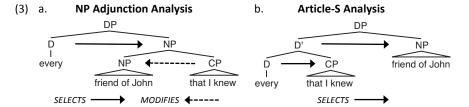
Revisiting Article-S

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Smith (1964) proposes the "Article-S analysis" under which relative clauses (1) begin as complements of Art or D before extraposing rightward (2a,b):

- (1) a. Every friend of John that I knew was present.
 - b. Every friend of John was present that I knew.
- (2) a. [NP [every that I knew] friend of John that I knew] was present.
 - b. [NP] [every that I knew] friend of John] was present that I knew.

Despite important virtues, Article-S has attracted little modern interest, possibly because of its unique view of selection in the nominal.



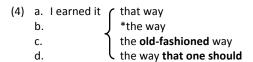
Here we:

- revisit syntactic evidence for Article-S, both classical and more recent.
- evaluate the semantic coherence of its view of selection in DP
- recast the account within a "dP/DP shells" framework (Larson 2014)
- consider implications of Article-S for "DP-less languages"

1.0 Syntactic Evidence for Article-S

1.1. Early Discussion

Kuroda (1969) notes indefinite way can co-occur with bare that, but not with bare the (4a-b). Restrictive modifiers (AP, RC) improve the result (5c-d). In effect, the + modifier "adds up" to that. Jackendoff (1977) makes a similar observation with proper nouns (7):



- (6) a. *the Paris
 - b. the **old** Paris
 - c. the Paris that I love
 - d. the Paris of the twenties

(4)-(6) suggests discontinuous dependency between D & restrictive modifier; Article-S offers a natural account.

(7) a. [the that one should] way b. [that - LOC] way

1.2 Southwestern Sulawese Relatives

Finer (1998) discusses RCs from southwestern Sulawese, Indonesia, (Selayarese, Makassarese, Konjo, Bugis). These languages are basically head initial with word order adjusted (sometimes significantly) by movement.

- (8) a. doe?-iñjo
 money-DEF
 'the money'
 b. [DP doe?-iñjo [NP doe?]]
- (9) a. doe?-na money-3poss 'his money'b. [_{DP} doe?-na [_{NP} doe?]]

Finer takes Selayarese transitive VOS clauses (10a)/(11a) to derive from SVO by fronting the absolutive object, raising V through its extended projection domain and attaching the absolutive clitic i (10b)/(11b).

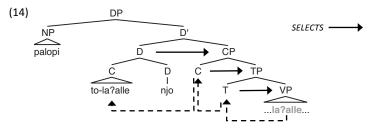
(10) a. La?alle i doe?-iñjo palopi-ñjo
take ABS money-DEF sailor-DEF
'the sailor took the money'
b. La?alle i doe?-iñjo palopi-ñjo la?alle doe?-iñjo

(11) a. Lakanre i juku?-na meong-na
eat ABS fish-3poss cat-3poss
'his cat ate his fish'
b, Lakanre i juku?-na meong-na lakanre juku?-na

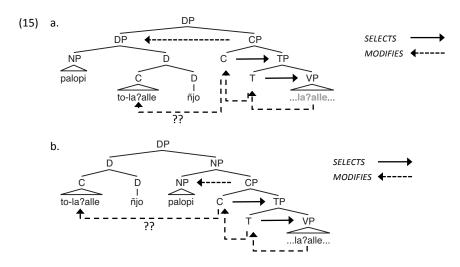
Consider (12) and (13), Selayarese RCs formed from (10) and (11) (resp).

- RC marker is prefixed to V (to- if RC head is [HUMAN], nu- otherwise)
- when the object is relativized (12b)/(13b), the absolutive clitic i is absent.
- D forms a unit with the entire relative clause verbal complex.
- (12) a. **palopi** to-la?alle-**ñjo** i doe?-iñjo sailor REL-take-DEF ABS money-DEF 'the sailor that took the money'
 - b. doe? nu-la?alle-ñjo palopi-iñjo money REL-take-DEF sailor-DEF 'the money that the sailor took'
- (13) a. meong nu-ŋaganre-na cat REL-eat-3POSS 'his cat that ate'
 - b. **juku** nu-lri-kanre-**na**fish REL-PASS-eat-3POSS
 'his fish that was eaten'

Finer (1998) notes that under Article-S, (12) and (13) can be derived by raising V to T to C to D, picking up to on the way. This sequence is licit because the functional projections form a concentric set, the head of each standing in a selection relation to the one below (14):



If RCs are adjoined to DP (15a) or NP (15b) (with subsequent fronting of *palopi*), the chain of selection fails and V raising becomes problematic.



2.0 Semantic Coherence of Article-S

2.1 Quantifiers and Restrictions

Consider (16a), attributed to New York Yankees baseball catcher Yogi Berra and presenting an apparent contradiction.

- (16) a. Nobody goes there anymore. It's too crowded.
 - b. 'Nobody who we know', 'nobody from our group', 'nobody important', ... etc.

(16b) suggests that S1 of (16a) should be represented \underline{not} as in (17a), but as in (17b), with an implicit restriction variable R whose value is fixed contextually (17c):

- (17) a. $\forall x[person(x) \rightarrow \neg go-there-anymore(x)]$
 - b. $\forall x [(person(x) \& \mathbf{R}(\mathbf{x})) \rightarrow \neg go-there-anymore(x)]$
 - c. $R(x) \approx_{context} know(we,x)$, from(x,our-group), important(x), ..., etc.

Cooper (1975, 1979) and Bach and Cooper (1978) propose that R originates in the D meaning (18a-d) (see also von Fintel 1994):

- (18) a. Every $\Rightarrow \lambda Q \lambda P \forall x [(Q(x) \& R(x)) \rightarrow P(x)]$
 - b. No $\Rightarrow \lambda Q \lambda P \forall x [(Q(x) \& R(x)) \Rightarrow \neg P(x)]$
 - c. Some $\Rightarrow \lambda Q \lambda P \exists x [(Q(x) \& R(x)) \& P(x)]$
 - d. The $\Rightarrow \lambda Q \lambda P \exists x \forall y [((Q(y) \& R(y)) \rightarrow y = x) \& P(x)]$

(19) No-body
$$\Rightarrow \lambda Q \lambda P \forall x [(Q(x) \& \mathbf{R}(\mathbf{x})) \rightarrow \neg P(x)](\lambda y [person(y)])$$

 $\Rightarrow \lambda P \forall x [(person(x) \& \mathbf{R}(\mathbf{x})) \rightarrow \neg P(x)]$

This implies that NL Ds are not unrestricted in the logical sense. This appears true even of Ds like *many*, *few*, *all*, *some*, *both* and *neither*. These can occur without an overt NP (20a). Nonetheless they are understood as restricted (20b).

- (20) a. (We saw a group of men/a pair of men.)
 Many/few/all/some/both/neither were/was wearing sandals.
 - Many/few/all/some/both/neither of the men we saw were/was wearing sandals.

2.2 Relative Clauses and Other Restrictive Attributives

Cooper (1975, 1979) and Bach and Cooper (1978) propose that RCs (and other restrictives) may supply R explicitly, e.g., when "extraposed" (21a). The composition rule is (21b). (S' denotes main clause interpretation and RC' denotes RC interpretation).

- (21) a. Nobody goes there anymore who we know.
 - b. λR[S'](RC')
 - c. $\lambda R[\forall x[(person(x) \& R(x)) \rightarrow \neg go\text{-there-anymore}(x)]](\lambda y[know(we,y)]) \Rightarrow \forall x[(person(x) \& know(we,x)) \rightarrow \neg go\text{-there-anymore}(x)]$

This view makes RCs implicit arguments of D and comports naturally with Article-S.

(22) a. Every
$$\Rightarrow \lambda Q \lambda P \forall x [(Q(x) \& \mathbf{R(x)}) \Rightarrow P(x)]$$

b. that I knew $\Rightarrow \lambda y [\text{knew}(I,y)]$
c. Every that I knew $\Rightarrow \lambda \mathbf{R}[\lambda Q \lambda P \forall x [(Q(x) \& \mathbf{R(x)}) \Rightarrow P(x)](\lambda x [\text{knew}(I,y)])$
 $\Rightarrow \lambda Q \lambda P \forall x [(Q(x) \& \text{knew}(I,x)) \Rightarrow P(x)]$
d. friend of John $\Rightarrow \lambda z [\text{friend}(z,j)]$

e. Every that I knew friend of John

⇒
$$\lambda Q \lambda P \forall x [(Q(x) \& knew(I,y)) \rightarrow P(x)](\lambda z [friend(z,j)])$$

⇒ $\lambda P \forall x [(friend(x,j) \& knew(I,x)) \rightarrow P(x)]$

This view also raises the question of whether RCs might be $\underline{\text{explicit}}$ arguments of D. Compare (23a) (= (18d)) with (23b):

(23) a. The
$$\Rightarrow$$
 $\lambda Q \lambda P \exists x \forall y [((Q(y) \& R(y)) \rightarrow y = x) \& P(x)]$
b. The $\Rightarrow \lambda R \lambda Q \lambda P \exists x \forall y [((Q(y) \& R(y)) \rightarrow y = x) \& P(x)]$

On (23a), *the* is a **binary D** with an R whose value may be supplied by context or by an overt phrase. On (24b), *the* is a **ternary D** that selects a syntactic restrictor to yield a binary D. Which we accept - (23a) or (23b) - depends on whether *the* genuinely requires a restrictor argument.

Vendler (1967) notes examples like (24) and (25).

- (24) a. I see a man. The man is wearing a hat.
 - b. I see a man. The man I see is wearing a hat.
 - c. I see a man. The man you know is wearing a hat.
- (25) a. I see a rose. The rose is lovely.
 - b. I see a rose. The rose I see is lovely.
 - c. I see a rose. The red rose is lovely.

(24a) is naturally understood like (24b). Similarly for (25a)/(25b). The examples present "continuous discourse". (24c) and (25c) are not continuous.. Why?

Vendler: "the definite article in front of a noun is always and infallibly the sign of a restrictive adjunct, present or recoverable..."(p.46). I.e., definite D <u>selects</u> a restrictive phrase. (24a) contains an elliptical or "deleted" RC equivalent to (24b), allowing continuity. By contrast, the overt RC in (24c) "saturates" the R required by *the*, hence (24c) can't be understood equivalently to (24b), hence continuity fails.

Vendler's view of *the* as selecting an (overt or covert) restrictive phrase fits Article-S constituency. Compare (22) and (26).

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(26) a. the \Rightarrow \lambda R \lambda Q \lambda P \exists x \forall y [((Q(y) \& R(y)) \rightarrow y = x) \& P(x)]
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- b. that I knew $\Rightarrow \lambda y[\text{knew}(I,y)]$
- c. $friend of John \Rightarrow \lambda z[friend(z,j)]$
- d. The that I knew \Rightarrow

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\lambda R\lambda Q\lambda P\exists x\forall y[((Q(y) \& R(y)) \rightarrow y = x) \& P(x)] (\lambda x[knew(I,y)]) \Rightarrow \lambda Q\lambda P\exists x\forall y[((Q(y) \& knew(I,y)) \rightarrow y = x) \& P(x)]
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e. The that I knew friend of John \Rightarrow

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\lambda Q \lambda P \exists x \forall y [((Q(y) \& knew(I,y)) \rightarrow y = x) \& P(x)](\lambda z [friend(z,j)]) \Rightarrow \lambda P \exists x \forall y [((friend(y,j) \& knew(I,y)) \rightarrow y = x) \& P(x)]
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3.0 Relative Clauses in dP/DP Shells

Smith (1964) derives English D-NP-CP order by rightward movement of RC from D complement position (27a). Compare Filmore (1965), which derives V-NP-PP order by rightward movement of PP from V complement position (27b).

b. [
$$_{VP}$$
 [[give to John] a birthday present] to John]

Modern analyses of ditransitives (Larson 1988, Chomsky 1995) invoke layered or "shelled" VPs that preserve inner complementation for PP, but derive V-NP-PP order by leftward raising of V (28a), Larson (1991,2014) proposes shelled DPs that preserve inner complementation for RCs, but derive D-NP-CP order by leftward raising of D (28b).

b.
$$[_{dP}$$
 every d $[_{DP}$ [friend of John] $[_{D'}$ every **that I knew**]]]

This parallelism arises from a particular account of syntactic projection.

3.1 Projection via Ordered θ -Features

Larson (2014, 2017) proposes that syntactic projection occurs by means of θ -features that undergo agreement upon Merge (29):

Sets of θ -features {[θ_1], [θ_2]} reside on heads (X); features undergo agreement according to an ordering; lower ranked features agree before higher ones. Feature ordering determines hierarchical projection order (α above β in (30)):

7

Features come in three main "flavors" (Pesetsky and Torrego 2007):

- interpretable θ , associated with a "meaning" (31) a. $i\theta$
 - b. θ val valued θ , associated with visible marking/pronunciation
 - c. θ uninterpretable-unvalued θ , concordial

Agreement is directional: unvalued θ (i.e., $i\theta$ or θ) probes any θ it commands and agrees with it; θ val does not probe. Agreement is notated by indexing and brackets:

(32) a.
$$i\theta[n] \dots \theta val[n]$$

b.
$$i\theta[n] \dots \theta[n] \dots \theta val[n]$$

 θ -features are LF-legible only in "agreement chains" with at least on interpretable and one valued instance. (33a-c) are LF-legible. (34a-e) are not.

(33) a.
$$i\theta[n] ... \theta val[n]$$

b.
$$\mathbf{i}\theta[n] \dots \theta[n] \dots \theta \mathbf{val}[n]$$

c.
$$i\theta[n] \dots \theta[n] \dots \theta[n] \dots \theta val[n]$$

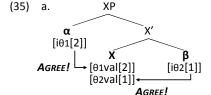
(34) a.
$$i\theta$$
[]

d.
$$\theta[n] \dots \theta val[n]$$

e.
$$i\theta[] \dots \theta val[]$$

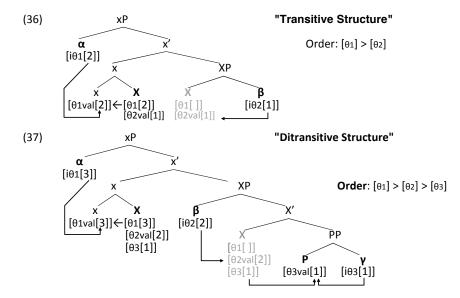
c.
$$\mathbf{i}\theta[n] \dots \theta[n]$$

These assumptions entail that θ -features must typically be valued on heads and interpretable on args. Compare:



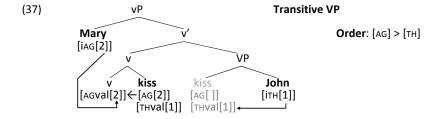
b. [θ1val[]] **X** [□] [iθ1[]] [02val[1]] [i02[1]] AGREE!

Finally, at most one θ -feature in a set born by X can be valued. So whenever X bears more than one θ -feature, valuation must recruit additional "valuers". Assume X, x ("light X") and P can value θ -features. (36) and (37) are example structures.

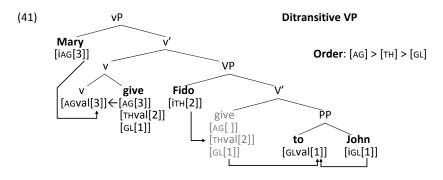


3.2 vP/VP Structures

(38)/(39) give two English vP/VP structures built according to these principles:

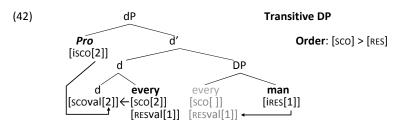


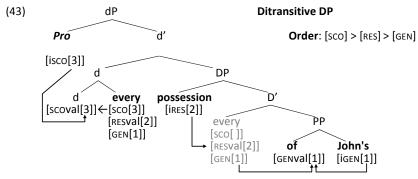
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3.3 dP/DP Structures

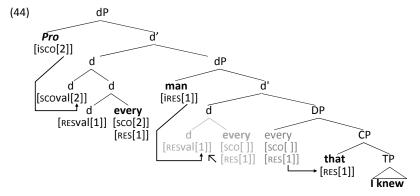
(42)/(43) give two English dP/DP structures built according to these principles:





10

3.4 Relative Clauses



- (45) a. John spoke to Mary, his daughter.
 - b. Mary left the keys on the table, in the far corner.

4.0 Relative Clauses in "D-less" languages?

Consider (64)-(65) from Serbian. (64a,b) can be accommodated under Article-S. What about (65a,b) with no determiner visible?

- (64) a. **Svaki** Jovanov prijatelj [**kojeg sam poznavala**] bio je prisutan. each Jovan.Poss friend who.Acc AUX knew was AUX present 'Each friend of John who I knew was present.'
 - b. Mnogi Jovanovi prijatelji [koje sam poznavala] bili su prisutni. many Jovan.poss friends who.acc aux knew were aux present Many friends of John who I knew were present.'
- (65) a. Jovanove slike [koje je Marija naslikala] bile su odlične.

 Jovan.poss pictures which Aux Marija drew were Aux excellent

 'The pictures of John that Mary drew were excellent.'
 - b. Zvaničnik [koji je predstavljao vladu] bio je prisutan. official who Aux represented government was Aux present 'An official who represented the government was present.'

Null Ds are arguably present in English genitives (65a) and bare plurals (66b). LaTerza (2014): counterpart to English, Serbian has null articles D_{DEF}/D_{INDEF} (65'). Note that Serbian marks definiteness explicitly in AP; potential agreement with D_{DEF}/D_{INDEF} (67):

- (66) a. DDEF John's book (was recently published).
 - b. D_{INDEF} children (are present). (cf. Some children are present.)
- (65')a. DDEF Jovanove slike [koje je Marija naslikala] bile su odlične.
 - b. D_{INDEF} zvaničnik [koji je predstavljao vladu] bio je prisutan.

Zlatić (1997), Stjepanović (1998), Trenkić (2004), Bošković (2005) and Despić (2011) argue that Serbian is "D-less" - that the subjects of (65a-b) are <u>bare</u> NPs. If correct, Article-S couldn't be correct for Serbian. If the analysis of RCs is uniform across languages, D-less languages would show Article-S is inadequate.

Phenomena in Serbian strikingly resemble those used to motivate Article-S in English. Serbian accented *onaj* is a deictic:

(67) **onaj** grâd (je predivan).

DEM city AUX beautiful

'that city (is beautiful)'

But *onaj* also has a de-accented/non-deictic use when it occurs with restrictive AP, PP or CP; it is interpreted essentially as a definite article.

- (68) (Koji grad vam najviše dopao? Which city you most like 'Which city did you like most?')
 - a. onaj prelepi grad DEM beautiful city 'the beautiful city'
 - b. onaj grad pored reke
 DEM city beside river
 'the city beside the river'
 - c. onaj grad koji smo posetili prvog dana DEM city which AUX visited first day 'the city we visited the first day (of our trip)'

Also when occurring with a proper name, *onaj* requires a restrictive AP, PP or RC in parallel to English *the;* compare (69a-c) to (7a-c).

- (69) a. Sećam se onog *(starog) Novog Sada.

 remember REFL that old Novi Sad.

 'I remember the *(old) Novi Sad.'
 - b. Sećam se onog Novog Sada *(iz 80-ih).

 remember REFL that Novi Sad from 80s

 'I remember the Novi Sad from the 80s."
 - c. Sećam se onog Novog Sada *(u kojem sam odrasla).
 remember REFL that Novi Sad in which AUX grew.up
 'I remember the Novi Sad I grew up in.'

Further Ivić (1964) notes Serbian temporal Ns that can appear in two contexts: (i) as accusative PP objects (70a) or (ii) as genitive nominals. In case (ii) they occur either with a deictic demonstrative (70b), or with non-deictic *onaj* 'that' and an obligatory restrictive attributive (70c-e):

- (70) a. Marija je otputovala na zimu.

 Marija Aux left on winter.ACC
 'Marija left in winter."
 - b. Marija je otputovala one/te zime
 Marija AUX left that winter.GEN
 Marija left that winter."
 - c. Marija je otputovala one *(hladne) zime

 Marija AUX left that cold winter.gen

 Marija left that cold winter."
 - d. Marija je otputovala one zime *(posle Božića).
 Marija AUX left that winter.GEN after Christmas
 Marija left the winter after Christmas."
 - e. Marija je otputovala one zime *(koje je Todor maturirao).

 Marija AUX left that winter.GEN which AUX Todor graduated

 Marija left the winter Todor graduated."

Serbian genitive-marked temporal nouns thus pattern like English "indefinite nouns"; and non-deictic *onai* 'that' once again patterns like English *the*.

Macedonian has definite articles, but lacks case-marking or short-form/longform in APs. Where Serbian uses a true demonstrative in the contexts above so does Macedonian, but where Serbian employs de-accented/non-deictic *onaj*, Macedonian uses either the counterpart, de-accented/non-deictic demonstrative *onoj* or the definite article *to*, with synonymous meaning.

- (71) (Koj grad vi se dopadna najmnogu?

 Which city you REFL like most
 'Which city did you like most?')
 - a. onoj preubav grad/ preubaviot grad
 DEM beautiful city/ beautiful-the city
 'the beautiful city'
 - b. onoj grad pokraj rekata / gradot pokraj rekata DEM city beside river / city-the beside river 'the city beside the river'
 - c. onoj grad što go posetivme prviot den / gradot što go posetivme prviot den. DEM city which it visited first day / city-the which it visited first day 'the city we visited the first day (of our trip)'
- (72) a. Marija otpatuva on zima. Marija left on winter 'Marija left in winter."
 - Marija otpatuva onaa / taa zima.
 Marija left that winter
 Marija left that winter."
 - c. Marija otpatuva onaa *(ladna) zima.

 Marija left that cold winter.gen

 Marija left that cold winter."
 - d. Marija otpatuva **zimata** *(po Božik).

 Marija left winter-the after Christmas

 Marija left **the winter after Christmas**."
 - e. Marija otpatuva zimata *(vo koja veeše strašen sneg).

 Marija left winter-the on which fallen big snow

 Marija left the winter which had a lot of snow."

This suggests that although Serbian grammar lacks a dedicated morphological form comparable to *the*, it can recruit de-accented/non-deictic demonstrative *onaj* as a definite article in certain contexts.

Given the well-established syntactic connection between de-accentuation and ellipsis (Tancredi 1992), this lends further support to the view that Serbian possesses a null definite article - potentially, a fully-deaccented *onaj* (65a"):

(65a") ONAJ Jovanove slike [koje je Marija naslikala] bile su odlične.

DEF Jovan.Poss pictures which AUX Marija drew were AUX excellent

'The pictures of John that Mary drew were excellent.'

Summary

- Article S captures apparent syntactic dependencies between D and RCs that alternative adjunction theories do not.
- The view of selection embodied in Article S has a coherent semantics
 - Domain restrictions are an essential component of D meaning, whether explicitly realized or left implicit.
 - RCs (and other restrictive attributives) appear to supply domain restrictions; they are D arguments in this sense.
 - With definite the, RC is potentially a true argument of D.
- Article-S can be updated within a more modern syntactic picture wherein (problematic) obligatory extraposition of RC is traded for obligatory leftward raising of D, in parallel with what happens in vP/VP.
- Claimed "DP less" languages (Serbian) pose an apparent challenge to the generality of Article-S. But the phenomenon of de-accented demonstratives suggests that showing lack of definite articles is less easy to establish than might appear.

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