

# Co-occurrence of non-article determiners as a window on variation in DP structure

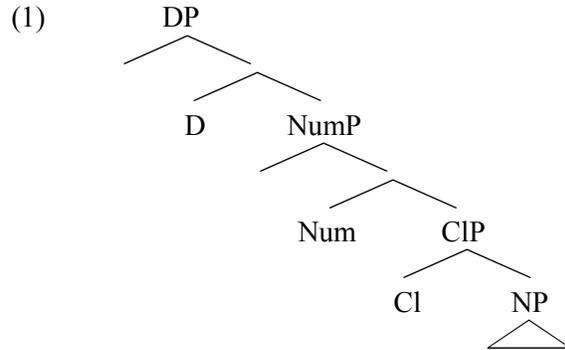
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Cambridge Comparative Syntax 7 • May 11, 2018

## 1. Overview

The basic DP structure of Abney (1987) with limited extensions has produced many insights into nominal syntax and semantics (Ritter 1991; Longobardi 1994; Szabolcsi 1994; Li 1998; a.o.).

- Functions attributed to the uppermost DP projection:
  - Position of *articles and other determiners*, incl. demonstratives, possessors, pronouns.
  - Specification of the referent(s) of the full nominal expression (Longobardi 1994)
  - Landing site for A' movement (Horrocks & Stavrou 1987) or escape hatch for extraction (Szabolcsi 1994; Gavruseva 2000).



This talk: implications of cross-linguistic variation in **co-occurrence among non-article determiners**: *demonstratives, proper names, pronouns, and possessors*.

### **Main Claims:**

- In some languages, the functions of “DP” are realized in an articulated series of functional projections.
- Determiner co-occurrence provides new evidence for a universal hierarchy of functional features in the nominal domain.
- Languages vary in the number of projections that these features are mapped to, and the distribution of bundled features on functional heads (Giorgi and Pianesi 1997; Douglas 2017; B. Hsu 2017).

## 2. Determiner co-occurrence

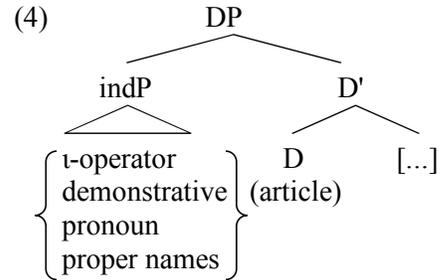
There are several known cases in which non-article determiners can or must co-occur with an article (Delsing 1998, Vangsnes 1999, Allen 2008, Giusti 2015).

- |     |      |          |               |   |
|-----|------|----------|---------------|---|
| (1) | ez   | a        | fű            | demonstrative + article ( <i>Hungarian</i> : Giusti 2015) |
|     | this | the      | boy           |   |
| (2) | emis | i        | glossologi    | pronoun + article ( <i>Greek</i> : Choi 2014)             |
|     | we   | the      | the linguists |   |
| (3) | Mett | the stór | hús-e         | possessor + article ( <i>Lappträsk</i> : Vangsnes 1999)   |
|     | my   | the big  | house-DEF     |   |

Such patterns remain largely compatible with a non-articulated DP structure.

For concreteness, consider Giusti (2015)'s proposal based on a cross-linguistic study of nominal structure:

- Demonstratives, pronouns, proper names are *indexical expressions* (denoting "person, reference, or deixis").
- Nominal expressions vary in the number of realized projections, but indexical items must move to the highest specifier (cf. Longobardi 1994, Jenks *to appear*).
- Articles instantiate functional heads within the nominal expression.



- Parametrization in whether a functional projection requires pronunciation of its head, specifier, or both accounts for variation in co-occurrence of articles with other determiners.

- (5) Italian: OR parameter with demonstratives
- |                   |               |                       |
|-------------------|---------------|-----------------------|
| a. queste ragazze | b. le ragazze | c. *queste le ragazze |
| these girls       | the girls     | these the girls       |
- (6) Hungarian: BOTH parameter with demonstratives
- |              |            |  |
|--------------|------------|--|
| a. ez a fiú  | b. *ez fiú |  |
| this the boy | this boy   |  |

This approach *predicts that non-article determiners cannot co-occur*, as they compete for the highest specifier position. This is borne out in the languages considered by Giusti (2015):

- (7)
- |              |        |         |                 |
|--------------|--------|---------|-----------------|
| a. *noi      | questi | ragazzi | <i>Italian</i>  |
| b. *nosotros | estos  | chicos  | <i>Spanish</i>  |
| c. *noi      | acești | băieți  | <i>Romanian</i> |
| d. *we       | these  | boys    | <i>English</i>  |

**Today's talk:** A larger sample of languages reveals many patterns of co-occurrence among non-article determiners, and support a further articulated DP structure.

### 3. Co-occurrence of non-article determiners

#### 3.1 Proper names + (pronouns) + demonstratives

Mandarin Chinese: Proper names and/or pronouns can precede demonstratives and head nouns in non-appositive structures (Huang et al. 2009).

- (8) ni-men zhexie haizi (pronoun + demonstrative)  
 you-PL these boys  
 'You these boys'
- (9) Lisi nage tiancai (proper name + demonstrative)  
 Lisi that genius  
 'That genius Lisi'
- (10) Zhangsan ta zhege ren (proper name + pronoun + demonstrative)  
 Zhangsan he this person  
 'This person Zhangsan'

- There is evidence for a specifier-head configuration of *proper name* + *pronoun* sequences (Huang et al. 2009).<sup>1</sup>

**Interim conclusion:** Person-denoting and deictic elements co-occur in separate projections in some languages.

(11) [FP<sub>pers</sub> Zhangsan<sub>[F<sub>pers</sub> ta</sub> [FP<sub>deix</sub> zhege<sub>[F<sub>deix</sub> [ ... [NP *ren* ] ... ]]]]]] (structure for Mandarin (10))</sub>

### 3.2 Possessors + demonstratives

Possessors can co-occur with demonstratives in languages like Bangla and Mandarin (Y.-Y. Hsu 2012; 2013).

(12) amar oi lal boi (Bangla; Syed 2017)  
 my that red book  
 ‘That red book of mine’

(13) Wangwu zhexie hao xiaohai (Mandarin)  
 Wangwu these good children  
 ‘These good children of Wangwu’s’

- Demonstrative + possessor co-occurrence is not restricted to languages with or without articles; Its availability reflects an independent parameter on structure.

(14) àsón nyè tòn éló ó le (Fongbe; Lefebvre 2013)  
 crab me GEN DEM DEF PL  
 ‘these/those crabs of mine’

(15) dieses unser Land (German; Plank 1992)  
 this our country  
 ‘This country of ours’

(16) men anje hest-i (Malax Swedish; Vangsnes 1999)  
 my this horse-DEF  
 ‘This horse of mine’

A potential analysis of possessors as adjectives (cf. Bošković 2014) is not possible for all of these cases.

- German: Agreement inflection on possessors resembles that of other determiners, but not adjectives (Plank 1992).
- Mandarin: True possessors (not marked with ‘modification/relativizing’ *de*) must precede demonstratives, while adjectives obligatorily follow demonstratives (Y.-Y. Hsu 2012; 2013)

Additional variation:

- Orderings of *demonstrative* > *possessor* (ex. Bangla) versus *possessor* > *demonstrative* (ex. German).
- Co-occurrence possible with full DP and pronominal possessors (ex. Mandarin) or restricted to pronominal possessors (German).

### Interim conclusions:

Given evidence that possessors and demonstratives are specifiers (not heads) of functional projections (Szabolcsi 1994; Giusti 2002), these languages realize deixis and possession in separate projections.

(17) [FP<sub>poss</sub> amar<sub>[F<sub>poss</sub></sub> [FP<sub>deix</sub> oi<sub>[F<sub>deix</sub> [ ... [NP *lal boi* ] ... ]]]]]] (structure for Bangla (12))</sub>

<sup>1</sup> In presence of a proper name, only the pronoun can be suffixed with plural marker *-men*, associated with head positions (Y.-H. A. Li 1999). Plural agreement is obligatory only on the pronoun and demonstrative. Furthermore, *proper name* + *pronoun* sequences denoting individuals can be used in isolation in colloquial Mandarin.

The highest nominal projection need not be occupied by an item co-referential with the head noun.

### 3.3 *Possessors + pronouns*

*Possessor linker constructions* in some Germanic languages provide evidence that possessors occur in dedicated functional projections.

- Non-pronominal possessors can immediately precede a co-referent pronoun (Delsing 1998; Strunk 2004).

(18) De'n                      Jung                      sien                      Vadder                      (*Low Saxon*: Strunk 2004)  
the.M.SG.ACC   boy.M.SG.ACC   his.M.SG.NOM   father.M.SG.NOM  
'the boy's father'

- The pronoun inflects for case assigned to the full nominal expression, case on the non-pronominal possessor is fixed (accusative or dative, depending on dialect)

The agreement patterns support a specifier-head structure for *possessor + pronoun* sequences (Delsing 1998; Strunk 2004).

(19) [<sub>FPoss</sub> *De'n Jung*    [<sub>FPoss</sub> *sien*    [ ... [<sub>NP</sub> *Vadder* ] ... ]]]    (Structure for Low Saxon (18))

A similar structure is available in Mandarin. Both the possessor and linker pronoun precede demonstratives; pronouns and demonstratives agree in plural-marking.

(20) wo jian-guo    [laoshi ta zhege pengyou]  
I meet-GUO teacher 3P this friend  
'I have met this friend of the teacher's'

(21) wo jian-guo    [laoshi ta-men zhexie pengyou]  
I meet-GUO teacher 3P-PL this.PL friend  
'I have met these friends of the teacher's'

(22) [<sub>FPoss</sub> *laoshi* [<sub>FPoss</sub> *tamen* [<sub>FPdeix</sub> *zhexie* [ ... [<sub>NP</sub> *pengyou* ] ... ]]]    (Structure for Mandarin (21))

### 3.4 *Demonstratives and inclusivity*

Additional support for articulated upper DP structure: Variation in the semantic components of 'definiteness' that can be simultaneously expressed (cf. Julien 2005; Partee 2006; Cheng et al. 2017).

- Bangla: *numeral-classifier-adjective-noun* sequences are interpreted as indefinite (23).
- Preposing of the *adjective-noun* sequence to the left of the numeral and classifier (24) results in a definite reading (Bhattacharya 1999; Chacón 2012; Dayal 2012; Syed 2017).

(23) du    To lal boi    ("indefinite")                      (24) lal boi    du To    ("definite")  
two    CL red book                                      red book    two CL  
'two red books'    'the two red books'

**A puzzle:** When a demonstrative is present, the nominal expression is interpreted as definite with both the non-preposed order (24) and the preposed order (25).

(25) oi du To [lal boi]    ("definite")                      (26) oi [lal boi]<sub>i</sub> du To t<sub>i</sub> ("definite")  
that two CL red book                                      that red book    two CL  
'those two red books'    'those two red books'

- What drives preposing in the presence of a demonstrative, which already appears to mark definiteness?

**Analysis** (Syed 2016; 2017): Distinct semantic components of “definiteness” (cf. Lyons 1999) can be specified in different structural positions

- *Identifiability*: The speaker knows or is in a position to work out the referent of the noun phrase.
- *Inclusiveness*: Reference to the totality of the objects or mass in the context which satisfy the description.
- *Deixis*: Situation of entities talked about in a spatial-temporal context.

Demonstratives in Bangla signal both deixis and identifiability. [adjective noun] preposing signals inclusiveness.<sup>2</sup>

- Example (Dayal 2012): In the context of a flower shop, (26b) suggests that there are *only two types* of red flowers (e.g. roses and carnations). No such implication holds for (26c) – the speaker may be picking out roses and carnations from a larger set of red flowers.

- (27) a. kon phul Ta Sundor?  
 which flower CL beautiful  
 ‘Which of the flowers are beautiful?’
- b. oi lal phul du To (inclusive)  
 that red flower two CL
- c. oi du To lal phul (non-inclusive)  
 that two CL red flower  
 ‘Those two red flowers.’

Distinct semantic components of “definiteness” correspond to different structural positions:

- Demonstratives occupy a projection that includes both [DEIX] and [IDEN] features.
- This dominates the functional projection that includes [INCL], which triggers movement of the *adjective + noun* constituent:

- (28) [<sub>FP</sub>deix/iden oi [<sub>FP</sub>inc [lal boi]<sub>i</sub> [<sub>NumP</sub> du To [<sub>NP</sub>lal boi]<sub>i</sub>]]]  
 that red book two CL  
 ‘Those two red books’ (inclusive)

### 3.5 Plurals and identifiability

Plurals in Jamaican Creole can be marked with an -s suffix, post-nominal marker *dem* (28), or both (29):

- (29) di yout dem (30) di gun-s dem  
 the youth DEM the gun-PL DEM  
 ‘the youths’ ‘the guns’

Syed and Irvine (ms. in progress)<sup>3</sup>: ‘dem’ is a marker of both plurality and *identifiability* (contra Stewart 2011, Bobyleva 2011)

- Identifiability is realized in a projection below the article, which attracts the noun and plural -s from NumP.

- (31) [<sub>FP</sub> di [<sub>FP</sub>iden [gun s] dem [<sub>NumP</sub> gun-s [<sub>NP</sub> gun ]]]]

<sup>2</sup> Dayal (2012) argues that NP movement to the post-demonstrative position indicates *maximality*, which in this context is terminologically interchangeable with inclusivity (Syed 2015, 2017).

<sup>3</sup> The data was collected by Melissa Irvine from interviews with Jamaicans in two documentaries, *Trench Town: Violent Crime in Bob Marley’s Home Town*, and *Documentary on Jamaica’s Failing Economy*. Many thanks to Melissa for sharing her findings with us!

## 4. Analysis

Main generalizations to be accounted for:

- [1] Some languages allow **co-occurrence of distinct projections** for instantiations of *person (proper names and pronouns)*, *possession*, *deixis*, *inclusivity*, while others do not.
- [2] Co-occurring determiners are subject to ordering restrictions.
  - Proper name<sub>i</sub> > pronoun<sub>i</sub>
  - Possessor<sub>i</sub> > pronoun<sub>i</sub>
  - Proper name > demonstrative > (head noun)
  - Demonstrative > possessor *or* possessor > demonstrative (both attested cross-linguistically)
- [3] Languages vary in the components of “definiteness” that can be simultaneously expressed in structure.

A single DP projection does not provide enough structure for co-occurring non-article determiners.

On the other hand, if a fully articulated series of projections is present in every language, co-occurrence restrictions are not easily captured.

- Example: Possessors do not co-occur with other determiners in languages like English:

- (32) a. \*my these people (possessor + demonstrative)  
 b. \*my them people (possessor + pronoun)

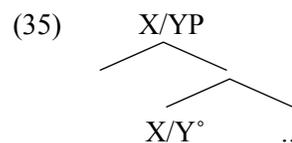
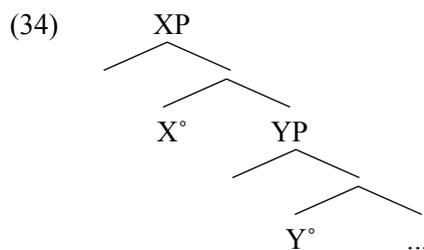
- Possessors are not “indexical” in the same way as other determiners; they have a referential index distinct from that of the full expression.
- In Giusti’s (2015) structure, possessors are predicted to occur below the highest projection DP.

(33) [DP Ø [D Ø [FP *the man’s/her/my* [F [ ... [NP *student*] ... ]]]]]

- For English, it must be proposed that the head and specifier of DP must be null if a possessor is present, an ad hoc extra parameter.

### 4.1 A bundling approach

Giorgi and Pianesi (1997): some functional category features X, Y can be realized on separate heads X°, Y° or on a bundled X/Y° head.



- Languages can show a variety of conflation patterns in the features that can be simultaneously expressed in phrase structure (Giorgi and Pianesi 1997; Cowper 2005; B. Hsu 2017)

**Claim:** Variation in determiner co-occurrence is determined by the distribution of nominal domain features across functional heads.

**Proposed (partial) hierarchy of upper nominal functional features:** [POSS]>[PERS]>[DEIX]>[IDEN]>[INCL]

#### 4.2 Articulation and conflation in Mandarin

Mandarin allows several types of determiner co-occurrence. However, some constraints remain on possessors and proper names.

- Recall that *possessor + pronoun* or *proper name + pronoun* sequences can precede demonstratives.

- Potential ambiguity between and proper name possessors and head-noun co-referent proper names:

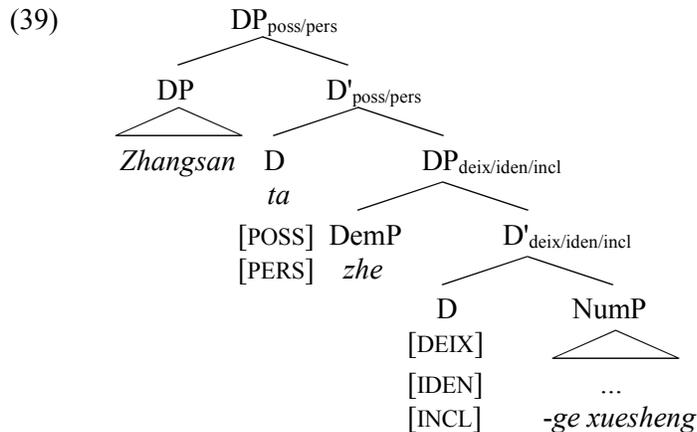
- (36) Zhangsan ta zhe-ge xuesheng  
 Zhangsan he this-CL student  
 a. ‘This student Zhangsan’  
 b. ‘This student of Zhangsan’s’

It is not possible for both a possessor and a name/pronoun referring to the head noun to co-occur, even in contextually appropriate contexts.

- (37) \*Lisi Zhangsan ta zhe-ge xuesheng  
 Lisi Zhangsan he this-CL student  
*Intended:* ‘This student of Lisi’s, Zhangsan’
- (38) \*ta Zhangsan zhe-ge xuesheng  
 he Zhangsan this-CL student  
*Intended:* ‘This student of his, Zhangsan’

- This is predicted to be possible if PossP and PersP are always present as separate projections, able to independently have filled specifiers.

- Proposal:** [POSS] and [PERS] are bundled on a single head in Mandarin. Only one feature on this head can be active for interpretation and vocabulary insertion.



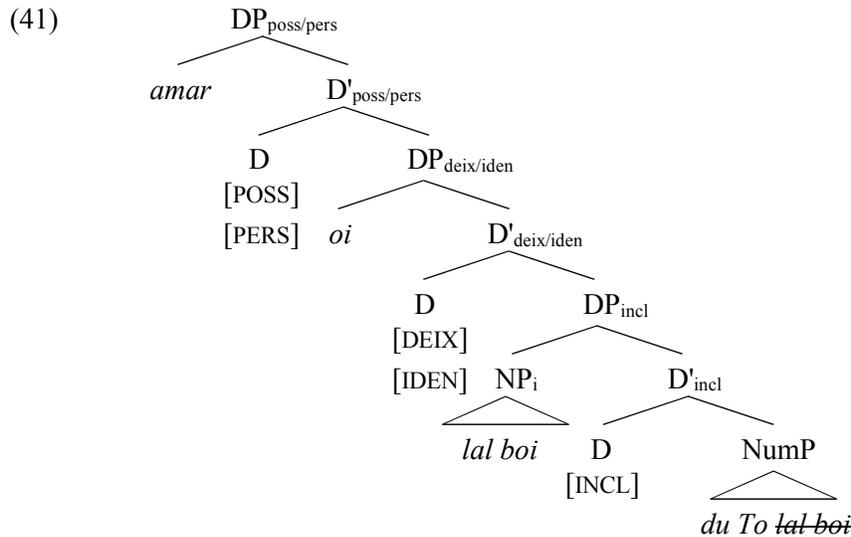
- Prediction:** There should be a language that allows possessors and proper names to co-occur at the nominal left edge in non-bundled PossP, PersP.

#### 4.3 Articulation and conflation in Bangla

- While demonstratives signal deixis and identifiability, inclusiveness is marked by NP movement to a post-demonstrative position.
- It is also possible for possessors to precede demonstratives and fronted NPs:

- (40) amar oi [lal boi]<sub>i</sub> du To [~~lal boi~~]<sub>i</sub>  
 my that red book two CL  
 ‘These two red books of mine’

**Proposal:** Bangla’s nominal functional features are realized on 3 heads indicating [POSS] and [PERS], [DEIX] and [IDEN], and [INCL] respectively.



## 5. Conclusion

Co-occurrence among non-article determiners has received relatively little attention in nominal syntax, but proves to be highly informative about nominal structure and its variation.

Questions to be addressed with further documentation of determiner co-occurrence across languages:

- How do degrees of DP articulation affect phrasal and head movement within nominals?
- Is the distribution of functional features determined by bundling of separately merged heads (B. Hsu 2016) or reprojection from a single node (Georgi and Müller 2010; Martinović 2016)?
- How do we account for *obligatory co-occurrence* among non-article determiners?

Jamaican Creole: Inclusive marker *dem* must co-occur with a preceding definite article *di* or a possessor

(42) \*(di/mi) guns dem  
 The/my guns INDEN  
 ‘the/my guns’

Mandarin Chinese: Non-pronominal possessors must co-occur with a following demonstrative.

(43) wo jian-guo Zhangsan/laoshi \*(zhe-ge) pengyou  
 I meet-ASP Zhangsan/teacher this-CL friend  
 ‘I have met this friend of Zhangsan’s/the teacher’s’

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