

Event semantics and discourse connected-movement in Eastern Cham

Abstract: This paper demonstrates that *discourse connected-* or DC-movement in Eastern Cham (Austronesian: Vietnam) makes reference to relations between semantic events in a discourse. Specifically, the moved phrase must be a participant in an event in the current sentence and an event in a prior sentence, such that the current event is interpreted as a cause or subtype of the prior event, two event relations associated with the notion of explanation. Evidence is presented that uses the distinction between stage- and individual-level predicates to show that DC-movement fails if either the current or previous sentence fail to project an event argument (i.e. if either only consist of an individual-level predicate, as per Kratzer 1995). A language-internal diagnostic for individual-level predicates is introduced with the existential marker *hu* and negation. It is proposed that a hierarchical event relation structure is needed alongside information structure, Questions Under Discussion, and rhetorical structure in the typology of pragmatic paradigms that can have effects on grammatical phenomena.

Keywords: event semantics, pragmatics, information structure, Austronesian

1 Introduction

In the syntax–pragmatics interface, there are multiple different paradigms in which discourse is organized that have effects on grammar. Information structure broadly tracks how information is organized and accounts for phenomena like topicalization. The Question Under Discussion framework partitions discourse into a hierarchy of questions and sub-questions, and this framework has been argued to underlie contrastive topicalization (Büring 2003, Constant 2014). Rhetorical structure organizes discourse as a hierarchy of sentence logical forms and the rhetorical relations between them, which has been argued to correlate with a range of phenomena (Taboada & Das 2013). This paper proposes that a new paradigm must be added: a hierarchy of semantic events tracked through-

out a discourse and the relations between them. Only event relations can account for the pragmatic phenomenon *discourse connectedness* (DC), instantiated by the syntactic operation we call *discourse connected-*, or DC-movement in Eastern Cham (Austronesian: Vietnam).

DC-movement in Eastern Cham broadly involves \bar{A} -movement of a phrase to the left periphery, as in (1b). Much like topicalization cross-linguistically, (1b) is degraded in an out-of-the-blue context, and sentences with and without DC-movement (1a) are typically considered pragmatically equivalent by speakers. This paper will show that the DC-movement of *ʔʔ ni* ‘this mango’ in (1b) is only possible if the phrase is participant in a semantic event in the current sentence (i.e. the eating event) and a participant in an event introduced in a prior sentence in the discourse that the current event interpreted as a cause of (i.e. providing an explanation) or subtype of (i.e. providing an elaboration). Note that DC-moved phrases and their antecedents are bolded throughout.¹

- (1) a. **kăw** **ʔʔ** **ʔʔ** **ni**
 1SG.FAM PROG eat mango this
 ‘I am eating this mango.’
- b. **ʔʔ** **ni**_{DC} **kăw** **ʔʔ** **ʔʔ** **ni**
 mango this 1SG.FAM PROG eat
 ‘This mango, I am eating.’

Eastern Cham is an Austronesian language spoken in south-central Vietnam by around 100,000 people, among whom there is near-universal bilingualism with Vietnamese (REF). Thousands of years of language contact with Mainland Southeast Asian languages has resulted in tonogenesis, a largely monosyllabic vocabulary, and other typological characteristics typical of Mainland Southeast Asian languages (e.g. Thurgood 1996, 1999).

¹The following abbreviations are used: ANIM=animate; CLF=(numeral) classifier, DEM=demonstrative, EMPH=emphasis marker, \exists =existential marker, FAM=familiar, FUT=future, INCOMP=incompletive, NEG=negation marker, POL=polite, PROG=progressive, REL=relativizer, ROOT=root modal, VN=Vietnamese loanword/code switch, Y/N.Q=polar question marker.

Data were collected through sentence and short discourse elicitation tasks from 2014 to 2019 with six main consultants, all native speakers of Eastern Cham born and raised in the Cham villages near the city of Phan Rang in Ninh Thuận province, Vietnam, the largest Eastern Cham population center. Of the six consultants, three were younger with some college education in Ho Chi Minh City, and three were older with little schooling. Unless otherwise noted, each datapoint reflects the judgments of multiple of these six consultants.

Transcriptions throughout this paper use standard IPA conventions, with the exception of an open circle that indicates falling pitch and breathy register on following vowels, in line with the Chamic linguistic tradition (e.g. *plěj* ‘buy’ indicates [plɛ̃j]). Short vowels are marked with breve diacritics in both Eastern Cham and Vietnamese words where there is a contrast, while long vowels are unmarked. There is much sociolinguistic variation in both Eastern Cham and Vietnamese (Brunelle 2005, 2009; REF). This variation is abstracted here to the most common forms used in colloquial speech in the authors’ elicitation for Eastern Cham, and dialectology research on local varieties for Vietnamese (Hoàng 1989).

The paper proceeds as follows. Section 2 presents basic formal characteristics of DC-movement, and Sections 2.1–2.3 demonstrate that rhetorical structure, information structure, and Questions Under Discussion are all insufficient to account for the pragmatics of DC-movement on their own. Section 3 presents our proposal for an event relation requirement on DC-movement. Sections 3.1–3.3 give background and the results of an individual-level predicate test that further provides evidence for the event relation analysis. Section 3.4 provides additional evidence from negation that events must be tracked in the discourse in a hierarchical way in order to account for DC. Section 4 discusses implications and concludes.

2 Discourse connectedness

Discourse connectedness (DC) in Eastern Cham is instantiated by DC-movement, an \bar{A} -movement operation where a phrase undergoes movement from its base position to the left periphery. Previous work has established the \bar{A} -characteristics of DC-movement (REF). For example, DC-movement is subject to island constraints. DC-movement of *mɛʔ kǎw* ‘my mother’ out of the object relative clause in (2b) is ungrammatical. It can be repaired either by a resumptive pronoun (2b’) or by pied-piping the entire island (2b’’).²

- (2) a. *kǎw* *ɕuwʔ* *mɛʔ* *kǎw* *hǰɛj* *ni*
 1SG.FAM help mother 1SG.FAM day this
 ‘I helped my mother today.’
- b. **mɛʔ* *kǎw*_{DC} *kǎw* *plɛj* *kan* *mɛʔ-kǎw* *ʔɔʔ* *ŋǎʔ* *hwǎʔ* *nǎn*
 mother 1SG.FAM 1SG.FAM buy fish PROG make eat that
 INTENDED: ‘I bought the fish that my mother is cooking.’
- b’. *mɛʔ* *kǎw*_{DC} *kǎw* *plɛj* *kan* *ju* *ʔɔʔ* *ŋǎʔ* *hwǎʔ* *nǎn*
 mother 1SG.FAM 1SG.FAM buy fish 3.ANIM PROG make eat that
 ‘I bought the fish that my mother is cooking.’
- b’’. [*kan* *mɛʔ* *kǎw*_{DC} *ʔɔʔ* *ŋǎʔ* *hwǎʔ* *nǎn*] *kǎw* *plɛj*
 fish mother 1SG.FAM PROG make eat that 1SG.FAM buy
~~*kan* *mɛʔ* *kǎw* *ʔɔʔ* *ŋǎʔ* *hwǎʔ* *nǎn*~~
 ‘I bought the fish that my mother is cooking.’

If a phrase is DC-moved out of a prepositional phrase, the preposition is pronounced neither in the base position nor the derived position. This preposition- or p-drop is seen elsewhere in Austronesian languages (e.g. Sato 2011). The context for example (3a) will be expanded upon in detail in Section 3.3. *Wh*-phrases can also be DC-moved, as seen in (3b) and in other work (REF).

²Note that *nǎn* ‘that’ marks clause-level deixis in (??b–b’).

- (3) a. **paj** **ɤ**_{DC} **mɛ?** **mi** **kăw** **naw** **ŋă?** **pjũ?** **pă?** **paj-ɤ**
 Saigon parent 1SG.FAM go make work in
 ‘My parents went to work in Saigon.’
- b. **tom** **jaŋ**_{DC} **hi** **kri** **ɔm** **ɤ**_{DC} **tankan** **həŋm** **tom-jaŋ**
 how.many person 2SG like talk story with
 ‘How many people do you like to talk to?’
- c. **nĩ?** **năn**_{DC} **kăw** **plěj** **han** **ni** **ka** **nĩ?-năn**
 child that 1SG.FAM give cake this to
 ‘That child, I [will] give this cake to.’

The following sections outline possible pragmatic analyses for discourse connectedness. Previous work has analyzed DC in terms of rhetorical structure, specifically discourse subordination (REF). Section 2.1 finds that this account largely captures the distribution of DC-movement, but overgenerates the contexts where it is licit. Section 2.2 demonstrates that topicalization, though similar to DC-movement on the surface, undergenerates the contexts that license DC-movement. Finally, Section 2.3 examines contrastive topic in Eastern Cham and finds that there is a distinct contrastive topic-marking process, though a phrase can be simultaneously marked as contrastive topic and DC.

2.1 Discourse subordination

Previous work on discourse connectedness has attributed its pragmatics largely to discourse relations, or rhetorical relations. Specifically, DC-movement is only possible if the moved phrase is previously mentioned in a prior sentence, and the current sentence is in a subordinating discourse relation with that prior one (REF). In theories of rhetorical structure, rhetorical relations represent how pairs of sentences logically relate to one another. Not every pair of sentence in a discourse need have a rhetorical relation, and an individual sentence can have rhetorical relations with multiple other sentences. While there are competing theories of rhetorical relations, which posit distinct sets of possible relations, among other differences (e.g. Asher & Lascarides 2003 on Segmented Discourse

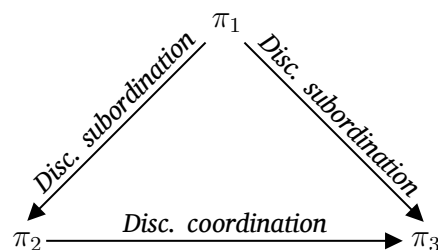
Representation Theory; Mann & Thompson 1988 on Rhetorical Structure Theory), a broad distinction is made between rhetorical relations that are coordinating and those that are subordinating (Fabricius-Hansen & Ramm 2008). Coordinating discourse relations are those in which separate events are related by some commonality (e.g. Narration, or answers to ‘Then what?’). Subordinating discourse relations, which we will term as a whole *discourse subordination*, are those in which one event asymmetrically expands upon another. The two main relations subsumed under discourse subordination are Explanation, or answers to ‘Why?’, and Elaboration, or answers to ‘What about X?’.

To illustrate discourse subordination, consider the small discourse in (4), which is represented in a hierarchical rhetorical structure in Figure 1.

- (4)
- a. This paper describes DC-movement in Eastern Cham.
 - b. First, the concept of discourse connectedness is introduced.
 - c. Then, the authors give a background on the Eastern Cham language.

Both (4b–c) elaborate upon (4a), by describing parts of the broader paper. At the same time, (4b–c) are in a Narration relation themselves. Given the asymmetric nature of discourse subordination, the resulting rhetorical structure is hierarchical. Note that Figure 1 represents the logical form for each sentence with $\pi_{\#}$, reflecting linear order in the discourse, in the vien of Asher & Lascarides’s (2003) Segmented Discourse Representation Theory.

Figure 1: Rhetorical structure for (4)



Turning to Eastern Cham, DC-movement is only possible if the moved phrase is previously mentioned in a sentence that the current one is discourse subordinate to (i.e. that it explains or elaborates upon). The moved phrase in (5b), *paj kəl* ‘Saigon’, is previously mentioned in (5a). Additionally, (5b) is interpreted in this case as explaining (5a), as in the parents’ moving to Saigon many years ago explaining where the child lives. Discourse subordination is represented here and throughout with (X ↓ Y), such that Y explains or elaborates upon X. By contrast, discourse coordination is insufficient. If the speaker moves on to a new event, such as where their parents live (5b’), DC-movement is infelicitous. The absence of discourse subordination is indicated by (X ↯ Y).

- (5) a. *kăw tɔʔ pǎʔ paj kəl*
 1SG.FAM live in Saigon
 ‘I live in Saigon.’
- b. *paj kəl_{DC} mɛʔ mi kăw naw ŋǎʔ pjuʔ pǎʔ paj-kəl*
 Saigon parent 1SG.FAM go make work in
 ‘My parents went to work in Saigon.’ (a ↓ b)
- b’. #*paj kəl mɛʔ mi kăw tɔʔ pǎʔ paj-kəl*
 Saigon parent 1SG.FAM live in
 ‘My parents live in Saigon.’ (a ↯ b’)

Discourse subordination is not limited to single-speaker narratives. Questions and answers can be in subordinating discourse relations as well. For example, if a question is asked out-of-the-blue, an answer functions as an elaboration if it offers more information than asked. In the example below, (6b) effectively inserts an Explanation relation of the form ‘No. Why? Because I already ate mango.’ Accordingly, DC-movement of *ʔǎʔ* ‘mango’ is felicitous in (6b). Direct answers to polar questions, however, do not have a subordinating function, and DC-movement is infelicitous (6b’).

- (6) a. *hi hu iŋ ɓǎŋ ʔǎʔ hlɛj*
 2SG ∃ want eat mango Y/N.Q
 ‘Do you want to eat mango?’

b. ʔǝʔ_{DC} kǎw bǎŋ ʔǝʔ jə
 mango 1SG eat already
 ‘I already ate mango.’ (a ↓ b)

b'. #ʔǝʔ kǎw iŋ bǎŋ ʔǝʔ
 mango 1SG want eat
 ‘I want to eat mango.’ (a ↓ b')

More generally, the prediction of this account of DC is that discourse subordination and previous mention are sufficient to license DC-movement. However, this prediction over-generates the possibilities for DC-movement in Eastern Cham. The DC-moved phrase *paj kəl* ‘Saigon’ is previously mentioned in (7a), and (7b) is interpreted as an explanation of (7a). Nevertheless, DC-movement is infelicitous. More detail on this example is given in Section 3.3, such as its variant without DC-movement, which is felicitous.

(7) a. kǎw nǐʔ pǎʔ paj kəl
 1SG.FAM be.born in Saigon
 ‘I was born in Saigon.’

b. #paj kəl_{DC} mɛʔ mi kǎw naw ŋǎʔ pjǔʔ pǎʔ paj-kəl
 Saigon parent 1SG.FAM go make work in
 INTENDED: ‘My parents went to work in Saigon.’ (a ↓ b)

The rhetorical structure account of DC, thus, is insufficient and must be further revised to fully explain the distribution of DC-movement in Eastern Cham.

2.2 Topic

It is worth investigating whether DC-movement could be due to information structure, specifically topicality, as DC-movement appears superficially similar to topicalization as seen in many languages. Broadly, topics are described as old information about which a sentence is organized (e.g. Reinhart 1981). As a heuristic, one example of DC-movement from the previous section are repeated below, with English glosses reflecting the ‘As for X’ test for topichood, though we do not make any claims about the felicity of the English

glosses in these contexts. If Eastern Cham DC-movement reflects topicality, then *paj kəl* ‘Saigon’ should be able to have a sentence prominence in (8b) along the lines of its English gloss that it cannot in (8b’).

- (8) a. *kăw tɔʔ pǎʔ paj kəl*
 1SG.FAM live in Saigon
 ‘I live in Saigon.’
- b. *paj kəl_{DC} mɛʔ mi kăw naw ŋǎʔ pjuʔ pǎʔ paj kəl*
 Saigon parent 1SG.FAM go make work in
 ‘As for Saigon, my parents went to work there.’
- b’. #*paj kəl mɛʔ mi kăw tɔʔ pǎʔ paj kəl*
 Saigon parent 1SG.FAM live in
 INTENDED: ‘As for Saigon, my parents live there.’

The aboutness prediction made by a topicality account is not borne out. In fact, there does not appear to be any sense in which DC-moved phrases in Eastern Cham have prominence. Based on the context of (9a), consultants report that both (9b–b’) are equally felicitous. Furthermore, both (9b–b’) can be continued by discussion either of the dog or the friend. Instead, DC-moved phrases must be old information, and if there is any prominence, it is accorded to the semantic event. The issue of prominence will be discussed further in Section 4.

- (9) a. *jüt kăw hu tʰǎw mjǎw*
 friend 1SG have dog new
 ‘My friend has a new dog.’
- b. *jüt kăw_{DC} kăw plěj tʰǎw nǎn ka jüt kăw*
 friend 1SG 1SG sell dog that to
 ‘I sold that dog to my friend.’ (a ↓ b)
- b’. *tʰǎw nǎn_{DC} kăw plěj tʰǎw-nǎn ka jüt kăw*
 dog that 1SG sell to friend 1SG
 ‘I sold that dog to my friend.’ (a ↓ b’)

Additionally, topicality undergenerates DC-movement possibilities. Downward-entailing quantifiers have been claimed to be anti-topical, in that they cannot be topicalized cross-linguistically (Ebert 2009). Downward-entailing quantifiers are capable of being DC-moved in Eastern Cham, however, if their NP restriction is previously mentioned in an appropriate sentence in the discourse (10).

- (10) a. hi ʔa lo **nujh** ləj
 2SG invite many person Y/N.Q
 ‘Did you invite many people?’
- b. kiʔ hən [mi jaŋ_{DC}] kəw ʔa kiʔ hən mi jaŋ maj pəʔ ni
 few exceed five person 1SG invite come here
 ‘I invited less than five people to come here.’ (a ↓ b)

Topicality, therefore, may be a related notion to DC, but it cannot account for DC-movement on its own.

2.3 Contrastive topic

Finally, the Question Under Discussion framework (QUD; Roberts 1998) should be examined, as it represents another hierarchical structure of discourse, and DC-movement is superficially similar to contrastive topicalization cross-linguistically, which has been analyzed in terms of QUDs. According to Constant’s (2014) account, a phrase can be a contrastive topic if it is a part of a focus set in a higher order QUD and if the current sentence provides a partial answer to that QUD. In (11b), *the salad* is one member of the focus set *what* in (11a), and (11b) provides a partial answer to (11a). Likewise, *the gazpacho* is a contrastive topic in (11c).

- (11) a. Who brought what to the potluck?
- b. THE SALAD_{CT}... ANTONIO_{Foc} brought ~~the salad~~.

c. ... And PERSEPHONE_{Foc} brought THE GAZPACHO_{CT}. (cf. Constant 2014)

If DC-movement were due to contrastive topicalization, we would predict that it should occur in partial answers to higher order QUDs. This prediction is not borne out. As seen in Section 2.1, DC-movement is found in elaborations, which not only answer a QUD, but provide more information than originally asked, as in (12), repeated below. Additionally, there is no contrastive intonation associated with DC-moved phrases, and they are not used in cases of contrast, such as the speaker in (12) suggesting a different food to eat.

(12) a. hi hu iŋ bǎŋ ʔǔʔ hlěj
 2SG ɛ want eat mango Y/N.Q
 ‘Do you want to eat mango?’

b. ʔǔʔ_{DC} kǎw bǎŋ ʔǔʔ jə
 mango 1SG eat already
 ‘I already ate mango.’

(a ↓ b)

Contrastive topicalization is indeed marked in Eastern Cham, but with the existential marker *hu*. In partial answers to multiple *wh*-questions, the position of *hu* tracks the position of the contrastive topic. If the object is a contrastive topic, *hu* is predicate-initial (13b’), and if the subject is a contrastive topic, *hu* precedes the subject (13b). It is possible that *hu* is used here to provide existential closure as it does for negated stage-level predicates, which will be discussed in Section 3.2.

(13) a. Who invited who to come here?

b. hu t^hu:ŋm³¹²_{CT} ʔa kǎw_{Foc} maj pǎʔ ni...
 ɛ Thuận invite 1SG.FAM come here
 B: ‘THUẬN_{CT} invited ME_{Foc} to come here...’
 #B: ‘THUẬN_{Foc} invited ME_{CT} to come here...’

b’. t^hu:ŋm³¹²_{Foc} hu ʔa kǎw_{CT} maj pǎʔ ni...
 Thuận ɛ invite 1SG.FAM come here

#B: ‘THUẬN_{Foc} invited ME_{CT} to come here...’
 B: ‘THUẬN_{Foc} invited ME_{CT} to come here...’

DC-movement can cooccur with contrastive topic-marking, but only if the sentence contains *hu* (whose position depends on the base position of the contrastive topic) and only if the corresponding *wh*-phrase is DC-moved in the original question (14). Contrastive topicality itself is not sufficient to license DC-movement.

- (14) a. **jaŋ hlěj_{DC}** jüt ʔa jaŋ-hlěj maj pă? ni
 which person friend invite come here
 A: ‘Which person did you [friends] invite to come here?’ [Directed at group]
- b. **t^hu:ŋm³¹²_{CT}** kăw_{Foc} hu ʔa t^hu:ŋm³¹² maj pă? ni...
 Thuận 1SG.FAM ∃ invite come here
 B: ‘Thuận_{CT}, I_{Foc} invited to come here...’

In cases where there is a DC-moved *wh*-phrase, the entire question-answer pair functions as an explanation or elaboration. For example, (15b) is interpreted as a question elaborating on (15a), asking for what subevent is occurring in that moment. If the question moves on to a different event, such as eating once the cooking is complete, DC-movement is infelicitous (15b’).

- (15) a. mɔŋ mi kăw tŭ? ʔiŋ ʔɔŋ t^ha kɔʔ hɔŋm kŭw? t^ha kɔʔ
 look father 1SG boil frog one pot with kiép one pot
 ‘Look at my father boil one pot of frog and one of kiép.’
- b. jă? ni kɔʔ kɛʔ_{DC} ʔoŋ năn tɔʔ ɲă? kɔʔ-kɛʔ năn
 now pot what old.man that PROG make that
 ‘Now, what pot is that old man making [working on]?’ (a ↓ b)
- b’. #jă? ni kɔʔ kɛʔ ʔoŋ năn tɔʔ ɲăŋ kɔʔ-kɛʔ năn
 now pot what old.man that PROG eat that
 INTENDED: ‘Now, what pot is that old man eating?’ (a ↯ b’)

To summarize this section, discourse subordination, topicality, and contrastive topical-

ity all do not account for the complete distribution of DC-movement described thus far. The next section proposes that discourse subordination along with a more specific event relation requirement is the analysis needed for Eastern Cham DC-movement.

3 Event relation requirement

The previous section observed that Eastern Cham DC-movement can largely be characterized in terms of previous mention and discourse subordination. However, it overgeneralizes, predicting (16b) to be grammatical, as *paj kəl* ‘Saigon’ is previously mentioned in (16a), and the two sentences are in a subordinating discourse relation. Furthermore, it is unclear how discourse subordination, which encapsulates a constellation of inferences, should be implemented grammatically.

- (16) a. *kăw nǎ? pǎ? paj kəl*
 1SG.FAM be.born in Saigon
 ‘I was born in Saigon.’
- b. #*paj kəl*_{DC} *mɛ? mi kăw naw nǎ? pjũ? pǎ? paj kəl*
 Saigon parent 1SG.FAM go make work in
 INTENDED: ‘My parents went to work in Saigon.’ (a ↓ b)

This section addresses both problems by analyzing DC-movement in terms of only one inference evoked by discourse subordination: a specific set of relations between events, Cause and Subtype. Under this analysis, discourse subordination is insufficient. DC-movement is only licit if the moved phrase is a participant in two events in a discourse which are in the event relation inferred by a subordinating discourse relation. This analysis makes the same general prediction that a subordinating discourse relation is necessary for DC-movement. Additionally, it accounts for the infelicity of (16b) as a special case where one of the relevant sentences does not project an event variable at all, following Kratzer (1995) account of individual-level predicates.

The two main rhetorical relations subsumed under discourse subordination, Explanation

and Elaboration, evoke the event relations Cause and Subtype, respectively. According to Asher & Lascarides (2003: 204), when (17b) is interpreted as an explanation of (17a), there is an inference that the pushing event caused the falling event.³ As for Elaboration, there is an inference that (18b) is a subtype of (18a).

- (17) a. Max fell.
 b. John pushed him (a ↓ b)
- (18) a. Max had a lovely evening.
 b. He had a great meal. (a ↓ b)

If DC-movement requires a Cause or Subtype event relation, many of the same predictions from Section 2.1 hold. DC-movement requires discourse subordination, as Explanation and Elaboration supply the Cause and Subtype event relations, respectively. For example, *paj kɔl* ‘Saigon’ can be DC-moved in (20b), as there is an inference that the going-to-work event causes the living event, and ‘Saigon’ is a participant in both.

- (19) a. *kăw tɔʔ pǎʔ paj kɔl*
 1SG.FAM live in Saigon
 ‘I live in Saigon.’
- b. *paj kɔl_{DC} mɛʔ mi kăw naw ŋǎʔ pǰüʔ pǎʔ paj kɔl*
 Saigon parent 1SG.FAM go make work in
 ‘My parents went to work in Saigon.’ (a ↓ b)

The event relation requirement makes several predictions that are borne out. The first two predictions are commensurate with the discourse subordination approach from Section 2.1, but the third cannot be accounted for by discourse subordination or other pragmatic paradigms. First, if we assume a Neo-Davidsonian event semantics, we would not predict

³More specifically, if the relevant discourse consists only of (17a–b), then the Explanation relation evokes the Cause relation between (17b) and (17a). If there is additional relevant discourse, then Explanation only requires that the discourse provide evidence for that Cause relation (Asher & Lascarides 2003: 205).

DC-movement to exhibit a restriction in terms of thematic roles or in terms of arguments and adjuncts, as event participants are not limited by thematic role, and event semantics makes no argument/adjunct distinction (cf. Champollion 2015). Contra previous work on Eastern Cham discourse connectedness (REF), DC-movement does not exhibit an argument/adjunct asymmetry. In the example used in Section 3.3, the locative adjunct *paj kəl* ‘Saigon’ can be DC-moved, leading to the dropping of the preposition *pǎ?* ‘in’. Additionally, we see that locations can be DC-moved in addition to the patients and goals seen elsewhere in this paper.

- (20) a. *kǎw tɔʔ pǎʔ paj kəl*
 1SG.FAM live in Saigon
 ‘I live in Saigon [temporarily].’
- b. *paj kəl_{DC} mɛʔ mi kǎw naw ŋǎʔ pjuʔ pǎʔ paj-kəl*
 Saigon parent 1SG.FAM go make work in
 ‘My parents went to work in Saigon.’ (a ↓ b)

Instruments in prepositional phrases with *mǎŋ* ‘with’ are not able to undergo DC-movement. However, the restriction appears to be due to blocking, not a broader argument/adjunct asymmetry. DC-movement of *tɔ ni* ‘this knife’, leading to p-drop of *mǎŋ* ‘with’ is ungrammatical in (21a). Movement of the whole prepositional phrase is reported for some consultants, but as a hanging topic with a long pause (21b). On closer investigation, it appears that DC-movement of *tɔ ni* ‘this knife’ is possible, but only in a functionally equivalent serial verb construction in which the phrase is a direct object of the highest verb (21c). Perhaps it is the availability of this alternative and the increased ambiguity of dropping a preposition that blocks (21a).

- (21) a. **tɔ ni kǎw cǐʔ ʔɔʔ mǎŋ tɔ ni*
 knife this 1SG.FAM cut mango
 ‘This knife, I cut mango with.’

b. %mǎŋ tɔ ni // kǎw cǐʔ ʔǔʔ mǎŋ-tɔ ni
 with knife this 1SG.FAM cut mango
 ‘With this knife, I cut mango.’

c. tɔ ni_{DC} kǎw mǎʔ tɔ ni cǐʔ ʔǔʔ
 knife this 1SG.FAM take cut mango
 ‘This knife, I use to cut mango.’

The two predictions above are not specific to an event relation requirement on DC-movement. The same predictions would be made if DC-movement purely required that a phrase be mentioned in two sentences in a subordinating discourse relation. The third prediction is specific to the event relation requirement: the two relevant sentences in the discourse must introduce event variables via stage-level predicates. If either sentence only consists of individual-level predicates, DC-movement becomes infelicitous. The following sections unpack that prediction and demonstrate it is borne out in Eastern Cham. Section 3.1 gives relevant background on the semantics of stage- and individual-level predicates. Section 3.2 presents *hu* as a general existential marker. Section 3.3 proposes a language-internal diagnostic based on *hu* to test whether two event variables must be introduced for DC-movement to be felicitous. Results give evidence that DC-movement must make reference to relations between semantic events.

3.1 Stage- and individual-level predicates

Kratzer’s (1995) analysis of the difference between stage- and individual-level predicates allows us to test if DC-movement can occur if certain event variables are not introduced in the discourse at all. Broadly, stage-level predicates represent temporary properties of the individuals involved, while individual-level predicates represent lifetime effects, or properties permanent throughout the existence of the individuals involved (Carlson 1977). This distinction has been argued to be manifested in a wide array of constructions cross-linguistically. In general, individual-level predicates have a more restricted distri-

bution than stage-level predicates. For example, individual-level predicates are illicit in English *there*-insertion (22).

- (22) a. There are firemen **available**. (Stage-level predicate)
- b. *There are firemen **altruistic**. (Individual-level predicate)
- (Kratzer 1995: 125)

Kratzer (1995) analyzes the distinction between stage- and individual-level predicates in terms of argument structure. Stage-level predicates project an argument position for Davidsonian event variables, while individual-level predicates do not. A variety of linguistic manifestations of the stage- and individual-level predicate distinction can be accounted for by the argument structure requirements of the construction in question (Kratzer 1995; Fernald 2000). Perhaps Eastern Cham DC-movement is one of these constructions. If DC makes reference to event variables overtly introduced, then individual-level predicates should be illicit in DC-movement constructions, as they cannot contribute the event variables needed. Section 3.3 confirms this hypothesis: both the current and prior sentence must contain stage-level predicates in order for DC-movement in the current sentence to be licit.

While many constructions have been argued to reflect the stage- and individual-level predicate distinction, not all constructions apply to every language, some constructions are more amenable to coercion which obscures the distinction, and there is lexical variation in which predicates function as stage-level and which function as individual-level. For these reasons, Section 3.2 proposes an Eastern Cham-specific test involving the existential marker *hu* and negation.

Before we proceed, it should be mentioned that Kratzer's (1995) analysis of individual-level predicates is not the only analysis for their restricted distribution. Jäger (2001) argues that the distinction between stage- and individual-level predicates masks a vari-

ety of different contrasts, including largely pragmatic ones. As for pragmatic contrasts, Jäger (2001) proposes that some contrasts are due to the topic-comment structure of different predicates. Subjects of stage-level predicates are optionally topics, while subjects of individual-level predicates are obligatorily topics. The restriction of individual-level predicate information structure then accounts for their ungrammaticality or limited readings in those constructions.

There are two reasons to think that a topic-based explanation cannot account for the Eastern Cham data. First, Section 3.2 demonstrates that the Eastern Cham *hu* test diagnoses a grammatical distinction, not a pragmatic one. Stage-level predicates require existential closure from *hu* under negation, else they are ungrammatical. Individual-level predicates do not require existential closure under negation, which is naturally explained by the absence of an open event variable. Second, the pragmatic status of the subject does not preclude DC-movement. DC-movement can cross a contrastive topic, as diagnosed by the position of *hu* before the subject (23b).

- (23) a. **jaŋ hlěj_{DC} jüt ʔa jaŋ hlěj maj pǎʔ ni**
 which person friend invite come here
 A: ‘Which person did you [friends] invite to come here?’ [Directed at group]
- b. **t^hu:ŋm³¹²_{CT} hu kǎw_{Foc} ʔa t^hu:ŋm³¹² maj pǎʔ ni...**
 Thuận ∃ 1SG.FAM invite come here
 B: ‘I_{CT} invited Thuận_{Foc} to come here...’

DC-movement can also cross another instance of DC-movement. In (24), the embedded subject is DC-moved to the matrix left periphery. Then, the embedded object is DC-moved across it.

- (24) **han ni nǐʔ měj sít nǎn t^hu:ŋm³¹² ʔa nǐʔ měj sít nǎn maj**
 cake this child female small that Thuận invite come
bǎŋ han ni
 eat
 ‘This cake, Thuận invited that little girl to come eat.’

Section 3.2 turns to the *hu* test and argues the grammatical effects are best explained by the failure of individual-level predicates to introduce event variables. Any other pragmatic analysis of these effects would have to provide an alternative account of why the existential marker *hu* appears in some, but not all negative clauses in such a way that aligns with DC-movement

3.2 The existential marker *hu*

Next, this section lays the groundwork for an individual-level predicate test via the existential marker *hu*. The form *hu* has a variety of uses in Eastern Cham, all linked to existential semantics (see Thurgood & Li 2007 on these and other uses of *hu* from the lens of grammaticalization). These uses parallel those of the form *adi* in Bura (Central Chadic: Nigeria), which Zimmermann (2007) analyzes as a general existential marker. We follow Zimmermann (2007) by analyzing Eastern Cham *hu* as a general existential marker as well. Of importance to DC-movement, both Bura *adi* and Eastern Cham *hu* track stage- and individual-level predication when under negation.

Eastern Cham *hu* parallels all four contexts for Bura *adi* described in Zimmermann (2007): (i)thetic sentences that introduce new referents, (ii) existential clefts, (iii) certain polar questions, and (iv) certain negative clauses. First, both *adi* and *hu* are found inthetic sentences that introduce new references, often at the beginning of narratives (25). The syntax of the Bura and Eastern Cham sentences appear very similar, both with cleft-like constructions introducing the new referents, only differing in the relative order of the existential and the nominal. Note that *hu* and *adi* are bolded throughout this section.

- (25) a. akwa saka laga [mda **adi** ka mwanki ntufu]
 at some time person \exists with wife five
 ‘Once upon a time, there was a man with five wives.’ BURA
 (Zimmermann 2007: (6a))

- b. **hu** t^ha oŋ k^ha hŏŋm mi ɕěj cǐm
 ∃ one grandfather old with 5 CLF.ANIMAL bird
 ‘There is an old man with five birds.’ EASTERN CHAM
 [Beginning a description of a card from the board game Dixit]

Second, both *adi* and *hu* are used in existential clefts with indefinites (26). Their use in clefts appears to be restricted to existential contexts. Zimmermann (2007: 28) demonstrates that *adi* is not found in the identificational focus clefts found in answers to *wh*-questions; instead, a cleft with *an* is found. Clefts are not generally used in identificational focus contexts in Eastern Cham whatsoever.

- (26) a. mda **adi** ti tsa kuga
 person ∃ REL 3SG invite
 ‘There is somebody that he invited.’ (Zimmermann 2007: (7)) BURA

- b. **hu** t^ha jaŋ ju ʔa
 ∃ one person 3SG invite
 ‘There is somebody that he invited.’ EASTERN CHAM

Third, both *adi* and *hu* are optional in polar questions (27). At first glance, they provide emphasis, as reflected in the gloss of (27a). Zimmermann (2007) analyzes their appearance in polar questions as questioning the existence of a particular event or situation, thus needing existential closure. Furthermore, Zimmermann (2007) predicts the existence of affirmative counterparts to (27a), where the existence of an event is explicitly at stake. This prediction is borne out in Eastern Cham: when used in (27c), *hu* emphasizes the existence of the eating event.

- (27) a. thla (**adi**) akwa di nda ya
 cattle ∃ in place DEM Y/N.Q
 ‘Is there cattle in that village?’ (Zimmermann 2007: (43)) BURA
 LIT.: ‘Does a situation of there being cattle in that village obtain?’

- b. hi (**hu**) ʔiŋ ɓăŋ ʔɔ? lěj
 2SG ∃ want eat mango Y/N.Q
 ‘Do you want to eat mango?’ EASTERN CHAM

- c. *kăw hu ʔŋ bǎŋ ʔʔ*
 1SG.FAM \exists want eat mango
 ‘I DO want to eat mango.’

Thus far, the uses of *adi* and *hu* follow naturally from existential semantics. The fourth use is indirect, but explainable via a need for existential closure. Both *adi* and *hu* are used in negative stage-level predicates (28).

- (28) a. *Pindar adi ata sa mbal wa*
 Pindar \exists FUT drink beer NEG
 ‘Pindar will not drink beer.’ (Zimmermann 2007: (5)) BURA

- b. *kăw hu ʔʔ bǎŋ lɔ nŭʔ ʔo*
 1SG.FAM \exists PROG eat meat chicken NEG
 ‘I am not eating chicken.’ EASTERN CHAM

Zimmermann (2007) argues that negation in Bura requires that all variables be existentially closed, including the open event variable (cf. Zeijlstra 2004 and others on existential closure and negation). Evidence for negation requiring existential closure can be found with indefinites. In (29a), the Bura negation marker *wa* scopes over not only the predicate but also the subject. In (29b–c), Eastern Cham *wh*-indefinites, or indeterminates (Kuroda 1965; Kratzer & Shimoyama 2002) are licensed under the scope of negation. Given the ability of the subject to be an indeterminate, the predicate-final negation marker *ʔo* is also taken to scope over the subject. These examples also demonstrate that *adi* and *hu* are under the scope of negation. In Eastern Cham, the position of *hu* follows the structurally highest indeterminate: predicate-initial if the highest indeterminate is in the predicate (29b), or preceding the subject if the subject is an indeterminate (29c).

- (29) a. *mda adi ta diva wa*
 person \exists prepare food NEG
 ‘Food is not prepared at all.’ (Zimmermann 2007: 339) BURA
 = ‘There is no event of a person making food’
 ≠ ‘Some person did not prepare food.’

b. *kăw hu t̚ʔ bǎŋ ke? ʔo*
 1SG.FAM ∃ PROG eat what NEG
 ‘I am not eating anything.’

EASTERN CHAM

b. *hu t^hɛj t̚ʔ bǎŋ ke? ʔo*
 ∃ who PROG eat what NEG
 ‘No one is eating anything.’

According to Zimmermann’s (2007) analysis of Bura, negation requires that all variables be existentially closed, and the verb lacks the ability to do so on its own. As a last resort, the existential marker *adi* is recruited to provide that existential closure. Given the Eastern Cham pattern in (29), we conclude that *hu* is similarly recruited to provide existential closure under negation. The final piece of evidence for this analysis is that *adi* and *hu* are illicit in negated individual-level predicates (30). For example, the verb ‘know’ in both Bura and Adi is not typically accompanied by *hu* (30a–b), whereas the negated stage-level predicates above would be ungrammatical without it. The predicate ‘know’, especially in the context of speaking a language, is a prototypical individual-level predicate cross-linguistically (e.g. Kratzer 1995: 136).

(30) a. *Musa asinda mya Bura wa*
 Musa know language Bura NEG
 ‘Musa does not understand / cannot speak Bura.’
 (Zimmermann 2007: (25))

BURA

b. *kăw thǎw ʔo*
 1SG.FAM know NEG
 ‘I don’t know.’

EASTERN CHAM

The absence of *adi* and *hu* is predicted under Kratzer’s (1995) analysis of individual-level predicates as lacking event variables entirely. If event variables are not introduced by the verb and there are no other open variables, no existential closure is needed. Zimmermann (2007) only cites one example in Bura and predicts that other individual-level predicates should behave like *asinda mya Bura*. In Eastern Cham, this prediction is borne out. Two

contrasts are given in (31): the temporary stage-level predicate *puj pe* ‘happy’ compared with the permanent individual-level property ‘be a happy person’ (31a–b); the temporary stage-level *tu?* ‘live, reside’ compared with the permanent individual-level *ni?* ‘be born’ (31c–d). The latter pair of *tu?* ‘live, reside’ and *ni?* ‘be born’ will be used to test DC-movement in the following section, as they allow for the possibility of DC-moving a locative phrase. The negated stage-level predicates require *hu*, while the negated individual-level predicates are either marked solely by *ʔo* or an additional *faw?* ‘correct’.

- (31) a. *měj năn hu puj pe ʔo*
 female that \exists be.happy NEG
 ‘That woman is not happy.’ (Stage-level)
- b. *měj năn faw? t^ha jaŋ puj pe ʔo*
 female that correct one person happy NEG
 ‘That woman is not a happy person.’ (Individual-level)
- c. *kăw hu tu? pã? mlěj năn ʔo*
 1SG.FAM \exists live in village that NEG
 ‘I do not live in that village [temporarily].’ (Stage-level)
- d. *kăw (faw?) ni? pã? mlěj năn ʔo*
 1SG.FAM correct be.born in village that NEG
 ‘I was not born in that village.’ (Individual-level)

Based on the parallels between Bura *adi* and Eastern Cham *hu*, we conclude that both are general existential markers. In the following section, *hu* in the context of negation will be used as a diagnostic for stage- and individual-level predicates for two reasons. First, it is a language-internal diagnostic, derived from specific Eastern Cham syntactic and semantic properties. Therefore, we need not rely on cross-linguistic intuitions on what predicates are generally stage-level and what are individual-level. Second, it is less subject to coercion than other tests employed. Consultants consistently interpret negated stage-level predicates without *hu* as ungrammatical, and negated individual-level predicates are reported with \emptyset or *faw?* ‘correct’. By contrast, other tests like locative and

temporal modification are more subject to coercion, with modification of individual-level predicates frequently judged acceptable (cf. Maienborn 2004).

Two aspects of *hu* will be mentioned for the sake of completeness. First, there are other negation, such as *ka* ‘not yet’, which supplant *hu* (32). It must be posited that existential closure is at least optionally a part of the semantics of *ka*.

- (32) kǎw **ka** bǎŋ kɛʔ ʔo
 1SG.FAM INCOMP eat what NEG
 ‘I have not yet eaten anything.’

Second, *hu* has even more uses than those reported so far in this section. Section 2.3 presented a contrastive topic-marker use, which may result from a need for existential closure along the lines of negation. The form *hu* can also be a main verb meaning ‘have’ (33a) and a root modal, encapsulating abilitative and deontic modality (33b). The main verb use is clearly distinct from the other uses in form and meaning, though it is likely the ultimate source of the others in terms of grammaticalization (Thurgood & Li 2007). The root modal use is also distinct in terms of form and meaning, as a predicate-final modal. When negated, predicates with the root modal are interpreted as individual-level predicates, so the existential *hu* is absent (33c), unless there is an indeterminate elsewhere in the sentence that needs existential closure (33d).

- (33) a. kǎw **hu** kʷa ɕɛj tʰǎw ɭam tʰaŋ
 1SG.FAM have two CLF.ANIMAL dog in house
 ‘I have two dogs at home.’
- b. kǎw bǎŋ ʔɿʔ **hu**
 1SG.FAM eat mango ROOT
 ‘I can eat mango.’
- c. kǎw bǎŋ ʔɿʔ **hu** ʔo
 1SG.FAM eat mango ROOT NEG
 ‘I can’t eat mango.’

- d. kǎw hu bǎŋ kɛ? hu ʔo
 1SG.FAM ∃ eat what ROOT NEG
 ‘I can’t eat anything.’

Despite the other uses of *hu*, it remains clear that one lexical item realized as *hu* should be analyzed as a general existential marker. The following section uses *hu* and negation as a test to diagnose if DC-movement requires two events to have been introduced in the discourse, vis-à-vis stage- and individual-level predication.

3.3 Individual-level predicate test

As laid out in the introduction to this section, we hypothesize that DC-movement requires a Cause or Subtype relation between two events in a discourse, a prior event e_1 and an event in the current sentence e_2 . If DC-movement requires overt introduction of event variables, it should be impossible in a current sentence that fails to introduce an event variable at all. In this case, there would be no e_2 . DC-movement should also be impossible in the current sentence if the relevant prior sentence only consists of an individual-level predicate, as there would be no e_1 . These predictions are schematized in (34): if either the prior or current sentence consists only of individual-level predicates, DC-movement should be impossible in the current sentence.

- (34) PREDICTIONS:
- i. Prior sentence: stage-level predicate
 ✗DC-phrase individual-level predicate DC-phrase
 - ii. Prior sentence: stage-level predicate
 ✓DC-phrase stage-level predicate DC-phrase
 - iii. Prior sentence: individual-level predicate
 ✗DC-phrase stage-level predicate DC-phrase

These three predictions are all borne out in Eastern Cham. We will use the paradigm of *tɔʔ* ‘live, reside’ and *nɨʔ* ‘be born’, which were diagnosed as stage- and individual-level predicates in Section 3.2 based on their interaction with negation and *hu*. This paradigm was chosen, as it allows for potential DC-movement of the locative phrase. With the stage-level predicate, (35a) is theoretically licit, while (35b) is interpreted as ungrammatical regardless of context. Note that the preposition *pǎʔ* ‘in’ is dropped (cf. Section 2).

- (35) a. **mlěj nǎn_{DC} kǎw tɔʔ pǎʔ mlěj-nǎn**
 village that 1SG.FAM live in
 ‘That village, I live in [temporarily].’ (Stage-level)
- b. ***mlěj nǎn_{DC} kǎw nɨʔ pǎʔ mlěj-nǎn**
 village that 1SG.FAM be.born in
 INTENDED: ‘That village, I was born in.’ (Individual-level)

The context in (36) demonstrates that DC-movement out of an individual-level predicate is illicit, even when previous mention and discourse subordination condition are present. The phrase *mlěj nǎn* ‘that village’ is previously mentioned in (36a), and (36b) is interpreted as an explanation of (36a). As a control, the same sentence without DC-movement is licit with an explicit Explanation cue phrase *jwa* ‘because’. Prediction (i), therefore, is confirmed.

- (36) a. **kǎw tɔʔ pǎʔ mlěj nǎn ɬom tʰũn hɭaw**
 1SG.FAM live in village that many year before
 ‘I have lived in this village for many years.’
- b. ***mlěj nǎn_{DC} kǎw nɨʔ pǎʔ mlěj-nǎn**
 village that 1SG.FAM be.born in
 INTENDED: ‘That village, I was born in.’ (Individual-level, a ↓ b)
- b’. **jwa kǎw nɨʔ pǎʔ mlěj nǎn**
 because 1SG.FAM be.born in village that
 ‘Because I was born in that village.’ (Individual-level, a ↓ b’)

As for prediction (ii), the licit examples of DC-movement thus far have all been of this

form: both the current and prior sentence contain stage-level predicates. The context (37) presents another example, which will be minimally changed to test an individual-level predicate in the prior sentence.

- (37) a. *kăw tɔʔ pǎʔ paj kɔl*
 1SG.FAM live in Saigon
 ‘I live in Saigon [temporarily].’ (Stage-level)
- b. *paj kɔl_{DC} mɛʔ mi kăw naw ɲǎʔ pjũʔ pǎʔ paj-kɔl*
 Saigon parent 1SG.FAM go make work in
 ‘My parents went to work in Saigon.’ (a ↓ b)

Finally, (38) minimally changes the previous context in order to make the prior sentence only consist of an individual-level predicate. Note that (38b) is identical to (37b) above. Yet, DC-movement here is infelicitous. Given that the only change is the individual-level predicate in (38a), we conclude that both the current and prior sentences must contain stage-level predicates in order for DC-movement to be licit.

- (38) a. *kăw nĩʔ pǎʔ paj kɔl*
 1SG.FAM be.born in Saigon
 ‘I was born in Saigon.’ (Individual-level)
- b. *#paj kɔl_{DC} mɛʔ mi kăw naw ɲǎʔ pjũʔ pǎʔ paj-kɔl*
 Saigon parent 1SG.FAM go make work in
 INTENDED: ‘My parents went to work in Saigon.’ (a ↓ b)

Again, as a control, both (37a) and (38a) can be continued by a sentence comparable to (38b) without DC-movement and with the overt Explanation cue phrase *jwa* ‘because’. Therefore, the context is licit; it is DC-movement itself that is problematic, and prediction (iii) is confirmed.

- (39) a. *kăw tɔʔ pǎʔ paj kɔl*
 1SG.FAM live in Saigon
 ‘I live in Saigon [temporarily].’ (Stage-level)

a'. kǎw nǎ? pǎ? pǎj kɔl
 1SG.FAM be.born in Saigon
 'I was born in Saigon.' (Individual-level)

b. jwa mɛ? mi kǎw naw ɲǎ? pjǔ? pǎ? pǎj kɔl
 because parent 1SG.FAM go make work in Saigon
 'Because my parents went to work in Saigon.' (a/a' ↓ b)

Given these results, we conclude that DC-movement requires that two event variables be introduced: one in the relevant prior sentence and one in the current sentence, in order to compute the Cause or Subtype event relation. It is unclear how a pure discourse subordination requirement (Section 2.1) would account for this data, as there is nothing preventing discourse subordination readings of the sentence pairs above. It is only the syntactic operation of DC-movement that is disallowed. Likewise, it is unclear how an information structure or Question Under Discussion account (Sections 2.2–2.3) would explain these data, especially (37–39), where it would have to be posited that an individual-level predicate disallows certain pragmatics in a subsequent sentence. Additionally, the flow of information and QUDs is not disrupted, as the continuation is licit without DC-movement.

This section raises an additional question: how can individual-level predicates be interpreted as Explanations or Elaborations if they lack the requisite event variable? A full exploration of this question is beyond the scope of this paper, but there are at least two possible avenues to answer it. First, perhaps the event relation requirement placed on DC-movement is more strict than that placed on discourse subordination. For example, the semantic computation of DC could make reference to explicit event variables, but that reference is not needed to classify rhetorical relations. Second, perhaps sentences consisting of only individual-level predicates cannot truly enter Explanation or Elaboration relations and instead must approximate them with indirect speech acts (Asher & Lascarides 2003: 328). In this case, the linguistic form of the sentence would not permit

an Explanation or Elaboration interpretation, but one can infer that relation is what was intended.

3.4 Negation

Based on the data presented so far, DC-movement requires that events be tracked in the discourse in some way, so it can be assessed whether there is a prior event for the Cause or Subtype relation. However, the data have not shown whether the set of prior events needs to be ordered or structured. To illustrate, consider the example from the introduction, repeated below as (40). Let us assume that there is a mechanism by which event variables are tracked in a discourse as an unordered set. First, the event introduced in (40a) enters that unordered set. Then, when the semantics of DC is computed in (40b), it is possible that the unordered set of prior events is checked to see if any are in a Cause or Subtype relation with the open event variable introduced by the predicate of (40b). In this case, such an event would be found, and DC-movement would be licit.

- (40) a. *kăw tɔʔ pǎʔ paj kɔl*
 1SG.FAM live in Saigon
 ‘I live in Saigon.’
- b. *paj kɔl_{DC} meʔ mi kăw naw ŋǎʔ pjuʔ pǎʔ paj-kɔl*
 Saigon parent 1SG.FAM go make work in
 ‘My parents went to work in Saigon.’ (a ↓ b)

The interaction between negation and DC-movement casts doubt on the unordered set approach. Recall from Section 3.2 that negation requires all variables be existentially closed, including the event variable; hence the need for the existential marker *hu* or other markers like the incompletive *ka* in negative stage-level predicates. In (41b), the phrase *mlěj nǎn* ‘that village’ is DC-moved across the incompletive *ka*, which existentially closes the event variable introduced by the stage-level predicate *tɔʔ* ‘live, reside’. If DC is computed in the left periphery, the landing site of DC-movement, it may no longer make

reference to an open event variable. Instead, in order to check if an appropriate event relation in (41) obtains, two events must be found in the discourse, such that one event corresponds with the current sentence and asymmetrically represents either the cause or subtype of the other event.

(41) a. hi hu tɔʔ pǎʔ mlěj nǎn hlěj
 2SG ∃ live in village that Y/N.Q
 Q: ‘Do you live in that village?’

b. mlěj nǎn_{DC} kǎw ka tɔʔ ɬam mlěj-nǎn ʔo
 village that 1SG.FAM INCOMP live in NEG
 A: ‘I have not lived in that village before.’ (a ↓ b)

The unordered set approach could be maintained if DC were computed low. However, reconstruction is not generally available for DC-movement. For example, (42) tests two scenarios: one where there is only one mango in total (ONLY > ∇) and one where each person has their own mango (∇ > ONLY). The in situ ‘only’-phrase can be interpreted in its base position or above a universal quantifier in subject position (42a). However, a DC-moved ‘only’-phrase can only be interpreted high, above the universal quantifier (42b).⁴

(42) a. pih jaŋ bǎŋ t^ha sīt t^ha pɔh ʔɔʔ mǐn
 all person eat only one CLF.ROUND mango EMPH
 ‘Everyone ate only one mango.’ ✓ONLY > ∇, ✓∇ > ONLY

b. t^ha sīt t^ha pɔh ʔɔʔ mǐn pih jaŋ bǎŋ
 only one CLF.ROUND mango EMPH all person eat
 t^ha sīt t^ha pɔh ʔɔʔ mǐn
 ‘Only one mango, everyone ate.’ ✓ONLY > ∇, ✗∇ > ONLY

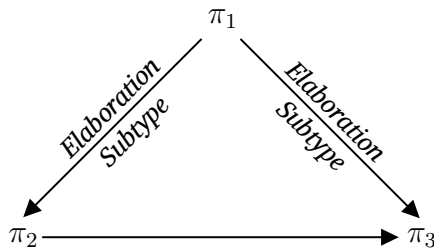
Given the ability of DC-movement to cross the existential closure of events due to nega-

⁴Note that *t^ha sīt* ‘only’ can transparently be decomposed to ‘one small’. However, we gloss it as one lexical item, as many consultants pronounce it as one word *cīt*, and the lexical decomposition does not clearly indicate the semantics of ‘only’.

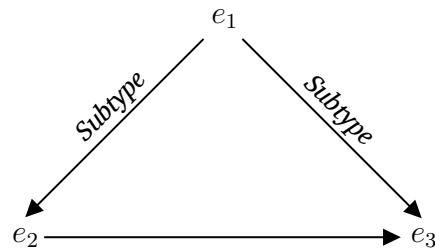
tion, we conclude that there must be an articulated or hierarchical representation of events in a discourse that allows DC to be computed. Perhaps this representation is parasitic on the rhetorical structure that results from rhetorical relations, as event relations constitute one inference of those relations (Figure 2a). Or, there is an independent mechanism that tracks events and their relations in a discourse, a dynamic event semantics (Figure 2b). Further research is needed to find if there are cases where the event relation that licenses DC-movement is not predicted by the structure of rhetorical relations, but could be predicted by an alternative event relation structure.

Figure 2: Possible event relation structures

(a) Embedded in rhetorical structure



(b) Distinct event relation structure



4 Discussion

To summarize, Eastern Cham DC-movement is best analyzed in terms of relations between events that correspond with subordinating discourse relations. Specifically, a DC-moved phrase must be a participant in an event in the current sentence and an event in a prior sentence, such that the current event is interpreted as a cause or subtype of that prior event. In (43b), the going-to-work event is interpreted as an explanation for the living event in (43a), and *paj kɔl* ‘Saigon’ is a participant in both. If no such event relation exists, if the phrase is not a participant in both events, or if one sentence fails to introduce an event variable at all, DC-movement is illicit. In the case of (43b’), no Cause or Subtype event relation exists.

- (43) a. kǎw tɔʔ pǎʔ paj kɔl
 1SG.FAM live in Saigon
 ‘I live in Saigon.’
- b. paj kɔl_{DC} mɛʔ mi kǎw naw ɲǎʔ pjuʔ pǎʔ paj kɔl
 Saigon parent 1SG.FAM go make work in
 ‘My parents went to work in Saigon.’ (a ↓ b)
- b'. #paj kɔl mɛʔ mi kǎw tɔʔ pǎʔ paj kɔl
 Saigon parent 1SG.FAM live in
 ‘My parents live in Saigon.’ (a ↘ b')

This analysis puts forth the need for a new paradigm in which the organization of discourse can affect grammar. In addition to information structure, Questions Under Discussion, and rhetorical relation structure, we also need an event structure that tracks the events introduced throughout a discourse, their participants, and the hierarchical relations between those events. The analysis also raises some new questions: why should DC be sensitive to the two distinct event relations Cause and Subtype, and why should DC-movement involve marking an event participant, not the event itself?

First, Cause and Subtype are considered two distinct event relations by Asher & Lascarides (2003), which correspond with the rhetorical relations Explanation and Elaboration, respectively. In the realm of rhetorical relations, we were able to appeal to a single broad category, discourse subordination. It could perhaps be an argument against an event relation account of DC if we were forced to use a disjoint rule for the two seemingly unrelated Cause and Subtype event relations. However, there is reason to think that Cause and Subtype can be unified under a broader category. In the philosophy of explanation, Ylikoski (2013) and others have argued that explanations can be split into causal explanations, which correspond with Cause event relations, the Explanation rhetorical relation, and answers to (44a); and constitutive explanations, which correspond with Subtype event relations, the Elaboration rhetorical relation, and answers to (44b). The question ‘Why is the glass fragile’, for example, is ambiguous between the causal and constitutive ex-

planation readings in (44). Ylikoski (2013) demonstrates that causal and constitutive explanation have different metaphysical properties, but share core ideas about explanation. If we can extend this commonality to event relations, perhaps DC makes reference to a single broader category of explanatory event relations.

- (44) a. How did the glass become fragile?
 b. What makes the glass fragile? (Ylikoski 2013: 279)

Second, as mentioned in Section 2.2, DC indicates something special about an event, but not necessarily anything special about the phrase that undergoes DC-movement. The moved phrase need only be a participant in the two events in the discourse. In the example repeated below as (45), either the direct object or indirect object can be DC-moved. Regardless of the choice, consultants report that subsequent discourse can center on either the direct object or the indirect object as well. A corpus study would be needed to assess if these metalinguistic judgments hold true, but the intuition remains that the DC-moved phrase is not prominent in the same way as topics are typically described in information structure.

- (45) a. **jüt** **kăw** hu **t^hăw** **mjăw**
 friend 1SG have dog new
 ‘My friend has a new dog.’
- b. **jüt** **kăw_{DC}** kăw plěj **t^hăw** **năn** ka jüt-kăw
 friend 1SG 1SG sell dog that to
 ‘I sold that dog to my friend.’ (a ↓ b)
- b'. **t^hăw** **năn_{DC}** kăw plěj **t^hăw-năn** ka **jüt** **kăw**
 dog that 1SG sell to friend 1SG
 ‘I sold that dog to my friend.’ (a ↓ b)

Perhaps movement of a nominal in Eastern Cham is a last resort to mark DC. Eastern Cham lacks bound verbal morphology and generally bans verb- or VP-movement. If it is

the event that is most prominent, but there is no mechanism to mark the verb, perhaps movement of a phrase that represents a participant is recruited instead. Turning to a different language, López (2009) first observed that discourse subordination can constrain syntactic movement operations, clitic right- and left-dislocation in Catalan. In Catalan, the verb is marked through cliticization, alongside dislocation (46). As we investigate other languages for DC-related phenomena, we may expect to find not only movement of nominals, but also marking on the verb.

- (46) a. El Joan_i va cuinar la carn_j.
 the Joan PAST.3SG cook.INF the meat
 ‘Joan cooked the meat.’ CATALAN
- b. ∅_j Li_i agrada molt la-carn, la carn_{j,DC}.
 pro CL.DAT like.3SG much the meat
 ‘He likes the meat very much.’ (a ↓ b)
 [LIT: The meat pleases him very much.]
- b'. #Després se_i la_j va menjar la-carn, la carn_j.
 afterwards CL.REFL CL.ACC PAST.3SG eat.INF the meat
 INTENDED: ‘Afterwards he ate it/the meat.’ (López 2009: (2.56)) (a ↓ b')

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