* by Rappaport Hovav and Levin (2001: 768).

the middle or the anticausative type though it completely fits the canonical transitive scheme with an accusative object.⁴ The phrase *sich bewegen* as a whole belongs to the same selectional class as *laufen*. If we replace *laufen* in (4) by *sich bewegen*, we encounter the following situation:

- (5) a. *Beweg dich ({ schlau / schnell }) !* $\approx$ (1a / b.i), (3.i)
 ‘Move ({smartly / fast}) !’
 b. **Beweg dich dich { schlau / gesund } !*

In (3.ii) and (5b) we observe a kind of haplological, but obligatory deletion of the same reflexively used pronoun. Possibly we might assume a ban on a twice (or more) occurrence of an identical pronoun (i.e. in the same case) with the same reference in a clause with one predicate, e.g. a verb. But which pronoun in (5b) is to be deleted? The one that belongs to the reflexive verb phrase or the one that corresponds to *dich* in (4b) with an intransitive verb? We will return to this question in section 4. So far, it is at least clarified that in (3) as well as in (1b), two structurally distinct clause types fall into the same shape superficially.

3. Analyses of ambiguous reflexives with and without object assignment shift

(2b) in section 1 was demonstrated as a case of a potentially ambiguous construction, though the following example, which coincides with the pattern in (2b), is not ambiguous because of the word *Angehörige* ‘relatives, family members’.

- (6) *dass sich einige Angehörige kaputtpflegen, ...*
 that(CONJ) REFL.PRON some:PL.NOM relative:PL.NOM destroyed.care.for:3PL.PRS
 ‘that some relatives make care works (for their family member(s)) and ruin themselves’ = ‘that some are caring for their relative(s) and ruin their own health’
 (*Migros Magazin* 23, 6.6.2011)

While *sich* in (6) does not stand for the object of the verb *pflegen* ‘care for’ and is constrained to the reading (2b.ii), example (7) corresponds to (2b.i).

⁴ Despite the structural transitivity of the clause with *bewegen* ‘move(TR)’, reflexively used pronouns such as *dich* in (3/5) as well as *sich* in (1) seldom replace a non-reflexive accusative object of *bewegen*, because it mostly does not take an animate undergoer as its object if the nominative subject represents a human actor as in (1/3/5). That the nominative subject corresponds to an agentive actor is a factor rather similar to the middle (cf. e.g. Arce-Arenales et al. 1994) than to the anticausative type, since the latter is usually accounted for as having an undergoer subject in nominative (cf. e.g. Kulikov 2011: 392). Nevertheless, they are tightly connected, as shown in the range of reflexive usages e.g. in German. For discussions on this topic in more detail, cf. e.g. Benveniste 1950, Halliday 1967: 42ff., Nedjalkov 1980, Haspelmath 1987, Kemmer 1994, Levin and Rappaport Hovav 2005: e.g. 2, Næss 2007: 31ff., esp. 82f., Malchukov 2015, Inglese 2022, cf. also Ono 2017: esp. 50f., 2024: esp. 144, and to appear, section 1.

- (7) *Man kann sich mit zu viel Kosmetika kaputt()pflegen.*⁵
 one:NOM can:3SG.PRS REFL.P. with too much cosmetics destroyed()care.for:INF
 ‘One can destroy one’s own health/beauty by caring with too much cosmetics.’

(7) conforms to the very canonical pattern of the reflexive construction in the narrower sense, where the actor coded as the nominative subject acts intentionally upon her-/himself represented by the reflexive pronoun in accusative. Therefore, nothing seems to demand an analysis presuming a complex structure analogous to (6). If, however, we adopt the same analytic procedure as for (1/3) with *bewegen* ‘move (tr.)’, (7) should have a logical structure similar to that of (1b.ii/3.ii) as well as (4b), i.e. a complex one, due to the neat parallelism between the patterns (2b.ii/7) and (1b.ii/3.ii).⁶

The next example, which is ambiguous, even fuzzy with regard to the identity of the undergoer corresponding to the verb object, may lead to a tenable analysis:

- (8) *Sie sticht sich reich. Tattoo-Queen G. tätowierte sich zu einem Vermögen von 10 Millionen Franken*
 she:NOM prick:3.SG.PRS REFL.PRON rich. tattoo:3.SG.PRT
 to INDEF.SG.DAT richness of millions francs
 lit. ‘She tattoos herself rich. Tattoo Queen G. tattooed herself to the income of 10 mio. CHF.’ (*Blick am Abend* 23.5.2016)

Interpretation 1: She tattooed herself; actually she has many tattoos on her body (in the photo attached to the article) (but her income therefore?)

Interpretation 2: She tattooed other people (customers)

Interpretation 3: For resultative reflexives it is not necessary to clarify the identity of the referent(s) of the verb object

The following examples with *trinken* ‘drink’, which has a transitive and an objectless (and in this sense: intransitive) usage parallel to *stechen* ‘prick’ in (8), give a suggestion for preference of interpretation 3:

- (9) a. *Sich mit Bier gesund trinken*
 REFL.PRON with beer healthy drink:INF
 lit. ‘drink oneself healthy with beer’ (20min. 27.4.2004)
 b. { i) *Bier* / ii) **Mit Bier* (a noun in acc. is necessary) / iii) **Sich* / iv) $\emptyset$ } *trinken*
 i) ‘drink beer’; iv) ‘drink’

(9) demonstrates an object-demoting effect of resultative reflexives, and in this sense they have an antipassivizing function.⁷ Hence, in (8) as well as in (7) the object of the verbs is

⁵ The parentheses with a space inside stand for a possible word border. They reflect that *kaputt* is considered to be an independent word in (2b), whereas it is treated in (6) as a component of a verb compound, at least orthographically.

⁶ Another possibility is to view *kaputtpflegen* as a verb compound analogous to e.g. *kaputtmachen* ‘destroy’, which has a simplex argument structure.

⁷ Cf. e.g. Nedjalkov 1980: e.g. 223, Van Valin 1980, Premper 2001: 489f., Kulikov 2011: 380ff., Malchukov 2015: esp. 114, Inglese 2022: 503ff., cf. also Ono 2024: 144.

absent, i.e.: *sich* in (7/8) does not represent the verb object corresponding to the undergoer of the activity denoted by the verb, in an analogous manner to (6).

4. Hypothesis on double reflexive deletion and logical structures of reflexives

We saw above that in resultative reflexives the expression of the verb object is suppressed, including a reflexivized object under the coreferentiality condition likewise. Therefore, the reflexive pronoun or a reflexively used pronoun in accusative does not belong to the clause with the given verb, mostly for Activity, but to the implied event leading to a resulting state (Accomplishment).⁸ Accordingly, the clauses under (2) are reanalysed as in (10), and analogously those under (1) as in (11):

- (10) (*jemanden* ‘someone (indef.acc.)’; *dadurch* ‘(by) doing so’; *machen* ‘make’):
- a. *sich* (ADV) *pflegen* = *sich pflegen* (+ e.g. *intensiv*)
 - b.i. *sich kaputt pflegen* = *sich pflegen* + *sich (dadurch) kaputt machen*
 - b.ii. *sich kaputt pflegen* = *jemanden pflegen* + *sich (dadurch) kaputt machen*
- ↓
- a'. *sich* (ADV) *pflegen* = *sich pflegen* (+ e.g. *intensiv*)
 - b'.i. *sich kaputt pflegen* = ~~*sich*~~ *pflegen* + *sich (dadurch) kaputt machen*
 - b'.ii. *sich kaputt pflegen* = ~~*jemanden*~~ *pflegen* + *sich (dadurch) kaputt machen*
- (11) a / b.i. *sich* (ADV) *bewegen* = *sich bewegen* (+ e.g. *schnell, schlau*)
- b.ii. *sich schlau bewegen* = ~~*sich*~~ *bewegen* + *sich (dadurch) schlau machen*

The superficially simplex reflexive construction as in (1b.ii), parallel to (2b.i), thus results from a causal chain of two subevents, and the reflexive marker is not governed by the given verb but conditioned by a general predicate on a higher layer like *make* or *bring to* which corresponds to CAUSE. Its logical structure may be analyzed as in (12):⁹

- (12) [**do'** (x_i , [**predicate'** (x_i , (y))])] CAUSE [BECOME/INGR **predicate'** (x_i , (z))]

y indicates that y , the second argument of a bivalent predicate, i.e. a transitive object in our case, may not appear overtly. y is in parentheses because of the possibility to have a monovalent intransitive verb for **predicate'** as in (4b) with *laufen* ‘walk, run’. If **predicate'** is a transitive verb, it allows an object coreferential with the agent x_i for y , but since y is never expressed overtly, consequently x_i in the position of y cannot occur, as demonstrated in (10/11). Taking account of this situation, (13) might be an alternative notation, under the condition that $\emptyset$ is understood properly in the above sense:

- (13) [**do'** (x_i , [**predicate'** (x_i , $\emptyset$)])] CAUSE [BECOME/INGR **predicate'** (x_i , (y))]

By contrast, the simplex reflexives without resultativity such as (1a / b.i) and (2a) include solely the part up to CAUSE, and y in (14) is realized by a pronoun for reflexivity standing for x_i :

⁸ For discussions on this topic cf. e.g. Van Valin 1990, 2005: 31ff., 2023: 95ff., Oswald 2021, cf. also Premper 2001: 482f.

⁹ Cf. e.g. Van Valin 1990: 254f., 2005: 42ff., 2023: 94ff., Oswald 2021.

(14) $\text{do}'(x_i, [\text{predicate}'(x_i, y)])$

5. Conclusions and perspectives

From a descriptive standpoint, we observe mainly two types of ambiguity in constructions which exhibit the canonical reflexive pattern with a reflexively used pronoun in accusative. The first type concerns the possibility of resultative and non-resultative reading which pertains to the change of state of the actor after her/his activity. For a resultative meaning, a reflexive clause needs a constituent capable of describing a state.¹⁰ Moreover, such a constituent must also be able to modify an activity as a manner adverb. Otherwise no ambiguity arises. The fact that adjectives and adverbs are formally not distinct in German is prerequisite, but not sufficient and decisive for ambiguity.

The second ambiguity type is restricted to the resultative reflexives and pertains to a shift in undergoer assignment. A shift has two correlating sides, namely, the perspective of the coding of the undergoer of the activity denoted by the verb, and simultaneously that of the role identity of the reflexively used pronoun. Is the undergoer identical with the referent of the pronoun? Conversely, does the role of the pronoun correspond to the undergoer of the activity? In other words, can the pronoun be the object of the verb semantically? If it is not the case, i.e. if the undergoer of the activity does not coincide with the referent of the pronoun, such an undergoer cannot be expressed overtly in the reflexive clause, and her/his/their identity is implicit and depends on the context, or vague. With this property, the resultative reflexives exhibit an antipassivizing effect.

From the analytic point of view, antipassivization suppressing the original verb object applies to any kind of the object, including a reflexivized one coreferential with the actor subject. Hence, resultative reflexives are all accounted for as having a complex structure with the CAUSE component, even if the surface construction perfectly fits the canonical simplex reflexive pattern. The obligatory clause constituent expressing the resulting state of the actor corresponds to a predicate of the logical structure accompanied by BECOME or INGRESSIVE after CAUSE, and this matches its treatment as secondary predication in some approaches (cf. e.g. Ono 2024).

In Section 3 above we encountered some fuzzy cases, either that vagueness rather than ambiguity is observed, or that the simplex–complex distinction depends on lexical treatment of the constituent for state description, sometimes quite arbitrarily in the form of orthographical decisions. The fuzziness arises particularly when an expression for a state or an endpoint does not seem to exclude an adverbial usage (e.g. *zu Tode* ‘to death’), or when an obligatory constituent apparently expresses duration without an end term, or when reflexive verb phrases show a higher degree of middle type characteristics (cf. Ono 2024: 137ff. and to appear). Actually, we have to deal with many continuous phenomena, for which it is presumably not always adequate to assume discrete categorial structures as proposed in section 4 (cf. Seiler et al. 2021). Thus, we have much more to study and to analyze, though I hope to have contributed to clarify a couple of tricky cases in this paper.

¹⁰ Or a telic expression analogous to *into a haemorrhage* in footnote 3 and *zu einem Vermögen* ‘to richness’ in example (8), though this type is not discussed in this paper.

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Locative adjuncts and their latent verbs*

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1. Introduction

Adverbials are well-known for their structural adaptability and flexibility within a clause (Hasselgard 2010, Meinborn and Schäfer 2019). Often classified according to lexical semantics (e.g. locative, manner, temporal), adverbials can be encoded by different structural phrase types: noun, preposition, or adverb.

For this paper we explore the behavior of adverbial adjuncts in a language of West Africa. Initially we compare locative and temporal adjuncts in Emai of the Edoid group in the Benue Congo family. We then zero in on locative adjuncts as our primary target, examining their distributional behavior in canonical and non-canonical constructions.

Emai exhibits a basic SVO structure. Although it has minimal inflectional morphology, Emai displays both lexical and grammatical tone. Its clausal structures manifest basic transitivity types as well as complex predicates with verbs in series or in phrasal constructions with prepositions.

The canonical position for adjuncts in Emai is the right periphery. When an adjunct is in focus, it is fronted and appears in the left periphery of a clause. When a locative adjunct is in focus, it not only occupies a left periphery position but also triggers a latent verb element in the verb phrase. A similar latency condition prevails when a locative adjunct corresponds to a WH-question-word of place. Under either condition the latent verb *za* occupies initial position in the verb phrase. To account for *za* that is induced by a locative adjunct, we consider various structural representations provided by Role and Reference Grammar (RRG). We conclude that *za* is a verb in a subordinate nexus relation to a core verb at the nuclear layer. This allows for the fact that *za*, while being marked for tense by tone, affects neither core participant meanings, as operators do, nor licenses a core argument, as main verbs do.

2. Locative and temporal adjuncts

The canonical position for locative and temporal adjuncts in RRG is core right periphery: immediate-after-core. This position is exemplified in (1-2), respectively, for phrases locative *ví ímè* ‘at the farm’ and temporal *vbí úkpédé lí ńzèèà* ‘on the third day.’ Both show preposition *vi* preceding a nominally headed phrase.

- (1) *ójé ɔ̀gbé ófě ví ímè.*
Oje:DST PST:kill rat LOC farm
‘Oje killed a rat at the farm.’

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- (2) *ójé ↓hián órán ví úkpédé lí ózèéà.*
 Oje:DST PST:cut wood LOC day R third
 ‘Oje cut wood on the third day.’

When either locative or temporal adjunct is in focus, its nominal complement phrase is fronted and appears in pre-core position: immediate-before-core. Under this fronting condition, the preposition *vi* is omitted. Following the fronted nominal phrase is contrastive focus (CF) particle *lí*. It prosodically phrases with following not-in-focus clausal elements (3-4) as evidenced by elision of particle *lí*’s vowel (e.g. *lí ójé > lójé*).

- (3) *ólí ímè lí ójé ↓zá gbé ófè.*
 ART farm CF Oje:DST PST:BE.AT kill rat
 ‘On the farm it was that Oje killed a rat.’

- (4) *úkpédé lí ózèéà lí ójé ↓hián óràn.*
 day R third CF Oje:DST PST:cut wood
 ‘On the third day it was that Oje cut wood.’

Comparison of clauses (3-4) reveals a notable contrast in verbal elements. The clause in (3) shows form *za*, whereas the clause in (4) shows neither *za* nor any other additional verb. In (3) *za* is obligatory; it precedes core verb *gbe* ‘kill,’ which expresses clausal main event. In (4) *za* is prohibited, despite the marking of both locative and temporal adjuncts by preposition *vi* (1-2). In addition, the WH-question of place corresponding to (1) and (3), which shows interrogative word *é↓bé* ‘where,’ also displays obligatory *za*, as in (5).

- (5) *é↓bé ójé ↓zá gbé ólí ófè?*
 where Oje:DST PST:BE.AT kill ART rat
 ‘Where did Oje kill a rat?’

However, when a place nominal topicalizes (6a-b) and appears in left detached position, *za* is prohibited. The comment clause following the topic requires a locative phrase (headed by *vi*) with pronominal *ò* as complement. This pronoun semantically corresponds to the erstwhile nominal complement in topic position.

- (6) a. *ímè, ójé ↓gbé ófè ví ò.*
 farm Oje:DST PST:kill rat LOC 3SG
 ‘As for the farm, Oje killed a rat on it.’
 b. **ímè, ójé ↓zá gbé ófè ví ò.*
 farm Oje:DST PST:BE.AT kill rat LOC 3SG
 ‘As for the farm, Oje killed a rat on it.’

As we have seen, the occurrence of *za* is limited to pragmatic conditions where a nominal complement of an adverbial locative adjunct occupies focus position. There are other locative nominal complements marked by preposition *vi* that do not give rise to latent verb *za*.

Verbal arguments marked by locative *vi*, as with *ìwè* ‘house’ in (7a), can also occupy focus position. When they do, the out-of-focus clause does not permit *za* (7d). This is evident in the contrastive focus constructions and content interrogatives of place in (7b-

c), where nominal complement of *vi* corresponds to the fronted focus constituent or the interrogative of place.

- (7) a. *òjè ó vî iwè.*
 Oje:PRX PST:enter:PFV LOC house
 ‘Oje entered the house.’
 b. *iwè nà lí ójé ó-ì.*
 house this CF Oje:DST PST:enter-PFV
 ‘It was this house that Oje entered.’
 c. *é^hbé ójé ó-ì?*
 where Oje:DST PST:enter-PFV
 ‘Where did Oje enter?’
 d. **iwè nà lí ójé zá ó-ì.*
 house this CF Oje:DST PST:BE.AT enter-PFV
 ‘It was this house that Oje entered.’

Focus conditions aside, *za* followed by preposition *vi* and its complement appears in series with verb elements expressing directional motion. For example, in (8a-b) *za* occurs in series with manner of motion verbs (*la* ‘run’) and directional/path verb (*dianre* ‘move out from’) or it appears only with a directional/path verb. For both motion events, *za* and its phrase express point of departure or source.

- (8) a. *ójé ↓zá vî iwè lá diànré.*
 Oje:DST PST:BE.AT LOC house run move.out
 ‘Oje has run out of the house.’
 b. *ójé ↓zá vî iwè diànré.*
 Oje:DST PST:BE.AT LOC house move.out
 ‘Oje came out of the house.’

Furthermore, in the expression of both motion events *za* and its preposition marked complement precede the main verb or verbs in series. *za* never follows a directional verb or a directional verb in series. In motion constructions, verb *za* participates in the expression of action events rather than stative locative conditions of place, as it did in (1). One additional point is that form *za* never occurs in the core layer of a clause as the sole main verb (9). It is consistently a dependent verbal element in motion events.

- (9) **ójé ↓zá vî iwè.*
 Oje:DST PST:BE.AT LOC house
 ‘Oje moved from the house.’

3. Canonical and focus representations for *za*

Returning to focus constructions from the outset, how are we to understand the distributional behavior of *za*? What kind of form is it? What conditions govern its occurrence? What is the relationship that holds between focus and non-focus clauses that involve an adjunct that expresses a stative locative condition? Why is *za* obligatory in pre-verbal position of focus constructions, whereas it fails to appear in corresponding non-focus indicative constructions?

Let's clarify the essential linear patterns of focus and non-focus where we find *za* before we assess possible hierarchical representations from RRG that might account for the constraints on its presence and its clausal positioning.

Canonical non-focus: S V O ADJUNCT_{PHRASE}

Focus: PLACE_{NOMINAL}: NP_{PLACE} [*li* S *za* V O]

PLACE_{QUESTION}: *é[↓]bé*_{PLACE} [S *za* V O]

To prepare for the next sections, we should briefly review some pertinent RRG representations for constructions associated with the distribution of *za*. First, we take a brief look at a simple indicative clause with a locative adjunct. Figure 1 is a representation of the canonical structure employed for locative adjuncts in RRG. In it, the locative adjunct appears under the right periphery unit.

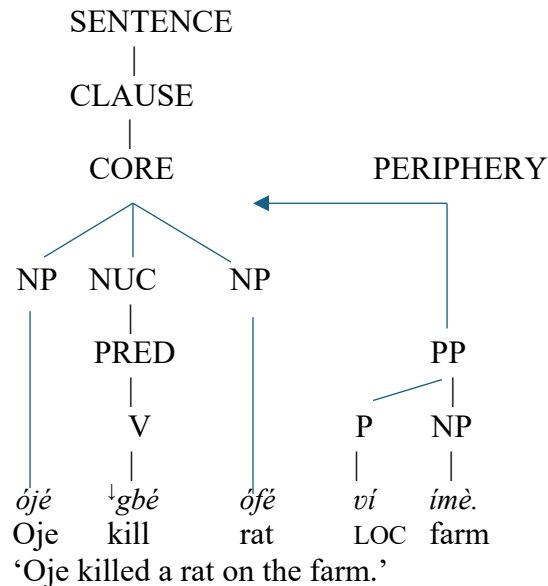


Figure 1 Canonical structure for a locative adjunct

Next, we present two figures, each of which provides a hierarchical representation of *za* in non-canonical constructions. In both representations, Figure 2 and Figure 3, the form *za* appears under the core unit but remains unattached to essential core units.

Figure 2 is a hierarchical representation of a contrastive focus construction where the nominal from the adjunct phrase appears in the pre-core clausal slot (PrCS).

Figure 3 is a hierarchical representation for an interrogative Wh-question construction. In Figure 3 the nominal complement from the adjunct phrase corresponds referentially to the question-word of place *é[↓]bé* 'where.'

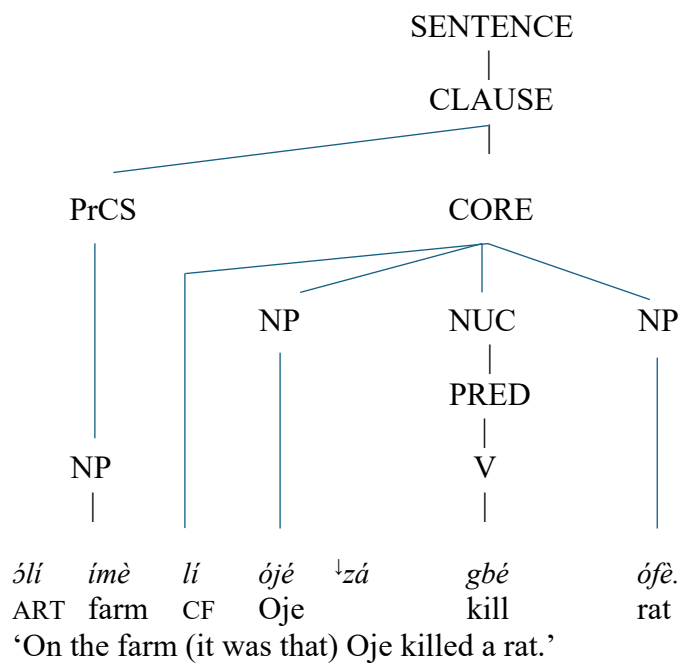


Figure 2 Representation of contrastive focus for locative adverbial

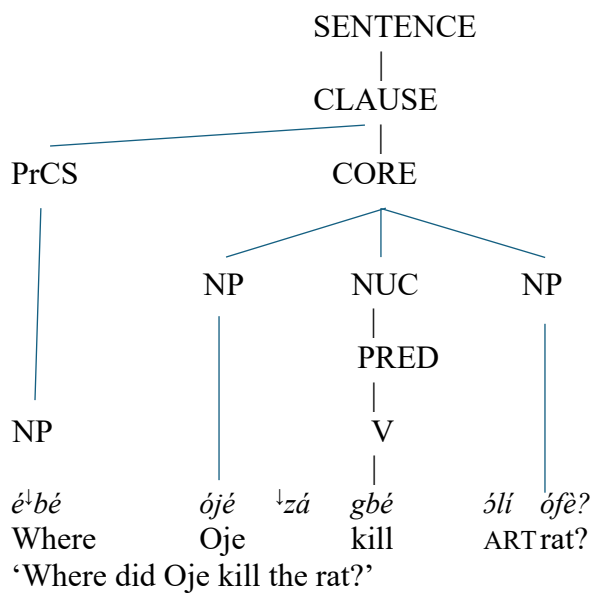


Figure 3 Representation of WH-interrogative for locative adverbial

4. Structural positioning of *za*

Relative to non-canonical focus constructions, there are several potential representations which we might consider to better account for *za*. Our ultimate goal is to determine where *za* would occur in a clausal hierarchical representation.

4.1. Candidate structural representations for *za*

An initial hypothesis would be to consider *za* as a support verb of some sort, like English DO. One prominent role of English DO concerns its function as a placeholder for tense (e.g. *did*) in interrogatives like (10a-b).

- (10) a. When did John eat the bread?
b. Did John eat the bread?

In RRG, DO with this placeholder function is viewed as unattached to any upper node. It is not part of the nucleus, core, or periphery. Although the tone of *za* in Emai expresses tense, *za* is not a general placeholder for tense, as English ‘do’ is. Tone of the other verb in the clause with *za* also is tone marked for tense. Moreover, *za* is limited to a locative adjunct construction, as shown earlier in (3) and (4).

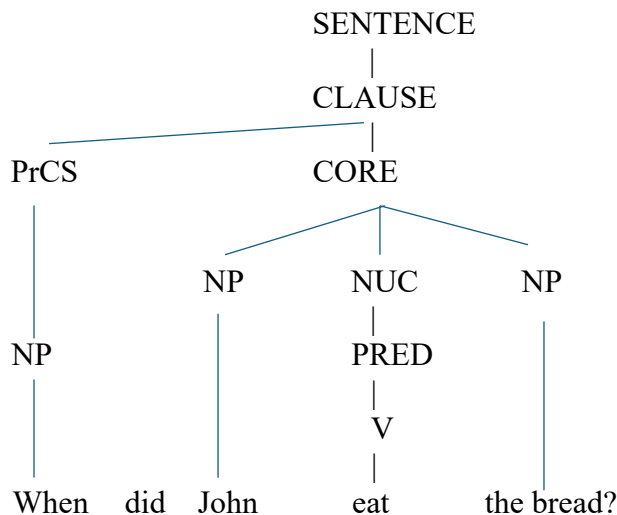


Figure 4 Representation of temporal interrogative

In the following we present alternative hypotheses that appear more fruitful. In sharp contrast to Figures 3 and 4, one might consider *za* to be a clause-level operator. If so, what would be the operator for this function of *za*? What grammatical content or meaning does it provide? Since *za* is limited in Emai to focus constructions for locative adjuncts, its content as an operator, whatever it might be, is severely limited.

What kind of meaning would operator *za* contribute to its clause? In RRG, operators function at one of three layers: nuclear, core, or clause (Van Valin 2005). In Emai, clausal operators include tense, epistemic modality, and negation. Nuclear operators include aspect.

Core operators also convey the orientation or motion of one participant toward the speaker or another participant. Operators of the latter type would correspond to Emai’s deictic directional forms, which are postverbal, namely itive *a* and ventive *re*. Operators

at none of these layers appear similar in meaning to *za* in focus constructions for locative adjuncts. We conclude that *za* is not an operator.

Since Emai is a serial verb language with constructions such as (11), where we find the two verb forms *fī* ‘throw’ and *gbe* ‘hit’ in a single clause, one might view verb *za* as part of the core unit in a co-subordinate relation.

- (11) *ólì òkpòsò fī úkpóràn gbé ùdékèn.*
 ART woman:PRX PST:throw:PFV stick hit wall
 ‘The woman threw a stick against the wall.’

According to RRG, a co-subordinate relationship in the CORE layer of a clause can be represented as in Figure 5. Form *za* is not only within the core unit but it is shown as co-equal to the verb *gbe* ‘hit’ that expresses a main clause event.

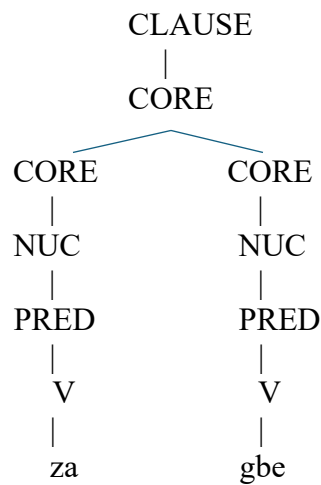


Figure 5 Representation of co-subordinate relation

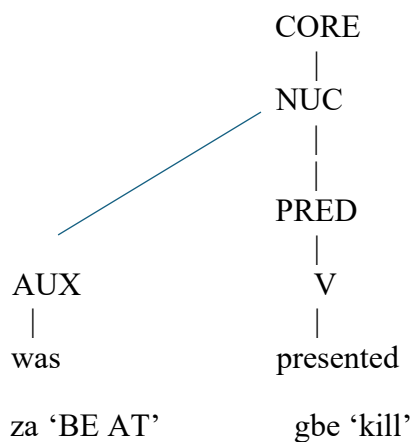


Figure 6 Representation of BE and *za* as an auxiliary

In a co-subordinate arrangement of clausal verbs, each verb contributes to the overall meaning of the clause. For example, in the projected contact event of (11), verb *fī* contributes a throwing sense, while verb *gbe* adds a sense of contact. If *za* were in a co-

subordinate relationship, it should contribute some element of meaning to event action. It would take its own argument or share an argument with the other clausal verb. Form *za* does neither. It does not contribute to the clausal event as do the verbs in (11) and even in earlier clauses such as (3) and (4).

Another alternative for *za* pertains to its potential status as an auxiliary (Figure 6). In RRG representations, a BE form as an auxiliary occurs at the nuclear level only when required for nucleus formation. In such instances, BE serves as an auxiliary at the nuclear layer, but it is not part of the predicate in the nucleus. If we apply this same representation to Emai, *za* would have to be an auxiliary and thus exhibit auxiliary properties. Emai auxiliaries include subject index, tense, modality types (deontic, epistemic, dynamic), intensifiers of argument categories, and others. Form *za* fits into none of these categories.

As a point of background, Emai shows a *za* form that serves as an auxiliary. Relative to an event in preceding discourse, *za* in an indicative clause expresses a resultative (RST) meaning, as in (12).

- (12) *ólí ókpósó ↓zá é ólí émàè.*
 ART woman:DST PST.RST eat:PFV ART food
 ‘As a result / So the woman ate the food.’

But a resultative sense is unrelated to the static locative sense associated with locative adjuncts in focus constructions and by extension with the presence of locative *za*. If *za* were a resultative auxiliary, it would be limited to focus clauses, where it cannot show an overt nominal complement. Semantically, auxiliary *za* with resultative meaning is distinct from static locative *za*. Non-auxiliary *za* associated with locative adjuncts is required for nucleus formation in focus clauses such as we saw in (3).

4.2. Representation of nuclear subordination for *za*

A different version of the configuration in Figure 6 is shown in Figure 7, adapted from Bentley and Vincent (2017).

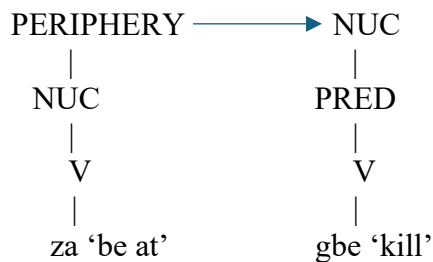


Figure 7 Representation of nuclear subordination for *za*

Figure 7 views *za* as a verb in a subordinate nexus relation to a core verb at the nuclear layer. This allows for the fact that *za* affects neither core participant meanings, as operators do, nor does it designate a core argument. In addition, form *za* in Figure 7 is not an element under the predicate. However, it is necessary to form the nucleus of a focus clause for locative adjuncts, and it is related to the nuclear level. Like other Emai verbs at the nuclear layer, it must be marked for tense by tone. Figure 7 allows this condition. In representation 7, it becomes clearer that *za* is not an auxiliary or an auxiliary verb but a verb in a subordinate relation to the main verb.

4.3. Another latent form

Interestingly, *za* is not the only latent verb or quasi-verb in Emai. There are other adjunct types that exhibit a verb or verb-like form in focus constructions but that do not occur in canonical indicatives.

Manner demonstrative adjuncts (*íná* ‘like this,’ *ìyó* ‘like that’), when focused, evince a latent form *i*. Each manner demonstrative form refers to a condition or manner of existence in the immediate deictic field, as in (13) and (14).

- (13) *ójé* $\downarrow$ *dín* *ólí* *éwé* *íná*.
 Oje:DST PST:tie ART goat PMD
 ‘Oje tied the goat like this (as you see).’

- (14) *ójé* $\downarrow$ *dín* *ólí* *éwé* *ìyó*.
 Oje:DST PST:tie ART goat DMD
 ‘Oje tied the goat like that (as you see).’

Akin to *za*, form *i* occurs in a clausal verb phrase when a manner demonstrative adjunct occupies either focus position (15) and (16) or corresponds to a WH-question word (17) and (18). Form *i* does not appear in a preverbal position when a manner demonstrative adjunct occupies its canonical post-verbal position (13-14). Since non-demonstrative manner adjuncts such as *dàbìdàbí* ‘staggeringly’ and *súnésúné* ‘sluggishly’ do not permit focus or WH-questions, form *i* does not appear with non-demonstrative manner adjuncts.

- (15) *íná* *lí* *ójé* $\downarrow$ *i* *dín* *ólí* *éwè*.
 PMD PF Oje:DST PST:MAN tie ART goat
 ‘It was like this that Oje tied the goat.’

- (16) *ìyó* *lí* *ójé* $\downarrow$ *i* *dín* *ólí* *éwè*.
 DMD PF Oje:DST PST:MAN tie ART goat
 ‘It was like that that Oje tied the goat.’

- (17) $\acute{e}\downarrow$ *bé* *ójé* $\downarrow$ *i* *dín* *ólí* *éwè?*
 how Oje:DST PST:MAN tie ART goat
 ‘How did Oje tie the goat?’

- (18) $\acute{e}\downarrow$ *bé* *ójé* $\downarrow$ *i* *dín* *ólí* *éwè?*
 how Oje:DST PST:MAN tie ART goat
 ‘How did Oje tie the goat?’

We assume that form *i*, as a mark of manner demonstrative, is also in a subordinate relationship with the clausal verb at the nuclear layer.

5. Information structure and focus

But there is still a nagging question about *za* and *i*. What motivates their presence? Why do they surface only in focus constructions and not in non-focus constructions? There are some additional features of focus constructions that suggest still another perspective.

Let's look back on Emai focus constructions for a moment. Focus constructions exhibit several key features. The lexical item in focus is fronted relative to other syntactic elements in the clause. The contrastive focus clitic *li* precedes and prosodically phrases with out-of-focus elements in the clause. Relative to the positioning of locative adjuncts in focus, the form *za* appears in pre-verbal position, whereas it does not appear in a corresponding non-focus clause. From this short list of features, it seems that focus is doubly marked: Fronting of the focus term in syntax and prosodic phrasing of particle *li* with out-of-focus elements.

Interestingly, *za* in a focus construction appears among the out-of-focus clausal elements. For us a natural follow up question is, why are focus constructions doubly marked in this fashion? And how might double marking contribute to the presence of *za*?

In a canonical indicative clause, the verb and its direct object can either be in-focus or out-of-focus. In this respect, *za* occurs when the verb is not in focus, but it does not occur when the verb is in focus. It is thus the marking of a lexical item or phrase as out of focus, which is provided by particle *li*, that establishes the information context in which *za* can occur.

For those familiar with the Bantu languages of Africa, this appears reminiscent of the distinction between conjoint (CJ) and disjoint (DJ) inflectional marking and its relation to information structure (van der Wal and Hyman 2017).

Prototypically, the essence of the Conjoint/Disjoint distinction is an alternation in the inflectional marking of tenses on the verb. One tense form, the one labeled CJ, correlates with the information structure condition of focus and phonological phrasing. Phonological phrasing pertains to whether the verb and following elements constitute a single phonological phrase or multiple phonological phrases. CJ characterizes the condition where there is a single phrase, i.e. an extended phonological phrase, and DJ the condition where there are multiple phonological phrases, a non-extended phonological phrase.

For Emai locative adjuncts, the alternations between focus and non-focus constructions does not involve inflection. Instead, it concerns alternation in the verbal make-up of the predicate phrase.

In the canonical indicative for locative adjuncts, the nucleus consists of a single verb while in focus the nucleus consists of V_{za} V. There is thus an alternation between V and V_{za} V. Phrasing of syntactic verb elements varies between these alternates.

Under the V condition the locative adjunct phrases with the verb and its direct object since the direct object element preceding the locative adjunct undergoes low tone raising. Under the V_{za} V condition where the nominal complement of the locative adjunct is fronted, there is no low tone raising on the same element that showed raising in the V condition. Specifically, the verb direct object *ófè* with a high high tone sequence in (19a) shows as *ófè* with a high low tone sequence in (19b).

- (19) a. *ójé* ↓*gbé* *ófè* *vbí* *ímè*.
 Oje:DST PST:kill rat LOC farm
 ‘Oje killed a rat at the farm.’
 b. *ólí* *ímè* *lí* *ójé* ↓*zá* *gbé* *ófè*.
 ART farm CF Oje:DST PST:BE.AT kill rat
 ‘On the farm it was that Oje killed a rat.’

We can now ask, do the phonological phrasing alternatives in Emai correlate with differences in information structure? Yes is the response, but the correlation seems opposite to that in Bantu, at least when utilizing the terminology of the Bantu tradition. In (19a) the locative adjunct is prosodically conjoined with the verb and its direct object, as signaled by the high high tone of *ófě*.

In Bantu, the CJ structure correlates with term focus, DJ does not correlate with term focus. In Emai, however, the CJ structure does not correlate with term focus. Now look at (19b). Here the locative adjunct is not conjoined with the verb and its direct object. The locative adjunct is disjoined from the verb and its direct object. This is signaled by the lexical or high low tone of *ófě*. Therefore, it is the DJ condition that correlates with information term focus, while the CJ condition correlates with a default value for predicate focus.

6. Conclusion

To conclude, we have reviewed contrasting syntactic constructions associated with adjunct adverbials that have locative significance. Canonical locative adjuncts appear in post-verbal position. They are marked by preposition *vi*, which precedes a complement that consists of a locative nominal. In non-canonical constructions such as contrastive focus and information questions of place, the locative adjunct nominal occurs in pre-verbal position. It is either fronted in the focus clause or corresponds to the fronted question-word of place. In both focus and question constructions, the main verb from the canonical construction is preceded by a second verb that assumes the shape *za*. In canonical constructions with a locative adjunct, there is no verb *za*.

A similar set of contrasting positional conditions obtain for manner adjuncts. Both locative and manner adjunct nominals appear as in-focus elements that are fronted relative to out-of-focus elements that essentially constitute the core units of a clause or the matrix clause. We have hypothesized that in focus and question constructions *za* presence in the nuclear layer is permitted by its inclusion in the clausal out-of-focus domain. With respect to the nuclear layer of the clausal out-of-focus domain, we also hypothesized that verb *za* and its core verb exist in a condition of nuclear subordination.

It is therefore our conclusion that an out-of-focus condition allows for the occurrence of Emai's latent forms in the verb phrase. Our future investigations of information structure within a clause should therefore be aimed at identifying not only in-focus domains but also out-of-focus domains.

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On the syntax-semantics interface of the negative markers “đâu” and “nào” in Vietnamese*

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1. Introduction

Vietnamese uses a variety of words that contain a negative meaning. These negative markers differ in position, scope of negation, and how they interact with the nucleus and its core arguments. Vietnamese negative markers have been examined from various perspectives, from synchronic to diachronic studies, as well as from syntactic, semantic, and pragmatic viewpoints (Thompson 1965, Nguyễn 1996, Huỳnh 2017, Phan 2024); however, they have not been studied from the perspectives of Role and Reference Grammar (RRG). Specifically, the markers *đâu* and *nào*, which have high expressive nuances and frequently appear in special constructions, have not been systematically explored for their scope of negation and compatibility with core arguments – an exploration that the RRG framework can be effectively applied to.

According to RRG, negation is not merely considered a syntactic phenomenon; it is also linked to semantic roles and discourse information. This paper aims to analyze the syntax-semantics interface of Vietnamese negative markers in relation to the nucleus and core arguments from the perspective of RRG (Van Valin and Foley 1980; Van Valin 1993, 2005). The study explores how effectively this framework can explain the syntax-semantics interface of the negative markers *đâu* and *nào*. The main objectives in our research include: (1) the position of the negative markers *đâu*, *nào* in sentences and the scope of these markers; and (2) the compatibility of these markers with the core arguments. These are our research questions:

1. How do the positions and scopes of the negative markers *đâu*, *nào* vary across sentence structures?
2. How do the negative markers *đâu*, *nào* interact with the core arguments in the layered structure of the clause?

Our analysis also includes a comparison with the typical negative marker “không”.

<i>Vietnamese</i>	<i>English equivalent</i>
<i>không</i>	not
<i>đâu</i>	certainly not
<i>nào</i>	absolutely not

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2. Theoretical framework

2.1. Role and Reference Grammar

RRG is a grammatical theory developed by William A. Foley and Robert Van Valin, Jr. in the 1980s, combining multiple viewpoints from contemporary functional grammar theories. Van Valin and Foley (1980: 330) described RRG as “a FUNCTIONAL approach to syntax and grammatical description”. Building on this foundation, Van Valin (1993) characterizes RRG as a “structural functional grammar theory” that seeks a balance between two extremes: formal grammar and functional grammar.

In RRG, the description of a sentence in a specific language is constructed based on (a) its logical (semantic) structure and communicative function and (b) the grammatical procedures available in the language to express these meanings. As shown in Table 1, RRG describes the structure of a sentence in multiple layers as follows:

Table 1: *Semantic units underlying the syntactic units of the layered structure of the clause*

Semantic element(s)	Syntactic unit
Predicate	Nucleus
Argument in the semantic representation of predicate	Core argument
Non-arguments	Periphery
Predicate + Arguments	Core
Predicate + Arguments + Non-arguments	Clause (= Core + Periphery)

Source: Van Valin (2005: 5)

2.2. Negation and negative markers

2.2.1. Negation

Negation, a term that contrasts with affirmation, is associated with human communication and thinking activities and operates on “a truth value of the proposition” (Luraghi and Parodi 2008: 142). Negation in language has attracted the attention of many researchers. This interest arises from the unique characteristics of negation in each language, distinguishing it from others. Researchers particularly focus on how negation interacts with various grammatical elements such as tense, aspect, and quantifiers.

Negation functions as a type of operator. Van Valin and LaPolla (1997) show that negation is one of the 8 categories of operators, which includes 7 other categories: tense, aspect, status, modality, illocutionary force, directionals, and evidentials.

According to the perspective of RRG, an operator is not considered part of the core, nucleus, or periphery of a clause; instead, it functions as an additional element that contributes specific grammatical features such as tense, aspect, modality, and others. Table 2 categorizes the types of operators as outlined by Van Valin (2005: 9).

Table 2: *Operators in the layered structure of the clause*

Nuclear operators:

Aspect

Negation

Directionals (only those modifying orientation of action or event without reference to participants)

Core operators:

Directionals (only those expressing the orientation or motion of one participant with reference to another participant or to the speaker)

Event quantification

Modality (root modals, e.g. ability, permission, obligation)

Internal (narrow scope) negation

Clausal operators:

Status (epistemic modals, external negation)

Tense

Evidentials

Illocutionary force

Source: Van Valin (2005: 9)

Observing the above table, we can see that negation is the only operator that appears at all three levels: nuclear negation (the scope of negation is the nucleus), core negation (the scope of negation is one or more core arguments, and possibly the nucleus), and clausal negation (the scope of negation is the clause). The distinction between core negation (and potentially nuclear negation, although this is not explicitly shown in Table 2) and clausal negation is also referred to as internal (narrow scope) negation and external negation.

The Vietnamese data provide clear illustrations of these negation operators. In the Vietnamese language, nuclear negation can be expressed as a negation operator like *bất* (not) in the words *bất hạnh* (unhappy), *bất hợp pháp* (illegal), *bất động* (immobile), etc. Core negation can be encountered in the sentence *Không ai biết cô ấy* (No one knows her). In this construction, the scope of negation is one core argument *ai*. Finally, we can see clausal negation in Vietnamese sentences such as *Nào Nam biết cô ấy* (There is no way Nam knows her).

2.2.2. Negative markers

The discussion on negation can be extended by considering how various types of negative elements function in different languages. Zeijlstra (2004: 334) distinguishes three concepts related to negation: (1) Negative markers, which denote that a sentence or constituent is under the scope of negation (*ne* and *pas* in French, *non* in Italian, etc.); (2) N-words, which are under specific conditions equivalent to negative quantifiers; (3) Negative elements, the broader category encompassing negative markers, N-words, and negative quantifiers.

This classification of concepts can also be applied to Vietnamese to identify its negative markers. Vietnamese uses a variety of negative markers, such as *không* (not), *chưa* (not yet), *chẳng* (definitely not), *đâu* (certainly not), and *nào* (absolutely not). The negative markers in Vietnamese have similarities and differences regarding the scope of negation, their position in sentences, and how they interact with the nucleus and its arguments.

3. Research results and discussion

3.1. The scope of negation of the Vietnamese negative markers “đâu”, “nào”

The main characteristic of negation operators is that they have scope, meaning that their semantic effects extend over other elements in the text. The affected elements can be

within the same clause or across clauses. This point has been well established in linguistic studies, notably by Klima (1964) and Lasnik (1972). Klima (1964) points out that negation may encompass the entire clause or only a constituent. Lasnik (1972) proposed a diagnostic test to determine when an item is being negated and when it is within the scope of negation. He shows that the scope of negation is not symmetric; if a quantifier occurs to the left of *not*, it will be outside the scope of negation.

Like English and many other languages, Vietnamese negative markers allow for negation to be expressed at different levels of sentence structure, from the nuclear to the core and the entire clause.

3.1.1. Nuclear negation

The negative markers like *không*, *đâu*, and *nào* typically function with core or clausal scope. The possibility of a negative marker yielding nuclear scope, even if it typically operates at higher levels, often depends on specific structural or contextual conditions. This brings us to consider how scope is determined in potentially ambiguous sentences, especially in contexts that highlight a specific part of the clause.

As Van Valin (2023) discussed, the scope of negation is closely tied to the focus structure of the clause, and consequently, the interpretation of the sentence depends on the context in which it occurs. He illustrates the relationship between negation scope and discourse context with the following example.

Max didn't buy a new car.

- | | |
|---|-----------------------|
| a. <i>He leased one.</i> | Nuclear scope |
| b. <i>He just went window shopping</i> | Core scope |
| c. <i>He bought a new motorcycle.</i> | Core (argument) scope |
| d. <i>Bill did.</i> | Core (argument) scope |
| e. <i>It's not the case that Max bought anything.</i> | Clausal scope |

Source: Van Valin (2023: 42)

Vietnamese also provides examples where the scope of negation in sentences using markers like *không*, *đâu*, and *nào* appears to be influenced by context and focus, analogous to Van Valin's illustration. Consider the following sentences.

- | | | | | | | |
|--------|---|---------------------|------------|-------------|---------------|----------------------------|
| (1) a. | <i>Nam</i> | <i>không</i> | <i>mua</i> | <i>nhà,</i> | <i>anh ấy</i> | <i>thuê</i> ¹ . |
| | Nam | NEG | buy | house | 3SG | rent |
| | 'Nam didn't buy a house, he rented instead.' | | | | | |
| b. | <i>Nam</i> | <i>đâu</i> | <i>mua</i> | <i>nhà,</i> | <i>anh ấy</i> | <i>thuê</i> . |
| | Nam | NEG | buy | house | 3SG | rent |
| | 'Nam certainly didn't buy a house, he rented instead.' | | | | | |
| c. | <i>Nam</i> | <i>nào</i> | <i>mua</i> | <i>nhà,</i> | <i>anh ấy</i> | <i>thuê</i> . |
| | Nam | NEG | buy | house | 3SG | rent |
| | 'Nam absolutely didn't buy a house; he rented instead.' | | | | | |

¹ Abbreviations used in this paper: 3SG: third person singular, COM: comparative, COP: copula, DEM: demonstrative, INDF.PRO: indefinite pronoun, MP: modal particle, NEG: negation, PRT: particle, WH.PRO: Wh-pronoun.

In (1a-c), the negative markers *không*, *đâu*, and *nào* exhibit nuclear scope, targeting the predicate *mua* ‘buy’, as supported by the contextual clause *anh ấy thuê* (he rented). The data illustrate that, under suitable contextual conditions, these markers serve as indicators of nuclear negation, and their surface position aligns with this scope.

3.1.2. Core negation

The Vietnamese negative markers *không*, *đâu*, *nào* indicate that the scope of negation can extend to the core, which includes one or more core arguments and possibly the core itself. The core negation scope allows for a deeper interpretation of negation within a sentence, as it can affect not only the action or state expressed by the nuclear predicate but also the actor and the undergoer involved in that action or state.

- (2) a. ***Không*** *ai* *đến.*
 NEG INDF.PRO come
 ‘Nobody comes.’
- b. ***Đâu*** *ai* *đến.*
 NEG INDF.PRO come
 ‘Certainly, nobody comes.’
- c. ***Nào*** *ai* *đến.*
 NEG INDF.PRO come
 ‘Absolutely nobody comes.’

As illustrated in (2a), the negative marker *không* has a scope of negation that includes the core argument, the indefinite pronoun *ai* ‘anyone’. This shows that the scope of negation in Vietnamese can extend beyond the nucleus to include the entire core (including the core arguments and maybe the nucleus). In other words, negation may be related to the actor or the undergoer involved in the action or state expressed by the nuclear predicate.

However, despite having a similar structure to (2a-c), examples (2c) require a more detailed discussion regarding whether the scope of negation here is core or clausal. To answer the question: ‘*How many people came?*’, the shortest possible answers can be: *Không ai* / *Đâu ai* / **Nào ai*, each with different emphatic nuances. This illustrates that in sentence (2b), *đâu* should be grouped with *không* as a negative marker with core scope. The unnaturalness of *nào ai* as a standalone phrase (and the natural structure consisting of ‘*nào + ai + PRED*’) suggests that *nào* can be interpreted as a clausal negation marker in case (2c) *Nào ai đến* rather than a core negation marker.

The scope of negation also requires careful consideration when negative markers precede the nucleus in sentences with definite core arguments. Consider the following examples.

- (3) a. *Nam* ***không*** *biết* *cô ấy.*
 Nam NEG know 3SG
 ‘Nam doesn’t know her.’
- b. *Nam* ***đâu*** *biết* *cô ấy.*
 Nam NEG know 3SG
 ‘Nam certainly doesn’t know her.’
- c. *Nam* ***nào*** *biết* *cô ấy.*
 Nam NEG know 3SG

‘Nam absolutely doesn’t know her.’

The above data can have two interpretations regarding the scope of negation: (1) the scope of negation is limited to the core, which includes the core argument *cô ấy* ‘her’ (or possibly the nucleus *biết* ‘know’); or (2) the scope of negation extends to the entire clause. For instance, if we extend the sentence to *Nam không biết cô ấy, Nam biết em cô ấy* (Nam doesn’t know her, Nam doesn’t know her younger sister), the ambiguity regarding the scope of negation disappears; at this point, the scope of the negative marker *không* is over the core argument *cô ấy*. Therefore, the scope of negation is related to focus structure, as discussed by Van Valin and LaPolla (1997), Van Valin (2005, 2023). This opens a broader discussion, where the scope of negation may extend beyond the core to encompass the clause, as will be examined in the next section.

3.1.3. Clausal negation

Besides having scope over the core, Vietnamese negative markers can also extend their scope to the entire clause.

- (4) a. *Nào ai biết cô ấy*
 NEG anyone know 3SG
 ‘Absolutely nobody knows her.’
- b. *Nào Nam biết cô ấy*
 NEG Nam know 3SG
 ‘It is not the case that Nam knows her.’
- c. *Nào Nam có biết cô ấy*
 NEG Nam MP know 3SG
 ‘It is not the case that Nam knows her.’
- d. *Nào anh ấy biết nào anh ấy hay*
 NEG 3SG know NEG 3SG know
 ‘Absolutely, he doesn’t know, absolutely he doesn’t cognize.’

Example (4a) *Nào ai biết cô ấy* (Absolutely nobody knows her) raises the question of whether the negation introduced by the marker *nào* is limited to the indefinite pronoun *ai* or extends over the entire clause. In contrast, (4b) and (4c) demonstrate that *nào* may appear before a definite core argument *Nam* and the scope of negation spans the entire clause, although the negative meaning of (4c) is further emphasized due to the modal particle *có*. Finally, when the marker *nào* precedes a definite argument, it frequently appears in a parallel structure, as illustrated in (4d).

Under certain conditions (specifically, the presence of the particle *mà*), the word *đâu* may also function as a clause-initial negative marker directly preceding a core argument, as shown in (5).

- (5) a. *Đâu ai biết cô ấy.*
 NEG INDF.PRO know 3SG
 ‘Certainly nobody knows her.’
- b. **Đâu Nam biết cô ấy.*
 NEG Nam know 3SG
 Expected meaning: ‘Nam doesn’t know her.’

- c. **Đâu** **mà** *Nam* *biết* *cô ấy*.
 NEG PRT Nam know 3SG
 ‘It is not the case that Nam knows her.’

Based on (5a-c), we can see that the negative marker *đâu* can appear clause-initially when followed by an indefinite core argument such as *ai*, with core negation scope, as shown in (6a). If the core argument is not an indefinite pronoun, the sentence becomes acceptable only with the presence of the particle *mà*, as shown in (5c). While in (5a), the scope of the negative marker *đâu* is over the core argument *ai* (an indefinite pronoun), in contrast, in (5c), the scope of negation encompasses the entire clause.

Besides occurring pre-verbally, *đâu* can also appear clause-finally, where its scope of negation encompasses the entire clause.

- (6) *Anh biết cô ấy, phải không?*
 ‘You know her, don't you?’
- a. *Tôi biết.*
 1SG know
 ‘I know.’
- b. *Tôi biết đâu.*
 1SG know NEG
 ‘Certainly, I don't know.’
- c. *Tôi biết cô ấy đâu.*
 1SG know 3SG NEG
 ‘Certainly, I don't know her.’
- d. *Không có chuyện đó đâu.*
 1SG have thing DEM NEG
 ‘There's no such thing.’
- d'. *Có chuyện đó đâu.*
 have thing DEM NEG
 ‘There's no such thing.’

A comparison of (6a) and (6b), as well as (6d) and (6d'), reveals that *đâu* functions as the sole negative marker in (6b) and (6d') since no other negator appears. Meanwhile, (6b) and (6c) raise the question of whether *đâu*'s scope of negation is confined to the nucleus, the core, or extends to the clause; example 6d' conclusively demonstrates that *đâu*'s negation scope encompasses the entire clause.

The negative marker *không* cannot appear as clause-initial negative markers with scope over the entire clause in the way that *đâu* and *nào* can, but this marker can occur in existential constructions (*Không có chuyện Nam biết cô ấy* ‘There's no way Nam knows her’). Of course, *đâu* and *nào* can also appear in these structures.

Therefore, the scope of negation of the five Vietnamese negative markers is illustrated in Table 3. Specifically, all three markers – *không*, *đâu*, *nào* – can realize nuclear, core, and clausal negation; however, their realizations and specific uses at each level vary. For instance, although all can express clausal negation, only *đâu* functions as a clause-final negative marker with a scope that encompasses the entire clause, as shown above. Conversely, *nào* typically appears in clause-initial position, where it interacts strongly with various types of actor arguments, both indefinite and definite, to negate the entire clause.

Table 3: *The scope of negation of the Vietnamese negative markers “không”, “đâu”, and “nào”*

Negative marker	Nuclear negation	Core negation	Clausal negation
<i>không</i>	+ (under contextual conditions)	+	+ (pre-nucleus)
<i>đâu</i>	+ (under contextual conditions)	+	+ (clause-final)
<i>nào</i>	+ (under contextual conditions)	+	+ (clause-initial)

3.2. The compatibility of the Vietnamese negative markers “đâu”, “nào” with the core arguments

3.2.1. The negative markers preceding the nucleus

In (3a-c), we observe that the compatibility of negative markers is the same when the core argument (the actor) is a definite third-person singular. However, when the core argument (the actor) is an indefinite pronoun, the compatibility of these negative markers differs. While the negative markers *không* can quickly appear in a sentence with the indefinite pronoun *ai* as the core argument, see (7a); the negative markers *đâu*, and *nào* seem to lack this compatibility, see (7b) and (7c). It is essential to distinguish between negative sentences and interrogative sentences that contain negative markers between (7a) and (7a’), (7b) and (7b’), (7c) and (7c’).

- (7) a. *Ai không biết cô ấy.*
 INDF.PRO NEG know 3SG
 ‘Everyone knows her.’
- a’. *Ai không biết cô ấy?*
 WH.PRO NEG know 3SG
 ‘Who doesn’t know her?’
 ‘Who hasn’t known her yet?’
- b. **Ai đâu biết cô ấy.*
 INDF.PRO NEG know 3SG
Expected meaning: ‘Everyone knows her.’
- b’. **Ai đâu biết cô ấy?*
 WH.PRO NEG know 3SG
Expected meaning: ‘Who doesn’t know her?’
- c. **Ai nào biết cô ấy.*
 INDF.PRO NEG know 3SG
Expected meaning: ‘Everyone knows this’.
- c’. **Ai nào biết cô ấy?*
 WH.PRO NEG know 3SG
Expected meaning: ‘Who doesn’t know her?’

Bruening and Tran (2006) refer to words such as *ai* as wh-indefinite. Trinh (2025) also notes that Vietnamese is one of the languages that construct negative polarity Items (NPIs) from wh-elements. For example, the word *ai* functions as an interrogative pronoun

meaning ‘who’, but when used as an NPI, it means ‘anyone’. Similarly, words like *đâu*, *gì*, etc. function in the same way in this context.

In both (7a) and (7a’), *không* functions as a negative marker. However, in (7a’), the word *ai* acts as an interrogative pronoun (who), and the sentence is interpreted as a real question. In contrast, (7a) is interpreted as a rhetorical question, and in this sentence, the clause-level negation operator *không* exploits the polarity sensitivity of *ai*. In this rhetorical context, *ai* acquires an empty-set reading, leading to a universal affirmative meaning: *Ai không biết cô ấy* (Everyone knows her), which has a similar meaning to *Không ai không biết cô ấy* (Everyone knows her).

In (7b’) and (7c’), the markers *đâu* and *nào* carry an emphatic implicature and cannot be suitable for an interrogative sentence. In other words, the structure ‘*Ai + đâu/nào*’ is not allowed in direct interrogative sentences. Whereas in (7b) and (7c), *đâu* and *nào* either do not function as wide-scope clause-level polarity operators, or are restricted in this function in this specific construction. Therefore, they cannot trigger an empty-set reading for *ai*, leading to a universal affirmative meaning.

The data demonstrate that not all negative markers are equally compatible with indefinite core arguments. This interaction depends on both the nature of the marker and the information status of the core argument. From the RRG viewpoint, this is understood as an interface between the negation operator and the semantic and pragmatic functions of arguments.

3.2.2. The negative markers preceding the core arguments

In the previous sections, we found that only *nào* can combine with both types of core arguments serving as the actor: the indefinite core argument *ai* (as in (2c) *Nào ai đến* ‘Absolutely nobody comes’) and definite ones, as in (4b) *Nào Nam biết cô ấy* ‘It is not the case that Nam knows her’, while other negative markers can only combine with the indefinite core argument *ai*, but not with definite ones.

- (8) a. ***Không** *Nam* *biết* *cô ấy*.
 NEG Nam know 3SG
 Expected meaning: ‘Nam doesn’t know her.’
 b. ***Đâu** *Nam* *biết* *cô ấy*.
 NEG Nam know 3SG
 Expected meaning: ‘Certainly Nam doesn’t know her.’

In this section, we examine which indefinite arguments negative markers can combine with, in addition to *ai* ‘anyone’. The set of indefinite pronouns considered in this analysis includes *đâu* ‘anywhere’ and *gì* ‘anything’.

- (9) a. **Không** *đâu* *đẹp* *bằng* *nơi* *này*.
 NEG INDF.PRO beautiful COMP place DEM
 ‘Nowhere beautiful as this place.’
 b. ***Đâu** *đâu* *đẹp* *bằng* *nơi* *này*.
 NEG INDF.PRO beautiful COMP place DEM
 Expected meaning: ‘Nowhere beautiful like this place.’
 c. ***Nào** *đâu* *đẹp* *bằng* *nơi* *này*.
 NEG INDF.PRO beautiful COMP place DEM
 Expected meaning: ‘Nowhere beautiful as this place.’

- (10) a. *Không* *gì* *là* *không thể.*
 NEG INDF.PRO COP impossible
 ‘Nothing is impossible.’
- b. *Đâu* *gì* *là* *không thể.*
 NEG INDF.PRO COP impossible
 ‘Nothing is impossible.’
- c. **Nào* *gì* *là* *không thể.*
 NEG INDF.PRO COP impossible
 Expected meaning: ‘Nothing is impossible.’

The data above show that the negative marker *không* combines freely with indefinite core arguments such as *đâu* ‘anywhere’ and *gì* ‘anything’, as indicated in (9a), (10a). Along with their interaction with the indefinite core arguments *ai*, the negative markers *không* demonstrate their extensive combinatorial possibilities with indefinite core arguments, despite the difference in emphatic nuance between these two negative markers.

Between the two markers *đâu* and *nào*, the marker *đâu* has a better compatibility with indefinite core arguments in negative constructions. *Đâu* cannot combine with *đâu* ‘anywhere’ as shown in (9b) *Đâu đâu đẹp bằng nơi này*, but it can combine with *gì*, as shown in (10b) *Đâu gì là không thể*. It would be more natural to include the word *có*, resulting in the sentence: *Đâu có gì là không thể* (Nothing is impossible).

Finally, *nào* does not demonstrate the capacity to be compatible with either *đâu* or *gì*. How can this be explained, given that in previous sections, we claimed that *nào* can appear before *ai* and even before definite core arguments, implying that *nào* can appear before a diverse range of core arguments? However, it should be noted that in all cases where *nào* appears before *ai* and various types of definite core arguments, *nào* consistently demonstrates clausal scope, rather than negating precisely the core argument functioning as the subject in the sentence. This explains why *nào* cannot occur before *đâu* ‘anywhere’ or *gì* ‘anything’ to form combinations like *nào đâu* ‘nowhere’ or *nào gì* ‘nothing’ that would serve to negate the core argument directly.

These findings suggest that Vietnamese negative markers are governed by both semantic and syntactic constraints when interacting with core arguments. In particular, their distribution reflects a sensitivity to the definiteness of the arguments: indefinite core arguments such as *ai* ‘anyone’, *gì* ‘anything’, *đâu* ‘anywhere’ show greater compatibility with negative markers, while definite core arguments restrict this combination.

4. Conclusion

This paper has provided an analysis of the negative markers “đâu”, “nào” in Vietnamese from the perspective of RRG. The investigation examined the scope of negation of these Vietnamese negative markers and their combinability with the core arguments.

The analysis of the scope of negation demonstrates that the negative markers *đâu*, *nào* operate across various layers of the clause, from the nuclear, the core, to the clause, demonstrating a layered structure typical of many languages analyzed within RRG. However, we also realize that both *đâu* and *nào* are most often found functioning at the clausal level. Among the investigated negative markers exhibiting clausal scope, *đâu* is unique in its clause-final placement, contrasting with *nào*, which occupies clause-initial position and strongly interacts with actor arguments (both definite and indefinite).

The study found that the combinability of these negative markers with the core arguments (actor) depends on: (1) the syntax-semantics characteristics of *đâu, nào*; (2) the position and characteristics of the core argument (indefinite or definite).

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Holophrastic use of ideophones in Japanese*

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1. Introduction

Ideophones are defined as “member[s] of an open lexical class of marked words that depict sensory imagery” (Dingemanse 2019: 16). They are attested in numerous languages worldwide (Voeltz and Kilian-Hatz 2001), and Japanese is no exception. In discussions of the morphosyntax of ideophones, scholars often focus on their part-of-speech categories when these items appear in sentences. In Japanese, ideophones typically occur in one of three grammatical categories: adverbs (e.g., *kúrukuru*(-to) ‘turning’ (1a)), adjectival nominals (e.g., *kurukuru* ‘curly’ (1b)), and verbs (e.g., *búrabura-suru* ‘sway’ (1c)) (see Kita 1997; Hamano 1998; Akita 2009; Toratani 2017, among others).¹

- (1) a. *Koma-ga kúrukuru-to mawat-te.iru.* [adverb]
top-NOM IDEO.turning-P turn-GER-exist
‘The top is turning round and round.’
b. *Sono-ko-wa kami-ga kurukuru-da.* [adjectival nominal]
that-child-TOP hair-NOM IDEO.curly-COP
‘That child’s hair is curly.’
c. *Ashi-o búrabura-shi-te-iru.* [verb]
leg-ACC IDEO.swaying-do-GER-exist
‘(She) is swaying her legs.’

By contrast, ideophones’ use as a holophrase, like those in (2), has received much less attention.

- (2) a. *GachaN.*
IDEO.bang

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¹ Abbreviations used in this paper are as follows: ACC=accusative, Ad-P=adverbial phrase, COP=copula, EVID=evidential, GEN=genitive, GER=gerundive, IDEO=ideophone, IF=illocutionary force, LSC=layered structure of the clause, *N*=moraic nasal, NEG=negative, NOM=nominative, NPAST=non-past, NUC=nucleus, P=particle, PASS=passive, PP=pre(/post)positional phrase, PrDP=pre-detached position, PRED=predicate, PROG=progressive, *Q*=moraic obstruent, Q=question, RP=reference phrase, SFP=sentence final particle, TNS=tense and TOP=topic.

- ‘(Someone) banged (the door shut)’.
<https://nlb.ninjal.ac.jp/headword/OM.00457/#SS11>)
- b. *ZuruQ*.
 IDEO.slip
 ‘(Someone) slipped (down to the ground).’
<https://nlb.ninjal.ac.jp/headword/OM.02205/#SS56>)
- c. *Gokuri*
 IDEO.gulp
 ‘(Someone) gulped (down something).’
<https://nlb.ninjal.ac.jp/headword/OM.00359/#SS314>)

A key distinction between the ideophones in examples (1) and (2) lies in their morphosyntactic behavior. Those in (1)—which appear within a sentence—are either marked by a particle (1a/1b) or combined with a light verb meaning ‘do’ (1c). In contrast, the ideophones in (2) occur, standing alone, without accompanying particles or light verbs. This contrast raises an important question: How is the syntactic structure of holophrastic ideophones represented? Toratani (2017) previously proposed a layered structure of the clause (LSC) within the framework of Role and Reference Grammar (RRG) but did not explain why holophrastic ideophones adopt this structure. This paper reexamines the syntactic nature of holophrastic ideophones, drawing on Heine’s (2023) observations, and proposing an alternative to the structure suggested by Toratani (2017).

The organization of this paper is as follows. Section 2 explores the structure of holophrastic ideophones in detail. Section 2.1 outlines the properties of “interactives” as described by Heine (2023), who characterizes holophrastic ideophones as a subtype of “interactives”. The subsection demonstrates how these properties apply to Japanese ideophones. Section 2.2 analyzes the syntactic structure of holophrastic ideophones through the lens of RRG, incorporating Heine’s (2023) observations. Section 3 offers concluding remarks.

2. The structure of holophrastic ideophones

Heine (2023) defines “interactive” as “an invariable deictic form that is in some way set off from the surrounding text semantically, syntactically and prosodically and can neither be negated nor questioned” (2023: 7). His examples of interactives include holophrastic ideophones (English *Thud!*), along with other forms, such as attention signals like *Hey!*, social formulae like *Bye!*, and vocatives like *Mom!*. This section focuses on three of the four defining characteristics outlined by Heine: (a) separation from the immediate linguistic environment (i.e., holophrastic ideophones are “in some way set off from the surrounding text semantically, syntactically and prosodically”), (b) un-negatability, and (c) unquestionability. Section 2.1 demonstrates that these three features (a–c) are indeed applicable to holophrastic ideophones in Japanese. Section 2.2 then explores how these features can be interpreted within the framework of RRG, offering insight into their structure.

2.1. Characteristics of holophrastic ideophones in Japanese

2.1.1. Separation from the immediate linguistic environment

As mentioned above, Heine (2023: 7) notes interactives, including holophrastic ideophones, are “in some way set off from the surrounding text semantically, syntactically and prosodically”. Three examples, (3), (4), and (5), are used to elaborate on this point.

In (3) and (4), the (a)-examples contain a holophrastic ideophone, the (b)-examples, which qualify as the “surrounding text”, show the context that clarifies what the ideophones express. In (5), the order of the ideophone and the surrounding text is reversed. In all cases, the (c)-examples indicate the location of a major phonological break when the (a)- and (b)- examples are uttered in sequence at a natural speed.

(3) a. *GachaN!*

IDEO.crash

‘(Something) crashed (into the ground).’

- b. *Garasu wa ware suingu wa dainashi.*
glass TOP crash.and swing TOP be.ruined

‘The glass crashed, and my swing was ruined’

(<https://nlb.ninjal.ac.jp/headword/OM.00457/#SS193>)

- c. *GachaN! || Garasu wa ware | suingu wa dainashi.* (= phonological break)

(4) a. *Kurukuru...*

IDEO.turning

‘(Something) is turning round and round.’

- b. *Atto.iu.ma.ni kami ga mak-are-te-iku.*
in.a.flash hair NOM curl-PASS-GER-go

‘In no time, her hair gets curled up.’

(<https://nlb.ninjal.ac.jp/headword/OM.00061/#SS35>)

- c. *Kurukuru. || Atto.iu.ma.ni kami ga mak-are-te-iku.* (= phonological break)

(5) a. *Kuriimu wa orenji-kajuu-iri-rashii-yo ~*

cream TOP orenji-fruit.juice-containment-EVID-SFP

‘I hear the cream contains orange juice; I tell you.’

- b. *Wakuwaku ♪*

IDEO.excited

‘(I) am excited.’

(<https://nlb.ninjal.ac.jp/headword/OM.00040/#SS6>)

- c. *Kuriimu wa orenji-kajuu-iri-rashii-yo. || Wakuwaku.*

(3) describes a scene of someone practicing his golf swing. The holophrastic ideophone in (3a), *GachaN!*, depicts the noisy sound emitted when something crashes into a hard object. (4) refers to a scene of a hair-styling contest. The ideophone in (4a), *Kurukuru*. (pronounced as /*kúru kúru*/), depicts the rolling (turning-around/curling) movement of something. (5a) describes something about the food the speaker is about to eat, and the ideophone in (5b), *Wakuwaku* (pronounced as /*wáku wáku*/), depicts how excited she is.

Heine’s (2023: 7) point on semantic separation (i.e., holophrastic ideophones are “in some way set off from the surrounding text semantically”) seems to mean that what is depicted by the holophrastic ideophone is distinct from what is portrayed by the immediately preceding or following text. This applies to the examples above. The holophrastic ideophone *GachaN!* (3a) depicts an event in which something crashes into a hard object, and this state of affairs itself is distinct from what (3b) denotes. Similarly, *Kurukuru.* in (4a) depicts an on-going action in which something is rolling/curling/turning around, which is distinct from the description in (4b)’s commentary note.

(5a) is a description about a food item, which is distinct from what the ideophone in (5b) depicts, i.e., the speaker's excitement.

Turning next to the matter of prosody, a distinct and substantial phonological boundary is observed between holophrastic ideophones and the adjacent sentence, whether preceding or following, as represented by the two vertical lines in the (c)-examples. In each instance, the duration of this phonological break between the (a)-example and the (b)-example is major, comparable to the pause typically employed at the end of a regular sentence. This phenomenon indicates that the phonological break simultaneously functions as syntactic disjunction, thereby implying that syntactically, the holophrastic ideophone (e.g., (3a)) is not part of the surrounding text (e.g., (3b)).

Furthermore, it is essential to underscore that holophrastic ideophones, such as those illustrated in (3a), (4a), and (5b), do not sound elliptical. This characteristic distinguishes them from single-word utterances of prosaic words. For example, an utterance of “*Ame*.” (meaning ‘rain’) implies the presence of un-uttered elements. The utterance of *Ame* suggests the speaker has perceived a change in the environment—namely, the onset of rain—and has responded with a truncated expression in lieu of the full sentence, *Ame ga fut-te ki-ta* [rain-NOM fall-GER come-PAST] ‘It started to rain.’ Similarly, the utterance “*Taberu!*” (meaning ‘eat’) is interpreted as an expression of intent by the speaker, with the subject ‘I’ being omitted, consistent with Japanese as a so-called pro-drop language. This type of construal involving ‘null elements’ does not apply to holophrastic ideophones.

2.1.2. Un-negatability and unquestionability

This section considers whether un-negatability and unquestionability apply to holophrastic ideophones in Japanese.

The negation marker in Japanese is *-nai*. It can be combined with an adjective (which ends in *i*) as in (6a), a verb (which ends in *u*) as in (6b), or a copula as in (6c).

(6) a. <i>Ooki-i.</i> big-NPAST ‘(It) is big.’	→	<i>Ookiku-nai.</i> big-NEG ‘(It) is not big.’	✓[Adjective]
b. <i>Nom-u.</i> drink-NPAST ‘(I) will drink.’	→	<i>Noma-nai.</i> drink-NEG ‘(I) will not drink.’	✓[Verb]
c. <i>Ame-da.</i> rain-COP ‘(It’s) rain.’	→	<i>Ame-ja-nai.</i> rain-COP-NEG ‘(It’s) not rain.’	✓[Copula]

However, *-nai* ‘not’ cannot be combined with a holophrastic ideophone as represented by the asterisks in (7). The ideophones are repeated from (2) and (5b).

(7) a. <i>GachaN.</i> IDEO.bang ‘(Someone) banged (the door shut).’	→ ✗	* <i>GachaN-nai.</i> IDEO.bang-NEG
b. <i>ZuruQ.</i> IDEO.slip ‘(Someone) slipped (down to the ground).’	→ ✗	* <i>ZuruQ-nai.</i> IDEO.slip-NEG

- | | | |
|--------------------------------------|-----|------------------------|
| c. <i>Gokuri.</i> | → ✗ | * <i>Gokuri-nai.</i> |
| IDEO.gulp | | IDEO.gulp-NEG |
| ‘(Someone) gulped (down something).’ | | |
| d. <i>Wakuwaku.</i> | → ✗ | * <i>Wakuwaku-nai.</i> |
| IDEO.excited | | IDEO.excited-NEG |
| ‘(I am) excited.’ | | |

A similar point can be said about unquestionability. Questions in Japanese are formed by adding the question particle *ka* at the end of the clause, as in (8a) and (8b).

- | | | | |
|----------------------------|---|------------------------|-----------|
| (8) a. <i>Oishii-desu.</i> | → | <i>Oishii-desu-ka.</i> | ✓[Clause] |
| delicious-COP | | delicious-COP-Q | |
| ‘(It) is delicious.’ | | ‘Is (it) delicious?’ | |
| b. <i>Iki-masu.</i> | → | <i>Iki-masu-ka.</i> | ✓[Clause] |
| go.POL.NPAST | | go-POL-Q | |
| ‘(I) will go.’ | | ‘Will you go?’ | |

However, the particle *ka* cannot be added to the holophrastic ideophones as in (9). Examples are repeated from (7).

- | | | |
|---|-----|-----------------------|
| (9) a. <i>GachaN.</i> | → ✗ | * <i>GachaN-ka.</i> |
| IDEO.bang | | IDEO.bang-Q |
| ‘(Someone) banged (the door shut).’ | | |
| b. <i>ZuruQ.</i> | → ✗ | * <i>ZuruQ-ka.</i> |
| IDEO.slip | | IDEO.slip-Q |
| ‘(Someone) slipped (down to the ground).’ | | |
| c. <i>Gokuri.</i> | → ✗ | * <i>Gokuri-ka.</i> |
| IDEO.gulp | | IDEO.gulp-Q |
| ‘(Someone) gulped (down something).’ | | |
| d. <i>Wakuwaku.</i> | → ✗ | * <i>Wakuwaku-ka.</i> |
| IDEO.excited | | IDEO.excited-Q |
| ‘(I am) excited.’ | | |

In short, Heine’s observations on interactives can be shown to apply to holophrastic ideophones in Japanese in terms of separation from the immediate linguistic environment, un-negatability, and unquestionability. The next task is to determine what these characteristics signify in RRG terms.

2.2 The structure of the holophrastic ideophones

Toratani (2017) proposes the LSC for a holophrastic ideophone, *Péta Péta*. ‘Stick Stick.’, as in (10),² but without any justification.

² The representation of (10) is adapted from Toratani (2017: 51), who represents the LSC of the holophrastic ideophone in a tree format. The term “mimetics” used in that earlier work is replaced by “ideophones” here, to be compatible with the more commonly used term in recent literature. The representation also uses *petapeta* followed by a note /*pétapéta*/, */*pétapeta*/. For simplicity, it is represented as *Péta Péta* in the text.

(10) [SENTENCE [CLAUSE [CORE [NUC [PRED [IDEOPHONE *Péta Péta.*]]]]]]]

The representation in (10) leads to two important questions: (i) Why is the holophrastic ideophone represented as “layered”? (Note the ideophone is represented in the innermost layer in (10)); (ii) Why is the highest unit (i.e., the outermost unit in (10)) identified as “sentence”? The next subsections explore these questions, considering the three characteristics observed in Section 2.1. and arguing the structure in (10) cannot be supported.

2.2.1. The relevance of layering

The first task is to consider what the un-negatability and unquestionability of holophrastic ideophones signify in the structural representation. In RRG, negation and question (illocutionary force) are operators (Van Valin 2005: 12, 2023: 33). The inability of holophrastic ideophones to co-occur with these operators hints that they may be unable to co-occur with other operators either. This turns out to be the case, as shown in (11). Three ideophones, from (9a-b) and (9d), are selected and repeated for illustration below.

- | | | |
|--|-----|---|
| (11) a. <i>GachaN.</i>
IDEO.bang
'(Someone) banged (the door shut).' | →!× | * <i>GachaN-te.iru.</i>
IDEO.bang-PROG |
| b. <i>ZuruQ.</i>
IDEO.slip
'(Someone) slipped (down to the ground).' | →!× | * <i>ZuruQ-te.iru.</i>
IDEO.slip-PROG |
| c. <i>Wakuwaku.</i>
IDEO.excited
'(I am) excited.' | →!× | * <i>Wakuwaku-te.iru.</i>
IDEO.excited-PROG |
| d. <i>GachaN.</i>
IDEO.bang
'(Someone) banged (the door shut).' | →!× | * <i>GachaN-ta.</i>
IDEO.bang-PAST |
| e. <i>ZuruQ.</i>
IDEO.slip
'(Someone) slipped (down to the ground).' | →!× | * <i>ZuruQ-ta.</i>
IDEO.slip-PAST |
| f. <i>Wakuwaku.</i>
IDEO.excited
'(I am) excited.' | →!× | * <i>Wakuwaku-ta.</i>
IDEO.excited-PAST |
| g. <i>GachaN.</i>
IDEO.bang
'(Someone) banged (the door shut).' | →!× | * <i>GachaN-kamoshirenai.</i>
IDEO.bang-may |
| h. <i>ZuruQ.</i>
IDEO.slip
'(Someone) slipped (down to the ground).' | →!× | * <i>ZuruQ-kamoshirenai.</i>
IDEO.slip-may |
| i. <i>Wakuwaku.</i>
IDEO.excited
'(I am) excited.' | →!× | * <i>Wakuwaku-kamoshirenai.</i>
IDEO.excited-may |
| k. <i>GachaN.</i>
IDEO.bang
'(Someone) banged (the door shut).' | →!× | * <i>GachaN-soo.</i>
IDEO.bang-EVID |

l. <i>ZuruQ</i> . IDEO. _{slip} '(Someone) slipped (down to the ground).'	→!× * <i>ZuruQ-soo</i> . IDEO. _{slip} -EVID
m. <i>Wakuwaku</i> . IDEO. _{excited} '(I am) excited.'	→!× * <i>Wakuwaku-soo</i> . IDEO. _{excited} -EVID

As (11) shows, holophrastic ideophones cannot be marked by an aspect marker (a nuclear operator) (*-te.iru* PROG) (11a–c), a tense marker (clause operator) (*-ta* PAST) (11d–f), an epistemic modality marker (core operator) (*-soo* ‘hear’) (11g–i), or an evidential marker (clause operator) (*-soo* ‘hear’) (11k–m). This shows holophrastic ideophones cannot be marked by the operators regardless of which layer they modify.

An obvious question is why holophrastic ideophones cannot take operators. One possible answer is the lack of the required morphological shapes for operators to attach to. For example, the negative marker can attach to an adjective, a verb, or a copula of prosaic words, each of which has a specific morphological ending (see (6)). But holophrastic ideophones do not have the same morphological ending as prosaic words (see e.g., (2)). This seems to suggest holophrastic ideophones are formally incompatible with operators. Further, this formal incompatibility seems motivated by semantic incompatibility: i.e., holophrastic ideophones are inherently incompatible with the concepts expressed by the operators. This leads to another question: Why are holophrastic ideophones semantically incompatible with such concepts as past tense, progression, negation, and hearsay? (12) represents a response to this question.³

(12) *BatabatabataQ!!!*
IDEO._{fluttering}
'Fluttering!!!'

The holophrastic ideophone in (12) serves as the sole caption accompanying a moment photograph, depicting a small bird in a nest (enclosed within a cage) vigorously fluttering its wings. This instance illustrates an event occurring directly before the cognizer’s eyes. In this context, the ideophone functions as a representation of the scene viewed from a “proximal” (Talmy 2000: 68) perspective point (Toratani 2024), or in Nuckolls’ terms, the ideophone represents an “image of an action unfolding in time” (Nuckolls, 1996: 14). Due to this immediacy, the utterance of an ideophone such as *BatabatabataQ!!!* implies that the bird is actively fluttering its wings at that precise moment, ceasing the action upon completion of the utterance. Alternatively, the ideophone may serve as an iconic reenactment of the fluttering event. In either case, the holophrastic ideophone encapsulates a *fait accompli*—a completed event. Consequently, the finality of the depicted action cannot be changed by adding operators, such as aspectual and tense markers.

I now review the characteristics of the LSC for a sentence consisting of prosaic words represented in Figure 1 to evaluate whether the LSC’s features can be transferred to capture the representation of holophrastic ideophones.

³ For the original photo, see <https://www.hama-midorinokyokai.or.jp/zoo/zoorasias/details/2025/post-558064.php>.

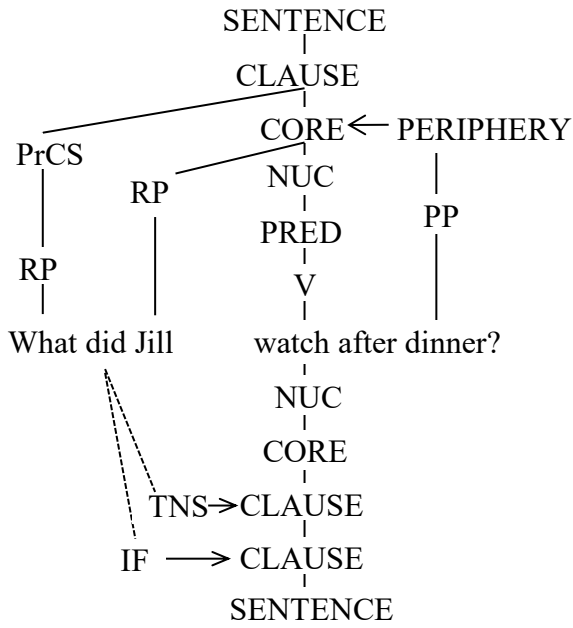


Figure 1: The LSC for *What did Jill watch after dinner?*

Figure 1 illustrates the LSC for the sentence *What did Jill watch after dinner?* The upper portion of the diagram represents the constituent projection, while the lower portion depicts the operator projection (cf. Van Valin 2023). As demonstrated in this representation, the constituent projection must indicate that the referential phrase (RP) is part of the core. Additionally, non-predicating elements—such as prepositional phrases (PPs) located in the periphery—must specify the syntactic unit they modify, which can be the nucleus, the core, and/or the clause. The directional arrow in Figure 1 serves to illustrate such a modificational relationship. Likewise, within the operator projection, each operator must identify the specific layer it modifies—be it the nucleus, the core, or the clause. In Figure 1, both the tense operator and the illocutionary force (IF) are shown to modify the clause. The necessity of indicating which elements participate in modificational relationships or contribute to the formation of syntactic units substantiates the postulation of distinct layers in sentences composed of multiple prosaic words and grammatical morphemes.

By contrast, a unit consisting solely of a holophrastic ideophone diverges fundamentally from a sentence consisting of multiple prosaic words and grammatical morphemes. As discussed in Section 2.2.1, holophrastic ideophones are not subject to modification by any operators. Consequently, the justification for an operator projection in their representation is untenable.

Moreover, the constituent projection, if applied, would encompass only the holophrastic ideophone itself. In the absence of additional syntactic units—such as an RP within the core or a PP modifying a specific layer—the rationale for positing the nucleus, the core, and the clause becomes logically indefensible. In other words, holophrastic expressions function as self-contained utterances, devoid of co-occurring elements that would necessitate a layered syntactic analysis.

Taken collectively, the lack of empirical support for the presence of layered structures in both the operator and constituent projections strongly suggests that holophrastic ideophones should not be represented by the LSC.

If the structure cannot be layered, does this imply that the highest unit of the LSC—namely, the “sentence”—loses its relevance? Put differently, what structural unit accommodates a holophrastic ideophone? To explore this question, I use a diagnostic test based on a sentential juncture.

In RRG, a sentential juncture links multiple sentences within a discourse unit referred to as “TEXT,” as illustrated in (13):

- (13) Sentential Juncture: [TEXT. . . [SENTENCE. . .]. . . + . . . [SENTENCE. . .]. . .]
(Van Valin 2023: 69)

Example (13) demonstrates that multiple sentences can be combined to form a text. The relationship between these sentences—referred to as the nexus type—may involve coordination, subordination, or cosubordination, although the specific instantiation of these types depends on the language in question.

If a holophrastic ideophone functions as a sentence, it should be capable of participating in a sentential juncture. That is, we should be able to substitute one of the sentences with a holophrastic ideophone, provided it is semantically compatible with the surrounding discourse under the text node. I test this through sentential coordination, a subtype of sentential juncture. Example (14) presents an English instance of sentential coordination that conveys a temporally unordered sequence of events (Van Valin 2005: 207, bold face added).

- (14) *Tyrone talked to Tanisha, and Yolanda chattered with Karen.*

(14) consists of two sentences shown in bold, connected by a coordinate conjunction *and*.

(15) gives the translation of (14) in Japanese, showing the translation equivalent is available, though we must separate the sequence into two separate sentences. This, however, does not affect the intention of the diagnostic test because multiple sentences can be housed under the text node whether the sentences are conjoined or independent.

- (15) *Tyrone wa Tanisha ni hanashi.kake-ta.*
Tyrone TOP Tanisha to talk.to-PAST
Soshite, Yoranda wa Karen to shabet-ta.
And Yoranda TOP Karen with chatter-PAST
‘Tyrone talked to Tanisha. And, Yolanda chattered with Karen.’

Since we have a holophrastic ideophone *pécha pécha* meaning ‘chattering’, we should be able to put it in place of the second sentence after *soshite* ‘and’, or since the two sentences are temporally unordered, we should be able to flip the order of the two sentences in (15) and put the ideophone in place of the first sentence. The result is shown in (16) and (17).

- (16) *Tyrone wa Tanisha ni hanashi.kake-ta. Soshite, pécha pécha.*
Tyrone TOP Tanisha to talk.to-PAST and IDEO.chattering
‘(lit.) Tyrone talked to Tanisha. And, chattering.’
/*‘Tyrone talked to Tanisha. And, Yolanda chattered with Karen.’

- (17) *Pécha pécha. Soshite, Tyrone wa Tanisha ni hanashi.kake-ta.*
IDEO.chattering and Tyrone TOP Tanisha to talk.to-PAST

‘(lit.) Chattering. And Tyrone talked to Tanisha.’
 /*‘Yolanda chattered with Karen. And Tyrone talked to Tanisha.’

Neither example (16) nor (17) yields the intended interpretation, as the ideophone in question functions merely as a reenactment of ambient vocal noise rather than a representation of a specific speech event involving identifiable referents—such as Yolanda conversing with Karen.

The inability of (16) to convey the meaning of (15) underscores that the holophrastic ideophone does not constitute a sentence, in the syntactic sense—that is, a sentence comprised of multiple elements consisting of prosaic words and grammatical components. Consequently, there is no empirical evidence to suggest that holophrastic ideophones take the LSC, whose highest unit is the sentence. If this is the case, how should a holophrastic ideophone be represented structurally?

I propose that holophrastic ideophones are best analyzed under the category of “utterance,” adopting the terminology employed by Dingemanse (2011) and drawing upon Lyons’s (2012) definition of the term.

In his analysis of Siwu ideophones, Dingemanse (2011:144) refers to constructions such as example (18) as instances of the “Utterance construction,” wherein the ideophone *Totoro-↑to:↑* (‘thick’) appears subsequent to a clause that semantically contextualizes the ideophone.

(18) *kõrẽ, i-rɔ nemɔ sina, so akodzɛ. Totoro-↑to:↑*
 now I-thing.INDEF REL.I-there meat elephant A.PL-skins IDPH.thick-EM
 ‘Now the meat of that thing, elephant skins. Totoro-↑to: ↑! [thick] Drums

Dingemanse (2011:144) observes that in constructions such as (18), “the ideophone comprises an intonation unit on its own,” thereby reinforcing its status as an independent utterance.

Lyons (2012: 172) writes: “‘utterance’ is more primitive than ‘word’, ‘sentence’, ‘morpheme’, etc., in that its application does not rest upon any technical definitions or postulates of the science of language”, in which “by ‘primitive’ is meant ‘undefined within the theory’, ‘pre-theoretical’.” Given this postulation, (4) might look like Figure 3.

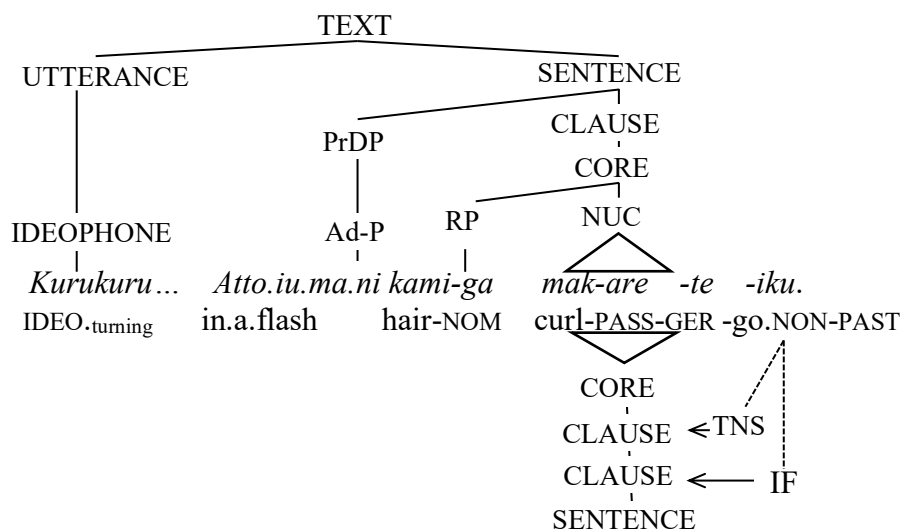


Figure 3: The proposed representation of (4)

Note the regular sentence consisting of prosaic words (the right side of Figure 3) is represented in both the constituent and the operator projection. The representation of the holophrastic ideophone *Kurukuru*. ‘turning round and round’, contained in the unit UTTERANCE, is preceded. The holophrastic ideophone and the regular sentence are housed under TEXT, showing that the holophrastic ideophone is part of the textual discourse.

3. Concluding remarks

This paper explores the structure of holophrastic ideophones, arguing that they possess an un-layered structure, represented in neither the constituent projection nor the operator projection. It proposes “UTTERANCE” as a more appropriate unit than “sentence” posited in Toratani (2017). Though this paper discusses Japanese data, many languages seem to use ideophones as a holophrase (e.g., Siwu: Dingemanse 2011, Pastaza Quechua: Nuckolls 1996). On the other hand, there is a report that not all languages use holophrastic ideophones: Treis (2024: 152) observes that in Kambaata, a Cushitic language, holophrastic use of ideophones is very rare, describing that it is construed as elliptic and attested only in artistic speech genre. To better understand the crosslinguistic prevalence and characteristics of holophrastic ideophones, especially their resistance to markers of operators as seen in Japanese, it is essential to collect more data—particularly from under-documented languages.

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Information structure and argument linking reconceived

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1. Introduction: A brief look at earlier discourse representation in RRG

Since its inception, RRG has concerned itself with explicating the syntax-semantics-pragmatics interface in human language, and it has restricted the tools available to the analyst in order to have a more explanatory theory. First and foremost among these restrictions is the ban on abstract syntactic representations and derivations from underlying to surface forms (and vice versa). It turns out that many of the phenomena analyzed in terms of underlying forms and derivations are in fact better explained in terms of the interaction of syntax and discourse pragmatics, e.g. extraction restrictions ('island constraints').

Of particular interest are so-called 'null elements', e.g. sentences in languages like Japanese, Mandarin and Thai which lack overt subjects and/or objects. These are typically analyzed as phonologically null pronominals which occupy the syntactic position that an overt pronominal would be in. These empty subjects and other arguments are a challenge for RRG's concrete approach to syntax, and the analysis proposed in RRG was to have discourse antecedents satisfy the valence requirements of the predicators in these languages. This crucially presupposes a motivated representation of the discourse antecedents.

The discussion will proceed as follows. The earlier RRG approach to discourse representation will be illustrated in section 2.0, followed by a critique in section 3.0. The alternative representation will be introduced in section 4.0, and it will be applied to the phenomena analyzed in section 2.0, as well as phenomena from English, in section 5. Conclusions will be presented in section 6.0.

2. Using DRSs in the linking between syntax and semantics

It seemed obvious that a formal representation of the discourse context in which sentences occur was necessary, and the only approach which could provide such a representation was Discourse Representation Theory [DRT] (Kamp and Reyle 1993). RRG adopted (and adapted) the version of DRT proposed by Klaus von Steg (1999), which made it possible to represent focus types à la Lambrecht (1994) and to use the discourse representations (known as DISCOURSE REPRESENTATION STRUCTURES [DRSs]) to represent discourse referents. Thus, sentences with missing arguments in Japanese, etc. need not be analyzed as containing a null element but rather the linking algorithm could make reference to the discourse representation to satisfy the COMPLETENESS CONSTRAINT, which was renamed the EXTENDED COMPLETENESS CONSTRAINT (Latrouite and Van Valin 2023).

As an example of how DRSs can play a role in linking, consider the sentences in (1), from Shimojo (2008).

- (1) a. (*Taro-ga*) *ringo-o* *ni-ko* *katta*.
 Taro-NOM apple-ACC two-CL bought
 ‘(Taro) bought two apples.’
 b. (*Oyatu-wa,*) *ringo-o* *ni-ko* *da*.
 snack TOP apple-ACC two-CL is.
 ‘(As for snack,) two apples[ACC] is.’ [literal translation]

In the verb-less numeral quantifier construction, (1b), there is no transitive verb, only the copula *desu*, yet the sole RP in it bears accusative case, which is assigned by transitive verbs to their undergoer arguments. How can the accusative case in (1b) be accounted for? The context in which (1b) is uttered is represented by the DRS labelled ‘presupposition’, and the linking from semantics to syntax is summarized in the numbered steps below.

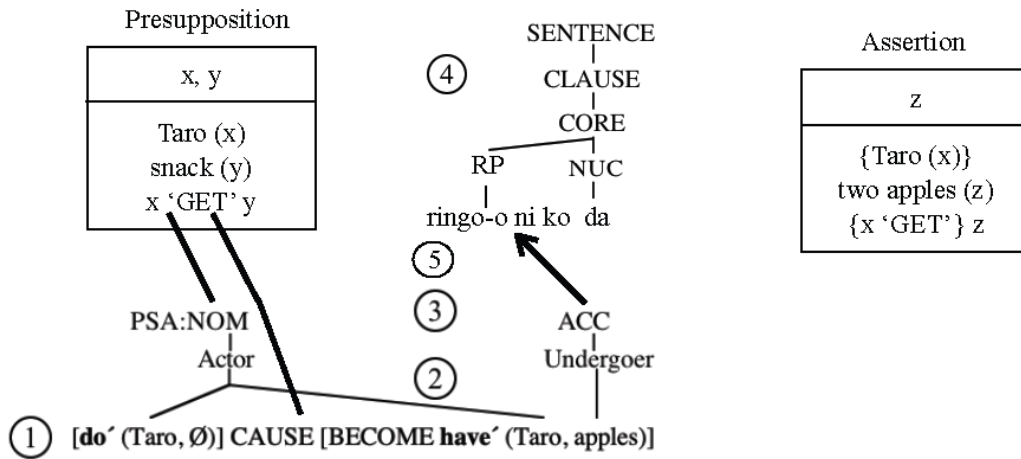


Figure 1: Linking from semantics to syntax in (1b)

Step 1 is the construction of the semantic representation of the intended utterance. Step 2 is macrorole assignment: the leftmost argument (*Taro*) is the actor and the rightmost argument (*ringo*) is the undergoer. Step 3 is the assignment of morphosyntactic status and coding: the actor is selected as PSA and assigned nominative case, while the undergoer is a direct core argument and assigned accusative case. At this point the principle that only new (non-presupposed) elements must be expressed overtly in a Japanese utterance comes into play. The presupposition DRS presents *Taro* and the verb as given, which means that they need not be mentioned explicitly in the utterance. The heavy black lines indicate that the actor/PSA and the verb can be recovered from context, i.e. from the presupposition DRS. The phrase ‘two apples’, on the other hand, specifies what the snack is and therefore constitutes new information and will be expressed explicitly in the utterance. Step 4 is selection of the syntactic templates motivated by the overt material, which is the phrase ‘two apples’ and the tense-bearing copula which marks it as a complete utterance. Step 5 links the accusative undergoer to its position in the tree, thereby explaining how the RP *ringo-o ni ko* ‘two apples’ gets accusative case despite the lack of a transitive verb in the sentence.

The linking from syntax and discourse to semantics is summarized in the numbered steps below.

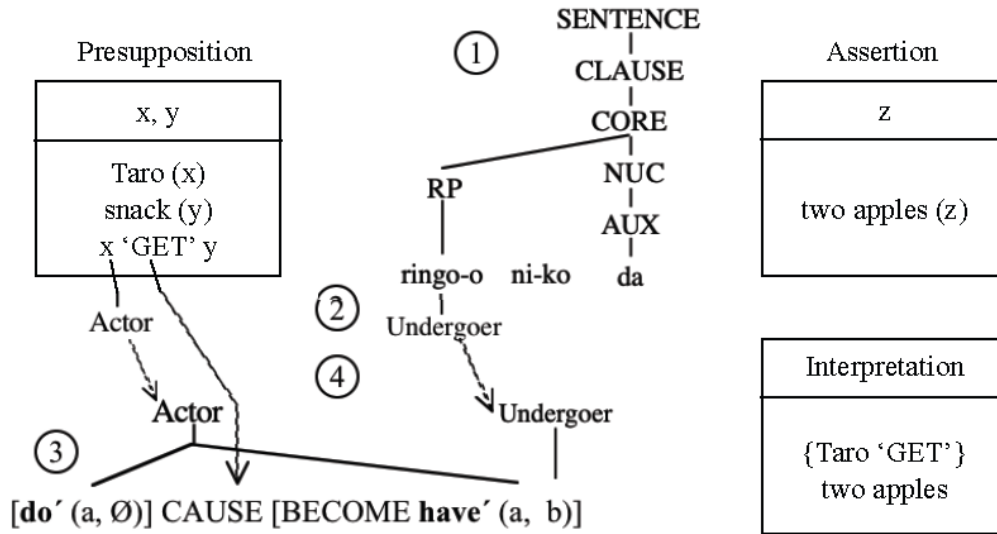


Figure 2: Linking from syntax to semantics in (1b)

Step 1 is the parser outputting a labeled syntactic tree.¹ The second step is the gleaning of the representation for indicators of the function of the constituents. In this example there is only one RP plus the copula in the tree. The RP carries accusative case and so is determined to be an undergoer. Accusative undergoers are associated with M-transitive verbs, which leads to the expectation that there should be a nominative actor and an M-transitive verb in the sentence, but there is neither in the clause. However, in the presupposition DRS there is an M-transitive verb with an actor argument which would occur as a nominative RP, and so it may be concluded that the x argument in the DRS, *Taro*, is the actor which pairs with the overt undergoer, *ringo-o ni-ko*. Step 3 is to go to the lexicon and retrieve the logical structure of the verb identified in the previous step. But there is no verb in the sentence, and therefore it is necessary to refer to the background DRS again for it. The logical structure for 'GET'² is called up and its two arguments are assigned actor and undergoer macroroles. The final step is the association of the arguments in the DRS and the syntax with the arguments in the logical structure: *Taro* is the x argument and the actor of 'GET', and the a argument is the actor, hence *Taro* links to the a argument; similarly, *ringo-o ni-ko* is an undergoer, and the b argument is the undergoer in the logical structure of 'GET', therefore *ringo-o ni-ko* links to the b argument. The resulting interpretation is given below the assertion DRS. Here again the Extended Completeness Constraint is satisfied by arguments from a DRS and the syntax.

¹ This is an idealization, as interpretation is incremental. See Van Valin (2023) for an incremental version of the linking system.

² Japanese verbs of giving and receiving involve complex social relationships among the interlocutors, which are irrelevant to the issues under discussion. Accordingly, the verb of receiving will be represented by 'GET'.

3. Critique of DRT as used in RRG

Balogh, Bentley and Shimojo (in press) present a critical assessment of discourse representation in RRG. They make a number of significant points, only two of which will be mentioned here.

1. DRT is intended not as a mere representation of context but as a model-theoretic account of the semantics of propositions. This raises questions of compatibility and redundancy with the approach to semantic representation in RRG.
2. The representation of discourse referents is inadequate in RRG, because it “currently lacks an explicit semantic representation of referents” which would allow one to differentiate between reference sharing and description sharing.

RRG used DRT as a way to represent referents and the context in which they occurred, but DRT is intended to be a full formal semantic theory. Accordingly, the semantic representations of propositions in DRT is very different from that in RRG, which involves lexical decomposition. This can be seen clearly in Figures 1 and 2, where the propositional representation in the DRSs is quite different from that in the linking system. If RRG intended to continue using DRSs for representing context, it would be necessary to replace the system of semantic representation in the DRSs with the *Aktionsart*-based decompositional system used in RRG. The second point highlights a serious deficiency in the representation of discourse referents, namely RRG has treated discourse referents as simple, atomic entities, but this is inadequate for several reasons. Balogh et al. give several reasons, and we will concern ourselves with only one, namely reference sharing vs. description sharing. They illustrate this with the following contrast.

- (2) a. Sam saw a yellow bus. Alex saw *it*, too. Reference sharing
b. Sam saw a yellow bus. Alex saw *one*, too. Description sharing

In addition, the way propositions are referred to is also inadequate. Formal semantic theories standardly invoke an event variable accompanying the semantic representation of the event.

4. Contextualized meaning and RRG

Balogh, Bentley and Shimojo (in press) propose the concept of CONTEXTUALIZED MEANING to replace DRSs for representing aspects of the discourse context. It requires a formal model of the IMMEDIATE COMMON GROUND [ICG], which is the discourse context plus the immediate physical environment that the speech event occurs in. A crucial part of their proposal is the representation of discourse referents in two ways: with a referential index and an argument description. This is illustrated in (3).

- (3) a. Bill bought a candy bar.
b. LS: [**do'** (Bill, $\emptyset$)] CAUSE [INGR **have'** (Bill, candy bar)]]
c. indexed LS: [**do'** (1:Bill, $\emptyset$)] CAUSE [INGR **have'** (1: Bill, 2:candy bar)]]

RRG's representations of referents have not contained a referential index despite the fact that referring and describing are distinct functions. They also introduce a variable *e* which

refers to the eventuality denoted by the proposition. The contrast between the current architecture of RRG and that proposed by Balogh et al. can be seen in Figure 3.

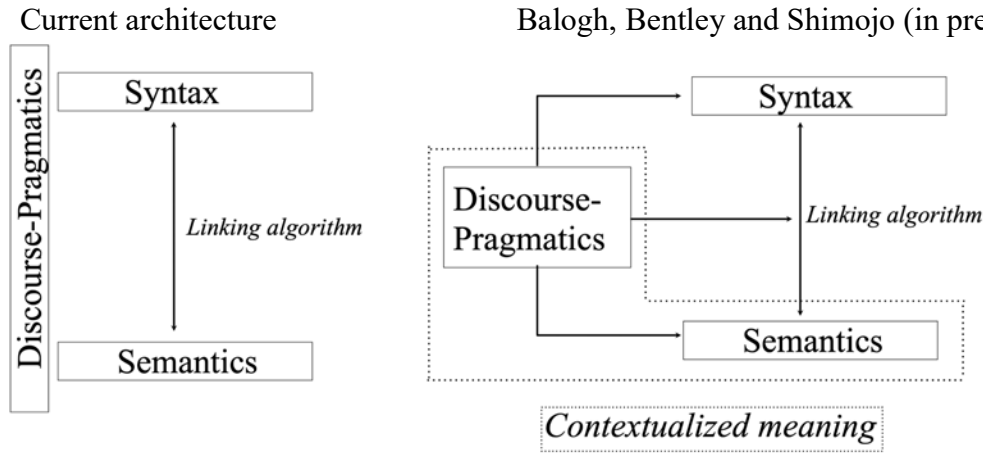


Figure 3: Current RRG vs. proposed CONTEXTUALIZED MEANING architecture

The most significant change is treating discourse-pragmatics on a par with syntax and semantics, as opposed to treating it as something peripheral to the linking system. Contextualized meaning consists of the semantic representation of the sentence (its descriptive and indexed LSs) together with a set of indexed LSs representing the previous discourse context, i.e. the ICG. It also includes local salience relations, e.g. actor > undergoer in active voice. Contextualized meaning is illustrated in Figure 4.

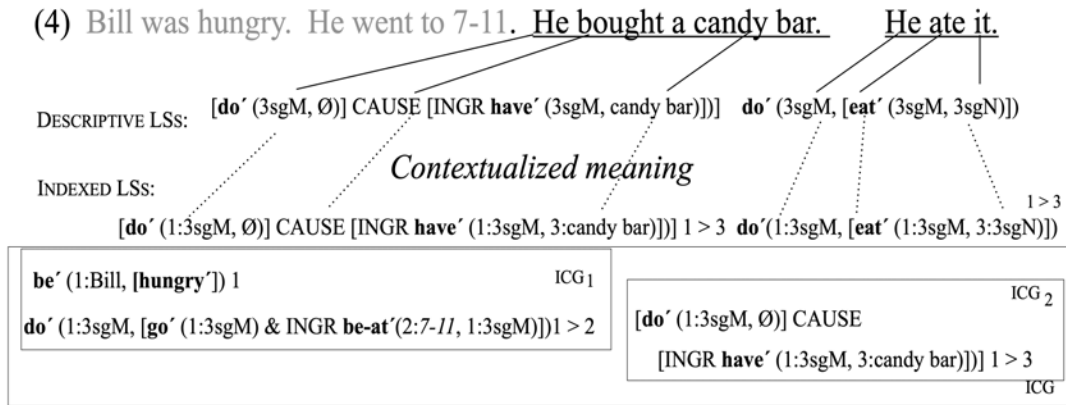


Figure 4: Contextualized meaning analysis of (4)

The first two sentences establish the context for the last two, for which the contextualized meanings are given. The descriptive LSs are the same as the LSs in a traditional RRG analysis, while the indexed LSs contain referential indices on the referential RPs. Non-referential RPs have no index. The indexed LSs also contain an indication of the salience relations holding among the RPs in the LS. Most important for this discussion is the role of the indexed LSs in the constitution of the ICG, which is the representation of the

discourse context. ICG₁ is the context in which *He bought a candy bar* occurs. It consists of the indexed LSs of *Bill was hungry*, introducing the referent ‘Bill’, and *He went to 7-11*, which continues ‘Bill’ as a pronoun and introduces the referent ‘7-11’. The final sentence, *He ate it* occurs in the context constituted by ICG₁ and the indexed LS of *He bought a candy bar.*, i.e. ICG₂.

The indexed LSs in the ICG do the work done by DRSs in the RRG representations of discourse. This means that the propositions in the semantic representation are formally the same as those in the discourse representation, thereby avoiding the problem of having incompatible semantic representations. We can illustrate this with the verbless numeral quantifier construction (Shimojo 2008) discussed earlier. In the linking diagram the indexed LS in the ICG captures the relevant context, namely that the actor *Taro* and the verb do not have to be expressed overtly in the sentence because they are recoverable from the ICG, just as in the original analysis they were recoverable from a DRS.

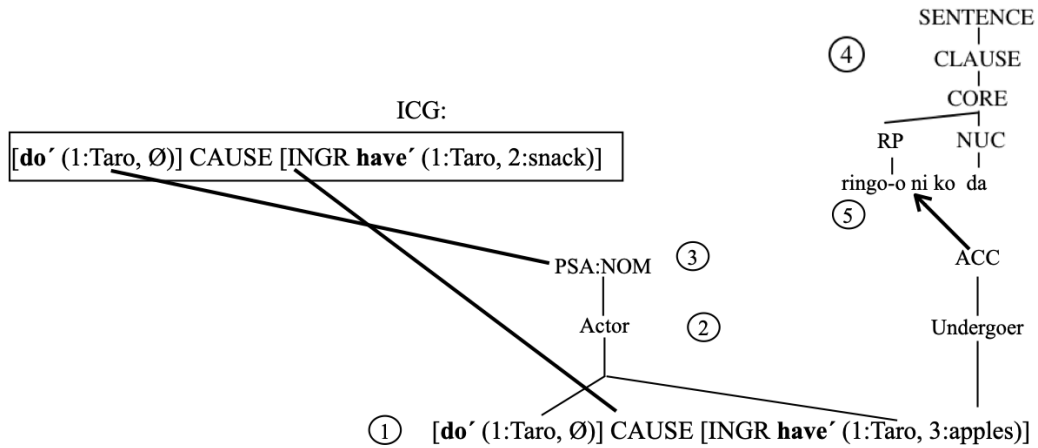


Figure 5: Contextualized meaning analysis of (1b)

5. Focus Structure and Contextualized Meaning

Balogh, Bentley and Shimojo (in press) address the other important function of DRSs, namely, the analysis of focus structure. The central concepts of the RRG approach to focus structure (focus types, information units [IU], actual vs. potential focus domains, etc.) can be accommodated comfortably in the theory of contextualized meaning. The ICG plays the role of the component which keeps track of the referents, eventualities, and properties in the discourse. The constituents being discussed can be represented as IUs, which can be tagged to indicate their status (topic, given, new, focus, etc.). We can illustrate these notions with the example in (3), repeated below.

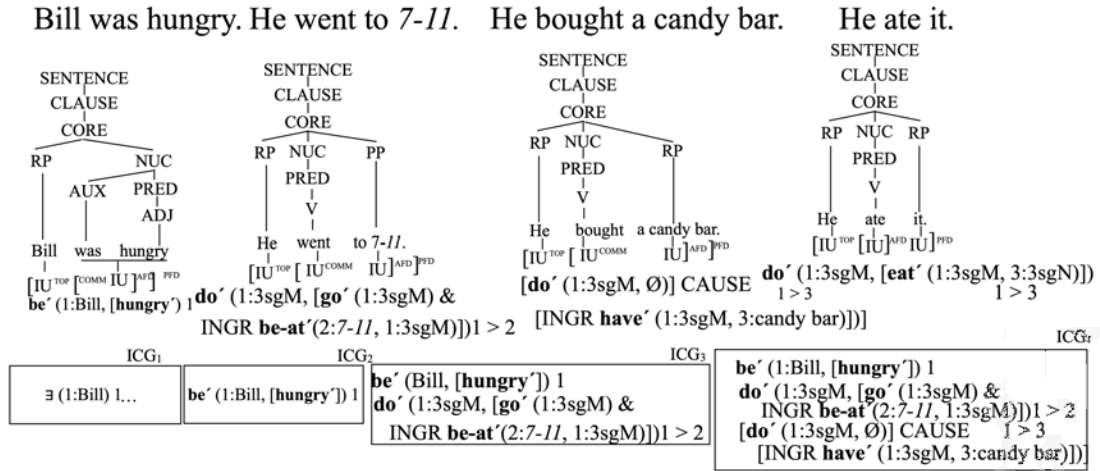


Figure 6: Focus structure derived from ICGs

ICG₁ contains only the referent of *Bill*, and it is either brand new unanchored, brand new anchored, or activated from a previous use in the past. In ICG₂ it is activated due to its having been mentioned in the previous sentence and is pronominalized. The referent of the RP *7-11* is new, or it could be accessible if *7-11* was a common place to go for a quick snack. In ICG₃ the referent of ‘*Bill*’, expressed by a pronoun, continues to be activated, and the referent of *a candy bar* is the new information; it is brand new anchored due to the connection to *7-11*. Finally, ICG₄ contains two activated referents, *Bill/he* and *a candy bar/it*, and the only new element is the verb *ate*. The contextualized meaning contains the information needed to motivate the activation status of the referents of the referring expressions in these utterances. RRG linking diagrams are annotated with the activation status of the referent of the RP; see Van Valin and LaPolla (1997: 200–201), Van Valin (2005: 137), Bentley (2023: 458–461). This can be derived from the ICGs.

6. Applying contextualized meaning

Balogh, Bentley and Shimojo (in press) illustrate recovering referents and predicates from discourse with the construction known as ‘VP’-ellipsis. Something similar was exemplified in the discussion of the Japanese verbless-numeral quantifier construction earlier.

- (5) a. Kim is eating an ice cream cone, and Pat is, too.
 b. (i) Speaker 1: Kim is eating an ice cream cone.
 (ii) Speaker 2: Pat is, too.

(5a) illustrates the construction within a single sentence. Of interest here is (5b), in which the ellipsis occurs in separate utterances by distinct speakers. The reduced form in (5bii), *Pat is, too*, has only a PSA and a tense-bearing auxiliary. The verb *eat* and the undergoer *ice cream cone* are recovered from the previous speaker’s utterance. This involves the ICG representations, which, here again, are doing the work done by the DRSs in earlier RRG analyses.

‘VP’-ellipsis exhibits a phenomenon which is relatively rare in English, namely discourse-driven subject-AUX inversion. This is illustrated in (6).

- (6) a. Speaker 1: Kim is eating an ice cream cone.
- b. Speaker 2: Pat is, too.
- b'. Speaker 2': So is Pat.

The first utterance of Speaker 2 reflects the default response to Speaker 1's assertion, and it reflects the default pattern of PSA followed by the tensed auxiliary. The second response, on the other hand, illustrates a much less common pattern in declarative utterances in English, tensed AUX + PSA. A clue to the motivation for this alternation can be found in 'VP'-fronting, as shown in the following examples.

- (7) a. I expected to find Bill mowing the yard, and mowing the yard he was.
- b. #I expected to find Bill mowing the yard, and mowing the yard was he.
- (8) a. #I expected to find someone mowing the yard, and mowing the yard Bill was.
- b. I expected to find someone mowing the yard, and mowing the yard was Bill.

In (7) the referent of the referring expression *Bill* is introduced in the first clause, and in the second it is activated and realized as a pronoun. Since English PSAs are prototypically topics and therefore activated and given, it is more felicitous for it to occur in the pre-auxiliary position, as in (7a), rather than in the post-auxiliary position, as in (7b). Conversely, when the first clause does not introduce a specific referent but the second one does, as in (8), the PSA in the second clause is preferentially post-auxiliary. So the position of the PSA in the second clause is a function of how topical or focal it is.

The same considerations hold with respect to 'VP'-ellipsis. When the PSA in the second clause is part of the ICG and therefore activated, the PSA occurs before the auxiliary, as in (6b). If, on the other hand, the referent of the PSA is being introduced into the context, then the PSA may occur after the auxiliary, as in (6b'). This is illustrated below, repeated from (5) and (6).

- (9) a. Speaker 1: I wonder if anyone's getting hungry.
- b. Speaker 2: Well, Kim is eating an ice cream cone. What about Pat?
- c. Speaker 1: Pat is, too/#So is Pat.
- (10) a. Speaker 1: I wonder if anyone's getting hungry.
- b. Speaker 2: Well, Kim is eating an ice cream cone.
- c. Speaker 1: So is Pat/Pat is, too.

The reason *Pat is, too* is fully felicitous in both of the contexts created by (9b) and (10b), whereas *So is Pat* is not, is that *Pat is, too* is the default form, since the PSA occurs in the normal pre-nuclear, core-internal position. *So is Pat*, with its post-nuclear PSA, on the other hand, is a marked form, and accordingly it requires specific contextual conditions for its felicitous occurrence.

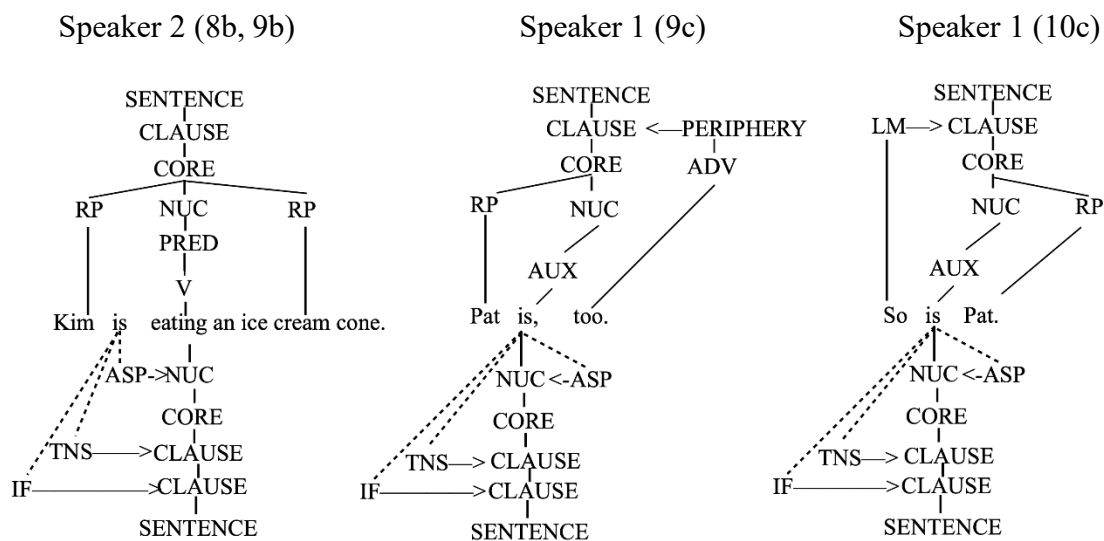


Figure 7: Discourse-driven subject-AUX variation in English

In their discussion of this construction, Balogh, Bentley and Shimojo argue:

The case in [(9c), (10c)] requires description sharing instead of referential sharing. The sentence expresses that there is another event (hence other referential index), which shares the description 'x is eating an ice cream cone' (**do'** (x, [**eat'** (x, y: ice cream cone)])) with the event that was given in previous discourse context... Within the two descriptions the referential indices of the arguments do not need to be the same. In [these examples], they are different; the actor is '1:Kim' in the discourse and '3:Pat' in the sentence.

In order to account for the difference in order of PSA and auxiliary, it is necessary to make reference to the ICG associated with the sentence. If it contains the indexed LS with the indexed referent of the PSA, then (9c) would be the preferred form. If it does not, then (10c) would be the preferred form.

Thus, the RRG analysis of 'VP'-ellipsis in (9) and (10) requires all of the machinery discussed so far: descriptive LSs, indexed LSs, ICG, focus structure. The utterance in (9a) and (10a) is not included in the analysis below.

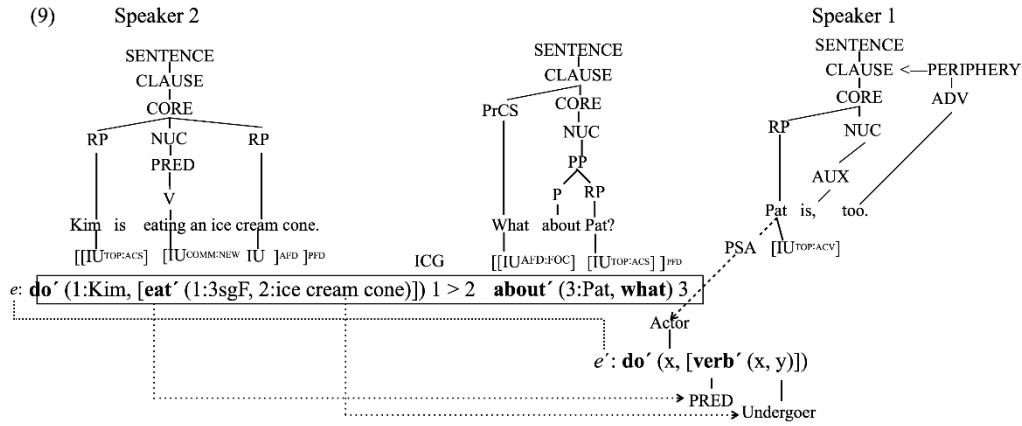


Figure 8: Contextualized meaning of (9)

The crucial difference between (9c) and (10c) lies in the ICG they occur in: the one for (9c) contains two indexed LSs, ‘do’ (1:Kim, [eat’ (1:3sgF, 2:ice cream cone)]) 1 > 2’ and ‘about’ (3:Pat, **what**) 3’, while (10c) contains only the former. Hence *Pat* is not part of the ICG for (10c) and cannot be interpreted as a topical PSA. It can therefore occur after the auxiliary.

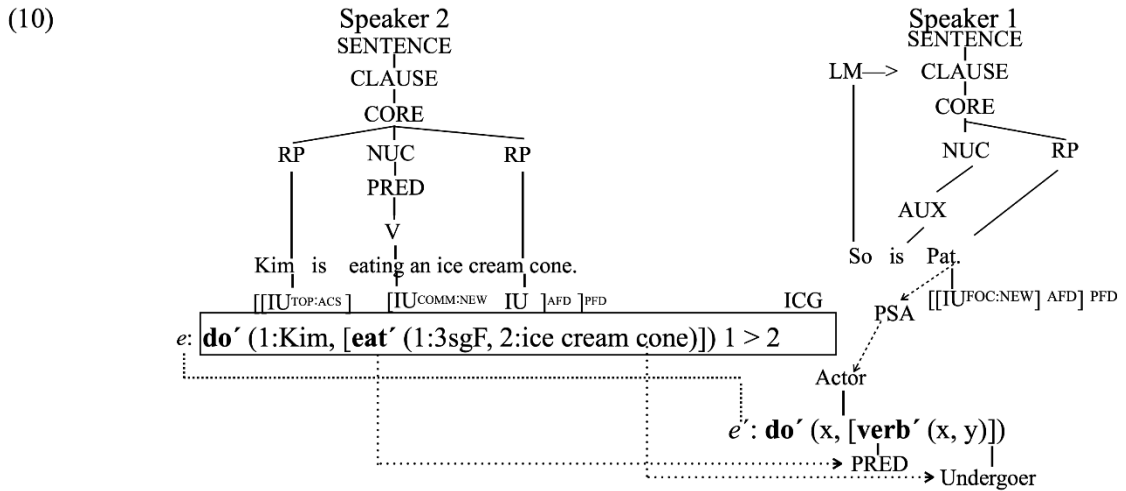


Figure 9: Contextualized meaning of (10)

The examples discussed thus far have involved linking from the discourse to syntax and then to the semantic representation. That is the interpretative perspective on the interaction: the interlocutor interprets the reduced response of the other interlocutor with help from the ICG. The interlocutor producing the reduced response also must rely on the ICG, as will be seen. Let’s suppose Speaker 1 has just responded to Speaker 2’s utterance ‘Kim is eating an ice cream cone’, in reply to Speaker 1’s query ‘I wonder if anyone’s getting hungry.’ Speaker 1 seeks the most efficient, compact answer possible, and accordingly replies with ‘So did Pat’. In order to achieve this, Speaker 1 assumes that Speaker 2 shares the same ICG relevant to the interaction. The key to the linking is the recognition that elements established in the ICG need not be expressed overtly in this construction. In this case only the PSA is new and must be expressed overtly in the

sentence; the predicator and the undergoer are given in the ICG. Because the PSA is new, it can occur after the nucleus.

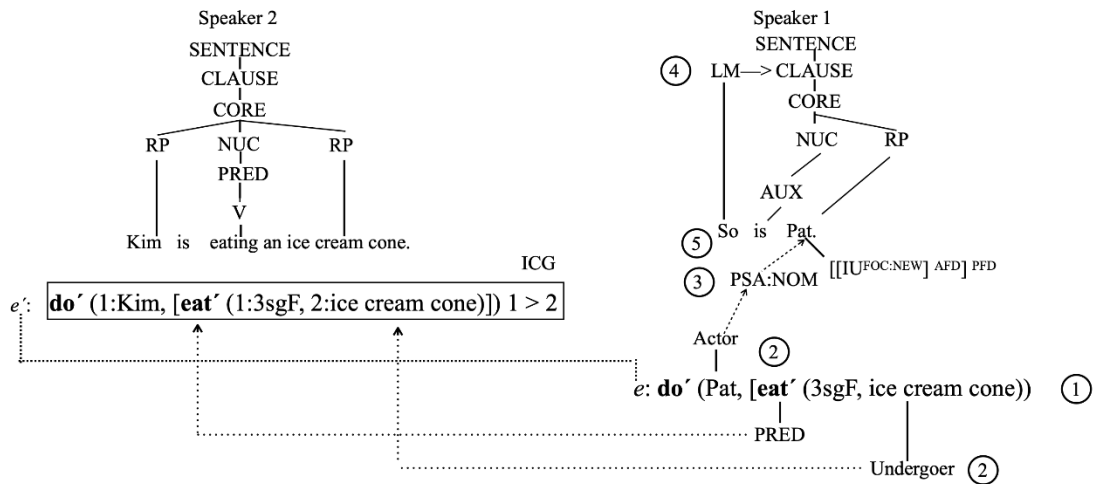


Figure 10: Semantics-to-syntax linking for (10c)

Space limitations have precluded representing the operators in the diagrams, and they are very important in this construction. (See Van Valin 2005:231–234.) There is a strong constraint governing the identity of the auxiliary: it must be the same as that in the clause uttered by the other speaker. When there is a simple tense in the first utterance, as in (11a) and (12a), the constraint seems to be weaker and revolve around semantic compatibility.

- (11) a. Spkr. 1: The boy ate an ice cream cone. Spkr. 2: Sam did, too./So did Sam.
 b. Spkr. 1: The boy will eat an ice cream cone. Spkr. 2: Sam will, too./so will Sam.
 c. Spkr. 1: The boy has eaten an ice cream cone. Spkr. 2: Sam has, too./So has Sam.
- (12) a. Spkr. 1: The boy ate an ice cream cone. Spkr. 2: ?Sam will, too./So will Sam.
 b. Spkr. 1: The boy has eaten an ice cream cone. Spkr. 2: *Sam is, too./So is Sam.

7. Summary

Balogh, Bentley and Shimojo (in press) have proposed contextualized meaning as a replacement for DRSs borrowed from DRT for representing the discourse context in which utterances occur in RRG. They make a strong case for the superiority of the new approach and illustrate it using data from Japanese, English and Hungarian. This paper has used these ideas and applied them successfully to the reanalysis of the Japanese verbless numeral quantifier construction and ‘VP’-ellipsis in English. In the latter, the discussion covered not only the linking between the ICG and the syntax, but also the variation in the position of the PSA relative to the tensed auxiliary.

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Adverbs and operator classes in Mexican languages*

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1. Introduction

In this paper, we examine the status of adverbs attached to verbal words in Mexican languages. Within the framework of Role and Reference Grammar (RRG), adverbs are considered peripheral elements, whereas operators are grammatical forms with their own projection. However, in Mexican languages, two types of adverbs can be identified: lexical adverbs, as in (1a) *jakam* ‘away’ in Mixe¹, and incorporated adverbs, as in (1b) *ñaxaň* ‘first’ in Chol. This raises the question of whether both types —lexical and incorporated—should be analyzed in the same way within RRG, or whether their distinct morphological status requires different analyses. If analyzed identically, they would share the same projection and function; if morphology is relevant, they may belong to different analytical domains. Within RRG parameters, some forms classified as adverbs may instead belong to the functional class of operators.

Drawing on the distinction between lexical and incorporated adverbs, this paper aims to review the morphosyntactic status of these units within the clause. We argue that lexical adverbs retain their lexical category, whereas incorporated adverbs behave as operators. Accordingly, the central question is whether both should be considered the same type of lexical item, or whether—as we propose—they belong to two different categories: lexical adverbs and lexical affixes.

- (1) a. *y-něj-kx-y muum jakam*
3S-go-DEP somewhere far.away
‘He went somewhere far away.’
(Mixe de Ayutla, Romero 2009)
- b. *primero tyi k-ñaxaň-ts’äb-ä-ø tyi i-xiňil*
first PRFV A1-first-light-VT-B3 PREP A3-in.the middle
‘First I lit a candle in the middle.’
(Chol, Vázquez 2022)

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¹ The glosses of the cited examples have been transcribed as in the original documents.

Incorporated adverbs add specific information to the verbal predicate. In (2a), in Zoque, *ka'm.pä. 'äy* 'quickly' modifies the predicate *kä's* 'eat'. In (2b), in Chol, *mero* 'a little bit' indicates the degree of fear expressed by the predicate *bä'ñ-añ* 'be afraid of', with scope over both the predicate and its arguments.

Mithun (1997, 2010), among others (Evans 1997, Haspelmath 2023, 2025), distinguishes between roots and lexical affixes. Lexical affixes exhibit lexical meaning similar to roots, which is why we consider incorporated adverbs to constitute lexical affixes: they retain their adverbial content, but appear in a fixed position within the verbal root. In (2), they are realized as core operators (Van Valin and LaPolla 1997, Van Valin 2005).

- (2) a. *y-kä's-ka'm.pä. 'äy-pa= 'unh* *Ø-manh-ke't-pa= 'unh*
 A3-eat-quickly-ICP=REP S3-go-REPET-ICP=REP
 'He ate it quickly and left.'
 (Zoque de Ocotepec, Ramírez 2022)
- b. *pero tsa'=ix* *keji* *i-mero-bä'ñ-añ-Ø* *je'e*
 but PRFV=already begin A3-a.bit- be afraid of -TD-B3 also
 'But he also began to be a bit afraid of it.'
 (Chol, Vázquez 2022)

Our revised data show that lexical affixes express a range of meanings, as seen in (1b), (2a), (2b), and (3). In (3a), in Lacandon, the affix *hach* 'very' expresses degree or intensity with respect to the predicate *ir* 'see', and the clitic *ki* 'well' modifies the manner of the event. In (3b), in Totonaco, *akstu* 'only' conveys exclusivity, and coexists with comitative *taa*, locative *puu*, and causative *maa* affixes, following an ordered sequence before the verbal root *pup* 'boil'.

- (3) a. *t-in-hach=ki'=ir-ah-Ø*
 PFV-ERG1-very=well=see-COMPLTR-ABS3
 ch'a'ak-ih-Ø *y-o'ok* *in-teet*
 cut.PSV-COMPL.INTR-ABS3 ERG3-foot ERG1-dad
 'I saw very well that my dad's foot was cut.'
 (Lacandón de sur, Martínez Corripio 2019).
- b. *k-akstu-taa-tiya-puu-maa-pup-i-qoo-lh*
 S1SG-only-COMIT-DPA-LOC.INSTR-CAUS-boil-CAUS-3PL-COM
 chuchut *k-tlamil* *ma* *ki-laq-sata-n*
 water LOC-clay.pot DET POS1-DSTR-children-PL
 'I went only with my children to boil water in the clay pot.'
 (Totonaco de Tuxtla, Puebla. Juárez 2016).

To argue that lexical affixes function as operators, it is necessary to examine: (i) their distribution within the verb; (ii) their scope within the clause; (iii) the specific layer of the clause over which they have scope; (iv) whether they modify or alter the meaning of verb; (v) whether they reduce or specify the scope of modification; (vi) how many and which adverbs in a given language behave as lexical affixes; (vii) whether lexical affixes are obligatory or optional.

In terms of methodology, the examples presented come from two sources: (a) individual field research conducted within different communities, and (b) documentary

research, specifically on online narratives published in the journal *Tlalocan: Revista de fuentes para el conocimiento de las culturas indígenas de México*.

Given the characteristics of the documentary data, we examined both the adverbial class as described in grammatical descriptions, and the meanings typically encoded by this lexical class. We reviewed nine of the eleven linguistic families of Mexico:

- i) Yuto-nahua: Nahuatl of the Huasteca (Veracruz), Nahuatl of the Huasteca (Hidalgo), Nahuatl (Tlaxcala), Mayo, Mexicanero, Pima bajo, Raramuri (Nogogachi), Raramuri (Munerachi), Tepehuan (Santa María Magdalena Taxicaringa), Yaqui.
- ii) Cochimi-yumana: Kumiai (San José), Paipai (Santa Catarina).
- iii) Oaxaca Chontal: Chontal (San Pedro Huamelula).
- iv) Seri: Seri.
- v) Otomangue: Mazateco (Ayautla), Mazateco (Huautla de Jiménez), Mazahua (San Pedro Potla), Triqui (Chichahuaxtla), Zapoteco (San Pablo Güilá), Zapoteco (Teotitlán del Valle), Zapoteco (Coatlán), Otomí (Valle del Mezquital).
- vi) Mixe-zoque: Zoque (Ocotepéc), Mixe (Tamazulápam), Mixe (Ayutla).
- vii) Tarasca: Purepecha.
- viii) Totonaco-tepehua: Totonaco (Río Necaxa).
- ix) Maya: Chol, Chuj, Lacandon (southern).

The remainder of this paper is organized as follows. First, we review theoretical considerations regarding the distinction between lexical and functional classes, as well as the status of adverbs and lexical affixes functioning as operators. We then examine how adverbs and operators function in Mexican languages, describing their behavior in clause structure. Finally, we offer some concluding remarks.

2. Exploring lexical and grammatical categories

There are substantial differences between lexical and functional classes. According to Bisang (2023), different criteria are often combined when defining lexical categories based on their semantic denotations and formal distribution. A contrast is sometimes made between ‘content words’ and ‘function words’. However, as Muysken (2008) points out, it is preferable to use the terms functional and lexical category, since not all languages express these forms as independent words. In this regard, lexical categories are open classes, have lexical meaning, and function as independent words or roots. By contrast, functional categories are closed classes; morphologically, they tend to be clitics or affixes and often have few syllables. These two categories are perceived as discrete, as differences arise along different dimensions, as Muysken (2008) explains. This author points out that there are lexical items (e.g. measure terms or class terms), lexico-grammatical (e.g. numeral, noun or verbal classifiers), and grammatical forms (e.g. noun classes and gender). Thus, functional categories may be realized as lexico-grammatical or grammatical elements.

It is also important to note, as Hopper and Traugott (2003) point out, that a lexical item may acquire grammatical functions through a process of grammaticalization. In this sense, the scale of grammaticalization represents a continuum from content item and inflectional affix, as shown in (4).

- (4) content item > grammatical word > clitic > inflectional affix

Regarding adverbs, this category has often been treated as residual. Adverbs have been described as an open class, defined by their ability to modify verbs or other constituents. In this sense, adverbs may modify different levels of the clause and provide additional information enriching the predicate with semantic information about manner, spatial and temporal setting, recurrence, among others. Structurally, they are considered peripheral and constitute units used as modifiers (Hengselveld 1997: 121, Schachter and Shopen 2007: 20).

Although not all documents in the corpus explicitly recognize adverbs as a distinct category, our analysis considers the meanings typically associated with this class, such as manner, quantity or intensity, time, place, affirmation, negation, possibility, inclusion, and direction, among others. The discussion extends to the interrelation between the wide range of semantic concepts encoded in lexical or functional categories and their syntactic distribution in a given language.

This paper proposes that incorporated adverbs should be treated as affixes with lexical content. Since they are morphologically bound, they change their categorial status—from lexical to functional—and perform a grammatical function.

The concept of incorporation (Mithun and Corbett 1999, Haspelmath 2025) is understood as “compounding of a word (typically a verb or preposition) with another element (typically a noun, pronoun, or adverb)” (Gerds 2017: 84). It is a compounding process that combines the syntactic functions of the elements involved. As is well known, nominal incorporation has been widely described, whereas adverbial incorporation has received less attention. According to Givón (2001: 90), when adverbial incorporation occurs, the incorporated item fuses with the verb stem and becomes an inherent semantic feature. When this combination becomes stable and recurrent, the predicate has a high potential for co-lexicalizing into a single verbal word. Adverbial incorporation thus functions as a modifier of verbal phrase and distinguishes different levels of sentence structure (Rivero 1992). Finally, the process of incorporation involves changes in grammatical functions (Baker 1988), such as creating a single complex verb or reducing verbal valency.

Regarding lexical affixes, Mithun (1997) explains that they express precise ranges of meanings, appear to be roots, and convey information within particular context, with both formal and functional grounding. Hopper and Traugott (2003: 5) note that these forms add a semantic component without affecting the categorial status of the root to which they are attached. In this way, lexical affixes convey information that is semantically or pragmatically subordinate within a particular context (Mithun 1997: 369). According to Mithun (1997) lexical affixes are grammatical in nature.

Finally, we assume that when an adverb is attached to a verb, it provides semantic content but performs a grammatical function, much like a lexical affix. Thus, within a theoretical model such as RRG, we propose that incorporated adverbs should be treated as lexical affixes and interpreted as operators. Operators constitute a closed class of grammatical morphemes that indicate functional categories, modify distinct nodes, and may occur in different positions. Nuclear operators modify the state without reference to participants; core operators modify the relation between the arguments and the event; and clausal operators have scope over the entire clause.

In Table 1, Van Valin (2023) identifies types of operators. Nuclear operators as aspect, negation and directionals; core operators include event quantification, modality, and

internal negation; and clausal operators include status, tense, evidentials and illocutionary force.

Operators
Nuclear operators
Aspect
Negation
Directionals (only those modifying the orientation of an action or event without reference to participants)
Core operators
Directionals (only those expressing the orientation or motion of one participant with reference to another participant or to the speaker)
Event quantification
Modality (root modals, e.g. ability, permission, obligation)
Internal (narrow scope) negation
Clausal operators
Status (epistemic modals, external negation)
Tense
Evidentials
Illocutionary force (IF)

Table 1: Operators (Van Valin 2023: 33)

In Table 2, we summarize the properties of adverbs, incorporated adverbs or lexical affixes and operators. Adverbs and lexical affixes share lexical content, but differ in morphological status. Adverbs have free order, whereas operators belong to a functional class with fixed order within the verbal word and are morphologically bound. Although lexical affixes retain lexical content, they display particular morphological and syntactic behavior that distinguishes them from lexical adverbs.

	ADVERBS	LEXICAL AFFIXES	OPERATORS
lexical meaning			
unbound			
free order			
functional cat			
fixed order			
bound			

Table 2: Properties of adverbs, lexical affixes and operators

In summary, this section has reviewed the distinction between lexical and functional categories, discussed adverbs and lexical affixes in relation to incorporation processes, and outlined the concept of operators within the Role and Reference Grammar framework.

3. General properties of adverbs and operators in Mexican languages

3.1. Some examples

In the data reviewed, the concept of adverb is not always identified as a lexical category; rather, the corpus reveals meanings typically associated with them, such as manner, quantity, aspect, and location. In general, these meanings tend to be encoded either as part

of a lexical adverbial class with a limited number of members, or as bound grammatical morphemes, as lexical affixes.

Accordingly, as noted by the authors of the reviewed data, some languages recognize adverbs as a lexical class, whereas in others this category is not explicitly identified. In some cases, certain languages encode these meanings as lexical affixes, while others use free forms.

For instance, in Mixe, adverbs form a closed class. There are adverbial suffixes, adverbial demonstratives, and adverbial locatives; in some cases, other categories such as nouns or adjectives can also function adverbially. In Pima, the adverb class includes forms expressing negation, location, position, time, modality, and epistemic values, and adverbial incorporation is also attested. In Rarámuri, the adverb class includes directional, locative, demonstrative, temporal, and manner meanings. It is a closed class, and its members may occur as either free or bound morphemes. Finally, in Tseltal, adverbs belong to a specific class that includes intensifiers, demonstratives, adverbs of manner, and numeral classifiers. In this language, adverbs can appear as either a free or bound morphemes and may also be incorporated, functioning as lexical affixes.

3.2. Lexical affixes (adverbs incorporated)

In several Mexican languages, lexical affixes express a wide range of meanings. Degree is encoded in languages such as Chuj, Chol, Zoque, Zapotec, Lacandon, and Totonac, while place or direction is expressed in Zoque, Yaqui, Totonac, Mazatec, Purépecha. In addition, manner appears in Chol, Zoque, Nahuatl, Zapotec, Otomi, Lacandon, and Mazatec; temporal meanings in Chol, Zoque, and Zapotec; and quantification values in Chol, Zoque, Zapotec, and Mazatec. Completive value is also found in languages such as Chuj, Chol, Zoque, Mazatec, Zapotec, Nahuatl, and Totonac, while reiterative value appears in languages such as Chuj, Chol, and Zoque. Finally, negation morphemes occur in Chuj, Zapotec, Mazatec, and Seri; affirmation morphemes in Chol and Zapotec; and approximation in Mazahua, to mention only a few types and languages.

3.3. Operators

According to Van Valin (2023), operators are a closed-class grammatical category that modifies the layers of the clause. In our analysis, the Mexican languages represented in the corpus exhibit nuclear, core, and clausal operators. For example, in Mazahua nuclear operators include aspect and negation morphemes. In Chontal, there are directional morphemes or morphemes related to associated movement. Both Zoque and Chuj exhibit core operators, such as event quantification, while Mazahua and Mazatec have clausal operators such as epistemic modals and tense, to name just a few.

In summary, our analysis reveals that adverbs appear as a lexical category in some languages, while incorporated adverbs —referred to in this study as lexical affixes functioning as operators— represent a distinct grammatical phenomenon.

4. Clause structure

Modification is a grammatical process through which certain constituents provide additional information about the referent; modification enriches the information in the discourse (Croft 2022). Specifically, Rijkhoff (2014) proposes five levels of modification: (i) class, (ii) quality, (iii) quantity, (iv) location, and (v) discursive-referential, each of which serves a communicative function.

Lexical adverbs are modifiers that peripherally affect the nucleus, core, or clause, while lexical affixes and operators add grammatical information to the layers of the clause.

The examples presented in this section are not exhaustive; rather, they illustrate the range of possibilities attested in Mexican languages.

4.1. Lexical adverbs

In RRG, lexical adverbs may function as clausal modifiers (Van Valin 2023), such as (i) speech act modifiers and (ii) evidentials that indicate the speaker’s attitude. In (5), in San Pablo Güila Zapotec, *ngjǎ* ‘clearly’ indicates speaker judgement. The projection of this modifier is represented in Figure 1.

- (5) *fɪʔ ngjǎ ngjǎ r-nɪ=ʒǎ*
 NEX clearly clearly H-speak=3CNF
 ‘...and he/she spoke clearly.’
 (Zapoteco de San Pablo Güila. Arellanes, *et al.*, 2022: 70)

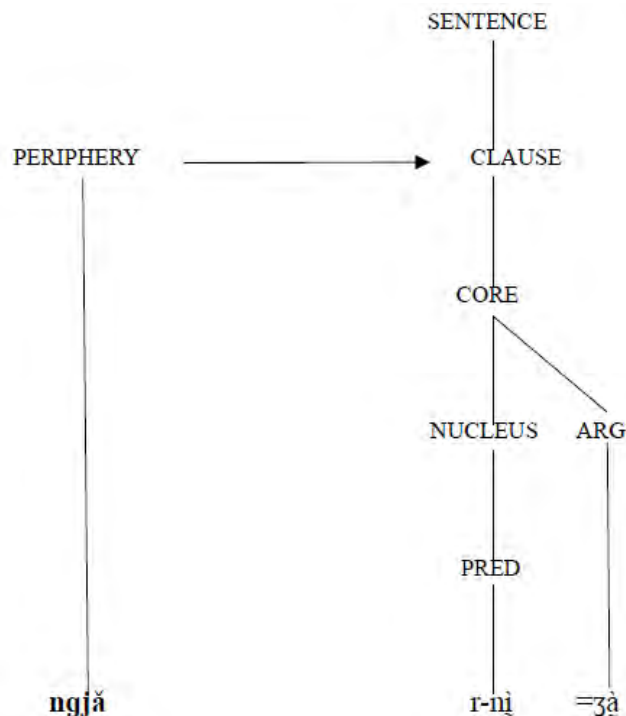


FIGURE 1: Clause lexical adverb

Core modifiers —such as (i) temporal, (ii) manner, (iii) pace, (iv) intent, (v) performance, or (vi) action— affect both the core and its arguments peripherally. In San Bartolo Yautepec Zapotec, (6a), *mód* expresses a manner type that modifies the verb *m-rú* ‘go out’, including its arguments, in this case, the noun phrase *Altamirano*. In (6b), in Alcozauca Mixtec, *ki^{ABiA}* is a pace adverb meaning ‘quick’. This adjunct has scope over the verb and its arguments, showing the culmination of an event and the way in which it is integrated into the predicate. Figure 2 shows an overview of the scope of core modifiers.

- (6) a. *mód jiá’ m-rú’ Altamiráan*
 manner ACV C-go.out Altamirano
 ‘That is how Altamirano came out’.
 (Zapoteco de San Bartolo Yautepec. Covarrubias y Jiménez, 2024: 161)

- b. ${}^Bku^M\tilde{u}a$ $ki^{AB}i^A=j\tilde{a}^A$ $ca^B\gamma a^A$
 PFV-grind quick=3.SG.M salsa
 ‘She quickly prepared salsa.’
 (Mixteco de Alcozauca de Guerrero y Santa María Peñones, Ruíz, Ramírez y Swanton, 2023)

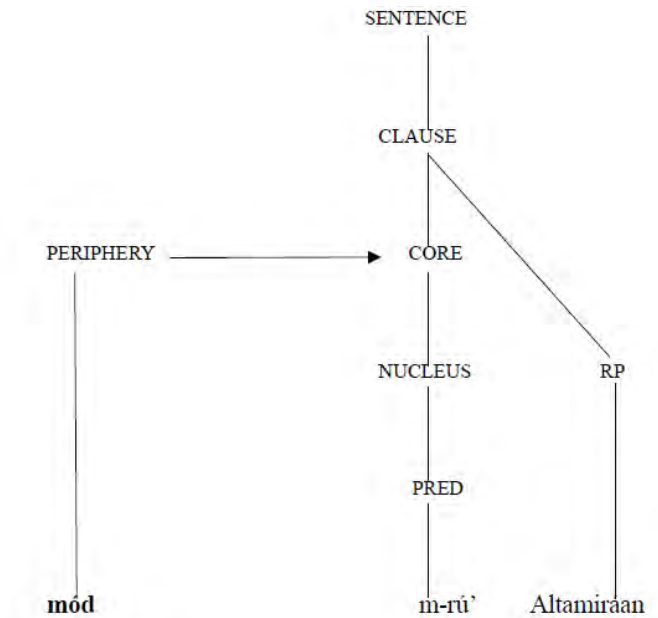


FIGURE 2: Core lexical adverb

In Chicahuaxtla Triqui, $si.^3na.^4$ ‘promptly’ is a nuclear modifier; this form configures the aspect in which the manner of the event is performed, that is, in a quick way (7). Figure 3 shows the scope of this nuclear modifier.

- (7) $si.^3na.^4$ $ga^2-\gamma we.^3$ $g-a^2nu.^2$ $f\ddot{i}^3\gamma i.^1$ ni^3h
 promptly POT-may POT-be.stuck disease 3P
 ‘She may be promptly attacked by diseases.’
 (Triqui de Chicahuaxtla. Elliott, *et al.*, 2024: 238)

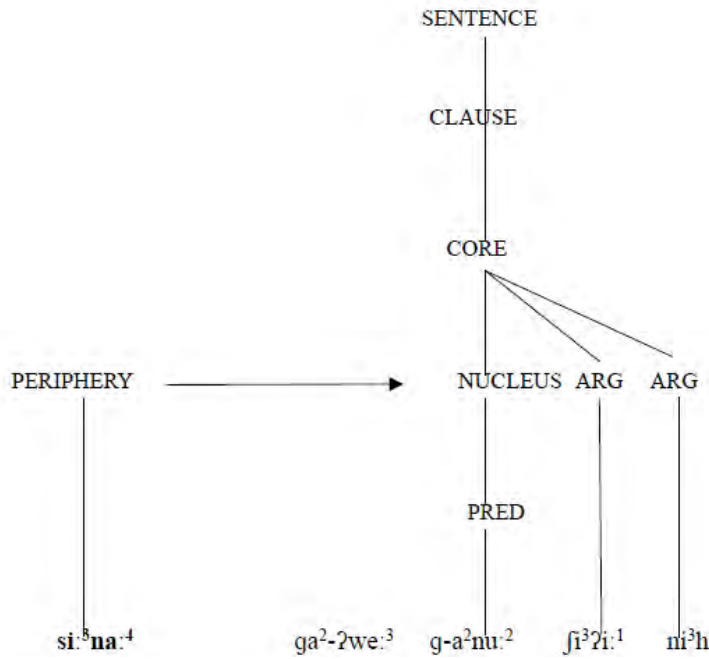


FIGURE 3: Nuclear lexical adverb

In sum, lexical adverbs may modify the clause (Figure 1), the core (Figure 2), or the nucleus (Figure 3); in all cases, they form part of the periphery.

4.2. Operators

Operators can also have scope over all the layers of the clause; thus, it is possible to identify clausal, core and nuclear operators. In Mazahua, *pó* is a clausal operator that expresses the degree of certainty of the whole event, in the case of the example (8), the action of going somewhere and dancing. Another clause operator in (8) is tense, expressed in *nèm'e*. The projection of clausal operators is shown in Figure 4.

- (8) *pó=já=hè=ndà=nèm'e* *a=ma=kw'a=j'a=k'o*
 PSB=PTL=LOC=TOT=3PST.dance PREP=go=there.PRX2=today=DEMP.L.PRX2
 ‘Maybe all of those already danced there.’
 (Mazahua de San Pedro Potla, Mora Bustos, 2022)

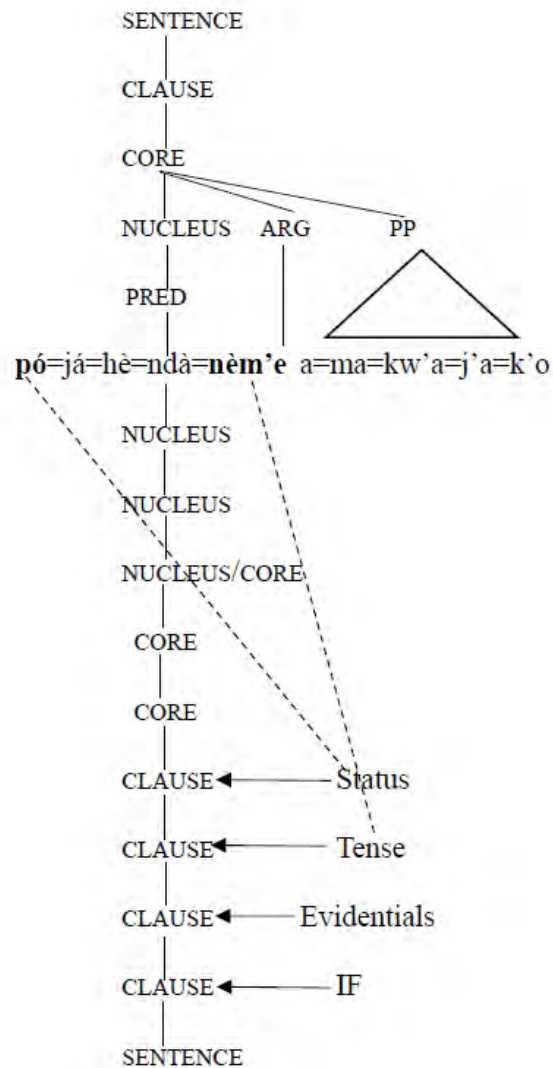


FIGURE 4: Clausal operators

Languages such as Ocotepec Zoque or Chuj exhibit core operators. In (9a), from Zoque, the clitics *te'*, *se'η* and *ti* encode limit. In the same language, in (9b), there is a totalizing affix *pä* that functions as an event quantifier; the same occurs in (9c) from Chuj with the affix *te*. The core operators are shown in Figure 5.

- (9) a. *tambyen* *ø-te'=se'η='omo=ti=pä=ma=ke*
 also S3-MED=LIM=SR:above=LIM=REL=yet=pues
 ‘also as his age’
 (Zoque de Ocotepec, De la Cruz Morales, 2022)
- b. *manh-pa=ma='tsi* *ø-ken-pä-ke't-i*
 AUX:go-ICP=yet=ABS1 S1-see-total-REPET-DEP1
 ‘I’m going to go see again.’
 (Zoque de Ocotepec, De la Cruz Morales, 2022)

c. *mero b'ab'el wal*
 mero first INTS
tz-in-te-t'ek'-e-j *k'ejmi lu'um*
 IPFV-1S-INTS-trample-DERIV-VTD lap CLF.PRON
 'First I trampled (the mud) a lot, going around.' (Chuj)

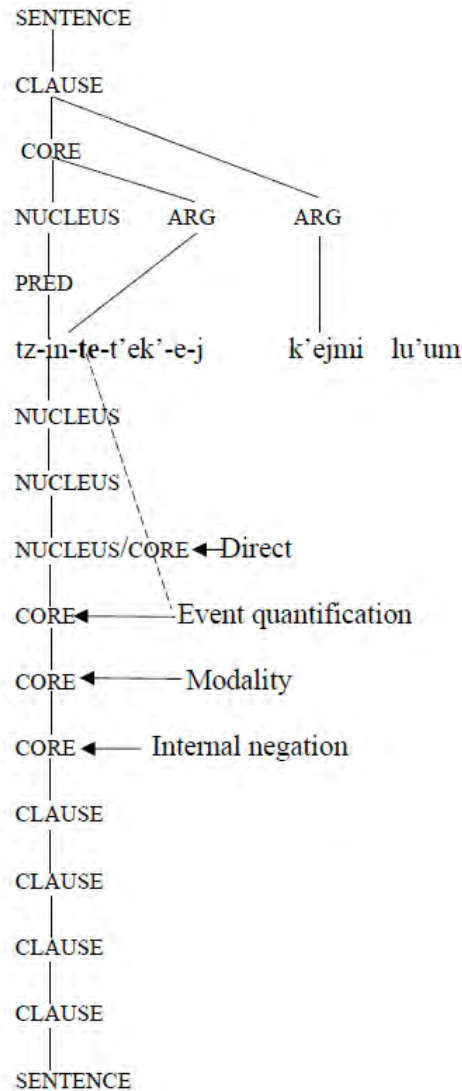


FIGURE 5: Core operators

Finally, in Chontal and in Oxchuc Tseltal, there are nuclear operators. In (10a), *pa* indicates perfective aspect, while *-s-* is a directional operator marking event orientation. Similarly, in Tseltal, *tel* encodes a directional meaning for the verb 'to come'. Figure 6 shows the projection of these operators.

- (10) a. *fa-s-pa=ya'*
 sow-AND-PFV.SG=1S.AGT
 'I went and sowed.'
 (Chontal de la baja de Oaxaca, O'Connor, 2014)

- b. *la* *jk-ich'* *tel* *ixim*
 COM.T A1-take[B3] DIR:venir+NF corn
 'I brought corn.'
 (Tseltal de Oxchuc, Polian, 2013)

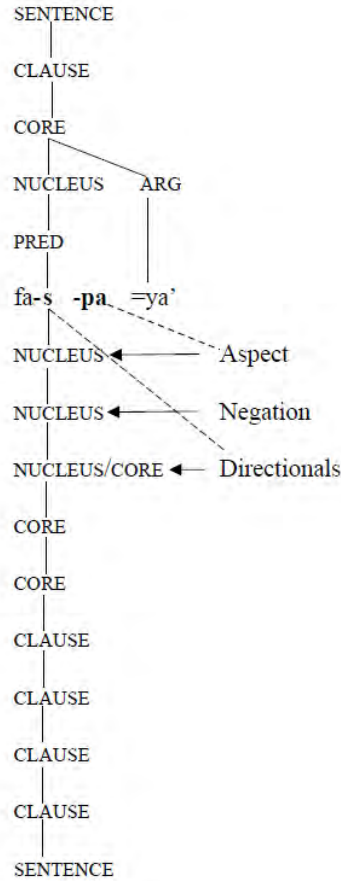


FIGURE 6: Nuclear operators

4.3. Lexical affixes

In this study, we propose that incorporated adverbs cannot be described in the same way as lexical adverbs. As lexical affixes, they should instead be treated as operators: closed-class grammatical morphemes indicating functional categories such as aspect or modality. In the languages under study, they appear exclusively as core and nuclear modifiers.

As core modifiers, in Ocotepec Zoque, in (11a), *ton* 'quickly' indicates how the person should climb. Based on its meaning, it may be considered to express a type of quantification of the rate at which the predicate is performed. In (11b), in Nahuatl, *kwal* 'well' appears in the verbal word together with negation and aspect operators, as well as person indexes. Figure 7 illustrates the projection of these lexical affixes.

- (11) a. *y-täp=ton=ki'm-u='uŋ*
 A3-jump=quickly=get.on-CP=REP
 'He climb it quickly.'
 (Zoque de Ocotepec. De la Cruz Morales (2022))

- b. *pampa ax-ø-ki-kwal-ita-k nopa*
 because NEG-3SUJ-3OP-well-see-PERF that
tlama:n-tli yeka ø-ki-mik-tih
 thing-ABS that's.why 3SUJ-3OP-die-CAUS.PERF
 'Because he didn't like that thing and that's why he killed her'.
 (Náhuatl de la Huasteca Veracruzana. Martínez y Peralta, 2021).

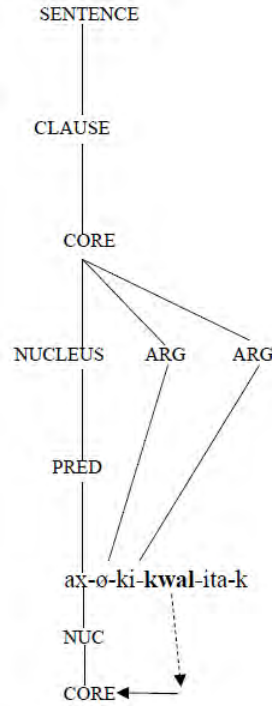


FIGURE 7: Lexical affix (core modifiers)

As a nuclear modifier, in Mixe, *timy* has scope only over the predicate *něj̃kx* ‘go’. This lexical affix restricts the mode of action. Figure 8 presents the corresponding projection.

- (12) *yě'ě jēte'n yě'ě y-timy-ně-něj̃kx-tě-yp*
 DEM.M M.DEM DEM.M 3S-only-above-go-PL-INDEP;TR
 ‘They are only going to see him.’
 (Mixe, Romero & Vázquez, 2012)

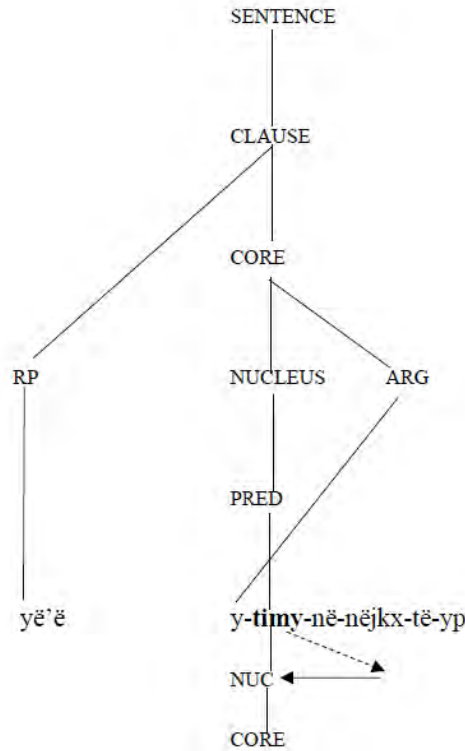


FIGURE 8: Lexical affix (nuclear modifier)

Future research should determine whether the values expressed by lexical affixes correspond fully to those in the list of operators presented in Table 1, or whether additional distinctions are required.

5. Grammatical properties of lexical affixes

Regarding morphological status, in some languages, such as Chol, the same adverb *cha* ‘again’ may occur either as an affix or as an independent word (13). This difference depends on the speaker’s choice; however, further research is needed to determine whether its use is mandatory in certain contexts.

- (13) *che’* *jiñ* *jiñ=tyo ty* *i-cha’-puntu-j-i-Ø* *paaj*
 so PRON3 PRON3=yet PRFV A3-again-aim-VT-B3 ONOM
cha’ *che’* *yambä*
 again say another
 ‘And then, he pointed it at him and ‘paaj’ again.’
 (Chol, Vázquez, 2022).

In the same language, as shown in (14), multiple categories associated with adverbs may occur with different morphological statuses: *yoke* is an intensifier, *äch* an affirmative morpheme, and *ix* ‘already’ a punctual aspect morpheme.

- (14) *yoke* *i-ñox-il=äch=ix* *i-ba*
 INTS A3-old-POS=AFIR=already A3-SR
 ‘It was very big.’
 (Chol, Vázquez, 2022).

At this stage of the investigation, we have found that the scope of these lexical affixes is core and nuclear. In Lacandon, as in (15), *hach* ‘a lot’ functions as a type of event quantification modifier, and although *ki* ‘well’ retains its manner meaning, it also adds punctual information.

With respect to internal order, lexical affixes have specific positions relative to the verbal predicate. In (16), *akstu* ‘only’ appears after the person marker and before the comitative morpheme, five positions before *pup* ‘boil’. The internal order, however, varies across languages.

- (15) *t-in-hach=ki'=ir-ah-ø*
 PFV-ERG1-a.lot=well=see-COMPLTR-ABS3
ch'a'ak-ih-ø y-o'ok in-teet
 cut.PSV-COMPLINT-ABS3 ERG3-foot ERG1-dad
 ‘I saw very well that my father’s foot was cut (with a machete).’
 (Lacandón de sur, Martínez Corripio, 2018).

- (16) *k-akstu-taa-tiya-puu-maa-pup-i-qoo-lh*
 S1SG-only-COMIT-DPA-LOC.INSTR-CAUS-boil-CAUS-3PL-COM
chuchut k-tlamil ma ki-laq-sata-n
 water LOC-clay_pot DET POS1-DSTR-baby-PL
 ‘I went only with my children to boil water in the clay pot.’
 (Totonaco de Tuxtla, Puebla. Juárez, 2016).

In Mazatec, lexical adverbs naturally appear in preverbal position, as in (17a), where *nda* ‘well’ modifies the event of drying clothes. When they occur as lexical affixes, however, they appear as suffixes, as in (17b) and (17c), where *nda* indicates that the action of arranging or making clothes must be carried out correctly.

- (17) a. *kri³s nda²* <*t*>*i²¹fi³¹* *na¹hjo¹*
 Cris well <IMP>be.dry.3 clothes
 ‘Cris, dry clothes well.’
 b. *ã²* *ø-bi²¹nja¹-nda¹* *he³=fi²kĩ³*
 PRON.1SG HAB-accommodate-well.3 ART.DEF=firewood
 ‘I arranged the firewood well.’
 c. *he³* *ki³²-si²-nda²* *na^{h2}jo²=le¹*
 3.PRON COMPL.LEJ-make-well.3 clothes=3
 ‘They made (in a specific way) the clothes.’
 (Mazatec of Huautla, Ortiz, personal data)

Based on Van Valin (2005: 22), the level of modification of lexical adverbs is peripheral. By contrast, the syntax of lexical affixes and operators is similar (Figure 9).

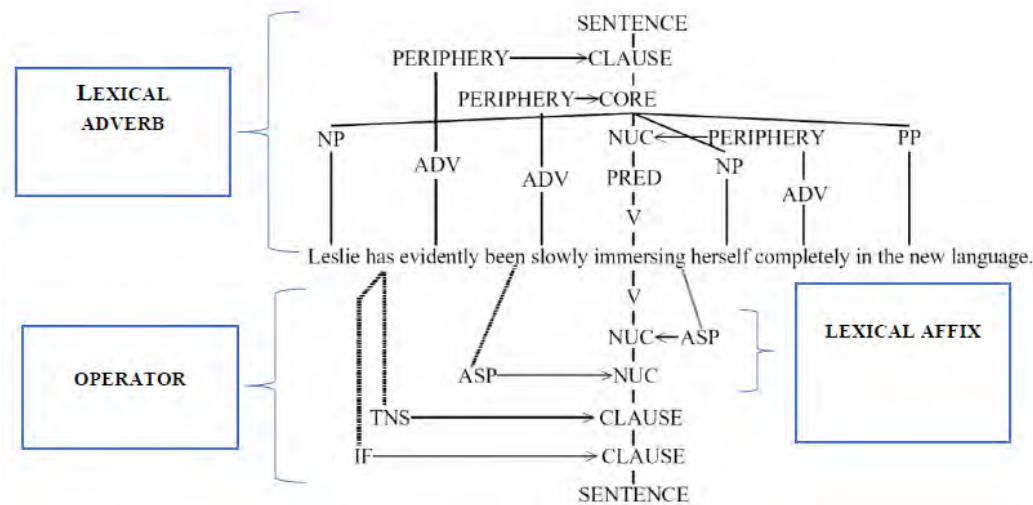


FIGURE 9: Projection of lexical affixes and operators.

6. Final remarks

In summary, lexical adverbs function as clausal, core, or nuclear modifiers, while lexical affixes function as core and nuclear modifiers and, as operators, add grammatical information (e.g. aspect, event quantification, or modality). Lexical affixes exhibit variable distribution relative to the verb. Their scope is specific with respect to clause structure; they retain part of the semantic content but add grammatical information. Further research is required to determine the contexts in which their presence is obligatory or optional and whether particular semantic restrictions apply.

A more detailed examination of the operator inventory is also needed, since these lexical affixes retain certain adverbial meanings that cannot be entirely reduced. Finally, the co-occurrence of lexical adverbs and lexical affixes requires further study in order to determine what kinds of restrictions arise and whether their scope is affected.

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Re-examining the relative clauses in Amis^{*}

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1. Introduction

This paper examines two types of relative clauses in Amis, a Formosan Austronesian language spoken in Taiwan. These two types of relative clauses (RCs), the internally-headed and the genitive-as-the-head types, have received little or no discussion in the literature. From the perspective of Role and Reference Grammar (RRG), I would like to argue that there actually are two sub-types of internally-headed RCs: an internally-headed type and a headless type. As for the genitive-as-the-head RCs, I suggest that they should be accommodated through a constructional schema that is pragmatically driven. This paper is organized as follows. Section 2 offers a brief introduction to Amis and the previous studies about the RCs in this language. Section 3 presents the new findings of Amis RCs. Section 4 offers an RRG account for these new findings and Section 5 concludes the discussion.

2. Brief introduction to Amis relative clauses

Amis is currently spoken by 210,839 speakers¹ in Taiwan. It is classified as one of the Eastern Formosan branch languages (Blust 1999) and is reported to consist of five dialects (Tsuchida 1988). The following discussion is based on the data collected from the Central dialect and the Northern dialect (aka the Nanshi dialect).

2.1. Some notes on Amis grammar

Amis is a predicate-initial language. Verbal predicates are usually affixed with a voice marker (e.g. *mi-*), followed by various numbers of arguments that are marked by a case marker, be it a nominative case (for the PSA argument), a genitive case (for a non-PSA actor or a possessor), or a dative case (for an oblique core argument or adjuncts), and a locative argument or adjunct is marked by the preposition *i*. See (1) for illustration.²

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¹ <https://www.apc.gov.tw/portal/docList.html?CID=7AD36169AB07E1D0>

² The phonetic symbols used in the transcription generally follow the IPA system, with the following exceptions: /e/ stands for schwa [ə], /d/ for voiceless lateral [t̪], /ʔ/ for glottal stop [ʔ], /q/ for epiglottis stop [q̠], and /ŋ/ for [ŋ]. The glosses in this paper in general follow Wu (2006), which adopts some of Liu's (1999) morphemic analyses (e.g. the separation of noun classifier and case markers) and Bril's (2023) glossing with some slight modification. Unless specified in the following, the abbreviations used in the glosses follow the Leipzig Glossing Rules:

- (1) a. *R<om>akat kako i lalan.*
 <NEUT> walk 1S.NOM PREP road
 ‘I am walking on the road.’
- b. *Mi-palo Ø-ci Sawmah ci Mayaw-an.*
 AV-beat NOM-PPN Sawmah PPN Mayaw-DAT
 ‘Sawmah is beating Mayaw.’; ‘Sawmah is going to beat Mayaw.’
- c. *Ma-palo n-i Sawmah Ø-ci Mayaw.*
 UV-beat GEN-PPN Sawmah NOM-PPN Mayaw
 ‘Mayaw was beaten by Sawmah.’
- d. *Pa-nanom kako t-o wawa t-o sayta.*
 CAUS-water 1S.NOM DAT-CN child DAT-CN soda
 ‘I gave the child soda to drink.’ (Causative, AV)

As shown in Table 1, Amis distinguishes two voices: actor and undergoer, and the latter can be further divided into the plain (or non-applicative) UV and applicative UV, including the instrumental applicative and the locative applicative.

Table 1 *Voice Markers and the Applicative Markers in Amis*

Voice		Semantic Role of the Subject	Affixes
Neutral Voice ³		Unspecified	<i>mi-</i> , <i>ma-</i> , < <i>om</i> >
Actor Voice		Actor	<i>mi-</i> , <i>ma-</i> , < <i>om</i> >
Undergoer Voice	Plain	Undergoer (unmarked choice)	<i>ma-</i> , <i>ma-...<om></i> , <i>ma-ka-</i> , <i>-en</i>
	Applicative	Undergoer (marked choice)	<i>sa-</i> , <i>-an</i>

As pointed out by Wu (2006), one of the distinguishing features between the plain voice forms and the applicative forms is that while the latter can serve as an argument nominalization form, the former has to appear with special TAM forms such as being suffixed with the factual marker *-ay* or being partially reduplicated⁴ to indicate the future tense. Table 2 below displays part of the nominalization forms of the verbs with different voices.

AV: actor voice, FAC: factual marker, INA: instrumental applicative, LA: locative applicative, LNK: linker, NCM: noun class marker, NEUT: neutural voice, NFIN: non-finite, PPN: personal proper Noun, UV: undergoer voice

³ This voice marker is used for the intransitive verbs of which the only macrorole is not specified. Such verbs used to be termed as actor voice (or agent voice/focus) by most of the previous studies of Amis and other Formosan languages.

⁴ This is known as Ca- reduplication (Ca- in Table 2), which refers to the process of copying the first consonant of the root or stem and adding the vowel /a/ to the reduplicated consonant. This reduplication form is commonly found in Austronesian languages (Blust 1988). In Amis, this form serves many functions. One of them is to indicate the irrealis mode of the verb, which is usually interpreted as “future tense”.

Table 2 *The Nominalization Forms of Amis Verbs*

Voices and Forms		Event Nominalization		Argument Nominalization	
		Forms	Meaning	Forms	Meaning
Neutral or Actor Voices	mi-Root	pi-Root	the action/ state/event denoted by the root	Voice marker-Root-ay	the actor that does or did the activity or the undergoer that bears or bore the property denoted by the verb
	ma-Root	ka-Root		Ca-Voice marker-Root	the actor that will do the activity or the undergoer that will bear the property denoted by the verb
	<om>Root	ka-<om>Root			
Plain Undergoer Voices	ma-Root Root-en	ka-Root	the action/ state/event denoted by the root with a passive reading	ma-Root-ay	the undergoer of the activity denoted by the verb

				Ca-Root-en	the future undergoer of the activity denoted by the verb
Applied Undergoer Voices	sa-pi-Root sa-ka-Root	--		sa-pi-Root sa-ka-Root	the instrument or reason of the activity/ state denoted by the verb
	mi-...-an pi-...-an ka-...-an	--		mi-...-an pi-...-an ka-...-an	the patient or location of the activity/ state denoted by the verb

2.2. Relative clauses in Amis

There have been quite a few studies that investigate the RCs in Amis, such as Wu (1995, 2006), Liu (1999), to name just a few. Common findings shared by these studies can be summarized as follows. First, the non-restrictive RC precedes the head, with an optional linker *a* that intervenes in between. Second, the verb of the RC has to be an argument nominalization form. Third, the RP coreferential with the head is gapped in the RC, indicated with “_____” in (2). Fourth, a grammatical relation is found in the formation of RCs. As exemplified in (2), from Wu (2023), the pivots (i.e. the gapped RP) in the RCs are restricted to an actor of an actor-voice verb, an undergoer of a undergoer-voice verb, an instrument of instrumental applicative verb, and a location of a locative applicative verb.

- (2) a. *Ma-patay=to* *k-o-ya* *mi-kalat-ay* ______i *ci* *Aki-an*
 NEUT-dead=ASP NOM-NCM-that AV-bite-FAC PPN Aki-DAT
a *waco_i*.
 LNK dog
 ‘That dog **that bit Aki** is dead.’
- b. *Tati’ih* *k-o-ya* *ma-kaen-ay* *n-i* *Aki* ______i *a*
 bad NOM-NCM-that UV-eat-FAC GEN-PPN Aki LNK
tali_i.
 taro
 ‘That taro **that Aki ate** was bad.’
- c. *Ma-pitek=ako* *k-o* *sa-pi-cikcik* *n-i* *Aki*
 UV-break=1S.GEN NOM-NCM IA-NFIN-cut GEN-PPN Aki
t-o *dateng* ______i *a* *po’ot_i*.
 DAT-NCM vegetable LNK knife
 ‘I broke the knife **with which Aki cut the vegetable**.’
- d. *Tayra* *Ø-ci* *Panay* *mi-ladom* ______i *pi-ladom-an*
 go NOM-PPN Panay AV-fetch.water PREP NFIN-fetch.water-LA
n-i *Aki* ______i *a* *tefon_i*.
 GEN-PPN Aki LNK well
 ‘Panay went to fetch water at the well **where Aki fetched water**.’

3. New findings of the relative clauses in Amis

Two types of RCs that have been found in various Amis dialects after further investigation challenge the above summary. They will be referred to as the internally headed type and the genitive-as-the-head type and discussed respectively below.

3.1. The internally-headed RCs

The above-mentioned features of Amis RCs are not found in following example from Northern Amis reported in Brill (2023), which manifests an internally-headed RC, where the modified noun *ina* “mother” stays inside the clause.⁵

- (3) *Bekac* *sa* *cira* *a* *tayra* *i* *ni-pi-sa-sinabel*
 run do NOM.3SG CONJ go LOC NMLZ-NFIN-do-dish

⁵ Brill (2023), cited from: <https://referenceworks.brill.com/display/entries/HFLO/COM-305010.xml>, original glosses, highlight mine.

n-u *"ina.*
 GEN-NM mother
 'She ran to her **mother who was cooking the meal.**'

More examples of internally-headed RCs can be found in the textbook of Northern Amis.⁶

- (4) a. *Aluman=tu* *k-u* *mi-liyas-ay* *n-u* *kapah* .
 many.people=ASP NOM-NCM AV-leave-FAC GEN-NCM young.man
 na *i* *niyaru*'.
 from PREP tribe
 'There have been many **young men who left the tribes.**'
 b. *A=tusa* *k-u* *ni-kerid-an* *nu* *vavainay* *t-u* *lusid.*
 FUT=two NOM-NCM LA-bring-LA GEN-NCM men DAT-NCM thing
 'There will be **two things that men bring** (when they marry to a woman).'

The RCs exemplified in (3) and (4) are interesting as they show at least two features different from the externally-headed type in addition to the position of the RC and the head RP. First, the verb form inside the RC can be either an event nominalization form (e.g. *nipisasinabel*⁷ '(the past behavior) of cooking' in (3)) or an argument nominalization form (e.g. *miliyasay* 'one who left' in (4)). Second, the modified noun does not have to be a PSA of the RC based on the information from case marking though the argument nominalization form of the verb still follows the morphological restriction that is found in externally-headed RCs; that is, the verb is AV-marked when the modified noun is an actor and UV-marked when the modified noun is an undergoer.

However, in spite of sharing the feature of having an internal head, the examples in (3) and (4) actually show two important differences among themselves. First, while those in (4) can have external versions, either headed ((5a) and (5c)) or headless ((5b) and (5d)), the one in (3) cannot as shown in (5e-f).

- (5) a. *Aluman=tu* *k-u* *mi-liyas-ay* *na* *i* *niyaru*'.
 many.people=ASP NOM-NCM AV-leave-FAC from PREP tribe
 a *kapah.*
 LNK young.man
 'There have been many **young men who left the tribes.**'
 b. *Aluman=tu* *k-u* *mi-liyas-ay* *na* *i* *niyaru*'.
 many.people=ASP NOM-NCM AV-leave-FAC from PREP tribe
 'There have been many **(ones) who left the tribes.**'
 c. *A=tusa* *k-u* *ni-kerid-an* *nu* *vavainay* *a* *lusid.*
 FUT=two NOM-NCM LA-bring-LA GEN-NCM men LNK thing
 'There will be **two things that men bring** (when they marry to a woman).'
- d. *A=tusa* *k-u* *ni-kerid-an* *nu* *vavainay.*
 FUT=two NOM-NCM LA-bring-LA GEN-NCM men

⁶ From <https://web.klokah.tw/twelve/learn.php>.

⁷ The form *ni-pi*-... is a past tense variant of the *pi*- nominalization form (or non-finite form in Brill's (2023) analysis).

- ‘There will be **two (things) that men bring** (when they marry to a woman).’
- e. **Bekac sa cira a tayra i ni-pi-sa-sinabel*
 run do NOM.3SG CONJ go LOC NMLZ-NFIN-do-dish
a ina.
 LNK mother
 Intended: ‘She ran to her mother **who was cooking the meal.**’
- f. **Bekac sa cira a tayra i ni-pi-sa-sinabel*
 run do NOM.3SG CONJ go LOC NMLZ-NFIN-do-dish
 Intended: ‘She ran to (someone) **who was cooking the meal.**’

As shown in (5e), it is ungrammatical to place the head out of the RC in the RC with an event-nominalization form.

Secondly, while the forms of the RCs in (4) can still help to decipher the semantic role of the modified noun, the event nominalization form in (3) does not serve this function. In fact, a further investigation of the internally-headed RC with an event nominalization verb shows that every argument can be a possible modified noun of the RC, though the actor is a preferred choice.

- (6) *Vekac⁸ sa cira a tayra i ni-pi-sa-cacak n-u*
 run so 3SG.NOM LNK go PREP NMLZ-NFIN-do-cook GEN-NCM
ina t-u sinavel.
 mother DAT-NCM dish.
 ‘He/she ran to (his/her) **mother who was cooking a dish.**’ (preferred)
 ‘He/she ran to the **dish that was being made by (his/her) mother.**’

As shown in (6), both arguments of *nipisacacak* ‘the (past) behavior of cooking’ can be the modified noun of the RC, but the actor RP as the head receives a preferred reading. This ambiguity is similar to the case discussed in Van Valin and LaPolla (1997: 502) for the internally-headed RCs in Lahokta. When all of the RPs inside the RC can be interpreted as the arguments of the matrix clause, then all are qualified to be interpreted as the head of the RCs.

3.2. The genitive-as-the-head type of RCs

Besides the internally-headed RCs, another type of RCs that violate the features discussed in Section 2 is found in the Amis Bible:

- (7) a. *O malininaay n-o-ya ma-krit-ay n-i Pitiro*
 NCM relative GEN-NCM-that UV-cut-FAC GEN-PPN Peter
k-o tangila ____i a tamdaw_i.
 NOM-NCM ear LNK person
 ‘It was the relative of that person **whose ear was cut by Peter.**’
- b. *Ira maro’ i Yirosalim ko talolong-ay*
 exit live PREP Jerusalem NOM-NCM pious-FAC
k-o faloco’ ____i a Yotaya a tamdaw_i.
 NOM-NCM heart. LNK Jewish LNK person
 ‘There were the Jewish people **whose hearts were pious** living in Jerusalem.’

⁸ This is the same predicate that appears in (3), but Bril (2023) used the old orthography.

As shown in (7), the pivots in the RC is a possessor instead of the RP that agrees with verbal marking in the RCs. If these gapped RPs show up in the clauses, they would appear in the genitive cases such as (8):

- (8) a. *Ma-krit-ay* *n-i* *Pitiro* *k-o* *tangila* ***n-o-ra***
 UV-cut-FAC GEN-PPN Peter NOM-NCMear ear **GEN-NCM-that**
 tamdaw.
 person
 ‘That person’s ear was cut by Peter.’
 b. *Talolong-ay* *k-o* *faloco*’ ***n-o*** *Yotaya* *a* *tamdaw..*
 pious-FAC NOM-NCM heart. **GEN-NCM** Jewish LNK person
 ‘Jewish people’s hearts were pious.’

In fact, these examples not only challenge the earlier analysis of Amis RCs as the possessor does not belong to the restricted set of roles specified in Section 2 but also the Noun Phrase Accessibility Hierarchy proposed by Keenan and Comrie (1977), in which genitive is placed at a less accessible position of relativization than subject, direct object, and indirect object; the latter two are impossible to be relativized in Amis unless they become the focused RP in the RC.

4. The RRG Analysis for the New Types of Amis RCs

Based on the above discussion, two analyses are proposed for the internally-headed RCs in (3) and (4). While (3) is treated as an instance of internally-headed RC, those in (4) are analyzed as headless RCs that constitute an RP on its own. For the internally-headed RCs, there is no way to place the head outside of the clause or remove the head from the clause, but for the headless type, it is possible to remove the seemingly internal head outside of the clause and remove it. In fact, the verbs in those headless RCs can simply function as a headless RP on its own and some of them have even become lexicalized in Amis such *mato'asay* 'old men or the one who is old'.

Regarding the RCs with a genitive head, they should be treated as a pragmatically-marked type of RCs. In fact, (7) can be paraphrased as (9) below, which better fits the restricted neutralization requirement of Amis RCs.

- (9) *O malininaay n-o-ya ma-krit-ay n-i Pitiro*
 NCM relative GEN-NCM-that UV-cut-FAC GEN-PPN Peter
t-o tangila ____i a tamdaw_i.
 DAT-NCM ear LNK person
 ‘It was the relative of that person whose ear was cut by Peter.’

In (9), the patient of *makritay*, which is the argument nominalization form of the UV verb *makrit* ‘cut’, is marked with the dative case and thus is a non-macrorole core argument. The undergoer of the verb should be the pivot according to the case pattern of Amis UV sentences. Although the role of this missing argument is a possessor, it can also be understood as a patient whose body part is affected in the event. (9) appears to be a marked undergoer choice, but at least it does not violate the restriction mentioned in Section 2. As structures like (7) seem to only appear in limited contexts such as translated works like the *Amis Bible*, where the faithfulness to the input languages is deemed

important and may override the syntactic rules, they should be handled through a special construction schema like Table 3.

Table 3 *Construction Schema for the Genitive-headed RC*

Construction: the genitive-headed RC in Amis
Syntax: Template: default Linking: default
Morphology: the argument nominalization form
Semantics: PSA is a possessor.
Pragmatics: Illocutionary force: unspecified Focus structure: PSA=unspecified Discourse: translated texts

Similar grammatically exceptional examples can also be found in other Amis translation works such as the official Amis textbooks, which are translated from a common Chinese version shared by all the Formosan languages.⁹ I suggest that such exceptions should be treated as a sub-set of the grammar but not deemed as basic rules.

5. Conclusion

In this paper, I have presented two types of RCs that have received little or no discussion in the previous studies of Amis RCs: the internally-headed types and the genitive-as-the-head type. I have proposed the following analysis for these RCs by using the RRG framework. The internally-headed types actually consist of two subtypes: the internally-headed one and the headless one; while the former does contain an internal head, the latter can serve as an RP. As for the genitive-as-the-head RCs, they are accounted for through a special construction schema for pragmatically-marked contexts.

As the two sub-types of internally-head RCs are both found in the Northern dialect, it is worthwhile to investigate whether such structures are also found in other Amis dialects. Regarding the genitive-as-the-head type, it will be interesting to survey on to what degree the source language can influence the Amis syntax in translated works.

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⁹ For example, Amis expresses the novel idea ‘X o’clock’ with a clause (e.g. *enemay ko toki* ‘6 o’clock, literally ‘The time is six.’. To express the idea ‘I get up at 6 o’clock.’, the Amis sentence will put a whole temporal expression (i.e. a clause) in another clause, which results in the occurrences of two nominative RPs. This is not allowed in the regular Amis syntax.

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On the interclausal syntactic relations of Toda Seediq evaluative complex predicates¹

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1. Introduction

In some Formosan (Austronesian, Taiwan) languages, there exists a type of little-studied monoclausal multi-verb constructions, as exemplified in (1)-(2).

(1) Squliq Atayal (Yeh 2015:134; glosses mine)

<i>blaq</i>	<i>niq-un</i>	<i>qu'</i>	<i>ringo'</i>	<i>qa'</i> . ²
good.AV	eat-PV	NOM	apple	this

'This (type of) apple tastes good.'

(2) Amis (Wu 2023:975; translation mine)

<i>Koesit</i>	<i>a</i>	<i>sowal-en</i>	<i>cira.</i>
difficult	LNK	say-UV	3S.NOM

'He is difficult to talk to.'

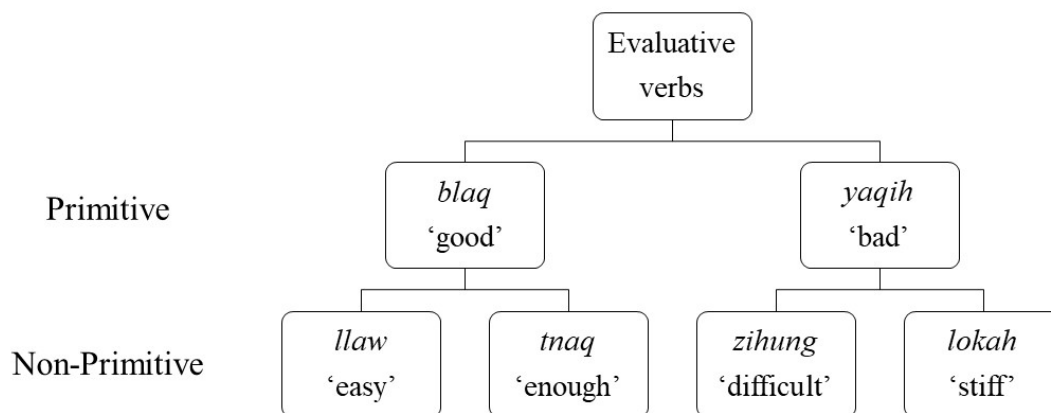
Yeh (2015:115) identifies the function of the first verb (V1) of the construction in question as that of 'evaluating' and refers to verbs of such as 'evaluative verbs', rather than just that of 'commentating' (Hare 1952, Noonan 1985), for she argues that this class contains verbs not only contains words "with positive value", but also those "with negative value" (ibid. 135). Moreover, since in Squliq Atayal, the V1s of the constructions in question are mostly *blaq* 'good', based on Wierzbicka's theory of 'semantic primitives', Yeh (2015:136) proposes a hierarchical distinction between 'primitive' and 'non-primitive' evaluative verbs, as illustrated in Figure 1. In addition, because speakers of Squliq Atayal use *blaq* 'good' more often than *yaqih* 'bad' for socio-pragmatic reasons, Yeh (ibid.) refers to the constructions in question as 'BLAQ UV *qu'* NP constructions',

¹ This paper was based on my presentation, titled 'The juncture-nexus types and the interclausal relations of the evaluative complex predicates in Toda Seediq', at *The 18th International Conference on Role and Reference Grammar (RRG)* held on July 14 and July 15, 2025, hosted by the Graduate School of Humanities, Kobe University. I would like to thank my advisor, Prof. Joy J. Wu for her invaluable suggestions for the draft of my conference presentation, and also Prof. Chien-hung Lin and Prof. Ronald Schaefer for their comments on my presentation. In addition, I would like to show my gratitude to my Toda consultants, for their generous provisions of language data with me.

² The interlinear morpheme-by-morpheme glosses in this paper follows the Leipzig Glossing Rules (<https://www.eva.mpg.de/lingua/resources/glossing-rules.php>), with additional abbreviations of glosses listed in the following: AUG, augmentatives; AV, actor voice; EXTNEG, external negation; INTNEG, internal negation; NV, neutral voice; S, singular; UV, undergoer voice; UVP/PV, plain undergoer patient voice; UVL, locative applicative undergoer voice.

where ‘BLAQ’ is a label for evaluative verbs, reflecting the concept of unmarkedness.

Figure 1. A hierarchy of evaluative verbs in Squliq Atayal (Based on Yeh 2015:136)



What makes these constructions intriguing is (i) their syntactic relations and (ii) the argument sharing of the verbs. According to Yeh (2015), they exhibit ‘a fusion of serial verb constructions (SVCs) and commentative complement clause constructions (CCCs), for she finds that BLAQ UV *qu*’ NP constructions syntactically exhibit obligatory sharing of arguments, tense-aspect-mood (TAM) information, and polarity value just as SVCs do, but the AV-UV manifestation on verb sequence can only be found in commentative CCCs but not SVCs (as illustrated in Figure 2 below). Therefore, she argues that SVCs have “syntactic imports” on BLAQ UV *qu*’ NP constructions, whereas the commentative CCCs have “semantic imports”, with the UV marking on the second verb (V2) exclusively designated to the evaluated undergoer that is marked by the nominative *qu*’ (ibid. 151-3).

Following Yeh’s (2015) terminology, Wu (2023) terms the constructions in question in Amis as ‘evaluative constructions’. In addition, Wu (2023:975) points out there are in fact two (sub)types of evaluative constructions: one that is equivalent to the English sentence ‘*The food tastes good*’ (e.g. (1)), and the other, ‘*It is difficult to do this job*’ (e.g. (2)).³ The difference between the two subtypes lies in the ‘semantic’ sharing of nominative (NOM) arguments: In the ‘taste-good’ type, the NOM arguments are semantically the core arguments of the two verbs, while in the ‘difficult’ type, the NOM arguments are the core arguments of the (eventive) V2s but not those of the evaluative V1s. Hence, the Parameter (B) that is adopted by Yeh (2015) for the syntactic tests can only account for the ‘syntactic’ sharing of NOM arguments, but not the ‘semantic’ one.

³ In my opinion, the English sentence ‘This job is difficult to do’ is more appropriate for exemplification, as the sentence is structurally more analogous to the constructions in question.

Figure 2. A comparison of the three types of constructions in Squliq Atayal
(Based on Yeh 2015:148)

Construction types Parameter	SVCs	BLAQ _{UV} qu' NP constructions	Commentative CCCs
(A) Manifestation of voice in verb sequences	(a) AV AV (b) UV AV	AV UV	(a') AV AV (b') AV UV
(B) Sharing of arguments	Obligatory	Obligatory	Optional
(C) Sharing of TAM information	Obligatory	Obligatory	Depends
(D) Sharing of polarity values	Obligatory	Obligatory	Optional

Wu (2023:978) further argues that the Role and Reference Grammar (RRG; Van Valin and LaPolla 1997, Van Valin 2005, Bentley et al. 2023) approach might provide a more straightforward answer to why the AV-UV sequence on verbs is obligatory. She explains that the AV marking on the ‘intransitive’ V1 should actually be seen as that of the ‘neutral voice’ (NV), which selects an ‘undergoer’ argument as the NOM one, for the sole argument of an intransitive verb intrinsically bears the semantic macrorole of undergoer, from RRG’s perspective. And in this way, the NOM arguments are both the semantic arguments of the two verbs in the constructions in question, rather than Yeh’s (2015) account that only the UV-marked V2s control the selection of the NOM arguments. Nevertheless, in spite of the more convincing proposals made by Wu (2023), the problems regarding the exact syntactic relations of the two (sub)types of evaluative constructions remained unsolved, and Wu has only focused on the semantic argument sharing of the ‘taste-good’ type, but not the ‘difficult’ type.

In Toda Seediq, another under-described Formosan language, the two subtypes of the constructions in question can also be found, with examples given in (3a-d). The primitive evaluative V1s *malu* ‘good’ and *naqah* ‘bad’ can also semantically extend to the meanings of ‘easy’ and ‘difficult’, as in (3c-d), respectively.

(3) Toda Seediq (Personal fieldnotes)

- a. *Malu equn ka siyang ni.*
good.NV eat.UVP NOM fatty_pork this
‘This fatty pork tastes good.’
- b. *Naqah equnka sari.*
bad.NV eat.UVP NOM taro
‘Taro(s) taste bad.’
- c. *Malu=bay diyun ka puting ni.*
good/easy.NV=very use.UVP NOM hunting_knife this
‘This hunting knife is easy to use.’
- d. *Naqah paqun qhuni ka kaur ni.*
bad/difficult.NV=very kill.UVP tree NOM sickle this
‘This sickle is difficult to cut down the tree(s).’

The main goal of this paper is to determine the exact syntactic relations displayed by the two subtypes of constructions in question. Since the current functional-typological frameworks (e.g. Aikhenvald and Dixon 2006 on SVCs, and Noonan 1985 on complementation) cannot fully account for this issue, here I choose to follow Wu (2023) and adopt RRG as the main theoretical framework for analysis, as RRG has proposed as of the finest classifications of interclausal syntactic relations among linguistic theories. Notice that in (3) I have already adopted Wu's (2023) analysis and the RRG perspective for glossing. Furthermore, in the following of the paper, I will refer to the construction in question as 'evaluative complex predicates' (ECPs), and the two subtypes, the '*sensory*-ECPs' and the '*difficulty*-ECPs' respectively, in order to faithfully reflect their semantic contents. As can be observed in (3a-d), the ECPs in Toda Seediq sequentially consist of 'evaluative predicates' (EvalP), 'eventive predicates' (EventP), sometimes oblique (OBL) arguments of the EventP, and the NOM arguments that undergo the evaluation. In particular, in sensory-ECPs, the EventPs are denoted by sensory verbs with the EvalPs meaning 'good' or 'bad', whereas in difficulty-ECPs, the EvalPs denote 'easy' and 'difficult', with the EventPs being the plain activity ones.

This paper is organized as follows: Section 2 will briefly introduce the grammar of Toda; the analysis of ECPs will be given in Section 3; and Section 4 will conclude this paper.

2. An overview of Toda Seediq grammar

Typologically speaking, typical of Formosan languages, Toda Seediq exhibits a Philippine-type four-way 'symmetrical voice' system: not a single type of voice constructions is morphologically basic (Himmelmann 2005), and there is no demotion of core arguments as peripheral, oblique arguments, which are found in languages with passive voices (e.g. nominative-accusative languages) or antipassive voices (e.g. ergative-absolutive languages). In traditional grammatical analyses, the four types of voices are actor voice, patient voice, locative voice, and circumstantial voice. Each type of voice selects arguments with particular 'thematic relations' (in the sense of RRG, semantic microroles⁴) as the NOM arguments of their own. Nevertheless, in general, the thematic relations of the NOM arguments in the latter three types of voices are all 'undergoer-like'. Therefore, from RRG's viewpoint, these voices can be categorized under a broader category of 'undergoer voice' (UV). Also, as mentioned in Section 1, in some intransitive actor voice clauses, the NOM arguments are 'undergoer-like', in addition to the actor-like NOM arguments in transitive actor voice clauses. Hence, following RRG's non-unified approach, two voice categories should be distinguished in terms of the umbrella term 'actor voice': the 'neutral voice' (NV) and the genuine, plain actor voice (AV). Figure 3 below provides the information about each type of voices in Toda Seediq, including the classification, the type of semantic macroroles of NOM argument they select, their M(acrorole)-transitivity (reflected by the macrorole number), and their corresponding morphological markers, etc.

⁴ The term is borrowed from Hartmann et al. (2014).

Figure 3. Voices in Toda Seediq

Voice	Subtypes	Macrorole of NOM Argument	Macrorole Number	Markers
Neutral Voice (NV)	—	None/ Undergoer	0 (M-atransitive) / 1 (M-intransitive)	$\emptyset$, < <i>m</i> >, <i>m</i> -, <i>mp</i>
Actor Voice (AV)	—	Actor	1 (M-intransitive)	
Undergoer Voice (UV)	Plain (UVP)	Undergoer (default)	2 (M-transitive)	- <i>un</i>
	Locative Applicative (UVL)	Undergoer (marked choice)	2 (M-transitive)	- <i>an</i>
	Circumstantial Applicative (UVC)	Undergoer (marked choice)	2 (M-transitive)	<i>s</i> -

And in terms of word order, Toda Seediq is predicate-initial and PSA-final. The PSA or topic of a clause is marked by the nominative case marker *ka*. Other than *ka*, there are also two cases in the language: the genitive case that marks the possessor of a possessed NP, or the actor argument of the UV clauses, and the oblique case that marks the non-macrorole arguments. However, in Toda Seediq, the genitive case and the oblique case are not formally distinguished, as the genitive marker has been dropped. Nevertheless, there are two other ways that can help one identify which argument bears which case. The first is through the indexing of the pronominal enclitics on the clause-initial elements. Only the nominative and genitive arguments would be indexed. The second way is the constituent order of the arguments. The genitive arguments would immediately follow the main verb, with the OBL arguments coming after and preceding the *ka*-marked NOM arguments.⁵

3. The analysis of ECPs and their interclausal syntactic relations

3.1 The RRG approach to clause linkage

Before the analysis, it is important to address how clause-linking phenomena are classified by the RRG theory. In RRG, the syntactic relations of complex sentences (including complex predicates) are classified based on the combinations of different types of ‘junctures’ and ‘nexuses’. The ‘junctures’ refer to the syntactic level where the clausal linkage occurs. RRG distinguishes four levels of junctures: nuclear, core, clausal, and sentential, which are directly relevant to the sizes of the linked units. A nucleus contains only a predicate itself. A core consists of a predicate and its semantic core argument(s). A clause is constituted of a core and potentially arguments that are not those of the core(s) (i.e. ‘non-arguments’). And a sentence is a clause plus ‘detached positions’ that may host topics or ‘peripheries’ hosting locative or temporal phrases. As for the ‘nexuses’, the term refers to the “abstract linkage relations” rather than referring to particular formal

⁵ However, in the ECPs there would be no pronominal enclitics on the clause-initial elements, and the reason is beyond the scope of this paper and will not be discussed hereafter. Thus, the only remaining type of arguments other than NOM arguments in ECPs can only be the oblique ones.

construction types (Van Valin 2023:72). There are three types of nexuses recognized in RRG: coordination, subordination, and cosubordination. The distinction of nexuses involves the notions of ‘structural dependence/y’ and ‘operator dependence/y’. First, ‘coordination’ shows no structural dependence; each linked unit can structurally stand alone as a single, grammatical construction, and is able to be modified by operators (i.e. grammatical morphemes) of their own. ‘(Daughter) subordination’, on the other hand, involves a syntactic unit that is an argument of another matrix unit.⁶ As for ‘cosubordination’, it involves ‘operator dependency’ or ‘operator sharing’: the modifying scope of the operator must range over all the linked units. In RRG, each type of operators works on different syntactic levels, as Table 1 illustrates below.

By combining all levels of junctures and types of nexuses, over 16 juncture-nexus types can be yielded. Figure 3 below presents the ‘Interclausal Syntactic Relations Hierarchy’ (ISynRH), with all the possible juncture-nexus types ranked from tightest/strongest integration (top) to the loosest/weakest (bottom). The degree of syntactic integration is determined by the tightness of junctures and that of nexuses. In terms of the former, the ranking naturally follows that from the smallest (nuclear) to the largest (sentential). As for the tightness of nexuses, cosubordination entertains the tightest integration, for the obligatory operator sharing makes few or no possibilities of locational variances for the linked units. Subordination is looser than cosubordination, as structural variance of the subordinate units may be allowed. The loosest is coordination, since the linked units are independent of one another. Note that in juncture-nexus types involving subordination, the ‘juncture’ parts actually refer to the ‘size of the subordinate units’, not the level of juncture or the size of the matrix unit where subordination takes place.

Table 1. Classes of operators distinguished in RRG (Van Valin 2023)

Scope / levels of operators	Operators
Nucleus (Nuclear operators)	Aspect
	Negation
	Directionals (only those modifying the orientation of an action or event without reference to another participant or to the speaker)
Core (Core operators)	Directionals (only those expressing the orientation or motion of one participant with reference to another participant or to the speaker)
	Event quantification
	Modality (root modals, e.g. ability, permission, obligation)
	Internal (narrow scope) negation
Clause (Clausal operators)	Status (epistemic modals, external negation)
	Tense
	Evidentials
	Illocutionary force (IF)

⁶ In fact, there is another type of subordination called ‘ad-subordination’ or ‘peripheral subordination’, which involves one unit that is the modifier of another unit.

Figure 3. ISynRH in RRG (Based on Van Valin 2023:84)



3.2. Adopting RRG to the analysis of Toda ECPs

After the readers are acquainted with the RRG's approach to clause linkage, now let us see how the problems raised by ECPs may be dealt with by RRG. First, in terms of the juncture, semantically EvalPs are one-place 'core' predicates that only take one core argument: in sensory-ECPs they naturally take the evaluated NOM arguments, and as for in the difficulty-ECPs, they are expected to take propositions as their arguments (e.g. English '*It is difficult to do this.*'). As for the EventPs, they also form cores with the NOM arguments and potentially the OBL arguments. However, they are not grammatically overt clauses that can stand alone, for in ECPs there lack of actor arguments that are normally also the core arguments of the UV-marked verb, as exemplified in (4).⁷ In fact, the actors or arguments representing speakers are not allow to appear in the ECPs, otherwise the whole constructions will become ungrammatical. See (5) for exemplification. These facts indicate that both predicates in ECPs are cores.

(4) (Personal fieldnotes)

- | | | | | |
|----|---------------|-----------|--------------|------------|
| a. | <i>*equn</i> | <i>ka</i> | <i>camac</i> | <i>ni</i> |
| | eat.UVP | NOM | meal | this |
| b. | <i>*diyun</i> | <i>ka</i> | <i>yayu</i> | <i>way</i> |
| | use.UVP | NOM | knife | that |

(5) **Naqah=mu* *diyun* *ka* *yayu* *way*.
 bad/difficult.NV=1SG.GEN use.UVP NOM knife that
 Intended: 'I think that knife is hard to use.' (Personal fieldnotes)

⁷ This has also been pointed out by Yeh (2015) on Sqliq Atayal ECPs.

Second, regarding the possible nexus relations of ECPs, because the cores formed by EvalPs and their arguments cannot stand alone as clauses, the possibility that ECPs are coordinate structures will be excluded. This indicates that ECPs can only be subordinate or cosubordinate structures. On the other hand, given that the two subtypes of ECPs differ in terms of argument sharing, it may be well argued and predicted that the juncture-nexus types of the two subtypes are **different** (J. Wu, personal communication). Since sensory-ECPs exhibit argument sharing but difficulty-ECPs do not, the former is expected to entertain tighter linkage than the latter. If this prediction is on the right track, it is expected that the nexus relation of sensory-ECPs is cosubordination and that of difficulty-ECPs is subordination.

To test whether ECPs syntactically exhibit subordination and cosubordination, one straightforward way is to see whether they showcase operator sharing, as only cosubordination requires operator dependency. Here five operators and grammaticalized lexical modifiers with different modifying syntactic levels are put to test: (i) *wada* ‘PFV’ (aspect; nuclear), (ii) *ini* ‘INTNEG’ (internal negation; core), (iii) *uxay* ‘EXTNEG’ (external negation; clausal), (iv) *musa* ‘FUT’ (tense; clausal), and (v) *ya bay* ‘probably’ (status; clausal). Their compatibilities with sensory-ECPs and difficulty-ECPs are shown in (6) and (7), respectively.

(6) (Personal fieldnotes)

- a. ?*Wada* *malu=bay* *equn* *ka* *damac* *ni*.
 PFV good.NV=very eat.UVP NOM dish this
 Intended: ‘This dish already tastes good.’
- b. ??*Ini* *k-malu* *equn* *ka* *siyang* *ni*.
 INTNEG STAT-good eat.UVP NOM fatty_pork this
 Intended: ‘This fatty pork does not taste good.’
- c. *Uxay* *malu* *equn* *ka* *siyang* *ni*.
 EXTNEG good.NV eat.UVP NOM fatty.pork this
 ‘It is not the case that this fatty pork does not taste good.’
- d. *M-usa* *malu* *equn* *ka* *pnychadaw* *Lawa*.
 AV-go good.NV eat.UVP NOM <PFV>cook PN
 ‘(The meal that) Lawa cooked will taste good.’
- e. *Ya bay* *malu* *equn* *ka* *h<n>apuy-an* *eqan* *idaw*
 probably good.NV eat.UVP NOM <PFV>cook-UVL eat.UVL rice
 hini!
 here
 ‘The food this restaurant cooks will probably taste good.’

(7) (Personal fieldnotes)

- a. ?*Wada* *naqah* *diyun* *ka* *puru* *ni* *da*.
 PFV bad/difficult.NV use.UVP NOM axe this COS
 Intended: ‘This axe is already difficult to use.’
- b. ??*Ini* *naqah* *diyun* *ka* *awic* *ni*.
 INTNEG bad/difficult.NV use.UVP NOM hoe this
 Intended: ‘This hoe is not difficult to use.’
- c. *Uxay* *naqah* *sluhay-an* *ka* *mriq* *rulu*.
 EXTNEG bad/difficult.NV learn-UVL NOM drive.AV car

- ‘It is not the case that driving a car is difficult to learn.’
- d. *M-usa naqah diyun ka puru way.*
 AV-go bad/difficult.NV use.UVP NOM axe that
 ‘That axe will be hard to use.’
- e. *Ya bay naqah diyun ka yayu way.*
 probably bad/difficult.NV use.UVP NOM knife that
 ‘That knife will probably be hard to use.’

Interestingly, the results for both subtypes are the same. First, *wada* ‘PFV’ is considered redundant for ECPs by the consultants; its existence in ECPs is more natural, such as when ECPs occur in reason clauses headed by *alaw* ‘because’. What is truly surprising is that the core-level internal negator *ini* does not go well with the ECP. Instead, it is the clause-level external negator *uxay* that fits better with ECPs, according to the consultants’ intuitions. This also holds true for the other two clause-level operators, *musa* ‘FUT’ and *ya bay* ‘probably’. Such results present an unexpected analytical paradox: what looks to be core junctures (here the ECPs) turn out to seemingly exhibit syntactically looser clausal junctures. However, judging from the argument structures of EvalPs and EventPs, the juncture type of ECPs should have been core junctures. The only assumption we can make is that there are other unexplored grammatical properties of ECPs affecting the results of operator-sharing tests shown in (6)-(7). Now it seems that such a paradox cannot be solved by the RRG theory alone, and borrowing the insights of other theories or frameworks would be needed.

3.3. Evidence outside RRG: the notion of ‘qualitative evaluation’

Recall that Yeh (2015) has argued that evaluative verbs contain both words with ‘positive’ or ‘negative’ polarity values. In fact, the same idea has also been proposed by other linguists as well, such as those working on the framework of ‘Evaluative Morphology’ (Grandi and Körtvélyessy 2015a). The linguistic phenomena the followers of Evaluative Morphology focus on are the affixes that exhibit both inflectional and derivational properties. For instance, in Italian, the diminutive *-ino* can express ameliorative meanings in the cases like *fuocherell-ino* ‘nice little fire’ (Scalise 1984); on the other hand, the Slovak augmentative *-isko* may also express pejorative meanings, such as in *mam-isko* [mother-AUG] (Grandi and Körtvélyessy 2015b:11). Hence, evaluative morphologists consider (prototypical) amelioratives and pejoratives to involve the notion of ‘qualitative evaluation’ and the semantic shifts on a scale with one end being ‘positive’ (amelioratives) and the other one ‘negative’ (pejoratives). Moreover, they also adopt the semantic primitive labels ‘GOOD’ and ‘BAD’ (following Wierzbicka 1989) to represent the prototypicality of amelioratives and pejoratives (Grandi & Körtvélyessy 2015b:12).

The concept of ‘qualitative evaluation’ has later been borrowed for the investigation of evaluation in grammar by typologists, and is defined as “positive or negative attitudes towards people, things or situations” by Dobrushina (2024; bolded part mine). Recent typological studies mostly focus on the reflection of qualitative evaluation in verbal emotional morphemes (e.g. Ponsonnet 2018), but the latest study by Dobrushina (2024) has even extended the research scope to syntactic constructions that are exclusively used for positive or negative contexts.

Since Toda ECPs are themselves syntactic constructions as well, it is worth adopting the concept of qualitative evaluation to the analysis of Toda ECPs. And in the next section, I will demonstrate that the incompatibility of core-level internal negator *ini* is indeed

affected by EvalPs' grammatical properties.

3.4. Toda ECPs revisited

Now it can be sure that EvalPs in Toda certainly involve qualitative evaluation, and if in ECPs they have been grammaticalized to the extent that they contain polarity values, it should be expected that grammatically EvalPs exhibit the denotation of polarity values in some ways. Upon further inquiry of why *ini* 'INTNEG' cannot co-occur with ECPs such as *malu equn* 'taste good', it is found that consultants all agree that the 'best' direct negated form of it should be *naqah equn* 'taste bad', and vice versa. Furthermore, although *uxay* 'EXTNEG' can naturally co-occur with ECPs, in this case, it only means "it is not the case that something is good/easy or bad/difficult", but not necessarily "something is good/easy" or "something is bad/difficult". In fact, they even think that generally there is no need to add negators, just directly saying that things are good or bad. These facts indicate that Toda EvalPs *malu* 'good/easy' and *naqah* 'bad/difficult' may be seen as 'core-level lexical polarity items', for they are antonyms that are direct negated forms of each other, suggesting that the two contain polarity values of their own.

Combining such a viewpoint with RRG's perspective, in the case of ECPs, the positive polarity denoted by *malu* 'good/easy', as well as 'internal negation' that is denoted by *naqah* 'bad/difficult', should also be seen as a type of core-level operator. And since ECPs already project core-level polarity values by themselves, they can no longer co-exist with *ini*, which also denotes core-level internal negation. Consequently, the only slot left for ECPs to be modified by negation is through the addition of the clause-level external negator *uxay*. This analysis can maintain that ECPs are indeed core junctures, at the same time reasonably explaining why they are only compatible with clause-level operators.

Finally, let us turn to the nexus relations of the two subtypes of ECPs. In terms of sensory-ECPs, the NOM argument is shared by both EvalP and EventP in their argument structures. And, according to Viberg (1984), here the sensory EventP entertains the 'copulative' function that semantically takes EvalPs as its predicate complement. This suggests that, when a sensory EventP serve the copulative function, the evaluation process is also entailed in the event structure of sensory EventP. This allows the scope of polarity values denoted by the EvalP to permeate both EvalP and EventP. Thus, syntactically sensory-ECPs exhibit 'core cosubordination'. On the other hand, in difficulty-ECPs, the NOM argument is the semantic core argument of EventP but not that of EvalP. Moreover, the modifying scope of EvalP only covers itself but not also the EventP, for plain activity verbs have not been reported to have the copulative function as sensory predicates do. Hence, it is the EventP along with the NOM argument that is the semantic core argument of EvalP, indicating that the difficulty-ECPs are an example of 'core subordination'.⁸

The analysis confirms the prediction that difficulty-ECPs are structurally looser than sensory-ECPs. Moreover, with the semantic distinctions of the two EventP classes and the modifying scopes of operators taken into account, what was initially a prediction solely grounded in the argument-sharing condition has now gained further empirical and theoretical supports.

4. Concluding remarks

This study demonstrates that sensory-ECPs exhibit core cosubordination, while the

⁸ Hence, the NOM arguments in difficulty-ECPs are probably best analyzed as topics.

difficulty-ECPs, core subordination. Also, it is found that lexical EvalPs in Toda can denote polarity values, in addition to grammatical negators. Thus, the case of Toda ECPs serves as an important example that qualitative evaluation can also be manifested grammatically in complex predicates.

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The 18th International Conference on Role and Reference Grammar

📍 Takigawa Memorial Hall, Rokkodai 2nd Campus, Kobe University

Program

RRG 2025 - Day 1: July 14, 2025 (Mon.)		
9:00 – 9:30	Registration	
9:30 – 9:40	Welcome	
	Chair: Delia Bentley	
9:40 – 10:40	Keynote Lecture - From double-accusatives to passives and impersonals: Yaqui contributions to Role and Reference Grammar	<i>Lilián Guerrero</i> (Universidad Nacional Autónoma de México)
10:40 – 11:00	Break	
	Chair: Wataru Nakamura	
11:00 – 11:30	Adverbs and operator classes in Mexican languages	<i>Sergio Ibáñez Cerda</i> (Universidad Nacional Autónoma de México), <i>Armando Mora</i> (Universidad Autónoma Metropolitana), <i>Alejandra Ortiz</i> (Universidad Autónoma Metropolitana), and <i>Antonio García</i> (Instituto Nacional de Antropología e Historia)
11:30 – 12:00	Re-examining the relative clauses in Amis	<i>Joy J. Wu</i> (National Taiwan Normal University)
12:00 – 13:45	Lunch break	
	Chair: Mitsuaki Shimojo	
13:45 – 14:15	The juncture-nexus types and the interclausal relations of the evaluative complex predicates in Toda Seediq	<i>Yuan-Lin Mickey Yang</i> (National Taiwan Normal University)
14:15 – 14:45	On resultative V-V compounds in Japanese	<i>Hideki Kishimoto</i> (Kobe University)

14:45 – 15:15	Exploring the scope of nuclear subordination: Unifying restructuring, light verb, and linking verb constructions	<i>Wataru Nakamura</i> (Tohoku University)
15:15 – 15:35	Break	
	Chair: Sergio Ibáñez Cerda	
15:35 – 16:05	Perspectivization in argument representation for serial verbs in Taiwan Sign Language	<i>Chien-hung Lin</i> (Institute of Linguistics at National Chung Cheng University)
16:05 – 17:05	Special contribution: Applying brain function with RRG to automate question-answering	<i>John Ball</i> (Founder and Chief Science Officer, Pat Inc.)
17:30– 19:30	Conference/Workshop Welcome Dinner: The dining hall, 1st floor of Takigawa Memorial Hall, Rokkodai 2nd Campus, Kobe University	

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| RRG 2025 - Day 2: July 15, 2025 (Tue.) |                                                                                                                               |                                                                                                                                  |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 9:00 – 9:10                            | Registration                                                                                                                  |                                                                                                                                  |
|                                        | Chair: Ying Fan                                                                                                               |                                                                                                                                  |
| 9:10 – 9:40                            | <b>Holophrastic use of ideophones in Japanese</b>                                                                             | <i>Kiyoko Toratani</i> (York University)                                                                                         |
| 9:40 – 10:10                           | <b>Semantic Representation of Grammaticalization: A Case Study of the Verb 'bei2 界' in Cantonese within the RRG Framework</b> | <i>Chow Pui Lun</i> (The Chinese University of Hong Kong)                                                                        |
| 10:10 – 10:30                          | Break                                                                                                                         |                                                                                                                                  |
|                                        | Chair: Joy Wu                                                                                                                 |                                                                                                                                  |
| 10:30 – 11:00                          | <b>The structure of simple sentences in Breton</b>                                                                            | <i>Eric Corre</i> (Université Sorbonne Nouvelle)                                                                                 |
| 11:00 – 11:30                          | <b>Locative adjuncts and their latent verb</b>                                                                                | <i>Ronald P. Schaefer</i> (Southern Illinois University Edwardsville) and <i>Francis O. Egbokhare</i> (The University of Ibadan) |

|               |                                                                                                |                                                                                                                                                                                                        |
|---------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30– 13:15  | Lunch break                                                                                    |                                                                                                                                                                                                        |
|               | Chair: Chien-hung Lin                                                                          |                                                                                                                                                                                                        |
| 13:15 – 13:45 | <b>On the syntax-semantics interface of the negative markers “đâu” and “nào” in Vietnamese</b> | <i>Thị Tuyết Mai Tăng</i><br>(Ho Chi Minh City University of Education)                                                                                                                                |
| 13:45 – 14:15 | <b>Types of ambiguity in reflexive constructions in German</b>                                 | <i>Yoshiko Ono</i> (Independent scholar)                                                                                                                                                               |
| 14:15 – 14:45 | <b>Apprehensive modal marker 别 bie35 ‘don’t’ in Mandarin Chinese</b>                           | <i>Ying Fan and Tiansong Lin</i><br>(Fujian University of Technology)                                                                                                                                  |
| 14:45 – 15:05 | Break                                                                                          |                                                                                                                                                                                                        |
|               | Chair: Kiyoko Toratani                                                                         |                                                                                                                                                                                                        |
| 15:05 – 15:35 | <b>Towards a new representation of discourse in RRG</b>                                        | <i>Kata Balogh</i> (Heinrich-Heine-Universität Düsseldorf), <i>Delia Bentley</i> (The University of Manchester), and <i>Mitsuaki Shimojo</i> (University at Buffalo, The State University of New York) |
| 15:35 – 16:35 | <b>Keynote Lecture - Information structure and argument linking revisited</b>                  | <i>Robert D. Van Valin, Jr.</i> (University at Buffalo, The State University of New York; Heinrich-Heine-Universität Düsseldorf)                                                                       |
| 16:35 – 16:40 | Closing                                                                                        |                                                                                                                                                                                                        |