Eastern Cham optional *wh*-movement is DC-movement

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- 'Optional *wh*-movement' refers to situations where *wh*-phrases can appear either in situ or in a position derived by *wh*-movement
  (cf. Denham 2000; cf. Cheng & Rooryck 2000 and others on optional in-situness)

- True optional *wh*-movement poses a problem for standard theories of *wh*-movement and Agree in general, as it is asserted that languages have one mechanism by which Agree operations interface with the [wh]-feature

- Cheng's (1991) Clausal Typing Hypothesis predicts that all instances of optional *wh*-movement can be shown to be apparent (cf. Roussou & Vlachos 2011)

- Eastern Cham exhibits apparent optional *wh*-movement (AOWM; 1a)

  - On the surface, it looks similar to cleft-like constructions (b), in accordance with Cheng (1991), Potsdam (2006), and others who attribute AOWM to clefts

  - It also shares characteristics with topicalization (c), which has also been claimed to be a motivation for AOWM (Mathieu 2004; Pan 2014)

(1) a. *Hâ daok mbeng hagait? / Hagait baow hâ daok mbeng?*

hɨ	tɔʔ	ɓăŋ	ḳɛɪt	/	ḳɛɪt	(po)	hɨ	tɔʔ	ɓăŋ
2SG	PROG	eat	what		what	COMP	2SG	PROG	eat

'What are you eating?'

  b. *Hu hagait baow hâ daok mbeng?*

hu	ḳɛɪt	(po)	hɨ	tɔʔ	ɓăŋ
EXIST	what	COMP	2SG	PROG	eat

'What is it that are you eating?'

  c. *Ing-aong ni baow kau daok mbeng.*

ʔiŋ	ʔɔŋ	ni	(po)	kaw	tɔʔ	ɓăŋ
frog[sp.]		this	COMP	1SG	PROG	eat

'This frog, I am eating.'

- This talk argues that the latter parallel is essentially correct: AOWM in Eastern Cham is structurally equivalent to topicalization (1c)

- However, traditional views on topicality and *wh*-topicality (i.e. D-linking) are shown to be insufficient

- Instead, topicalization and AOWM display the discourse subordination (DS) effect, which is defined in terms of rhetorical relations between sentences (Baclawski Jr. 2015; cf. López's (2009) [+anaphor])

    – In (2), the existence of a subordinating discourse relation between (b) and (a) licenses AOWM

    – But AOWM is infelicitous in (b′) due to the absence of a subordinating discourse relation between (b′) and (a)

(2)   a. *Birau mâh, Sơn saong Thuận ngap ing-aong.*

mjaw	mɨh	sʌn	hɔŋ͡m	thừən	ŋaʔ	ʔiŋ ʔɔŋ$_i$
first		Sơn	with	Thuận	make	frog[sp.]

'First, Sơn and Thuận cooked the ing-aong [frog sp.].'

   b. *Ing-aong thei baow sa-ai cheh hơn?*

{ʔiŋ ʔɔŋ$_i$	thĕj}	(pɔ)	saʔaj		sʌh	{}	hʌn
ing-aong	who	COMP	older.sibling		like		more

'Whose ing-aong do you[older sibling] like more?'   *Subordination$_q$*(a,b′)

  b′. *Blaoh nan, sa-ai mbeng ing-aong thei?*

plɔh	năn,	{#}	saʔaj	ɓăŋ	{ʔiŋ ʔɔŋ	thĕj$_i$}
after	that		older.sibling	eat	ing-aong	who

'After that, whose ing-aong did you[older sibling] eat?' *Coordination$_q$*(a,b)

- This talk follows Baclawski Jr. (2018) in analyzing the DS-effect with a *discourse-connected* (DC) feature, accounting for both topicalization and AOWM

- Finally, the interaction between AOWM and subextraction reveals that it is not the *wh*-phrase that bears the relevant feature, rather a *DC-particle*

- On analogy with Cable's (2010) Q-particle, the DC-particle adjoins to phrases, indicating their DC antecedent (Figure 1)

Figure 1

(a) Topic	(b) Moved *wh*-phrase
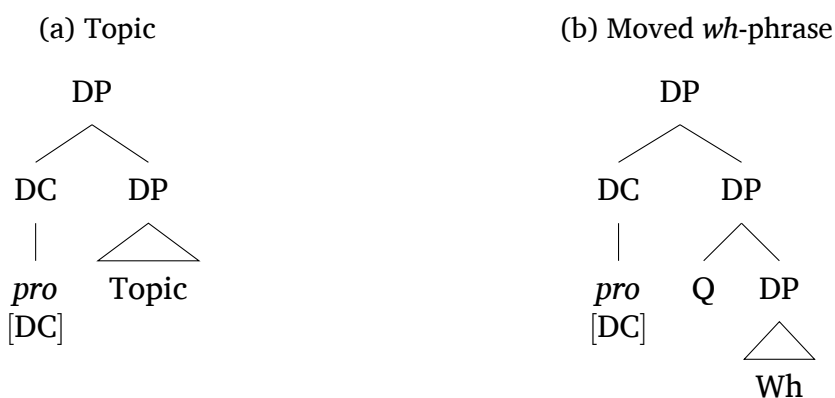
Roadmap

- Section 1: Some background on Eastern Cham, its *wh*-phrases, and *wh*-in situ

- Section 2: Evidence is presented that AOWM does not involve clefting or pseudoclefting

- Section 3: D-linking is shown to be nearly adequate for describing AOWM

- Section 4: Core evidence that AOWM displays the DS-effect

- Section 5: Topicalization also displays the DS-effect. Locality effects indicate that topics can intervene on AOWM and vice versa, implying featural identity

- Sectiom 6: Subextraction from 'inventory form' constructions indicates that *wh*-phrases cannot bear a [DC] feature themselves

- Section 7 concludes

1   Preliminaries on Eastern Cham *wh*-phrases

- Eastern Cham (Austronesian: Vietnam) is an endangered language with a long history of language contact with languages of Mainland Southeast Asia

  - It is an isolating SVO language with few bound morphemes

  - It is the oldest attested Austronesian language, with a script tradition from at least the 9th century CE. In the examples here, the first line represents a romanization of Cham script known as Rumi.[1]

- Eastern Cham *wh*-phrases are typically in situ (3a)

- They are truly in situ, not moving to a low focus position, as evidenced by the fact that in situ *wh*-phrases are not associated with phrase edges. In (b), the *wh*-phrase is VP-internal, between the modal *hu* and the indirect object
  (cf. Uribe-Etxebarria 2002 on Spanish)

(3) a. *Hâ daok mbeng hagait?*

   hɨ   tɔʔ   ɓăŋ   k̥ɛɪt
   2SG   PROG   eat   what

   'What are you eating?'

   b. *Kau blei hagait ka anâk sit nan hu?*

   kaw   [plɛj   k̥ɛɪt   ka   nĭʔ   thĭt   năn$_{VP}$]   hu
   1SG   give   what   to   child little that   ROOT

   'What can I give to that little child?'

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[1] IPA orthography is in line with the Chamic linguistic tradition (e.g. Moussay 1971). Open circles represent falling, breathy tone on the following vowel. All Eastern Cham data is from the author's fieldwork with over 30 native speakers from the Cham villages of Ninh Thuận province, Vietnam. Data reported here is from colloquial speech, which differs markedly from the formal speech reported elsewhere in the Chamic literature, and there is much inter- and intra-speaker variation.

- There is a clause-final polar question particle *lɛj* (4a)

- This is predicted if Eastern Cham is a *wh*-in situ language, but is not expected in *wh*-movement languages (Cheng 1991)

(4) *Hâ daok mbeng wek halei?*

hɨ   tɔʔ   ɓăŋ   vɨʔ   lɛj
2SG PROG eat   ITER Y/N.Q
'Are you eating more/again?'

- It is important to note that *wh*-phrase forms alternate with non-interrogative *wh*-indefinites when they are bound by certain operators, as they do in Mandarin (e.g. Cheng 1991), Vietnamese (e.g. Tsai 2009), and other languages

  – Licensed contexts include under the scope of negation (5a) and polar questions (b)

  – Indefinites are also licensed by *çɨŋ* 'also' with a universal reading (c)

- In order to ensure that a *wh*-phrase is truly an interrogative *wh*-phrase, these contexts must be avoided, as is done in the remainder of this talk

(5) a. *Kau di hu mbeng hagait o.*

kaw   hu   ɓăŋ   k̥it   o
1SG   EXIST eat   what   NEG
'I didn't eat anything.'   (Negation)

b. *Ayut âng mânyum hagait halei?*

jut   ɨŋ   ɲum   k̥it   lɛj
friend want   drink what   Y/N.Q
'Do you want to drink something?'   (Polar question)

c. *Kenny mbeng aia bai halei lijang hu.*

kɛn ni ɓăŋ   ʔjæ   p̥aj   hlɛj   çɨŋ   hu
Kenny   eat   water soup which also   ROOT
'Kenny can eat many/all soups.'   ('Also')

1.1   Covert Q-movement

- When *wh*-phrases are in situ, Eastern Cham exhibits properties of covert Q-movement in the sense of Cable (2010)

- In some *wh*-in situ languages, *wh*-phrases undergo covert/LF-movement; in others, they can be interpreted in situ (e.g. Cheng 1991)

- Cable (2010) and subsequent work makes a finer grained distinction: languages can move a Q-feature ('Q-adjunction'), or pied-pipe a larger phrase ('Q-projection') (cf. Hagstrom 1998 on Japanese; Tsai 2009 on the lack of Q-movement in Vietnamese)

- In Eastern Cham, there must be some movement, as in situ *wh*-phrases are sensitive to island constraints[2]

    – In a complex NP, for instance, the existence of an in situ *wh*-phrase leads to ungrammaticality (6a), even though no overt movement has taken place
    (Note that the sentence is grammatical without a *wh*-phrase)

    – Overt movement is likewise ungrammatical, surprisingly even in the presence of a resumptive pronoun, which would usually be expected to salvage island violations
    (e.g. McCloskey 2006:98 on resumptive pronouns as repairs)

(6) a. *Hâ blei đồ mbeng baow thei ngap?*

     hɨ   plɛj ɗɔ̰   ɓǎŋ po̥   thɛj ŋǎ?
     2SG buy stuff(VN) eat COMP who make

     INTENDED: 'You buy the food that who makes?'

    b. *Urang halei hâ blei đồ mbeng baow (nyu) ngap?*

     jaŋ hlɛj hɨ   plɛj ɗɔ̰   ɓǎŋ po̥   (ɲu) ŋǎ?
     CLF which 2SG buy stuff(VN) eat COMP 3.ANIM make

     INTENDED: 'Which person do you buy the food they make?'

- Despite the island data, intervention effects demonstrate that there cannot be covert phrasal movement

- Kotek (2014, 2017) analyzes intervention effects as alternative sets that are c-commanded by an operator and cannot escape it by overt or covert movement

    – In English, (7a) is grammatical, as the in situ *wh*-object *which book* can move at LF to be interpreted

    – In (b), however, the *wh*-subject has already agreed with C and failed to move. It cannot undergo LF-movement to escape the intervention effect
    (Note that the *PL notation indicates a loss of a pair-list reading)

(7) a. (*Which book*) Which student didn't read which book?

    b. $*^{PL}$Which book didn't which student read? (Pesetsky 2000:Ch.5)

- Eastern Cham intervention effects imply that *wh*-phrases have no option to LF-move whatsoever, unlike those in English

- *Wh*-objects cannot be under the scope of operators like negation or 'only' (8a–b)

(8) a. *Amaik hâ sanâng hâ di hu cheh mbeng hagait o.*

     mɛ?   hɨ   hnːɨŋ hɨ   hù   sʌh ɓǎŋ   k̥ɛɪt o
     mother 2SG think 2SG EXIST like eat   what NEG

     INTENDED: 'What does your mother think you do not like to eat?.'

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[2]There is some inter-speaker variation with island constraints, as has been widely reported in other languages (cf. Szabolcsi 2006). One consultant consistently accepted in situ and moved *wh*-phrases in weak and strong islands; one in weak, but not strong islands. However, six consultants rejected them in all island contexts. Impressionistically, the other two consultants are often permissive with judgments in general.

     b. *Sa drei sa-ai Thuận takrâ aia bai halei min?

       tha ʈʂɛj   ʔaj   thừən kɨ   ʔjæ paj hlɛj   mĭn
       only   older.sibling Thuận like soup̥   which EMPH

       INTENDED: 'Which soup does only Thuận like to eat?'

- Intervention effects can only be avoided if the *wh*-phrase overtly moves out of the scope of the intervener

- However, it is not immediately clear what drives this movement, as any movement operation is taken to alleviate intervention effects (e.g. scrambling in German and Japanese)

(9)   a. *Abaoh kayau halei amaik hâ sanâng hâ di hu cheh mbeng o.*

       pɔh jːaw hlɛj   mɛʔ   hɨ hnːiŋ hɨ hù   sʌh ɓăŋ o
       fr̥uit   which mother 2SG think 2SG EXIST like eat NEG

   'Which fruit does your mother think you do not like to eat?.'

    b. *Aia bai halei sa drei sa-ai Thuận takrâ min?*

       ʔjæ paj hlɛj$_i$ tha ʈʂɛj ʔaj   thừən kɨ t_i mĭn
       soup̥   which only   older.sibling Thuận like   EMPH

       'Which soup does only Thuận like to eat?'

- I follow Cable (2010) on Sinhala in positing covert movement of a Q-particle, leaving the *wh*-phrase itself in situ (Figure 2a)[3]

- In the presence of an intervening operator, the *wh*-phrase must move in order to enter this kind of Agree relation with C

Figure 2: Q-movement in *wh*-in situ (after Cable 2010:86)

Covert movement

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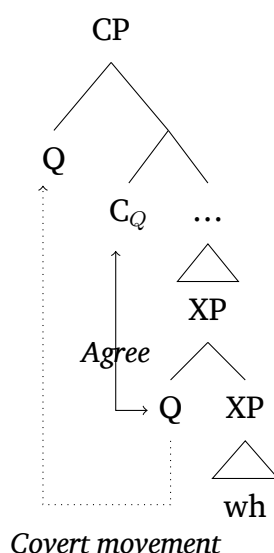
[3]The Q-particle itself is null, so whether it left- or right-adjoins to DP and CP is purely stipulative. The related language Moken does have some kind of Q-particle that is pronounced as an enclitic on *wh*-words, sentence-finally, and occasionally elsewhere: Baclawski Jr. & Jenks 2016.

1.2   Apparent optional *wh*-movement

- As just seen, *wh*-phrases can optionally be moved to the left-periphery (10a)

- In this position, nominal *wh*-phrases can be marked by the complementizer *p̥o*

- *Wh*-adverbials can also be moved to the left-periphery; some like *ʔjawʔ k̥ɛɪt* obligatorily do so, but they are not marked by *p̥o* (b)

(10)   a.   *Hagait baow hâ daok mbeng?*

         k̥ɛɪt (p̥o) hɨ t̥ɔʔ ɓăŋ
         what COMP 2SG PROG eat

         'Which one [lit.: what] are you eating?'

    b.   *Njep hagait, ayut mânyum aia caiy?*

         ʔjawʔ k̥ɛɪt (*p̥o) zut ɲum ʔjæ çɛ
         why   COMP friend drink water tea

         'Why do you[friend] drink tea?'

- *Wh*-prepositional phrase arguments can also be moved, but the preposition cannot be stranded or pied-piped, resulting in P-drop
(cf. Wang 2007 on Mandarin Chinese; Sato 2010 on Indonesian)

(11)   a.   *Hâ brei ahar ni ka thei?*

         hɨ plɛj han ni *(ka) thɛj
         2SG give cake this to   who

         'Who [will] you give this cake to?.'

    b.   *Thei hâ brei ahar ni?*

         (*ka) thɛj hɨ plɛj han ni (*ka)
         to   who 2SG give cake this to

         'Who [will] you give this cake to?'

- Cheng's (1991) Clausal Typing Hypothesis predicts that this is not true *wh*-movement

- The following sections turn to clefts and D-linking as possible alternatives

2   Clefts and pseudoclefts

- Cheng (1991), Potsdam (2006) and others argue that AOWM in languages like Bahasa Indonesian (Austronesian: Indonesia) and Malagasy (Austronesian: Madagascar) are in fact instances of cleft-like constructions

- This is essentially based on a parallel between AOWM (12a), relative clauses (b), and focalization (c) (Here, the use of *yang*)

- The prediction is that this parallelism does not extend to topicalization (d)

(12)   a. siapa yang Sally cintai
           who   that Sally loves
           'Who does Sally love?'   BAHASA INDONESIAN

        b. gamelan yang mereka pakai dari Yogya
           gamelan that they   used   from Yogya
           'The gamelan that they used is from Yogya.'

        c. kamar itu   yang harus kami hias
           room   this that must   we   decorate

           'It is that room that must be decorated.' (Cheng 1991:54)

        d. buku itu   John beli
           book this John bought

           'This book, John bought.' (Cheng 1991:56)

- As mentioned in the introduction, it is true that Eastern Cham AOWM shares structural characteristics with a cleft containing the existential copula *hu* (13b) and relative clauses (c)

- However, it is also structurally parallel to topicalization, unlike Indonesian (d)

- This also means that AOWM is consistent with a topic interpretation, not necessarily a focus one, as will be explored in Section 4

(13)   a. *Hagait baow hâ daok mbeng?*

            k̥ɛɪt (po) hɨ   t̥ɔʔ   ɓăŋ
           what COMP 2SG   PROG eat
           'What are you eating?'

        b. *Hu hagait baow hâ daok mbeng?*

           hu   k̥ɛɪt (po)   hɨ   t̥ɔʔ   ɓăŋ
           EXIST what COMP   2SG   PROG eat
           'What is it that are you eating?'

        c. *Ong likei baow Kenny thau daok pak lingiw nan.*

           oːŋ   kɛj   (po) kɛn ni thaw t̥ɔʔ păʔ ŋːiw   năn
           grandfather male COMP Kenny   know COP   in   outside that
           'The old man Kenny knows is over there.'

        d. *Ing-aong ni baow kau daok mbeng.*

           ʔiŋ ʔ̥ɔŋ   ni   (po)   kaw t̥ɔʔ ɓăŋ
           frog[sp.] this COMP   1SG PROG eat
           'This frog, I am eating.'

- Potsdam (2006) supports a pseudocleft analysis of Malagasy AOWM with evidence that the pseudoclefts can contain predicative material

- This is not the case with Eastern Cham. Some predicative material is possible with the overt cleft with the existential *hu* (14a), but none without it (b)

- However, it is difficult to test, as many predicate-final markers also condition *wh*-indefinites, like the negation marker *o* and the root model *hu*

(14)   a. *Hu hagait o baow kau daok mbeng.*

    hu   k̥ɛɪt {o} (pɔ̥) kaw t̥ɔʔ ɓăŋ {}
    EXIST what NEG COMP 2SG PROG eat
    'There is nothing that I am eating.'

   b. **Hagait o baow kau daok mbeng.*

    k̥ɛɪt {*} (pɔ̥) kaw t̥ɔʔ ɓăŋ {o}
    what   COMP 2SG PROG eat NEG
    'Nothing, I am eating.'

- Finally, Potsdam (2006) uses evidence from discontinuous *wh*-phrases to support a cleft analysis (15a)

- Part of the *wh*-phrase can be extraposed rightward, stranding the rest of the DP

- In Eastern Cham, the opposite is true: in discontinuous *wh*-phrases, the *wh*-phrase must be stranded low (b–c)
(This data will be explored further in Section 6)

(15)   a. iza   {} no novakin-dRabe {tamin' ireo boky ireo}?
    which   PRT read.PASS-Rabe PREP   DEM book DEM
    'Which of these books were read by Rabe?'   MALAGASY
    (Potsdam 2006:2171)

   b. *Abaoh pa-aok hâ blei hadom ki?*

    {pɔh ʔɔʔ} hɨ plɛj {} t̥om   ki?
    mango   2SG buy   how.many kg
    'How many kilograms of mango did you buy?'

   c. **Abaoh kayau halei hâ blei limâ ki?*

    {*pɔh jːaw hlɛj} hɨ plɛj {*} mːɨ ki?
    fruit   which 2SG buy   5   kg
    'Which fruit did you buy five kilograms of?'

- Thus, we do not find evidence that Eastern Cham AOWM is a concealed cleft. In the next sections, we will see that it has more in common with topicalization

3 D-linking

- If Eastern Cham AOWM is structurally similar to topicalization, it may well be due to D-linking

- It has been noted that D-linked *wh*-phrases behave syntactically like topics in a variety of languages (e.g. Polinsky 2001; Grewendorf 2012), and it has been shown to drive AOWM in languages like Mandarin (Pan 2014)

- While D-linking is close to being an account of Eastern Cham AOWM, there are three ways in which it falls short:

  1. Conceptually, D-linking is not embedded in a coherent theory of discourse (cf. Baclawski Jr. 2018)

  2. D-linking fails to predict AOWM of *what X*

  3. It does not account for the presence of the DS-effect

- D-linked *wh*-phrases are usually characterized as alternative sets saliently shared by the speaker and addressee
  (Pesetsky 1987; Comorovski 1996; but cf. Wiltschko 1997 for problems)

  – However, how 'salience' is achieved is unclear, whether previous mention (cf. Grohmann 1998), individuation (Fiengo 2007), or not specified

  – Furthermore, how does D-linking relate to other discourse effects? Is 'salience' the same level of salience needed to license pronouns, definites, specificity or something else?

  – For many, D-linking remains an isolated phenomenon

- In English and many other languages, the form of a *wh*-phrase is taken to reflect its D-linking properties:

  – *Which NP* is taken to be obligatorily D-linked

  – D-linked readings of bare *wh*-phrases (e.g. *who*) can be coerced

  – *What NP* is non-D-linked (Pesetsky 1987:fn.36; Wiltschko 1997:113)

  – *Wh-the hell* is "aggressively non-D-linked" (den Dikken & Giannakidou 2002)

(16)   CONTEXT: Some people$_i$ entered the room…

   a. Which (ones)$_i$ did Antonia talk to?   [D-linked]

   b. $^?$Who$_i$ did Antonia talk to?   [Optionally D-linked]

   c. #What ones$_i$ did Antonia talk to?   [Non-D-linked]

   d. *Who the hell$_i$ did Antonia talk to?   [Aggressively non-D-linked]

- Pan (2014) claims that a D-linking feature triggers apparent optional *wh*-movement in Mandarin, giving detailed accounts of contexts like (17)

- Bare *wh*-phrases can be moved to the left periphery, but only if a D-linked reading is coerced, something that apparently cannot be done in (a)

(17) a. *Shénme$_j$, sheí yǐjīng   dú-guò-le   t$_j$?
        what   who   already read-Exp.-Perf
        INTENDED: 'What did who already finish reading?'   MANDARIN

      b. [Nǎ-jǐ-běn   shū]$_j$, nǎ-xiē   tóngxué yǐjīng   dú-guò-le   t$_j$?
        which-several-Cl book   which-Pl student already read-Exp.-Perf
        'Which books did which students already finish reading?' (Pan 2014)

- If D-linking were responsible for Eastern Cham apparent *wh*-movement, then it could be explained by an additional phrasal projection

- In the vein of Pan (2014), D-linking corresponds with a TopicP, presumably hierarchically lower than ForceP, the site of clausal typing in the expanded left periphery (Rizzi 1997)

Figure 3: Potential D-linking analysis (after Pan 2014 on Mandarin)
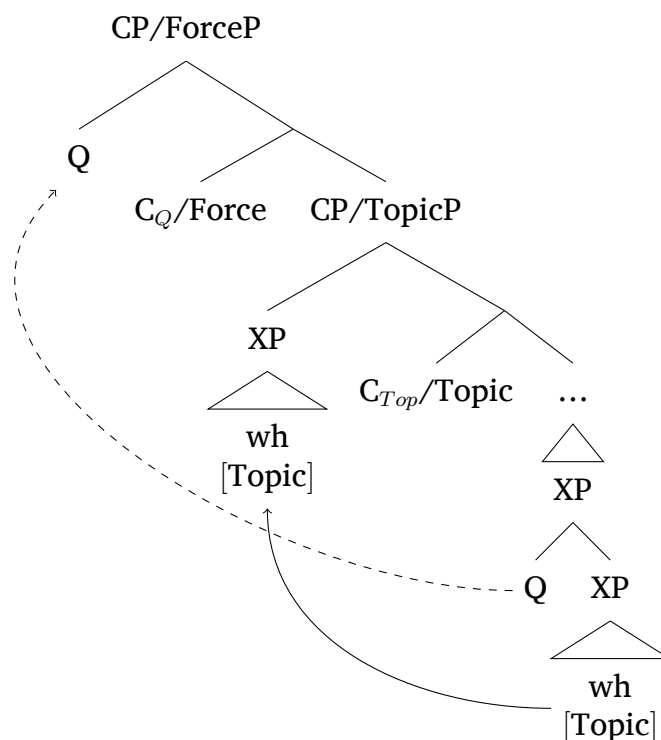
- Eastern Cham moved *wh*-phrases initially appear to have D-linked characteristics

- Moved *wh*-phrases are often translated as DWh's (e.g. 18a)

- They are infelicitous out of the blue (18b). In such a context, a speaker will insert shared information between the speaker and addressee

(18)   a. *Hagait baow hâ daok mbeng?*

   k̥ɛɪt   (po)   hɨ   t̥ɔʔ   ɓăŋ
   what   TOP   2SG   PROG   eat

   'Which one [lit.: what] are you eating?'

   CONTEXT: Out of the blue

   b. *#Hagait baow hâ daok mbeng?*

- Aggressively non-D-linked *wh*-phrases cannot be topicalized (a)

(19) *Hâ daok ngap hanruai hagait?*

   {*}   hɨ   t̥ɔʔ   ŋăʔ   {mɓroj   k̥ɛ}
        2SG   PROG   do   crazy   what
   'What the hell are you doing?'

- However, the *what X/which X* distinction does not line up with AOWM (though cf. Fiengo 2007 for an alternate analysis of this distinction)

- Recall that *what X* is non-D-linked, and *which X* obligatorily D-linked

- *Which X* is quite easily moved, as in (20). Here, the set of fruits is clearly shared

(20)   CONTEXT: 'Everyone must choose a fruit to eat from the ones here.'

     Abaoh kayau halei hâ âng mbeng?

     {pɔh zaw hlɛj} hɨ ɨŋ ɓăŋ {}
     fruit   which 2SG want eat
     'Which fruit do you want to eat?'

- Unexpectedly, *what X* can also easily be moved, as in (21), where a fruit is in the common ground, though not an obvious set of fruits

- This is not predicted if AOWM is related to D-linking; typically an overt partitive is needed to salvage D-linking of *what X* (Wiltschko 1997)

(21)   CONTEXT: 'Look at the fruit I have.'

     Abaoh kayau hagait hâ mbeng nan?

     {pɔh zaw ḳɛɪt} hɨ ɓăŋ {} năn
     fruit   what 2SG eat   that
     'What [kind of] fruit are you eating?'

- Finally, D-linking does not predict the DS-effect

- AOWM is felicitous in (22b). Here, the set of frogs is clearly shared by the speaker and addressee

- However, AOWM is infelicitous in (b′). Presumably, the salience of the set of frogs is the same as in (b) – the information state is identical prior to the utterance, and both utterances make mention of the set of frogs

(22)   a. *Birau mâh, Sơn saong Thuận ngap ing-aong.*

     mjaw mɨh sʌn hɔŋ͡m thɨ̀ən ŋaʔ ʔiŋ ʔɔŋ$_i$
     first   Sơn with Thuận make frog[sp.]
     'First, Sơn and Thuận cooked the ing-aong [frog sp.].'

     b. *Ing-aong thei baow sa-ai cheh hơn?*

     {ʔiŋ ʔɔŋ$_i$ thĕj} (pɔ) saʔaj   sʌh {} hʌn
     ing-aong who COMP older.sibling like   more
     'Whose ing-aong do you[older sibling] like more?'

     b′. *Blaoh nan, sa-ai mbeng ing-aong thei?*

     plɔh năn, {#} saʔaj   ɓăŋ {ʔiŋ ʔɔŋ thĕj$_i$}
     after that   older.sibling eat ing-aong who
     'After that, whose ing-aong did you[older sibling] eat?'

4   The DS-effect

- Apparent *wh*-movement is best explained in terms of the *discourse subordination* (DS) effect, introduced by Baclawski Jr. (2015, 2018)
  (Noting crucial insights from López's (2009) [+anaphor])

- The DS-effect describes a special kind of discourse anaphoric relation: an anaphor whose antecedent is in a prior sentence in the discourse

- *Discourse subordination* (23) is a type of rhetorical relation typified by *Elaboration, Explanation,* and elaborating answers to questions. Non-subordinating relations include sequences of events (*Narration*) and direct answers to questions
  (On discourse subordination: Grosz & Sidner's (1986) 'dominance'; Asher 1993:271 'd-subordination'; Asher & Vieu 2005; on discourse relations: Mann & Thompson 1988; Asher & Lascarides's (2003) Segmented Discourse Representation Theory)

(23)   DISCOURSE SUBORDINATION ($\Downarrow$): Sentence $\alpha \Downarrow$ sentence β, iff the main eventuality described in β is a subsort of the main eventuality described in α
(Asher & Vieu 2005:158)

(24)   a.   Tell me about your evening.

     b.   First, I had dinner at an expensive restaurant.   *Elaboration*(a,b)

     c.   They had a prix fixe special that was quite affordable.   *Explanation*(b,c)

     d.   Then, I went window shopping at a nice mall.   *Narration*(b,d)

- As formalized below (25), an anaphor is licensed if an antecedent's sentence discourse subordinates the anaphor's sentence

(25)   THE DS-EFFECT: For antecedent $x \in \alpha$ and discourse anaphor $y \in \beta$, y is licensed iff $\alpha \Downarrow \beta$ and $y \subseteq x$

- According to Asher & Lascarides's (2003) SDRT, questions can have exactly the same kinds of discourse relations as statements (e.g. *Explanation_q, Narration_q*)[4]

(26)   a.   First, I had dinner at an expensive restaurant.

     b.   Why did you go there?   *Explanation_q*(a,b)

     c.   After that, where did you go?   *Narration_q*(a,c)

- Turning back to Eastern Cham, AOWM displays the DS-effect

- (27a) contains an antecedent *ʔiŋ ʔɔ̥ŋ* 'frog[sp.]'

- There is an anaphor in (b), and (a) $\Downarrow$ (b)

- Even though there is an identical anaphor in (b′), there is no discourse subordinating relation between (a) and (b′)

- Accordingly, AOWM is felicitous in (b), but not (b′)

---

[4]I assume that these relations have the same status with regard to discourse subordination. E.g., *Elaboration* and *Elaboration_q* are both subordinating. According to Asher & Lascarides (2003), questions are naturally subordinating. However, pronominal data strongly implies that the former is true. If interested, please ask.

(27)   a. *Birau mâh, Sơn saong Thuận ngap ing-aong.*

          ɱjaw mɨh sʌn hɔ͡ŋm thừən ŋaʔ ʔiŋ ʔɔŋ$_i$
          first   Sơn with Thuận make frog[sp.]
          'First, Sơn and Thuận cooked the ing-aong [frog sp.].'

     b. *Ing-aong thei baow sa-ai cheh hơn?*

          {ʔiŋ ʔɔŋ$_i$ thĕj} (pɔ) saʔaj   sʌh {} hʌn
          ing-aong who COMP older.sibling like   more
          'Whose ing-aong do you[older sibling] like more?'   *Subordination$_q$(a,b′)*

    b′. *Blaoh nan, sa-ai mbeng ing-aong thei?*

          plɔh năn, {#} saʔaj   ɓăŋ {ʔiŋ ʔɔŋ thĕj$_i$}
          after that   older.sibling eat ing-aong who
          'After that, whose ing-aong did you[older sibling] eat?'   *Narration$_q$(a,b)*

- Based on the above examples, one may hypothesize that the sentence-initial adverbials (e.g. *plɔh năn* 'after that') may be relevant. This is true, in so far as certain adverbials are associated with specific discourse relations. For example, *after that* cues Narration ("cue words", in the sense of Grosz & Sidner 1986)

- But cue words are not necessary to force this distinction. (28b–b′) presents a minimal pair: when elaborating on a previous statement, AOWM is felicitous, as it is a subordinating question (b)

- But when the speaker is asking for a clarification, if they did not hear or understand for example, the *wh*-phrase must be in situ. Accordingly, such corrections are taken to be non-subordinating
(Though it should be noted that (b′) could be an echo question with distinct characteristics)

(28)   a. *Dahlak birau mbeng mâng klam ni.*

          ṭahḷaʔ   m̥jaw ɓăŋ klam ni$_i$
          1SG.FORMAL just   eat night DEM
          A: 'I just ate dinner.' [Lit.: 'I just ate tonight.']

     b. *Hagait, ajut mbeng?*

          {k̥ɛɪt$_i$} zut   ɓăŋ {}
          what   friend eat
          B: 'What [kind of food] did you [friend] eat?'   *Subordination$_q$(a,b)*

    b′. *#Ajut mbeng hagait?*

          {#} zut   ɓăŋ {k̥ɛɪt$_i$}
            friend eat what
          INTENDED: B: 'What did you [friend] eat?'   *Correction$_q$(a,b′)*

- Supporting evidence comes from adverbial *wh*-phrases

- The *wh*-adverb *ʔjawʔ ḳɛɪt* 'why' must be clause-initial (29a). This follows, as 'why' necessarily marks Explanation relations, which are inherently subordinating. Hence, 'why' always displays the DS-effect

- In contrast, *mpʌn* 'how' only sometimes marks Explanation. Its usual position is inside the pre̊dicate, but it too can be moved when an Explanation relation is made clear by the context (b)

(29)   a. *Njep hagait, ayut mânyum aia caiy?*

    {ʔjawʔ ḳɛɪt}   zut   ɲum   ʔjæ   çɛ   {*}
    why   friend drink water tea
    'Why do you[friend] drink tea?'

    b. CONTEXT: *Aia bai mbak ralo.* 'This soup is so salty.'

    Habien kau mbeng hɯ?

    {mpʌn}   kaw   ɓăŋ   {??}   hu
    how   1SG   eat   ROOT
    'How can I eat it?'   *Explanation*$_q$(a,b)

- Finally, throughout this section, AOWM is optional. In other words, the *wh*-phrases can generally felicitously remain in situ
  (cf. Szabolcsi 2006 and others on the general optionality of information structural syntactic movement)

- This optionality disappears in partitive-like constructions where the anaphoric set relation is spelled out explicitly (30a–b)
  (cf. the fact that D-linking is also forced in the presence of an overt partitive in some languages)

(30)   a. *Dalam limâ abaoh kayau pak ni, abaoh hagait ajut âng mbeng?*

    l:am m:ɨ pɔh z:aw păʔ ni$_i$ {pɔh ḳɛɪt$_i$} zut   ɪŋ   ɓăŋ   {??}
    in   5   fruit   here CLF   what friend want eat
    'Of the 5 [kinds of] fruits here, what fruit do you[friend] want to eat?'

    b. *Hu limâ abaoh kayau pak ni. Abaoh hagait ajut âng mbeng?*

    hu   m:ɨ pɔh z:aw păʔ ni$_i$ // {pɔh ḳɛɪt$_i$} zut   ɪŋ   ɓăŋ   {??}
    EXIST 5   fruit   here   what friend want eat
    'There are 5 [kinds of] fruits here. What fruit do you[friend] want to eat?'

- With this in mind, we can update the analysis

- Baclawski Jr. (2018) analyzes the DS-effect with a *discourse-connected* (DC) feature and a DC-probe on C. AOWM, then, is really DC-movement

- Instead of a TopicP, we posit a DC flavor of CP (though a DC-phrasal projection in the expanded left periphery is certainly possible). The hierarchical order of $CP_Q \gg CP_{DC}$ is purely stipulative, as the Q-particle is null, but it follows from the rough similarity of DC-phrases to topics, which are generally lower than Force

Figure 4: Preliminary discourse-connected analysis of optional *wh*-movement
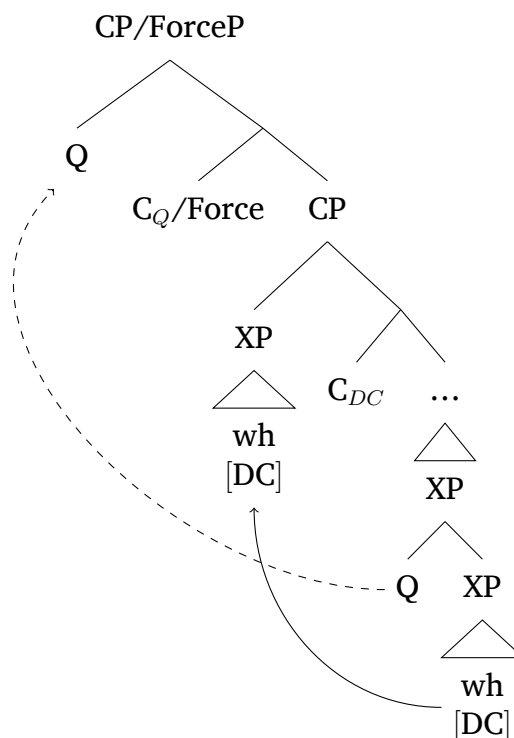
5   Topicalization and locality effects

- As mentioned above, AOWM patterns with (apparent) topicalization. The DS-effect and locality provide additional evidence that they are both in fact instances of DC-movement

- First, topicalization is equally sensitive to island constraints, and topics are optionally marked by the complementizer *p̥o* (31a–b; cf. Section 1)

(31)   a. *Urang nan kau tức gimbeng kayua hâ da-a (nyu) mai mânyum bia?*

> jaŋ năn kaw thɨ̰k   mɓăŋ jɔa   hɨ   ʔa   (ɲu)
> CLF that 1SG be.angry(VN) very   because 2SG invite 3.ANIM
> maj   ɲum biːə
> come drink beer
>
> INTENDED: 'That person, I am angry because you invited to come drink beer.'

   b. *Urang nan kau blei đồ mbeng baow (nyu) ngap?*

> jaŋ năn kau plɛj đȍ   ɓăŋ p̥o   (ɲu)   ŋă?
> CLF that 1SG ɓuy stuff(VN) eat   COMP 3.ANIM make
>
> INTENDED: 'That person, I buy the food they make.'

- Topicalization also shares P-drop fwith AOWM

- In situ indirect objects, whether *wh* or non-*wh* require the preposition *ka* 'to' (32a)

- Moved indirect objects, however, lose *ka* entirely (b)

(32)   a. *Hâ brei ahar ni ka thei? / Hâ brei ahar ni ka anâk sit nan.*

   hɨ   plɛj   han   ni   *(ka)   {thɛj/nɨʔ}   sɪt   năn}
   2SG   g̊ive   cake   this to   who/child   little that

   'Who [will] you give this cake to? / You [will] give this cake to that little child.'

   b. *Thei hâ brei ahar ni? / Anâk sit nan, hâ brei ahar ni.*

   (*ka)   {thɛj/nɨʔ   sɪt   năn}   hɨ   plɛj   han   ni   (*ka)
   to   who/child   little that   2SG   g̊ive   cake   this   to

   'Who [will] you give this cake to? / That little child, you [will] give this cake to.'

5.1   The DS-effect

- Turning back to the pragmatics, apparent topics in the left periphery also display the DS-effect. There is an antecedent and anaphor in (33a) and (b), and (a) ⇓ (b) (compare: 27 above)

- In (b′), there is no subordinating discourse relation. Accordingly, topicalization is only felicitous in (b)

(33)   a. *Birau mâh, Sơn ngap ing-aong.*

   mjaw mɨh   sʌn   ŋaʔ   ʔiŋ ʔɔŋ$_i$
   first   Sơn   make   frog[sp.]

   'First, Sơn cooked the ing-aong [frog sp.].'

   b. *Ing-aong nan, nyu ngap bingi ralo.*

   {ʔiŋ ʔɔŋ năn$_i$}   ɲu   ŋaʔ   {}   pi̥ɲi   lo
   frog[sp.]   that 3SG   make   be.delicious very

   'He cooks that ing-aong [frog sp.] very well.'   *Subordination*(a,b)

   b′. *Urak ni, sa-ai daok mbeng ing-aong nan.*

   ŭni,   #   saʔaj   t̥ɔʔ   ɓăŋ   {ʔiŋ   ʔɔŋ   năn$_i$}
   now   older.sibling   PROG   eat   frog[sp.]   that

   INT: 'Now, he [older sibling] is eating that ing-aong [frog sp.].'
   Narration(a,b′)

- Question-Answer pairs provide additional evidence. Recall that direct answers to questions are non-subordinating (i.e. those that simply answer the question, nothing more or less), while elaborating answers are subordinating (i.e. those that offer more information than asked)

- Topicalization is only felicitous with elaborating (34b), not direct answers (b′)

(34)   a. *Hâ âng mbeng ralaow manuk halei?*

        hɨ   ɨŋ   ɓăŋ l:ɔ   n:uʔ$_i$ lɛj
        2SG want eat   meat chicken Y/N.Q
        A: 'Do you want to eat chicken?'

      b. *Ralaow manuk, kaw mbeng paje.*

        l:ɔ   n:uʔ$_i$ kaw ɓăŋ jɨʔ
        meat chicken 1SG eat   already
        B: 'I already ate chicken.'   *Subordination*(a,b)

      b′. *#Ralaow manuk, kaw âng mbeng.*

        #l:ɔ n:uʔ$_i$ kaw ɨŋ   ɓăŋ
        meat chicken SG   want eat
        INTENDED: B: 'I want to eat chicken.'   *Answer*(a,b′)

- Finally, topicalization is also preferred in partitive-like constructions (35a–b), corresponding with (30) above

(35)   a. *Dalam limâ abaoh kayau pak ni, abaoh ni kau âng mbeng.*

        l:am m:ɨ pɔh z:aw păʔ ni$_i$ {pɔh ni$_i$} kaw ɨŋ   ɓăŋ {??}
        in   5   f̥ruit   here   C̥LF this 1SG want eat
        'Of the 5 [kinds of] fruits here, this fruit, I want to eat.'

      b. *Hu limâ abaoh kayau pak ni. Abaoh ni kau âng mbeng.*

        hu   m:ɨ pɔh z:aw păʔ ni$_i$ // {pɔh ni$_i$} kaw ɨŋ   ɓăŋ {??}
        EXIST 5   f̥ruit   here   C̥LF this 1SG want eat
        'There are 5 [kinds of] fruits here. This fruit, I want to eat.'

- This evidence confirms that apparent topicalization and *wh*-movement have the same discourse requirements (the DS-effect)

5.2   Locality effects

- Locality effects provide structural evidence that topicalization and AOWM involve identical features

- First, when there are multiple topics in the left periphery, their movement paths must be *nested* in the sense of Pesetsky (1982) (36a)

- Crossed paths consistently result in strong ungrammaticality (b)

(36)   a. *Ahar ni anâk kumei sit nan Thuận da-a mai mbeng.*

        han **ni**$_j$ nɨʔ   m:ɛj   thɨt   nan$_i$ thừən ʔa t_i maj ɓăŋ **t**$_j$
        cake this child woman small that Thuận invite   come eat
        'This cake, Thuận invited that little girl to come eat.'
        [XP$_j$...XP$_i$...t_i...t_j]

b. *Anâk kumei sit nan ahar ni Thuận da-a mai mbeng.*

nǐʔ	m:ɛj	thǐt	nan$_i$	**han**	**ni**$_j$	thừən	ʔa	t_i	maj	ɓăŋ	**t**$_j$
child	woman	small	that	cake	this	Thuận	invite		come	eat	

INTENDED: 'This cake, Thuận invited that little girl to come eat.'

*[XP$_i$...XP$_j$...t$_i$...t$_j$]

- Baclawski Jr. & Jenks (2016) and Baclawski Jr. (2016) account for this pattern with the reprojection of CP

- First, CP$_1$ is projected. It agrees with and attracts the most local DP, DP$_i$, which is then frozen in Spec-CP$_1$ (assuming criterial freezing)

- Then, CP$_2$ is projected, at which point the next most local DP can be moved

Figure 5

(a) Derivation of CP$_1$ (b) Derivation of CP$_2$
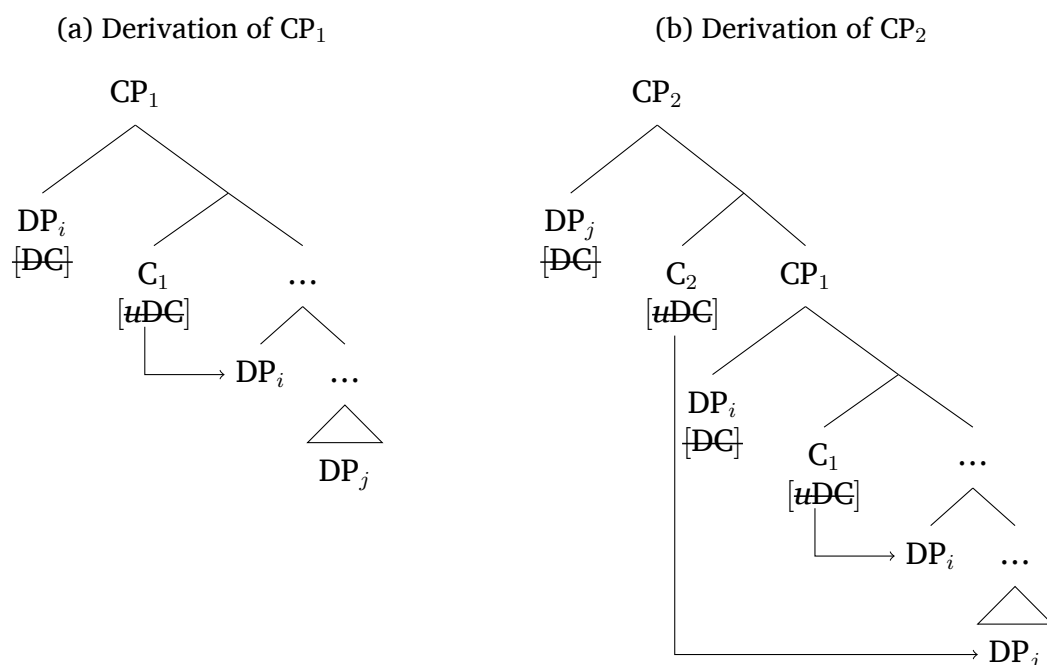
- The ungrammatical order cannot obtain, as it would require a C-probe to agree with a non-local DP at some point in the derivation

- According to Friedman et al. (2009), when such locality effects result in strong ungrammaticality, there must be featural inclusion between the two phrases

- In this case, both topics bear some feature like [DC] (along with [D], etc.)

- The same locality effect can be seen with multiple AOWM, discussed at length in Baclawski Jr. & Jenks (2016) and Baclawski Jr. (2016)

(37) a. *Hagait, thei blei?*

k̥ɛt$_j$	thɛj$_i$	t_i	plɛj	t_j
what	who		ɓuy	

'Who bought what?'

[XP$_j$...XP$_i$...t$_i$...t$_j$]

b. *Thei, hagait blei?*

thɛj$_i$ ḳɛt$_j$ t_i plɛj t_j
who   what   b̥uy
INTENDED: 'Who bought what?'
*[XP$_i$...XP$_j$...t_i...t_j]

- Again, the two *wh*-phrases must include the same features. One might posit that these features are [DC], [D], and [wh]

- However, we also find locality effects with mixed topicalization and AOWM:[5]

(38)   a. *Ahar ni anâk kumei sit halei Thuận da-a maj mbeng?*

han **ni**$_j$ nĭʔ m:ɛj thĭt hlɛj$_i$ thṳən ʔa $\underline{t_i}$ maj ɓăŋ **t**$_j$
cake this   child woman small which Thuận invite   come eat
'Which little girl did Thuận invite to come eat this cake?'
[XP$_j$...XP$_i$...t_i...t_j]

b. *Anâk kumei sit nan ahar halei Thuận da-a maj mbeng?*

nĭʔ m:ɛj   thĭt nan$_i$ **han** **hlɛj**$_j$ thṳən ʔa $\underline{t_i}$ maj ɓăŋ **t**$_j$
child woman small that   cake   which   Thuận invite   come eat
INTENDED: 'Which cake did Thuận invite that little girl to come eat?'
*[XP$_i$...XP$_j$...t_i...t_j]

- We have to say, then, that at some level topics and moved *wh*-phrases include the same features. If the features differed, Friedman et al. (2009) would predict some difference in acceptability

- This proves that AOWM is truly parallel to topicalization and that both can be considered subtypes of one kind of movement, which we call DC-movement

- However, it raises some questions: why does the [wh] feature not figure into the feature incluson calculation, and how can a *wh*-phrase be marked as discourse-connected?
(cf. Cable (2008) and others on the debate on wheter *wh*-phrases can be topical)

6   Inventory forms

- This final section provides initial evidence that there is a DC-particle within the DP that bears the [DC] feature, with evidence from inventory forms

- Inventory forms involve an NP preceding a numeral in languages where they typically follow them (Simpson 2005)

- In many languages, inventory forms are at least marginal in list contexts
(e.g. recipes, shopping lists)

- In Indonesian, the demonstrative remains DP-final in inventory forms (39b)

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[5]Note that there is an additional constraint such that TOPIC ≫ FOCUS.

(39)   a. saya mau   membeli [beras dua kilo$_{DP}$]
          I   want buy   rice   2   kilo
          'I want to buy two kilos of rice.' (Simpson 2005:(21–22))   INDONESIAN

       b. ... mengerjakan [lobang sa   buah itu$_{DP}$] sampai lima enam hari
          ... make   hole   one   CLF   that   took   5   6   day
          'Indeed it took 5 or 6 days just to dig that one hole.'

       c. Sugar, 3 pounds. Bread, 2 loaves. Wine, 4 bottles.

- Inventory forms are quite common in a range of contexts in Eastern Cham, where the noun moves ahead of a numeral and a classifier or measure word (40)

- This is not an instance of rightward extraposition of the numeral phrase, as indicated by the clause-final iterative marker

(40) *Kau blei tajuh ki pa-aok vek./Kau blei pa-aok tajuh ki vek.*

      kaw plɛj {ʔɔʔ}   çuh kiʔ {} vɪ̌ʔ
      1SG buy   mango   7   kg   ITER
      'I bought seven more kilograms of mangoes.'

- Inventory forms involve movement of some constituent containing the noun to a position high in the DP (feel free to ask which)

- This fact is justified by quantifiers, typically the leftmost element in a DP (cf. Brunelle & Phú, in press; Nguyen 2004 on nearly identical facts in Vietnamese)

- However, in inventory forms, the noun can appear to the left of them (41b)

(41)   a. *Drei da-a mai abih salipan urang anâk saih.*

          t͡ʃɛ̥j ʔa   maj   [{pih} thampan jaŋ {*} nɪ̌ʔ sɛh]
          self invite come   all   9   CLF   student
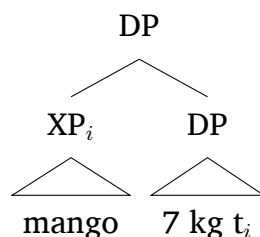   'I[myself] invited all nine of the students to come.'

       b. *Drei da-a mai anâk saih, abih salipan urang.*

          t͡ʃɛ̥j ʔa   maj   [nɪ̌ʔ sɛh$_i$ pih thampan jaŋ t_i]
          self invite come   student   all 9   CLF t
          'I[myself] invited all nine of the students to come.'

- Thus, the general structure of inventory forms is posited below

Figure 6: Preliminary inventory form schematic

```
                        DP
                       /  \
                   XP_i    DP
                  /  \    /  \
              mango   7 kg t_i
```

- Inventory forms are relevant here because they also display the DS-effect

- To illustrate, inventory forms are possible in elaborating answers to questions like (42b), but not direct answers like (b′)

- Elaborating answers are typical examples of discourse subordination, but direct answers are typically non-subordinating[6]

(42)   a. *Hâ nao darak hu blei tamâkai lac?*
       A: 'Did you go to the market and buy watermelons?'

       b. *Kau blei tamâkai sa abaoh.*

kaw	plɛj	tha	pɔh	tʌmkaj	/	kaw	plɛj	tʌmkaj	tha	pɔh
1SG	b̥uy	1	C̊LF	watermelon		1SG	b̥uy	watermelon	1	C̊LF

       B: 'I bought one watermelon.'   *Subordination*(a,b)

       a′. *Hâ blei hadom abaoh tamâkai?* A: 'How many watermelons did you buy?'

       b′. *Kau blei sa abaoh tamâkai.*

| kaw	plɛj	tha	pɔh	tʌmkaj	/	#kaw	plɛj	tʌmkaj	tha	pɔh
1SG	b̥uy	1	C̊LF	watermelon		1SG	b̥uy	watermelon	1	C̊LF

   B: 'I bought one watermelon.'   *Answer*(a′,b′)

- What's different about inventory forms is that no movement to Spec-CP is needed: only DP-internal movement

- I would like to hypothesize that inventory forms instantiate a *DC-particle* position in the DP

  – The DC-particle is a spell-out of the discourse-connected antecedent

  – In topicalization and AOWM, this particle is a null *pro*

  – In all cases, it is the DC-particle that bears the [DC] feature

Figure 7: The DC-position
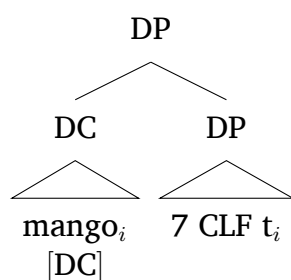
(a) Inventory forms   (b) Topic/Moved *wh*-phrase
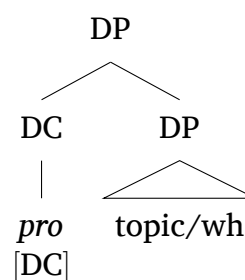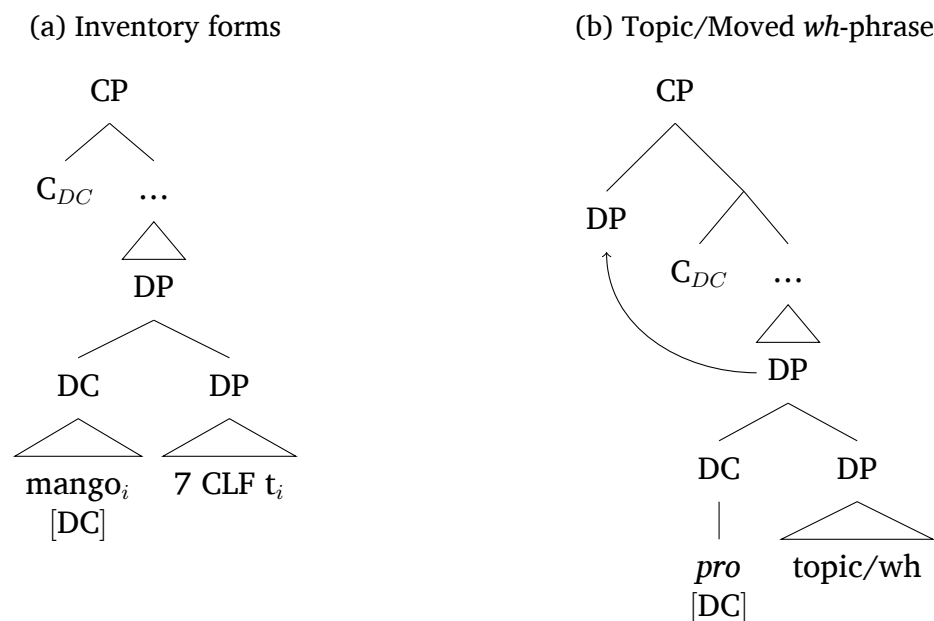

- When it comes to movement, we see the following pattern:

  – If the DC-particle is overt (inventory forms), it remains in situ, presumably agreeing with C_{DC} and possibly covertly moving to Spec-CP

[6]Except if the question itself is a subordinating question. In this case, the answer inherits the subordinating relation from the question. As predicted, inventory forms are felicitous in such cases.

– If it is null, it pied-pipes the whole DP, resulting in DC-movement (topicalization, AOWM)[7]

Figure 8: The DC-position and movement

(a) Inventory forms

CP
├ C$_{DC}$
└ ...
    └ DP
        ├ DC
        │   └ mango$_i$
        │   [DC]
        └ DP
            └ 7 CLF t$_i$

(b) Topic/Moved *wh*-phrase

CP
├ DP
└ C$_{DC}$ ...
        └ DP
            ├ DC
            │   └ *pro*
            │   [DC]
            └ DP
                └ topic/wh

• If this hypothesis is on the right path, it naturally explains the questions posed earlier regarding *wh*-phrases

• Observe that the numeral element of the inventory from can easily be a *wh*-phrase (43a)

• However, it is quite impossible for a *wh*-phrase to exist in the DC position (b)

(43)   a. *Hâ blei abaoh pa-aok hadom ki?*

     hɨ   plɛj   [pɔh ʔɔʔ$_i$ t̥om   kiʔ e_i]
     2SG buy   mango   how.many kg   e
     'How many kilograms of mango did you buy?'

   b. **Hâ blei abaoh kayau halei sa ki?*

     hɨ   plɛj   [pɔh zaw hlɛj   tha   kiʔ]
     2SG buy   fruit   which how.many kg
     INTENDED: 'Which fruit did you buy one kilogram of?'

• This implies that *wh*-phrases are incapable of being DC-particles. In other words, they can never be assigned a [DC] feature themselves, obviating the issue of the interaction between *wh*-phrases and topicality

• When they do undergo DC-movement, they are instead being pied-piped

• This allows us to explain the featural inclusion puzzle from Section 5: topics and moved *wh*-phrases share features at the level of the DC-particle (i.e. [DC]), but the [wh]-feature does not percolate up to the level of the highest DP

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[7]Note that, under Cable's (2010) logic for the Q-particle, such pied piping would imply that the DP is in fact a DCP (cf. the DP vs. QP distinction), though I have not committed to that here.

Figure 9: Final analysis of AOWM as DC-movement
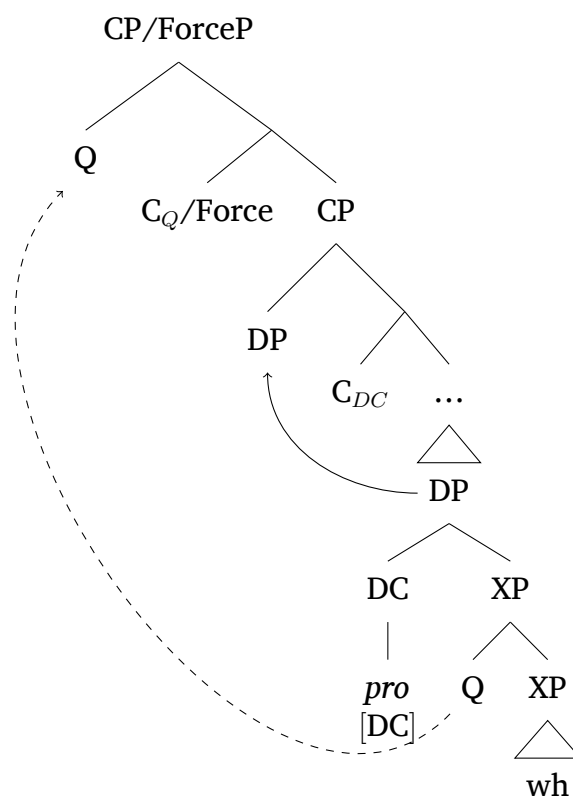
7   Summary

- Eastern Cham optional *wh*-movement is only apparent. It is a *wh*-in situ language with covert Q-movement (cf. Cable's (2010) Q-adjunction)

- Apparent optional *wh*-movement is best explained in terms of discourse structure: it is a type of *discourse-connected* (DC) movement

- DC-movement is driven by DC-particles:

    - When overt, they remain in situ (inventory forms)

    - When null, they pied-pipe the whole DP to Spec-CP (topicalization, AOWM)

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