Revisiting Article-S

Richard Larson (SBU) (and Ivana LaTerza, S. Seattle College)

Smith (1964) proposes the "Article-S analysis" under which relative clauses (1) begin as complements of Art or D before extrapositing 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.

(3) a. NP Adjunction Analysis  
   b. Article-S Analysis

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):

(4) a. I earned it that way
   b. *the way
   c. the old-fashioned way
   d. the way that one should

(5) a. He greeted me with the/*a warmth I expected
   b. *the/a warmth I hadn’t expected

(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, Makassarase, Konjo, Bugis). These languages are basically head initial with word order adjusted (sometimes significantly) by movement.

(8) a. doe?–iṅjo
   'the money'

(9) a. doe?–na
   'his money'

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).

(10a) Laʔalle i doe?–iṅjo palopi–iṅjo
     take ABS money-DEF sailor-DEF
     'the sailor took the money'

(10b) Laʔalle i doe?–iṅjo palopi–iṅjo laʔalle doe?–iṅjo

1
(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-lrı-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):

(14) NP
    DP
    SELECTS
    D
    to-la?alle
    njo
    C
    D
    C
    T
    CP
    TP
    VP

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.

   b. ‘Nobody who we know’, ‘nobody from our group’, ‘nobody important’, ... etc.

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

(17) a. ∀x[person(x) → ¬go-there-anymore(x)]
   b. ∀x[(person(x) & R(x)) → ¬go-there-anymore(x)]
   c. R(x) =_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 ⇒ λQAPVy [ (Q(y) & R(y)) → P(y) ]
   b. No ⇒ λQAPVy [ (Q(y) & R(y)) → ¬P(y) ]
   c. Some ⇒ λQAP3y [ (Q(y) & R(y)) & P(y) ]
   d. The ⇒ λQAP3y [ (Q(y) & R(y)) & y = x & P(y) ]
(19) \[ \text{No-body} \Rightarrow \lambda \alpha \lambda \beta \forall x \left( \left( Q(x) \land R(x) \right) \Rightarrow \neg P(x) \right) \]
\[ \Rightarrow \lambda \beta \forall x \left( \left( \text{person}(x) \land R(x) \right) \Rightarrow \neg P(x) \right) \]

This implies that NL Ds are not unrestricted in the logical sense. This appears true even of Ds like \textit{many}, \textit{few}, \textit{all}, \textit{some}, \textit{both} and \textit{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.)
   \textit{Many/few/all/some/both/neither} \ were/\ was \ \text{wearing sandals.}
b. Many/few/all/some/both/neither \ \textit{of the men we saw} \ \text{were/\ was} \ \text{wearing sandals.}

2.2 Relative Clauses and Other Restrictive Attributes

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 \textbf{who \ we \ know}.
   b. \lambda R[S'](RC')
   c. \lambda R[\forall x[(\text{person}(x) \land R(x)) \rightarrow \neg \text{go-there-anymore}(x)]] \lambda y[\text{know}(\text{we}, y)] \Rightarrow
   \forall x[(\text{person}(x) \land \text{know}(\text{we}, x)) \rightarrow \neg \text{go-there-anymore}(x)]

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

(22) a. \textit{Every} \ \Rightarrow \ \lambda \alpha \lambda \beta \forall x \left( \left( Q(x) \land R(x) \right) \Rightarrow P(x) \right)
   b. \textit{that I knew} \ \Rightarrow \ \lambda y[\text{know}(l, y)]
   c. \textit{Every that I knew} \ \Rightarrow \ \lambda R[\lambda \alpha \lambda \beta \forall x \left( \left( Q(x) \land R(x) \right) \Rightarrow P(x) \right) \lambda x[\text{know}(l, y)]]
   \Rightarrow \lambda \alpha \lambda \beta \forall x \left[ \left( Q(x) \land \text{know}(l, x) \right) \Rightarrow P(x) \right]
   d. \textit{friend of John} \ \Rightarrow \ \lambda z[\text{friend}(z, j)]
   e. \textit{Every that I knew friend of John} \ \Rightarrow \ \lambda \alpha \lambda \beta \forall x \left( \left( Q(x) \land \text{know}(l, y) \right) \Rightarrow P(x) \right) \lambda z[\text{friend}(z, j)]
   \Rightarrow \lambda \beta \forall x \left[ \left( \text{friend}(x, j) \land \text{know}(l, x) \right) \Rightarrow P(x) \right]

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

(23) a. \textit{The} \ \Rightarrow \ \lambda \alpha \lambda \beta \forall x \forall y \left[ \left( Q(x) \land R(y) \right) \Rightarrow y = x \right) \land P(x) \right]
   b. \textit{The} \ \Rightarrow \ \lambda R[\lambda \alpha \lambda \beta \forall x \forall y \left[ \left( Q(x) \land R(y) \right) \Rightarrow y = x \right) \land P(x) \right]

On (23a), \textit{the} is a \textbf{binary} D with an R whose value may be supplied by context or by
an overt phrase. On (24b), \textit{the} is a \textbf{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 \textbf{a man}. \textit{The man} \ \textit{is} \ \textit{wearing a hat}.
   b. I see \textbf{a man}. \textit{The man \ I see} \ is \ \textit{wearing} \ \textit{a hat}.
   c. I see \textbf{a man}. \textit{The man \ you know} \ is \ \textit{wearing} \ \textit{a hat}.

(25) a. I see \textbf{a rose}. \textit{The rose} \ \textit{is} \ \textit{lovely}.
   b. I see \textbf{a rose}. \textit{The rose \ I see} \ \textit{is} \ \textit{lovely}.
   c. I see \textbf{a rose}. \textit{The red rose} \ \textit{is} \ \textit{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 in all cases the sign of a
restrictive adjunct, present or recoverable..."(p.46). I.e., definite D selects 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
\textit{the}, hence (24c) can't be understood equivalently to (24b), hence continuity fails.

Vendler’s view of \textit{the} as selecting an (overt or covert) restrictive phrase fits Article-S
constituency. Compare (22) and (26).

(26) a. \textit{the} \ \Rightarrow \ \lambda R[\lambda \alpha \lambda \beta \forall x \forall y \left[ \left( Q(x) \land R(y) \right) \Rightarrow y = x \right) \land P(x) \right]
   b. \textit{that I knew} \ \Rightarrow \ \lambda y[\text{know}(l, y)]
   c. \textit{friend of John} \ \Rightarrow \ \lambda z[\text{friend}(z, j)]
   d. \textit{The that I knew} \ \Rightarrow \ \lambda R[\lambda \alpha \lambda \beta \forall x \forall y \left[ \left( Q(x) \land R(y) \right) \Rightarrow y = x \right) \land P(x) \right]
   \Rightarrow \lambda \alpha \lambda \beta \forall x \forall y \left[ \left( Q(x) \land \text{know}(l, y) \right) \Rightarrow y = x \right) \land P(x) \right]
   e. \textit{The that I knew friend of John} \ \Rightarrow \ \lambda \alpha \lambda \beta \forall x \forall y \left[ \left( Q(x) \land \text{know}(l, y) \right) \Rightarrow y = x \right) \land P(x) \right] \lambda z[\text{friend}(z, j)]
   \Rightarrow \lambda \beta \forall x \left[ \left( \text{friend}(x, j) \land \text{know}(l, x) \right) \Rightarrow P(x) \right] \lambda z[\text{friend}(z, j)]
   \Rightarrow \lambda \beta \forall x \left[ \left( \text{friend}(x, j) \land \text{know}(l, x) \right) \Rightarrow P(x) \right] \lambda z[\text{friend}(z, j)]
   \Rightarrow \lambda \beta \forall x \left[ \left( \text{friend}(x, j) \land \text{know}(l, x) \right) \Rightarrow P(x) \right] \lambda z[\text{friend}(z, j)]
   \Rightarrow \lambda \beta \forall x \left[ \left( \text{friend}(x, j) \land \text{know}(l, x) \right) \Rightarrow P(x) \right] \lambda z[\text{friend}(z, j)]
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).

(27) a. [φ [_every that I knew_] friend of John that I knew ]
   b. [φ [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).

(28) a. [φ give _ [vp [a birthday present] [vp give to John]] ]
   b. [φ every d [friend of John] [vp 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):

(29) XP
    \[ \theta \leftarrow \text{AGREE} \to [\theta] \]

Sets of θ-features ([θ1], [θ2]) 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)):

(30) XP
    \[ \alpha \leftarrow \text{AGREE} \to [\theta1] \]
    \[ X' \leftarrow \text{AGREE} \to [\theta1] \]
    \[ X \leftarrow \text{AGREE} \to [\theta2] \]

Order: [θ1] > [θ2]

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

(31) a. \( \theta \) _interpretable_ \( \theta \), associated with a "meaning"
   b. \( \theta \) _valued_ \( \theta \), associated with visible marking/pronunciation
   c. \( \theta \) _uninterpretable-unvalued_ \( \theta \), concordial

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

(32) a. \( \theta [n] \ldots \theta [n] \)
   b. \( \theta [n] \ldots \theta [n] \ldots \theta [n] \)

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

(33) a. \( \theta [n] \ldots \theta [n] \)
   b. \( \theta [n] \ldots \theta [n] \ldots \theta [n] \)
   c. \( \theta [n] \ldots \theta [n] \)

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

(35) a. \( \alpha \leftarrow \text{AGREE} \to [\theta1] \]
   b. \( \alpha \leftarrow \text{AGREE} \to [\theta1] \)

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:

(37) "Transitive Structure"

Order: \([\theta_1] > [\theta_2]\)

(37) "Ditransitive Structure"

Order: \([\theta_1] > [\theta_2] > [\theta_3]\)

3.3 dP/DP Structures

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

(41) Ditransitive VP

Order: \([\text{AG}] > [\text{TH}] > [\text{GL}]\)

(42) Transitive DP

Order: \([\text{SCO}] > [\text{RES}]\)

(43) Ditransitive DP

Order: \([\text{SCO}] > [\text{RES}] > [\text{GEN}]\)
3.4 Relative Clauses

(44) Pro
[isco[2]]
dP
d’

d, d’
[SCOVAL[2]] [SCO[2]] [RES[1]]

man
d
[dP
[RESVAL[1]] [SCO[1]] [RES[1]]

d, d’
[SCOVAL[1]] [SCO[1]] [RES[1]]

that
[RES[1]]

(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. Svači Jovanov prijatelj [kojeg sam poznavala] bio je prisutan.
each Jovan.Poss friend [kojeg sam poznavala] knew was AUX present
’Each friend of John who I knew was present.’
many Jovan.Poss friends [koje sam poznavala] were AUX present
’Many friends of John who I knew were present.’

Jovan.Poss pictures which [koje je Marija naslikala] drew were AUX excellent
’The pictures of John that Mary drew were excellent.’
official [koji je predstavljao vludu] 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. $D_{def}$ John’s book (was recently published).
b. $D_{indef}$ children (are present). (cf. Some children are present.)

(65’) a. $D_{def}$ Jovanove slike [koje je Marija naslikala] bile su odlične.
b. $D_{indef}$ zvaničnik [koji je predstavljao vludu] bio je prisutan.

(67) a. $D_{def}$ novi grâd
new.NOM.SG.MASC.LONG city
’the new city’
b. $D_{indef}$ nov grâd
new.NOM.SG.MASC.SHORT city
’a new city’

Browne (2002, p.237)

Zlatić (1997), Stjepanović (1998), Trenkić (2004), Bošković (2005) and Despić (2011) argue that Serbian is "D-less" - that the subjects of (65a-b) are bare NPs.

If correct, Article-S can’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. Sekam se onog *(starog) Novog Sada.
   remember REF that old Novi Sad
   'I remember the *(old) Novi Sad.'

b. Sekam se onog Novog Sada *(iz 80-ih).
   remember REF that Novi Sad from 80s
   'I remember the Novi Sad from the 80s.'

c. Sekam se onog Novog Sada *(u kojem sam odrasla).
   remember REF 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 onaj 'that' once again patterns like English the.

Macedonian has definite articles, but lacks case-marking or short-form/long-form 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 onaj or the definite article to, with synonymous meaning.

(71) ( Koj grad vi se dopadna najmognog?
   Which city you REF like most
   'Which city did you like most?'
   a. onoj preužav grad/ preužaviot 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 otputovala na zima.
   Marija left on winter
   'Marija left in winter.'

b. Marija otputovala onaa / taa zima.
   Marija left that winter
   Marija left that winter.'

c. Marija otputovala onaa *(hladna) zima.
   Marija left that cold winter.GEN
   Marija left that cold winter.'

d. Marija otputovala zimata *(po Božik).
   Marija left winter-the after Christmas
   Marija left the winter after Christmas.'

e. Marija otputovala 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.

References


Kuroda, Sige-Yuki. 1969. English relativization and certain other related problems. Language 44: 244-266


