

Analyticity in the nominal domain: classifiers and the structure of DPs in languages of Southeast Asia

Focus of interest: variation in DP-internal syntax in Southeast Asian languages:

- many language families (Tibeto-Burman, Tai, Austronesian, Austroasiatic), different typological properties

- random and unconstrained ordering of elements?

- often not in line with general headedness/direction of selection:

e.g. Thai/Khmer head-initial SVO but seem head-final in DPs (due the final occurrence of the heads Num, CL, and Dem); head-final Burmese seems to have a head-initial Dem/D;

(1)	Thai, Khmer:	N	Adj	RC	Num	CL	Dem
(2)	Burmese:	Dem	RC	N	Adj	Num	CL
(3)	Hmong, Malay, Vietnamese:	Num	CL	N	Adj	RC	Dem

- What is responsible for the diversity, and is there a common structural base? How could such a base be identified?

Discussed based on: Simpson, Andrew. 2005. Classifiers and DP Structure in Southeast Asia. In *The Oxford Handbook of Comparative Syntax* 806-838

Classifiers as important clues to the internal structure of DPs

(1) The status of classifiers

- two different views:

(a) numbers and classifiers instantiate distinct functional head positions, Num and CL (e.g. Pan 1990, Tang 1990):

(b) numbers and classifiers comprise a single functional head CL/Num/Q (e.g. Kawashima 1993, Muromatsu 1998)

Gil (1994), support for position (b):

(i) numbers and classifiers commonly occur together as a single *uninterrupted* sequence.

(ii) numbers and classifiers in many languages pattern phonologically as a single unit
the classifier is affixed to the numeral

(iii) in some languages, the number+classifier sequence can be separated as a unit from the rest of an NP (Num-CL floating)

- (4) nay-ka **chayk-ul** ecey **sey-kwon** ilk-ess-ta Korean
 I-NOM book-ACC yesterday 4-CL read-PAST
 'Yesterday I read four books.'
- (5) saouq-kou canaw mane-ka thoun-ouq we hke pa te.
 book-ACC I yesterday 3-CL buy DIST POL REAL
 'I bought three books yesterday.'

Support for position (a):

- (i) two distinct morphemes two distinct heads; classifiers in SEA languages are phonologically unreduced independent functional words not inflectional affixes
- (ii) classifiers are *functional* elements with the primary semantic function of *individuating* NPs (Muromatsu (1998), Cheng & Sybesma (1999), Li (1998a/b/1999) and others); the individuation function of classifiers is distinct from number specification provided by numerals

Effects of (ii): Vietnamese, Hmong, Nung: classifiers occur alone without any numeral, simply functioning to individuate the NP:

- (6) **tus** tsov tshaib tshaib plab
 CL tiger hungry hungry stomach
 'The tiger is/was very hungry.' (Hmong, Jaisser 1987)

Numerals occurs without any classifier when numeral specification is vague and individuation is not (necessarily) implied or focused.

- (a) **Nung** and **Burmese**: classifiers optional with numbers which are multiples of ten
 (b) **Jingpo** classifiers often omitted with numbers over ten
 (c) '**Thai** classifiers do not occur with large numbers like 1000 unless individuation is implied' (Aikhenvald (2000), p.100)
 (d) **Malay** classifiers omitted when approximate and vague numeral reference is made, no specific individuation Hopper (1986):
- (7) adalah **dua tiga pondok** kechil-kechil bersama-sama dekat rumah Temenggong
 be **2 3 hut** small small together near house Temenggong
 'There were **two or three small huts** close together near Temenggong's house.'

CL and Num perform distinct formal functions separate syntactic heads

Also: **Nung** (Tai): number 'one' not adjacent to classifier: CL N Num_[one] :

- (8) an **ahn tahng nuhng** ma
 take **CL chair one** come
 'Bring a chair.' (Saul & Wilson 1964)

Ejagham (Benue-Congo): all numbers non-adjacent to CL:

- (9) a-mege ' i-cokud a-bae
 NC-CL GEN NC-orange seed NC-two
 'two orange seeds' Watters (1981)

distinct functional head positions

Languages where (certain) adjectives occur between Num and CL Num and CL not a single functional head:

- (10) a. yi xiao ben shu b. liu da jian xingli
 one small CL book 6 big CL luggage
 'one small book' 'six big pieces of luggage' T'ung & Pollard (1982)

(2) Headedness and directionality in the DP.

If Num and CL are separate heads important consequences for analysis of DP-structure

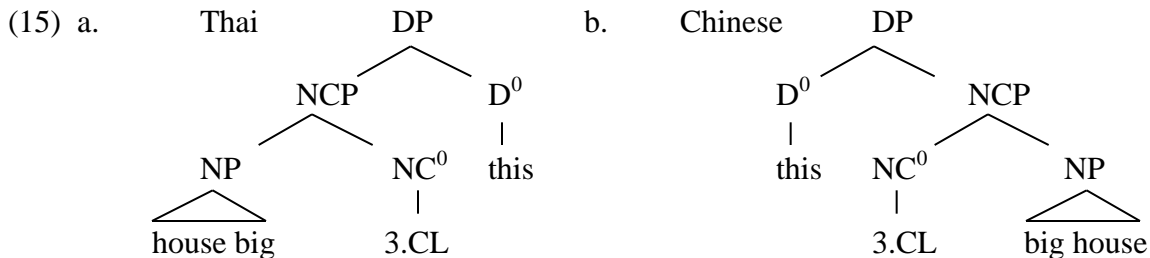
- (11) Thai: [DP N Adj Num CL Dem]

- (12) Chinese: [DP Dem Num CL Adj N]

- (13) baan yai saam lang nii Thai
 house big 3 CL this
 'these three big houses'

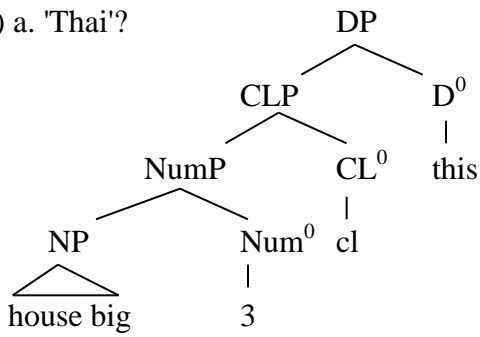
- (14) zhe san suo da fangzi Chinese
 this 3 CL big house
 'these three big houses'

If Num and CL a *single* head "NC⁰" (9) and (10) mirror images of each other
 (10) base-generated head-initial DP; (9) base-generated fully head-final DP

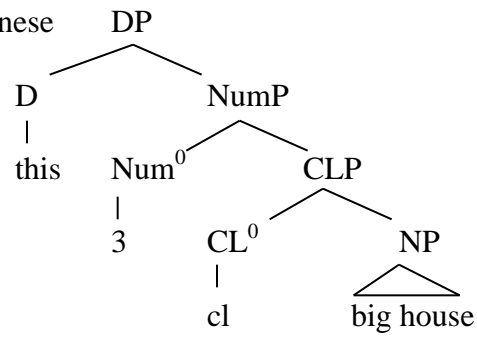


BUT if Num and CL different heads (11) and (12) cannot *both* be base-generated
 (12) Num higher than CL; (11) CL higher than Num

(16) a. 'Thai'?



b. Chinese



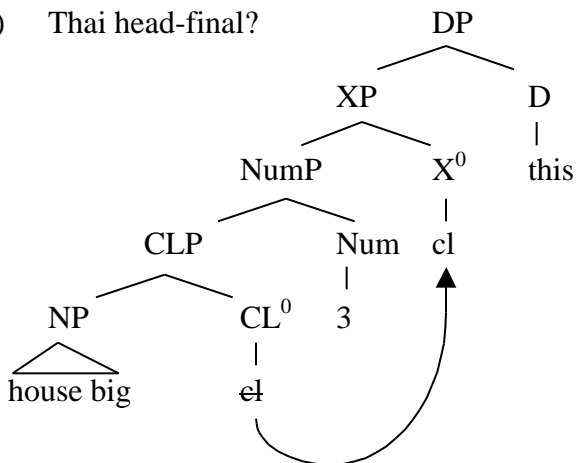
- common assumption: Num higher than CL: nouns first individuated by a classifier, then quantified over by a numeral/other quantifier

Thai order in (11) not simply base-generated; in a “pure” head-final DP one expects the ordering: [N CL Num Dem] with Num selecting CLP to its left. must be some movement-distortion in (11)

- 3 possibilities:

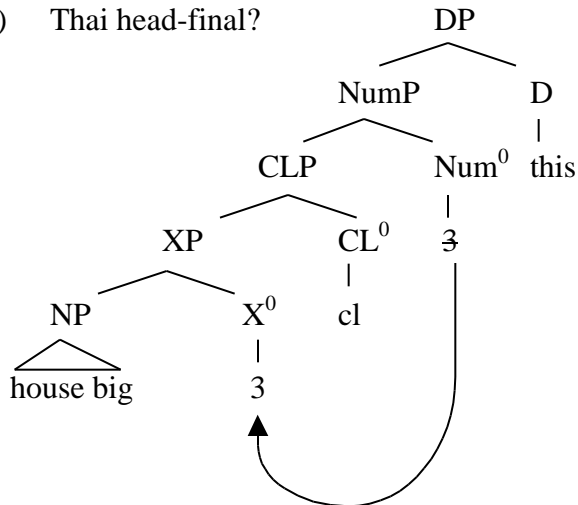
(i) the Thai DP is head-final (though Thai is elsewhere head-initial) [N Num CL] from movement of CL to a higher rightward head position above Num, i.e. [N t_i Num CL_i] BUT: should violate Head Movement Constraint

(17) Thai head-final?



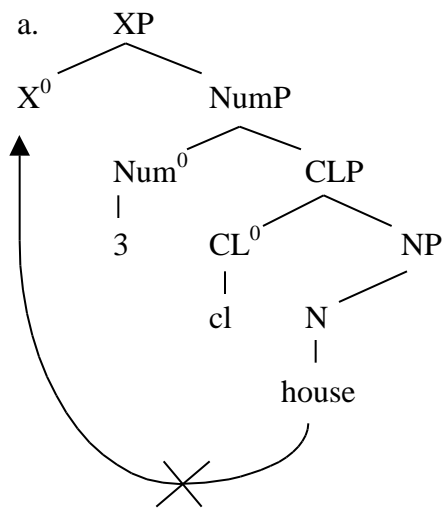
(ii) [N Num CL] from lowering of Num to a position below CL, i.e. [N Num_i CL t_i] BUT: barred due to lowering

(18) Thai head-final?

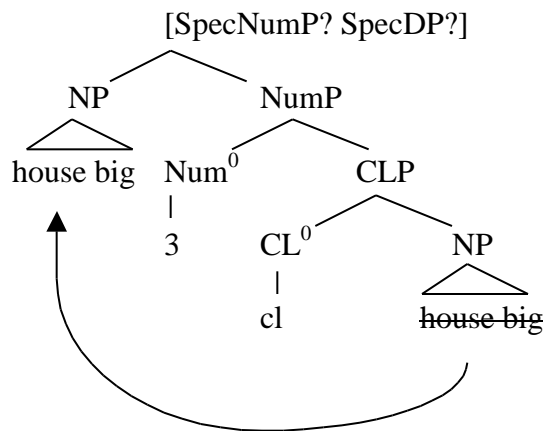


(iii) assume Num and CL do not change positions the Thai DP is head-initial and N moves leftwards from position to the right of CL; as N-raising should be blocked by the HMC + because adjectives and relative clauses intervene between N and Num⁰ CL⁰ as in (1), assume movement of NP:

(19) a.

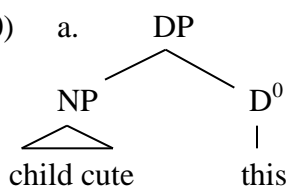


b.

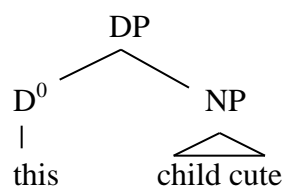


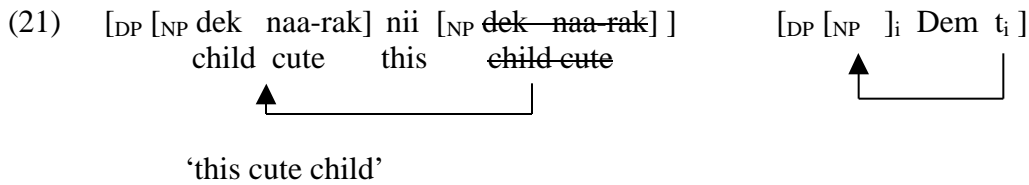
• same conclusion of NP-movement also forced by Dem position: if Thai head-initial + only one direction of selection per language DP-final Dem either in D⁰ and NP complement raised leftwards, or DEM in leftward SpecDP and NP raised leftwards:

(20) a.



b.

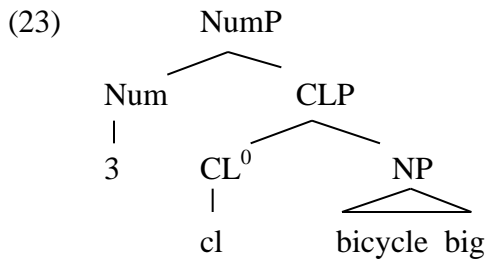




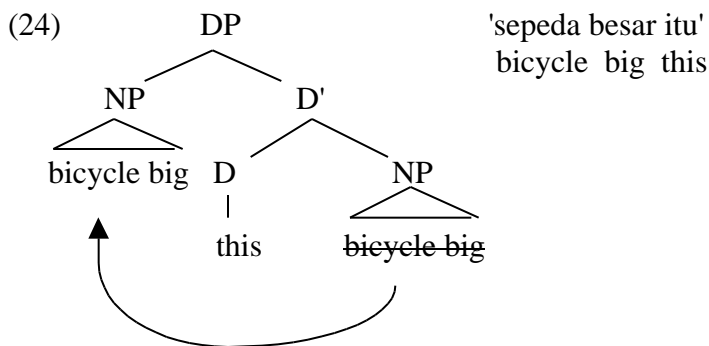
Other head-initial SEA languages with DP-final Dems: **Hmong, Vietnamese, Indonesian.**
 need DP-internal NP raising with these languages too

PLUS NOTE: these languages are otherwise regularly head-initial *inside* the DP (Num>CL>NP):

(22) tiga buah sepeda besar (Indonesian)
 3 CL bicycle big
 'three big bicycles'



DP-final Dem is sole exception to head-initial pattern assume due NP movement



Because the conclusion of [DP [NP]_i Dem t_i] is well-justified for Hmong/Vietnamese/Indonesian, adds extra plausibility to the [DP [NP]_i Dem t_i] analysis of Thai.

• ALSO NOTE: **Nung** (a Tai language related to Thai) has parallel ordering of elements in the DP (and elsewhere) as standard Thai, with the exception of NUM and CL, which *precede* the N:
 Nung shows suggested underlying order of Thai:

(25) Nung (northern Tai): **Num CL N Adj**
 Thai (southern Tai): N Adj **Num CL**

To allow for both Thai and Nung need some kind of movement. Most natural to assume NP-movement occurs in standard Thai.

- FURTHER SUPPORT: DP-internal NP-movement occurs in other languages: **Indonesian** neutral order [Num CL NP Dem] sometimes occurs as $[[NP]_k \text{ Num CL } t_k \text{ Dem}]$:

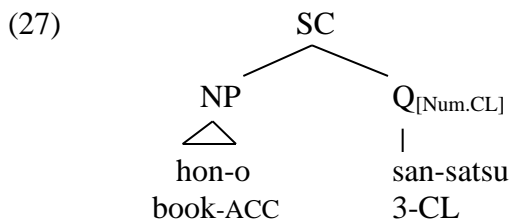
(26) maka adapun mengerjakan [**lobang sa buah itu**] sampai lima enam hari
 and indeed make **hole one CL that** took 5 6 day
 ‘Indeed it took 5 or 6 days just to dig that one hole.’ (Hopper 1986, p317)

Similar alternations in **Vietnamese**: neutral order [Num CL NP] $[[NP]_k \text{ Num CL } t_k]$ in poetry/literature and ‘inventory forms’ (Nguyen 1997).

- **CONCLUSION**: Thai is regularly head-initial in DP. Surface forms result from NP-movement.

An alternative possibility to NP-movement: NUM-CL as a predicate to NP

Muromatsu (1998) Num and CL are not functional heads selecting NP, but make up small clause *predicates*, predicating onto NP subjects within DP.



[NP [Num CL]] structures can be base-generated without movement.

- support for the ‘predicate’ theory: numerals and certain quantifiers can occur as predicates:

(28) a. the apostles were twelve in number
 b. they are many (in number)

(29) mie-guo-zhe wu-shi Classical Chinese
 destroy-country-NZL 50
 ‘His extinctions of countries were fifty.’ (Meng 3B/9)

However, only *weak* not strong quantifiers can occur in subject-predicate structures:

(30) *the men are all/each

But in Thai, Num allows both weak *and strong* quantifiers:

(31) dek soong khon / laai khon / thuk khon
 child 2 CL several CL every CL
 ‘two children/several children/all the children’

as strong quantifiers can occur cannot be a subject predicate structure
Such strong quantifiers are impossible as predicates in Thai:

- (32) *dek-law-nii thuk-(khon)
child-group-this every-CL
intended: ‘*These children are all/every.’

assume DP-internal NP-movement analysis instead

(3) What causes DP-internal NP-movement?

• Greenberg (1975), Gil (1994) and others: sequences of N/NP > numeral/classifiers often occur in **written list** or **‘inventory’** forms + when people are involved in situations such as **buying commodities** in a store and **placing orders for food** in a restaurant.

Generalization: if both [Num CL NP] and [NP Num CL] are possible in a language (e.g. in Indonesian, Vietnamese) [NP Num CL] occurs preferred in lists or buying/food-ordering situations and often only occurs in such situations.

NB: [NP Num CL] also occurs as a conventional way of itemizing elements in written shopping lists in English which otherwise do not permit such orders, as shown in (34):

- (33) saya mau membeli beras dua kilo
I want buy rice 2 kilo
‘I want to buy two kilos of rice.’

- (34) Sugar, 3 pounds
Bread, 2 loaves
Wine, 4 bottles

[NP Num CL] orders are very widespread, and occur throughout the major classifier languages in Asia, either as the ONLY possible ordering (Thai, Khmer, Burmese), or as alternatives to [Num CL NP] orders in certain situations (Indonesian, Vietnamese, Chinese, Japanese, Korean).

Why?

• Possible functional answer: placing NP before Num/CL is a natural/useful way of ordering this information in certain types of *presentational* situations information about the identity of the NP is presented before information about its cardinality.

Such ordering is practical/useful at certain times, e.g. a storekeeper receiving information about what goods a customer wishes to purchase: identifying the type of goods before the quantity (i.e. ordering NP before NUM/CL) presents the information in a sequence which mirrors the actions of the storekeeper, who first needs to identify and locate the required goods and then select a certain quantity of them. Presentation of the information in this way is helpful and efficient/logical.

placement of the NP in DP-initial position is like **presentational focus** or **topicalisation**

- in both CP and DP, newly presented nominal elements may be fronted so that they precede additional information added on about them.

Classical Chinese: had both [Num NP] and [NP Num CL] forms. [NP NUM CL] occurs in initial presentation of the new referent in (23), [Num NP] without NP-fronting follows when the referent has been established as old, identified information:

- (35) you da jiang er ren. Er jiang...
be big general 2 CL 2 general..
'There were two great generals. The two generals...' (Schafer (1948, p.413)

- Thai, Khmer and Burmese no alternative to [NP Num CL] order suggest that "presentational focus" has become grammaticalized as obligatory (similar to the grammaticalization of XP-fronting in German main clauses)

NEXT QUESTION: So, did modern [NP Num CL] develop from earlier [[Num CL NP] through NP-fronting?

ANSWER: No, not as far as we know.

FOLLOW-ON QUESTION: So how can we explain the "sudden development" of [NP Num CL]?

A possible explanation lies in considering a different theory of [NP Num CL], the 'adverb' theory.

The adverb theory of NP Num CL

Num CL are *not* inside the DP but are adverbs base-generated in distinct adjunct-like positions. Fukushima (1991), Ishii (2000) Greenberg (1975). Due:

(a) Num CL can occur separated from NP in other VP-/S-final adverbial positions:

- (36) mii nisit maa haa khun soong khon Thai
be student come find you two CL
'Two students came to look for you.'

- (37) xi sang di yu Qin qi-bai-li Chinese
west lose land to Qin 700 li
'On the west we lost 700 li's land to the Qin' (Meng 1A/5, in Pulleyblank 1995)

(b) Before the formal establishment of the functional category "Classifier/CL", "classifiers" would have been the heads of independent NPs occurring as adverbial type elements modified by numerals:

- (38) [NP ren] [NP shi-you-wu ren]
person 10-and-5 person
'15 people


(c) NUM and CL in Japanese can be co-ordinated with adverbs:

(39) Shoonin-ga kinoo [san-nin katsu tashika-ni] sono jiko-o mokugekishi-ta
 witness-NOM yesterday **3-CL and certainly** that accident-ACC witness-PAST
 ‘Three witnesses certainly witnessed that accident yesterday.’ (Fukushima 1991)

(d) Instances of ‘floated’ NUM-CL pairs which could *not* have been base-generated with the associated preceding NP must be base-generated independently:

(40) a. Taroo-ga pisutoru-o ippatsu kinoo utta
 Taroo-NOM pistol-ACC one-CL(blast) yesterday shot
 ‘Yesterday Taroo shot off one blast of his pistol.’ (Fukushima 1991)
 b. *Taroo-ga ippatsu-no-pisutoru kinoo utta
 Taroo-NOM one-CL-GEN-pistol-ACC yesterday shot

• **Proposal:** early sequences of NP and numerically-quantified adverbial NP were re-interpreted as parts of a single DP. When this happens, the NP>Num CL ordering results in an instantaneous analysis of movement, as this is the only analysis consistent with speaker’s head-initial parameter of selection. The natural linear ordering of NP > Num CL present in NP + adverb structures is re-interpreted as DP-internal presentational focus movement. Movement arises instantaneously from structural re-analysis.

(41) early: [NP NP] [NP Num N] is reanalysed as: [[NP NP] Num CL ~~NP~~]


NEXT PROBLEM: It now needs to be proved that re-analysis of NP + adverb Num-CL really has taken place and that NP Num-CL is not *still* NP followed by ADV, as argued in Fukushima and Greenberg.

EVIDENCE: (a) in Thai & Khmer, Dem follows Num and CL Num and CL are DP-internal:

(42) [DP dek saam khon nan] keng maak Thai
 child 3 CL **Dem** clever very
 ‘Those three children are very smart.’

(b) Burmese case-markers & postpositions follow Num & CL Num & CL are DP-internal, not adverbial:

(43) canaw [DPsaouq hna ouq]-ko weh hta teh
 I book 2 CL ACC buy ASP REALIS
 ‘I bought two books.’

(44) U-Win-Win [PP [DP meitswee thoun yauq] ne] Yangoun thwaa teh
 U-Win-Win friend 3 CL with Rangoon go REALIS
 ‘U-Win-Win went to Rangoon with three friends.’

(c) Aspects of the interpretation of [NP Num CL] sequences Num & CL are DP-internal. Example (45) Num and CL in S-final adverbial position partitive interpretation:

(45) **dek** sia chiwit laew **saam khon** Thai
 child lose life ASP 3 CL
 ‘Three of the children died already.’

(46) NP NUM CL sequence no partitive interpretation possible

(46) **dek saam khon** sia chiwit laew Thai
 child 3 CL lose life ASP
 ‘The three children died already.’

Partitive readings assumed possible when numerical quantification is applied to a definite DP from a DP-external position (47a); partitive readings are blocked when numerals occur under the scope of D^0 inside the DP, (47b):

(47) a. [_{QP} Three of [_{DP} the children]].
 b. [_{DP} The three children]

Thai (45): Num & CL DP-external partitive reading

Thai (46): Num & CL adjacent to NP no partitive reading possible
 conclude Num & CL in [NP Num CL] are DP-internal.

Similar evidence in Burmese: (48) [Dem NP Num CL] only a non-partitive interpretation Num and CL are DP-internal under the scope of the D^0 :

(48) canaw eh-dii saouq hna ouq weh hta teh
 I Dem book 2 CL buy ASP REALIS
 ‘I bought those two books/NOT:*I bought two of those books.’

Cross-linguistically, not all [NP Num CL] forms pattern in the same way. [Dem NP Num CL] in Japanese (49) similar to Burmese (48) may have the opposite partitive interpretation to Burmese:

(49) Jiro-wa sono hon-o san satsu katta (Muromatsu 1998)
 Jiro-TOP DEM book ACC 3 CL bought
 ‘Jiro bought three of those books./NOT:*Jiro bought those three books.’

Japanese Num CL may not be inside DP and might be adverbial as argued in Fukushima (1991) and Ishii (2000). Burmese may also still allow for such an adverbial possibility. Case-markers often follow Num CL in Burmese, but can also occur between NP and Num CL and (50) same partitive-like interpretation as Japanese (49) still possible that Num CL in Burmese occurs outside of the DP:

(50) U-Win-Win eh-dii saouq-ko hna ouq weh teh
 U-Win-Win Dem book ACC 2 CL buy REALIS
 ‘U-Win-Win bought two of those books.’

The historical development of Khmer [NP NUM CL]

(51)	<u>Old Khmer</u>	<u>Middle Khmer</u>	<u>Modern Khmer</u>
a.	N Num		
b.	N CL Num	N CL Num	
c.		N Num CL	N Num CL

Possible explanation of the development:

(a) old Khmer: early ‘classifiers’ were really just nouns

N CL Num = sequences of two NPs: [NP N₁] [NP N₂ Num] (noting that [NP N Num] exists independently in Old Khmer - (51a))

(b) middle and modern Khmer: grammaticalisation of N₂ as the new category classifier

two-NP structure is re-analysed as one NP/DP, Num and ‘CL’ internal to DP

causes important change in CL/Num word order, reversing linear order of CL and Num

pattern (c) replaces pattern (b):

(52) [NP N₁] [NP N₂ Num] [N CL Num] triggering change to [N Num CL]

when grammaticalisation and re-analysis occurred forced Num and CL as functional heads within DP to be re-aligned in a *head-initial* order following the general direction of headedness in Khmer

- if correct shows strong pressure for languages to adopt consistent head-initial orders
- grammaticalisation and reanalysis not random; there are clear principles of headedness governing the organisation of DPs.

CONCLUSIONS:

- DP-internal NP-movement as a significant cause of word order variation
- NP-movement is the result of reanalysis of an earlier adverbial form
- adverbial Num-CL forms may still exist in certain languages
- the switch in CL/Num order in middle Khmer is understandable once one adopts such an account of the development of classifiers in DPs

SECTION 2: DP-internal X⁰-movement and grammaticalization

How X⁰-movement and grammaticalisation may be responsible for further surface variation in DPs in SEA languages.

(4) Bare classifiers and definiteness

- an interesting pattern found in various SEA languages – bare classifier-NP sequences with no Num:

- (53) Nguoi chong rat tot Vietnamese
CL husband very good
 'The husband was very good.'
- (54) Tus tsov tshaib tshaib plab Hmong
CL tiger hungry hungry stomach
 'The tiger was very hungry.'
- (55) leo tu me da tu po va.. Nung
 then CL wife scold CL husband say
 'Then the wife scolded the husband and said...'

- an important general observation: bare classifier-NP/CL-NP sequences are commonly associated with **definiteness effects**; when a DP has a definite interpretation, a bare classifier is generally found to occur with it in these languages, similar to Cantonese

- Cheng & Sybesma (1999): classifiers in Cantonese are definite elements like determiners in other languages; classifiers however occur in CL⁰ so CL-NP with definite interpretations are simply CLPs and do not project any higher functional structure such as NumP or DP

- a different approach: bare classifier structures are regular DPs in which CL raises up to D⁰

- to be accounted for: although CL-NP may be definite, when Num occurs can only be indefinite:

- (56) toi mua tam cai ghe (Vietnamese)
 I buy 8 CL chair
 'I bought eight chairs.'

unexpected if classifiers are inherently definite; expect (56) = either 'the eight chairs' or 'eight of the chairs'

need to capture the fact that classifiers are definite at some times but not at others

- also: when indefinite [Num CL NP] is combined with a demonstrative definite interpretation:

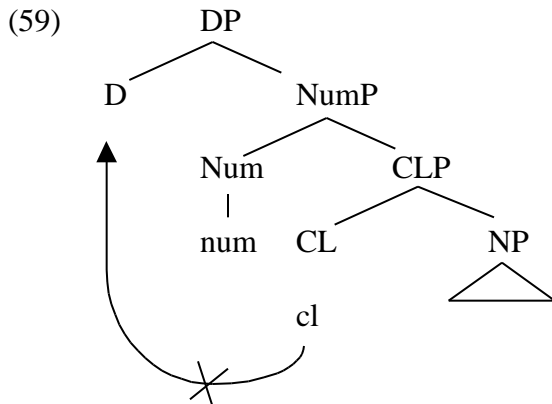
- (57) goh saam bo sue (Cantonese)
 Dem 3 CL book
 'those three books'

- (58) slong ahn sleng te (Nung)
 2 CL province Dem
 'those two provinces'

the locus of definiteness is the D⁰ position above NumP + the occurrence of a particular morpheme in either D⁰ or SpecDP interpretation of the DP as definite

Suggestion: bare classifier [CL NP] forms are definite due to (optional) CL raising up to D^0 either D^0 or SpecDP must be overtly instantiated for the definite interpretation to be triggered otherwise the DP is interpreted as indefinite by default

- when Num occurs, no possible CL-to-D due to HMC, hence no: [$*CL_i$ Num t_i NP] instead Dem has to be inserted into D^0 (or SpecDP) to trigger a definite interpretation



- potential empirical evidence for the higher D position: **two CL structures** in certain varieties of Vietnamese, a second general classifier element may occur before the regular classifier and results in sequences with clear definite interpretations (Nguyen 1997):

(60) **cai con** dao [anh cho toi muon], no that sac
 CL CL knife you give me borrow, it real sharp
 ‘The knife you gave me is really sharp.’

(61) **cai chiec** ban nay
 CL CL table Dem
 ‘this table’

shows that there is another X^0 head-position above CL^0 + this X^0 is (a) instantiated by a classifier and (b) specifically associated with definite interpretations of the DP

• **grammaticalization of CL_{general} in D^0**

suggestion: the possibility of inserting CL_{general} directly into D^0 is due to movement and reanalysis. Sustained CL-to-D movement CL_{general} allows for potential reanalysis as a D^0 -element allows CL^0 to be lexicalised and instantiated by a second classifier as in (60-61)

Simpson (1998), Wu (2004), Simpson & Wu (2000), Roberts & Roussou (2003): grammaticalisation due to similar movement and reanalysis

synchronically, if CL_{general} and a second regular CL are selected in the numeration CL_{gen} is inserted into D^0 , and no CL-to-D movement (45-46)

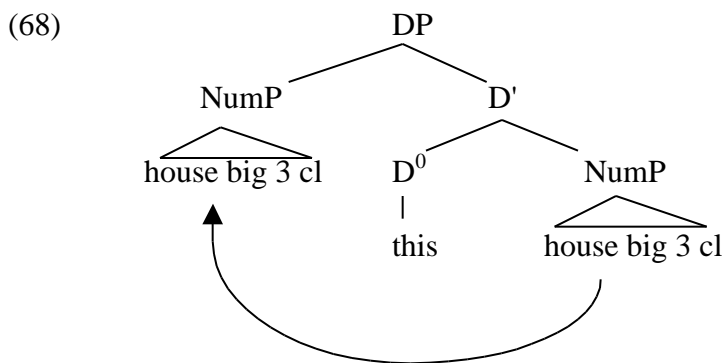
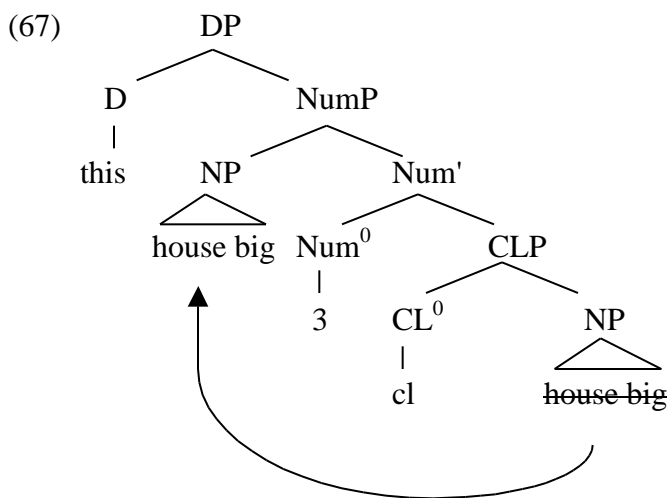
if CL_{general} not selected together with a second regular CL the classifier base-generated in CL^0 undergoes CL-to-D to trigger the definite interpretation

- (66) underlying structure: [Dem Num CL NP]
- NP movement: [Dem **NP_i** Num CL **t_i**] occurs in Thai/Burmese
- movement over Dem: [[**NP_i Num CL t_i**]_k Dem **t_k**] occurs in Thai, Khmer

What are the landing-sites for the two movements? - Three possibilities.

- (i) NP moves to SpecNumP, [_{NumP} NP Num CL] moves to SpecDP
- (ii) NP left-adjoins to NumP, [_{NumP} NP Num CL] left-adjoins to DP
- (iii) Movement of NP and [_{NumP} NP Num CL] are both instances of DP-internal topicalisation, to the specifier positions of DP-internal topic projections below and above D⁰; similar to the assumption (Rizzi (1997)) that there may be iterated topic positions in the higher part of clausal structure.

Possibility (i):



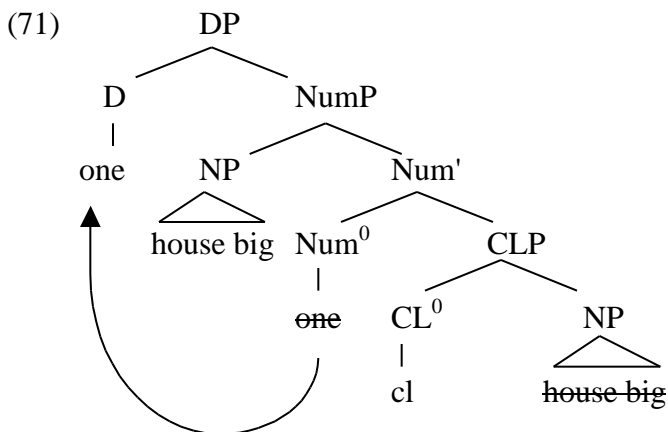
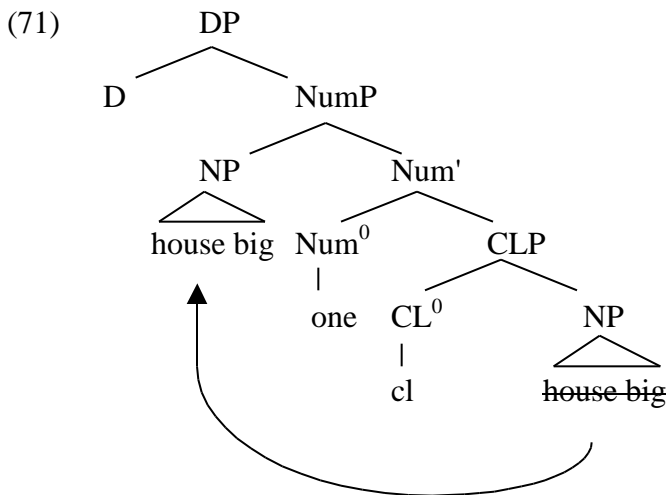
'one' raising

- 'one' is base-generated in Num⁰ and raises up to D⁰
- note that it is not possible to have any other number in Num when 'one' is in the DEM position:

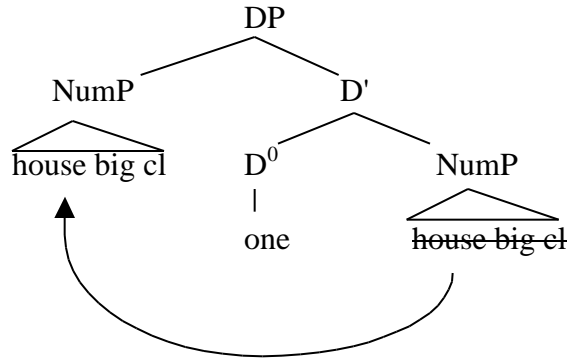
(69) *dek saam/nung khon nung
 child 3/one CL 'one'

THE DERIVATION:

(70) underlying structure: [one CL NP]
 NP movement over Num CL: [**NP_k** one CL **t_k**]
 ↑
 'one' raises from Num⁰ to D⁰: [**one_i** [NP_k **t_i** CL t_k]]
 ↑
 NumP raises over D⁰: [**NP_k t_i CL t_k**]_m [one_i **t_m**]
 ↑



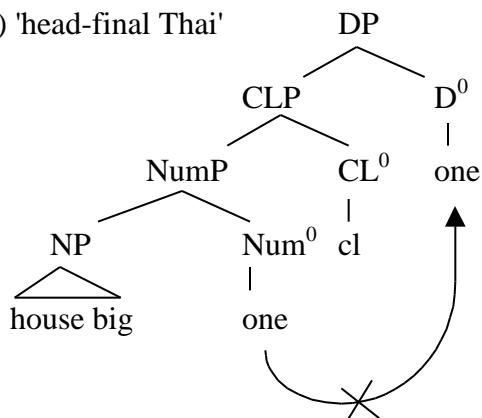
(73)



• **three conclusions**

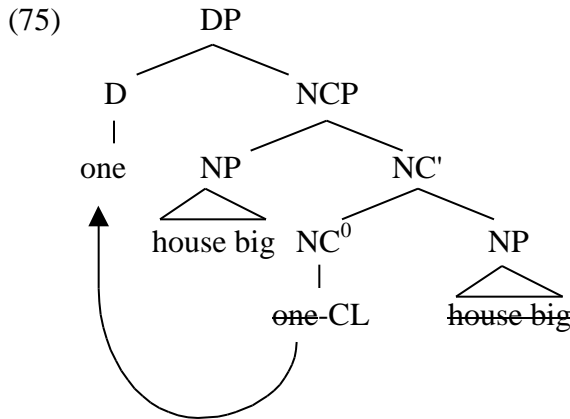
• good support for the conclusion that the DP in Thai is not head-final; if the DP was head-final and 'one' raised rightwards to D⁰ over CL, this should violate the HMC (74); Num-to-D raising can only be possible if Num is higher than CL the Thai DP is head-initial NP to the left of Num CL has raised there from a position to the right of CL

(74) 'head-final Thai'



• further support for the assumption that Num⁰ and CL⁰ are independent functional heads - if 'one' raises out of the regular position of numerals and up to D⁰ classifiers are not suffixes attached to numerals in a single head; affixes/subparts of words are not normally stranded by operations of movement; instead Num and CL are independent words in discrete functional heads; see tree (75);

Illicit extraction of a sub-part of a head if Num + CL form a single head 'NCP':



- the Thai and Nung new indefinite determiner 'one' targets the same position as definite D^0 elements (demonstratives) supports the assumption that both definiteness and indefiniteness are encoded in the same position D^0 in DPs indefinite nominal expressions are full DPs in the Tai languages.

Aside: the number 'one' may also raise to D^0 in English. In contrast to other numerals, 'one' cannot co-occur with other instantiations of D^0 unless it is interpreted like the adjective 'unique' and is followed by a relative clause as in (76):

- (76) a. The two/three men/*one man left.
 b. These two/three books are mine/*/?this one book is mine.
 c. The unique/one person *(I like) is David.

(6) Head-movement below D^0 and Num^0 : N-to-CL

- further classifier-related variation - 'classifier-less' DPs
- no classifier occurs with a numerically-quantified NP although individuation is implied
- two basic forms:
 - (a) in some language certain nouns are commonly quantified without any CL; frequently e.g. 'year', 'day', 'time' etc, sometimes 'person', + other high frequency terms:

- (77) a. hai nam b. ba lan (Vietnamese)
 2 year 3 time
 'two years' 'three times'

- (b) in certain languages (e.g. colloquial Minangkabau and Indonesian) the use of a CL is optional with a fully wide range of nouns, e.g. in Nung:

- (78) slam (tew) kha-lo (Nung)
 3 (CL) road
 'three roads'

- three possible analyses

I: No CL position in type (a)? some nouns require no individuation?

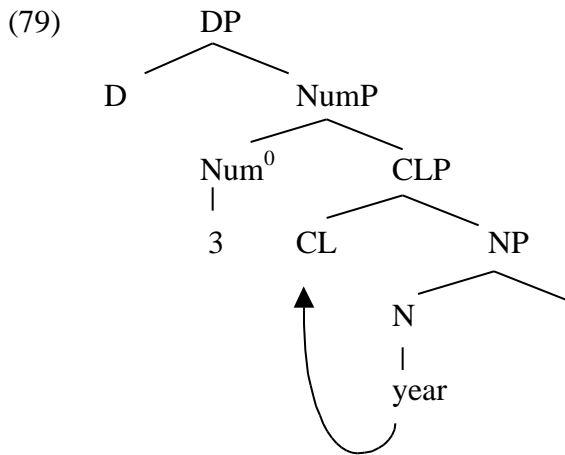
Problem: will not generalize to cover type (b) where the nouns do have classifiers, these are just optional.

II. Type (a) elements ‘year’ and ‘time’ are base-generated in CL and there is no N/NP?

Unlikely – if no N-position there are classifiers which classify/individuate nothing, but classifiers are by definition functions which apply to a second complement term the presence of a CL requires the presence of an N/NP; also will again not generalise to cover type (b).

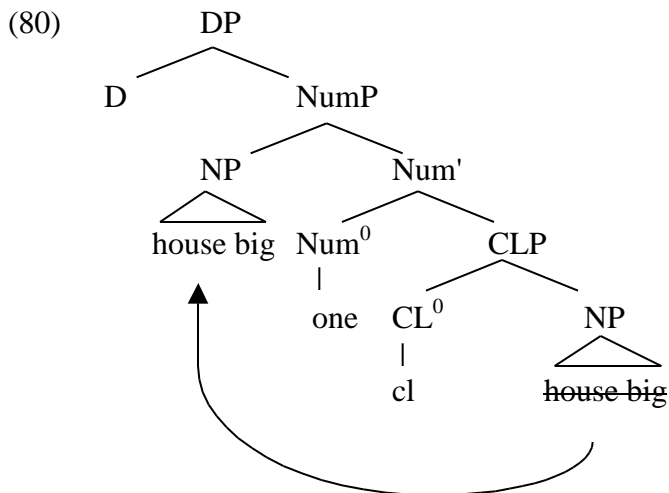
III. If there is Num-to-D and also CL-to-D, possibly there is also N-to-CL:

the elements ‘year/time’ are base-generated in N⁰ and raise to CL instantiating both positions



- CL and N are linearly adjacent in Vietnamese, Indonesian, Chinese difficult to see N-to-CL

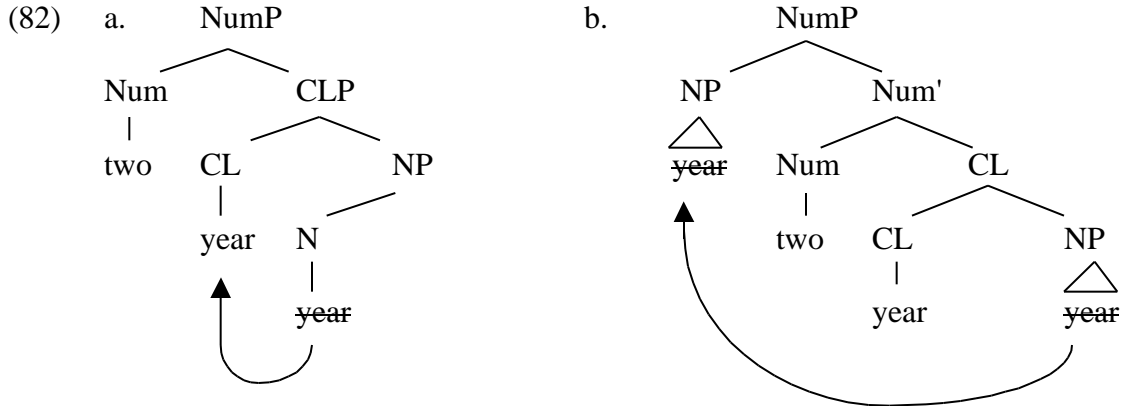
- Thai & Khmer: different surface linearisation of DP structure N and CL are not adjacent but separated by numerals in Num due to NP movement: (i.e. [N(P) Num CL]); possible to check the N-to-CL hypothesis;



(81) shows that elements such as ‘year’ and ‘time’ appear in CL to the right of Num, so not in N⁰ indicates N-to-CL movement:

- (81) a. soong pii b. saam khrang c. sii khon (Thai)
 2 year 3 time 4 person
 ‘two years’ ‘three years’ ‘four people’

Derivation of N-to-CL in Thai:

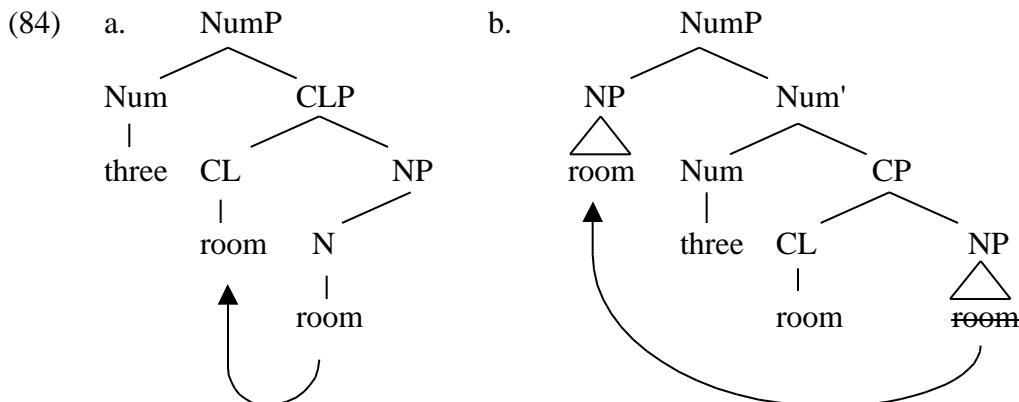


• the N-to-CL analysis suggests that certain nouns may be able to function as their own classifiers and lexicalize CL⁰ as well as N⁰. This possibility is seen in Thai, Burmese, Lahu and other languages in a second way with the occurrence of “self-classifiers” or “repeaters” – the repetition in CL of the element in N:

- (83) a. hoong saam hoong (Thai) b. cun ta cun (Burmese)
 room 3 room/CL island one island/CL
 ‘three rooms’ ‘one island’

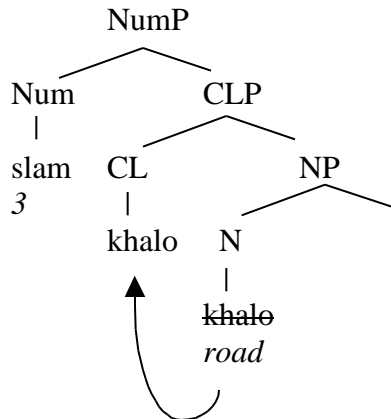
the idea of an element being used to classify/individuate itself is plausible and commonly attested.

• if one assumes the ‘copy theory’ of movement (Chomsky 1995), movement between N and CL and the copy left in N is not deleted/is spelt-out phonetically in repeater cases (though the copy of NP-movement would be deleted, otherwise giving rise to a redundant, identical sequence of elements):

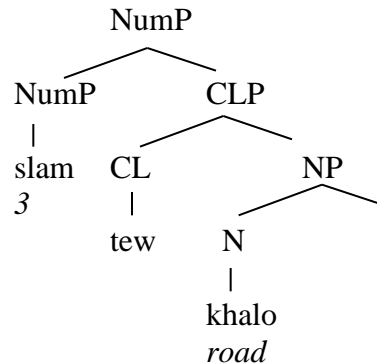


- the N-to-CL raising analysis of type (a) will extend to cover type (b) if a CL is not selected from the lexicon there will be N-to-CL; if a CL is selected, there will be no N-to-CL (85) represents Nung (78);²

(76) a. overt CL not selected



b. overt CL selected



- finally, if N-to-CL occurs regularly, and if the ‘movement and reanalysis’ approach to grammaticalisation is correct, one might expect certain ‘N’s might become reanalyzed as CLs; cross-linguistically CLs are indeed known to develop from Ns;

(7) Conclusions

- **surface variation in DP structure is the result of a combination of XP and X⁰ movement inside the DP**
- **X⁰ heads may commonly raise to instantiate/lexicalize more than one position**
- **regularization of (head-)raising leads to grammaticalization and categorial reanalysis**

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² In this sense classifiers pattern a little like expletives – when an expletive such as ‘there’ is selected in a numeration, it will be inserted into SpecIP, but when no such expletive is selected, the subject of a clause has to raise to instantiate the SpecIP position.

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