# Constraints on Distributive Coordination

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**Abstract**    The paper argues that the *distributive conjunction construction* formed in English by *both XP and XP* and in Italian by *sia XP che XP* is best analyzed as a sentential conjunction reduced by a combination of fronting operations and across-the-board raising. The distribution of this type of conjunction has a number of peculiar restrictions, compared to 'plain' coordination. The analysis accounts for these restrictions by showing a strong correlation between constituents that may appear in *both/and* or *sia/che* and constituents that may undergo A-bar fronting, including independently motivated interlinguistic variations. The paper puts forth a novel proposal to extend the analysis to non-final positions – a major stumbling block for analogous theories in the past.

**Keywords**    Both. Conjunction. Coordination. Distributivity. Italian. Sia. Syntax-semantics interface

## 1 Introduction

This paper presents an analysis of the distributive conjunction given by the Italian *sia/che* correlative construction in (1), contrasted with its English counterpart, the *both/and* construction in the translation of (1).

| (1) | Maria | ha visto | **sia** | Carlo | **che** | Marco. |
|---|---|---|---|---|---|---|
| | Maria | has seen | IS$_{subj}$ | Carlo | THAT | Marco |
| | 'Maria has seen **both** Carlo **and** Marco' | | | | | |

Etymologically, *sia* is the 3$^{rd}$ Person Singular subjunctive form of the verb *essere* 'be',[1] *che* is the complementizer "that", used as subordination with declarative verbs and relative clauses, but also as a 'coordinative' pivot (cf. *than*) in comparative constructions where constituents of the same type are compared (2) (Donati 1998).

| (2) | Gianni | ha | più | nemici | che | amici |
|---|---|---|---|---|---|---|
| | Gianni | has | more | foes | than | friends |
| | 'Gianni has more foes than friends' | | | | | |

*Sia/che* is distributive in the sense that it blocks cumulative predicates like those in (3), which crucially apply to semantic *pluralities* (Lasersohn 1995; Schwarzschild 1996, a.o.). In object position, the use of *sia/che* strongly suggests that Carlo and Marta were each married to someone else, possibly in different occasions.

| (3) | *Sia | Carlo | che | Marta | {sono una coppia / | formano | un team / |
|---|---|---|---|---|---|---|---|
| | Is | Carlo | THAT | Marta | {are a couple / | form | a team |
| | vivono | insieme / | hanno | gusti | diversi | tra | loro |
| | live | together / | have | tastes | different | among | them |

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[1] The subjunctive form *sia* was used in older Italian as an existence statement ("let X be"), a usage that persists in the language of mathematics (i). The form agrees in number with the DPs afterward (ia vs. b).

(i)　a. Sia *f*: una funzione con domino e codominio R…

　　　IS$_{subj:3p.sg}$ *f*: a function with domain and range R…

　　　'Let *f*: be a function with domain and range R… '

　　b. Siano *f*: e *g*: due funzioni totali…

　　　'Let *f*: and *g*: be two total functions… '

　　　ARE$_{subj:3p.pl}$ *f*: and *g*: two functions total…

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(4) | Il prete | unì | **sia** | Carlo | **che** | Maria in matrimonio.
| The priest | has joined | IS$_{subj}$ | Carlo | THAT | Maria in marriage

'The priest married both Carlo and Marta' (not: to each other)

Building on Bianchi and Zamparelli (2004), I will propose that when these constructions appear clause-finally their distributive meaning is the result of a syntactic derivation that starts as the coordination of two sentences, as in (5), followed by raising of the elements to be coordinated to Focus positions within each clause, followed by rearrangement of the shared remnants.

(5) | Sia che | [$_{TP}$ Maria ha visto Carlo] | [$_{TP}$ Maria ha visto Mario]
| IS THAT | [$_{TP}$ Maria has seen Carlo] | [$_{TP}$ Maria has seen Mario]

roughly: 'Let it be the case that Maria has seen Carlo and Maria has seen Mario'

This analysis, a member of the *conjunction reduction* family,[2] predicts an intricate set of restrictions in the distribution of *sia/che* and *both/ and*, which reduce to whether the conjoined elements are able to move to an edge position. Independently motivated differences between Italian and English account for cases where the two constructions diverge. Given the high parallelism of the two constructions, *sia* and *che* will henceforth be glossed BOTH and AND, respectively, except when their lexical nature becomes relevant (as in Sec. 1.1 and 6 below). Distributive conjunction will be abbreviated as **D-Conj** in what follows. Translations will be omitted when glossae are transparent.

The structure of the paper is as follows: After introducing in Sec. 1.1 a previous proposal on the ambiguity of English *both*, Sec. 2 gives the basic D-Conj paradigm, dividing it in cases where the construction is acceptable in both English and Italian (Sec. 2.1); cases where it is out in both (while plain conjunction is possible) (Sec. 2.2) and cases where the two languages diverge (Sec. 2.3). The key points of the analysis for Italian are laid out in Sec. 3, with English *both/ and* in Sec. 3.1 and Sec. 3.2 devoted to the process that factors the common portions of the conjuncts using ATB-raising. Sec. 4 discusses some differences in scope between plain coordination and D-Conj. Sec. 5 illustrates in four subsections how the theory proposed can account for the data presented, also discussing the role of ellipsis. Sec. 6 illustrates other correlative uses of *sia* and *che* and suggests some possible structures. Finally, Sec. 7 and 8 discuss the critical problems raised by the appearance of D-Conj in non-final positions,

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**2** Oirsouw 1987; Wilder 1997; Camacho 2004; Wilder 2018.

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and offer a radical solution: the non-final cases should be seen as a lexical process molded by analogy with the final cases, and inheriting all their semantic properties and constraints. Section 9 concludes.

## 1.1 Two "Both"

Schwarzschild (1996, Ch. 7) proposed that English *both* is ambiguous between two forms, tagged $both_{DP}$ and $both_{and}$. $Both_{DP}$ is a pre-determiner which can precede definite/bare DPs and coordinations thereof, and can 'float' (6); $both_{and}$ precedes the conjunction of many categories (as described in this paper) including quantificational and indefinite DPs, but cannot float (7):

(6)   a. Both$_{DP}$ the boys were tired.
      b. The boys were bothDP tired.

(7)   a. Both$_{and}$ [every boy] and [many of the adults] were sleepy.
      b. *[Every boy] and [many of the adults] were both$_{and}$ sleepy

In (7) picking the coordination of two quantificational DPs ensures that we are in the presence of $both_{and}$, not $both_{DP}$, which cannot be associated with quantificational DPs (see *both {some/exactly two} boys*). Despite these differences, Schwartzschild's two *both*s share the property of distributivity: in (8a), *play chess* applies individually to each boy, but predicates with cumulative readings degrade the sentence; in (8b), the meaning in which each screw is connected to its nut does not call for the use of *both*.

(8)   a. Both boys {played chess / ?played together / *were a couple}.
      b. Both every screw and every nut {got rusty / ??were screwed in together tightly}.

In Italian, the two *both*s are rendered with different expressions: $both_{DP}$ is *entrambi*, followed by a definite DP, while $both_{and}$ is our *sia/che*. *Che* is obligatory and cannot be replaced by the regular coordinator *e* 'and', though it can be replaced by another *sia*, as in (9c).[3]

(9)   a. Entrambi {i ragazzi / ? Gianni e Maria} erano soli.
         both$_{DP}$ {the boys / Gianni and Maria} were alone
      b. Sia Gianni che/sia Maria sono soli.
         IS Gianni THAT/IS Maria are alone.

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**3**   Note that the verb is plural both in (9a) and (9b): distributively conjoined preverbal subjects still require plural verb agreement. This aspect will be picked up in Sec. 7.

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'Both$_{and}$ John and Mary are alone'

c. Ho visto sia Gianni che/sia Maria.
I_have seen IS Gianni THAT/IS Maria.
'I have seen both John and Mary'

Unlike *entrambi*, which like *both$_{DP}$* has a strict presupposition of duality, the *sia/che*-constituent (and its variant with just *sia*) may also be iterated (10), with constraints schematized in (11): a sequence of *sia* (no *che*), but also a sequence of *che*, with *sia* obligatory as the first element.[4]

(10) a. Sia Gianni che Carlo che Marco votarono "sì".
BE Gianni THAT Carlo THAT Marco voted "yes"
'Gianni, Carlo and Marco all voted in favor'
b. Per passare il tempo, Gianni ha sia pescato che letto che scritto lettere
to kill the time, Gianni has BE fished THAT read THAT written letters
che camminato.
THAT walked.
'To kill time, John fished, wrote letters and walked.'

(11) a. sia A$_1$ ... sia A$_n$ (*che A$_{n+1}$)
b. *(sia) A$_1$ che A$_2$ ... che A$_n$

As Schwartzschild observes, *both$_{and}$* does not have a presupposition of duality either. Examples like (12) can be found in abundance in the UKWAC corpus. Note that other 'floated quantifiers' (*all, each*) do not have the distribution of *both*. For instance, they cannot replace *both* in (12).

(12) a. It makes both personal, legal and business sense for managers...
b. government at both local, national and EU levels

I will return to these cases in Sec. 6, after dealing with the binary D-Conj cases.

## 2 The Distribution of *sia/che* and *both/and*

As is well known, *and* and *or* coordinations can be applied to many and perhaps all syntactic categories. The null hypothesis is that the D-Conj with *both/and* and *sia/che* shouldn't show any difference in this respect. In actual fact, D-Conj has many restrictions which are

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**4** This pattern was confirmed via corpus searches on the huge ITWAC3 corpus (Ferraresi et al, 2008).

unknown to plain *and*, and which turn out to be mostly syntactic, not semantic in nature. Let's first consider cases where D-Conj does not differ from plain conjunction, in Italian as in English.

## 2.1 Acceptable Distributive Conjuncts

### A. FULL ARGUMENTAL DPS (subject, object and indirect object):

(13) a. Sia Gianni che Maria sono qui.
   BOTH John AND Mary are here
   b. Ho visto sia Gianni che Maria
   I have seen BOTH John AND Mary

(14) I sent both John and Mary a wonderful book.[5]

### B. ARGUMENTAL PPS:[6]

(15) Carlo ha parlato sia [con sua moglie] che [con il bambino].
   Carl has spoken BOTH [with his wife] AND [with the kid]

### C. POST-COPULAR PREDICATES

(16) Gianni è sia alto che magro
   John is BOTH tall AND slim

(17) Mario è sia [un linguista] che [un romanziere].
   Mario is BOTH [a linguist] AND [a novelist]

(18) Maria era sia [senza soldi] che [senza documenti].
   Mary was BOTH [without money] AND [without ID card]

### D. NON-FINITE VPS: (possibly omitting the object, as in (20))

(19) Maria voleva sia [vedere Carlo] che [salutare Paula].
   Mary wanted BOTH [to see Carl] AND [to greet Paula]

(20) Maria aveva sia visto che riconosciuto il suo amico.
   Mary had BOTH spotted AND recognized her friend

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**5**  Indirect object DPs are unavailable in Italian, which uses [V DO to-PP].

**6**  Note that here and elsewhere *entrambi* "both$_{DP}$" is completely ungrammatical:
   *\*Gianni ha parlato entrambi [con sua moglie] e [con il bambino].*
   *Entrambi* is only compatible with the conjunction of *nominal* elements.

E. EMBEDDED CPS:

(21) So      sia      [{che/se} Gianni è qui]      che [{che / se} Maria
I-know   BOTH  [{that/whether} John is here]  AND [{that/whether} Mary
lo nasconde].
him hides]
'I know both that/whether John is here and that/whether Mary is hiding him.'

The sequence . . . *che che*. . . 'that that' is stylistically cumbersome, but removing one *che* leads to ungrammaticality.

(22) *So    sia     che Gianni è qui    che Maria lo nasconde
I-know  BOTH   that John is here   THAT Mary him hides

F. ADJUNCTS: (AdvP and PPs in (23a); *when*-clauses in (23b), *because*-clauses in (23c))

(23) a.  Gianni lavorava  sia [velocemente]         che [con attenzione].
         John worked     BOTH [quickly]          AND [with care]
    b.  Maria ride       sia [quando è nervosa]    che [quando è calma]
         Mary laughs    BOTH [when she is nervous]  AND [when she is calm]
    c.  Maria ride   Sia [perché è nervosa]    che [perché è divertita]
         Mary laughs  BOTH [because she is nervous]  AND [because she is amused]

G. DETERMINERS (24) AND POSSESSIVES (25) (in English, including the genitive marker)

(24) Sia [troppa] che [troppo poca] acqua fa male alle piante.
     BOTH [too much] AND [too little] water does damage to-the plants

(25) a. Both [John's] and [Mary's] fingers were dirty.
     b. Both [men's] and [women's] expectations decrease as the years go by.

Note that in all cases except A, distributivity can be difficult to test. This does not mean that the *sia/che* variant is identical in meaning to plain *and*: the natural use of these forms is to deny that only one of the conjuncts is true (in other words, to deny the implicit claim of an exclusive *or*):

(26) Carlo non è solo bello, o solo ricco: è sia bello che ricco!
     Carlo not is just handsome, or just rich: he-is BOTH handsome AND rich!

## 2.2 Categories that Cannot be Joined by D-Conj

In English and Italian, it is impossible to distributively conjoin root clauses:

(27) a.  *Sia [Maria è qui]        che [Gianni sarà in ufficio].
      BOTH [Mary is here]     AND [John will_ be in the office]
      '*Both Mary is here and John is going to be in the office.'
    b.  * Sia [Carlo partì]         che [Maria tornò].
      BOTH [Carl left]        AND [Mary returned]
      '*Both [Carl left] and [Mary returned]'

The ability of D-Conj to apply to root clauses is subject to considerable cross-linguistics variation, examined in Johannessen (2005). Exclusive disjunction on root clauses seems to be more common that distributive conjunction (see Johannessen 2005, ex. (87); Larson 1985b; Schwartz 1999), and is possible both in English and Italian (28a).[7] Even what seems to be the negation of D-Conj, the *neither/nor* construction, allows matrix conjunction (28b).

(28) a. O [Gianni è partito presto] o [non è venuto affatto].
     either [John has left early] or [not he_is come at all]
     'either John left early, or he didn't come at all'
   b. Nè [ho letto il libro] nè [lo leggerò mai].
     Neither [I_have read the book] nor [it I_will_read ever]
     'Neither have I read the book nor will I ever read it'

In the languages under consideration, TPs embedded under C are also out (cf. (27))[8]

(29) a. *So che sia [Marco è qui] che [Maria è in ufficio].
     I_know that BOTH [Marco is here] AND [Maria is in office]
     '*I know that both Marc is here, and Mary is in the office'
   b. *Mi domando se sia [Marco arrivi oggi] che [Carla lo ospiti].

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**7**  Several Germanic languages place the *either/both* adverb in the V1 position, forcing Johannessen to an analysis that moves this adverb out of the left conjunct at LF, onto the Spec of a CoordP containing *and*.

**8**  One reviewer finds other cases of TP coordination more or less acceptable (one example provided is *Non dubito affatto che sia gli studenti abbiano lavorato che i docenti siano stati esigenti* 'I have no doubt that both the students have worked, and the teachers have been demanding') and worries about the coverage of Generalization (68) below for the case of TPs. While I do not find the reviewer's examples completely acceptable, they are better than the examples in (29). However, removing the initial negation makes it worse, suggesting that association with focus might be part of the explanation. In any case, the contrast between e.g. (29b) and the CP coordination in (21) appears quite solid.

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I wonder if BOTH [Marco arrives~subj~ today] AND [Carla him puts_up~subj~]
'*I wonder if both Marco arrives today and Carla puts him up'

The group formed by an auxiliary plus a VP is impossible (30) (see, however, (43) below).

(30)  a. *Maria sia [è partita] che [ha viaggiato a lungo].
          Maria BOTH [is left] AND [has travelled for long]
          '*Mary both has left and has traveled a long time.'
      b. *Maria sia [è arrivata] che [sta vestendosi].
          Mary BOTH [is arrived] AND [is getting-dressed]
          '*Mary both has arrived and is getting dressed'

Small clauses selected by epistemic and elective verbs (31) are degraded, but those selected by verbs of perception (32a) or prepositions (32b) are perfect.[9]

(31)  a. ??Considero sia [Gianni intelligente] che [Maria simpatica].
          I consider BOTH [John intelligent] AND [Mary nice]
          '??I consider both John intelligent and Mary nice'
      b. ??Abbiamo nominato sia [Gianni presidente] che [suo figlio ministro].
          we-have appointed BOTH [John president] AND [his son minister]
          '??We appointed both John president and his son a minister'

(32)  a. Ho appena visto sia [Carla in giardino] che [Marco in soggiorno].
          I-have just seen BOTH [Carla in garden] AND [Marco in living-room]
          'I just saw both Carla in the garden and Marc in the living troom.'
      b. Con sia [Gianni espulso] che [Marco infortunato], la partita sarà un disastro
          with BOTH [John out] AND [Marc injured], the match will be a disaster
          'With both John out and Marc injured, the match will be a disaster'

D-Conj of (DP-internal) NPs and AdjPs is impossible (33), as are prenominal attributive adjectives (34).[10]

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**9**  (31) is not simply due to the fact that the small clause must be adjacent to the element selecting it: in Italian, sentence-level adverbs like *certamente* 'certainly' can be be inserted between the verb and the small clause, but not between the preposition *con* 'with' and the small clause.

**10**  One reviewer finds examples like (33a) and (34) not as degraded, and gives them one question mark. We were unable to find a single example of DET (POSS) *sia* NOUN/ ADJ *che* NOUN/ADJ in all of ITWAC3, while we found many thousands of post-nominal adjectives connected by *sia/che* (e.g. *ricerca sia teorica che sperimentale* 'research both theoretical and experimental'). If post-nominal attribute adjectives are (optionally) analyzed as reduced relatives, these cases reduce to the post-copular examples in (16), which are also quite common.

(33) a. *Il mio sia amico che collega è Gianni.
      * My BOTH friend AND colleague is John.
    b. *Maria è molto sia alta che snella.
      *Mary is very BOTH tall AND slim.

(34) *Un sia famoso che nobile guerriero sfidò Orlando.
    *A BOTH famous AND noble warrior challenged Orlando.

Relative CPs are out:

(35) *Un uomo sia [che conosco bene] che [con il quale parlo spesso].
    *A man BOTH [that I know well] AND [with the which I_talk often]
    '*A man both that I know well and with whom I often talk'

WH-DPs in direct questions are out (36), but they improve when embedded (37).

(36) a. *Sia chi che cosa hai visto?
      BOTH who AND what you have seen?
      '*BOTH who AND what did you see?'
    b. *Sia quando che dove l'hai vista?
      BOTH when AND where her you.have seen?
      '*BOTH when AND where did he see her?'
    c. *Sia quale ragazzo che quale ragazza hai salutato?
      BOTH which boy AND which girl you.have greeted?
      '*BOTH which boy AND which girl have you greeted?'

(37) Mi domando sia quando che dove l' abbia vista.
    I.wonder BOTH when AND where her he.has seen
    'I wonder both when and where he saw her.'

Stump (1985) discusses "absolute constructions" like the bracketed constituents in (38), distinguishing those built on Individual-Level predicates (38a) from those containing Stage-Level predicates (38b).

(38) a.  [Being a linguist], Karl was immediately hired.      *IL predicate*
     b.  [Standing on a chair], Karl can touch the ceiling.    *SL predicate*

D-Conj is only possible with the latter (39). Normal *and* coordination is of course possible with both.

(39) a. *Sia essendo un linguista che conoscendo Python, Carlo è stato assunto.
      *BOTH being a linguist AND knowing Python, Carl has been hired.
    b. Sia stando su una sedia che saltando Carlo può raggiungere il soffitto.
      BOTH standing on a chair AND jumping, Carl can reach the ceiling.

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(39b) has the expected distributive semantics (that is, *standing on a chair, Carl can touch the ceiling; jumping, Carl can touch the ceiling*).

## 2.3    Cross-Linguistic Differences

In the examples above, Italian *sia/che* and English *both/and* give rise to parallel judgments. In yet other cases, the two languages differ. D-Conjs of finite verbs, with or without an object, are out in Italian but fine in English:

(40)  a. *Gianni sia lavorava che chiacchierava.
          John BOTH worked AND chatted.
      b. *Maria sia vide (Gianni) che salutò Eva
          Mary BOTH saw (John) AND greeted Eva

DPs under a preposition selected by a verb are out in Italian but fine in English:

(41)  a. ??Gianni ha parlato con sia Maria che Eva.
          John has spoken with BOTH Mary AND Eva
      b. *Vado a sia Roma che Bologna
          I-will go to BOTH Roma AND Bologna
      c. *Roma ha combattuto contro sia i Visigoti che i Vandali
          Rome has fought against BOTH the Visigoths AND the Vandals

However, at least for some speakers *sia/che* under *con* 'with' improves when the PP modifies nouns (42). The (b) case is from ITWAC.

(42)  a. Voglio un auto con sia l' autopilota che il climatizzatore di serie
          I-want a car with BOTH the autopilot AND the air-conditioner as standard
      b. l' oceano con sia scogliere che lunghissime distese di sabbia
          the ocean with BOTH cliffs AND very-long stretches of sand

Finally, in contrast with (30a) above, native speakers report that D-Conj of contrastively focused modals is fairly acceptable.

(43)  John both CAN and SHOULD speak out.

## 3    The Analysis: Focus and ATB Factorization

My proposal is that 'native' distributive coordination is the result of the coordination of two full sentences – in most cases, root clauses – which get 'reduced' by meaning-preserving syntactic operations. The distributive semantics falls out automatically from

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a full clause coordination structure, without having to stipulate the existence of a special, distributive type of conjunction, and so does the ungrammaticality of e.g. (44a) (in the reading *different from that of the other*), which would be derived from *\*I gave a different book to John and I gave a different book to Mary.*

(44)  \*I gave a different book to both John and Mary.

In this section, I will only discuss final or near-final cases like (44) (as opposed to, e.g., *\*Both John and Mary read a different book*). The special challenges raised by other D-Conj positions (including the fact that pre-verbal D-Conj of *singular* subjects triggers *plural* verb agreement) will have to await till Sec. 7 and 8.

   The Italian *sia/che* form of D-Conj reveals an underlying *biclausal structure* much more openly than the English form, since it contains the complementizer *che* 'that' (a Force head, in the sense of Rizzi 1997), which canonically selects sentences, and the verb above it.[11] English *both/and* does not have the same transparent relation to the Comp area, but I believe the distributional similarities noted above hint at a parallel analysis.

   In Italian, we start by assuming that *sia* selects a 'coordinative CP' ($C_\&$), presumably the same one used in comparatives (2) (Donati 1998), which takes two FocPs, one in Specifier, the other in Complement position:

(45)  *sia* $[_{CP}[_{FocP} \text{Foc}^0 [_{TP} \text{T} [_{VP} \text{Subj Pred}]]] \, che_\&[_{FocP} \text{Foc}^0 [_{TP} \text{T} [_{VP} \text{Subj Pred}]]]]$

The reduction of the two initial FocPs to their pronounceable form is done by two operations: one, which raises two FocP-internal constituents of the same type to the [Spec,Foc⁰] of each conjunct; the second, which targets the remnants and extracts them in an Across-the-Board fashion to a position above *sia*. The constituents moved by the first operation are those that appear to be conjoined in overt syntax.

   To get the semantics of distributivity, the predicate must combine with its subject within each conjunct in (45), yielding two distinct propositions, which are then combined by sentential conjunction. Suppose that this semantic process is completed by FocP, if not earlier. I will assume that the CP in (45) is selected by *sia* "is$_{SUBJ}$"

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**11**  *Sia/che* is in fact not the only structure Italian uses to express D-Conj. The same meaning can be expressed using the pairs *tanto/quanto* "much/how-much" and (at a higher stylistic register) *così/come* "so/how". In both structures, the conjunction is focused. These variants will be discussed in forthcoming work, but the fact that they use Wh elements like *quanto* 'how much' or *come* 'how' confirms that the Comp area is crucially involved.

(46), which I will place in V, not T, on account of the fact that this form has an existential meaning and – unlike the *sia* in ft. 1 – takes no external subjects and does not vary in number.

This analysis has many points in common with Donati's (1998) analysis of Italian *che* comparatives (though Donati uses ellipsis, not ATB for sentence reduction), Kayne's (1998) treatment of *only* and other structures, Bianchi and Zamparelli's (2004) analysis of Italian *non solo X ma anche Y* 'not only X but also Y' and Vicente (2010) for Spanish *X sino Y* cases. Merchant's (2005) raising account of ellipsis also contains similar observations.

## 3.1 The English Case

For English *both/and*, we could assume that *both* is adjoined to the conjunction of two or more CPs, which are remapped onto DPs (CP routinely appear as subjects, either alone or as an apposition to the noun *fact*). If this is the case, a CP conjunction would become the sort of object that the pre-determiner *both* (i.e. $both_{DP}$) could directly modify. The structure would then become:

(46)  ... $both_{DP}$ [$_{\&P}$ [$_{CP}$ C0 [$_{FocP}$ Foc [$_{TP}$ Subj [$_{VP}$ Pred]]]] [$_{\&'}$ and [$_{CP}$ C0 [$_{Foc}$ Foc [$_{TP}$ I [$_{VP}$ Subj Pred]]]]]]]

This would reduce $both_{and}$ to $both_{DP}$, arguably a positive result, but one which runs into problems with the possibility of more than two conjuncts, as we saw in (12) (*both local, national and EU levels*). The solution is to assume that, while distributive CP coordination is born binary, this fact is hidden by recursion (a second *both* in the second conjunct of the first) and ellipsis (deletion of *and*, much as it happens in *Marc, Luke and Sara*, plus deletion of the second *both* under identity) (47).[12]

(47)  [$_{CP}$ both [$_{CP}$ ... local ] ~~and~~ [$_{CP}$ ~~both~~ [$_{CP}$ ... national ] and [$_{CP}$ ...EU levels ]]]

With the basic multi-sentential structure in place, we turn to the reduction process.

Following Bianchi and Zamparelli (2004), I will assume that the elements that are contrasted move to [Spec,FocP]. This generates one set of alternatives per conjunct. With *John saw both Mary and Lucy*, we have (48):

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**12**  This raises interesting questions about the strength of the presuppositions of *semantic* duality, (*Both John and his sons* appears to be fairly acceptable; again, see Schwarzschild 1996, Sec. 7.2), which I won't address here.

(48)  a. "John saw Mary" is true, and every statement "John saw x", x a (contextually salient) individual alternative to Mary, is false.
b. "John saw Lucy" is true and every statement "John saw x", x a (contextually salient) individual alternative to Lucy, is false.

These conjuncts can be jointly true only if *John saw Lucy* is not among the alternatives of (48a) and *John saw Mary* not among the alternatives of (48b). This effect of excluding each conjunct from the alternatives of the other is, I propose, the core semantic effect of *sia/che* and *both/end*.

## 3.2    Factoring the Conjunction

The rest of the derivation factors the remnant containing the traces of the elements moved to FocP, which may be thought of as the shared background of the coordination. In Bianchi and Zamparelli (2004) (which deals with a different correlative structure: *not only X but also Y*) the shared material was raised across the board to a Ground Phrase within the same clause, above FocP (49).

(49)  $[_{\text{GroundP}} [_{\text{TP}} \text{Shared\_Remnant } t_{i/j} ]_k \dots [_{\&P} [_{\text{FocP}} \text{Coord\_1}_i \text{ Foc0 } t_k] \& [_{\&P} [_{\text{FocP}} \text{Coord\_2}_j \text{ Foc}^0 t_k]]]]$

This analysis is not viable for the *sia/che* construction: the fact that the shared material is higher than *sia* 'is' and the Force complementizer *che* (Rizzi 1997) implies that it has been placed in a higher clause. Moreover, Ground should be understood as the locus for old or presupposed information (see Poletto, Pollock 2000; Poletto 2010), but there is no problem in having new information in the remnant, in the form of clefts or contrastive focus (50).[13]

(50)  a. Era Carlo che ha visto sia Marco che Maria.
    It-was Carlo that has seen BOTH Marco AND Maria.
b. CARLO ha visto sia Marco che Maria, non Luigi, che ha visto solo Marco.
    CARLO ha seen BOTH Marco AND Maria, not Luigi, who has seen only Marco.

Moving the shared remnant to different left-peripheral positions in the upper clause (Ground, Focus or Topic positions) would not solve the problem of e.g. (50b), where only a subpart of the remnant is focused. A more interesting option is to capitalize on the defective status of the matrix clause (which has, remember, a frozen existential *sia* with no over subject possible). Suppose that matrix clauses cannot

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**13**  This criticism is also raised in Toosarvandani 2013.

be constituted by a bare VP: once a VP is projected, some functional projection (at least the TP) must also be projected. In turn, the $T^0$ head requires some form of licensing, perhaps "identification" in the sense of Rizzi (1986). But the verb, a frozen form, cannot provide it.

In Zamparelli (2000) a different way for licensing was proposed for heads lacking phonological or identificational features: a $X^0$ is licensed if a fully identified phrase of the same category, a XP, is moved or generated in [Spec,$X^0$] ("Spec-Head licensing") (51).

(51)  $[_{XP1} [_{XP2} X^2 \ldots] [_{X'} X^0 \text{ YP}]]$

The rationale is that empty heads can inherit features and semantic content from their specifiers. This approach dovetails with the view of C-command specified in Kayne (1994):16, according to which an element can C-command out from a specifier position.

My proposal is then that the reduction process which yields the final word order in D-Conj is driven by the need to move material to the defective upper clause, thus licensing the TP projection above *sia*.[14] Note that we want to leave open the possibility that the various parts of the remnant move further and get the desired discourse effects in the left periphery of the upper clause, to derive e.g. Wh- questions (52).

(52)  {Perché / Con quale motivazione} hai escluso sia Maria che Marta?
       {Why / For which reason} you.have excluded BOTH Maria AND Marta?
       '{Why / For which reason} have you excluded both Maria and Marta?'

In other term, the movement to the higher TP must *not* have the 'freezing' effect that has been proposed for other types of movement, e.g. scrambling.
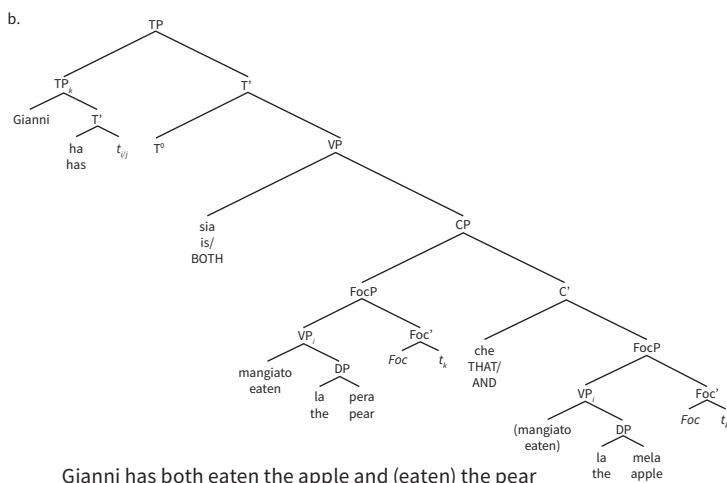
The tree in (53b) illustrates the situation after raising of the lower TP to the Spec of the higher one, using (53a) (where the optional forward ellipsis of the second V gives rise to an apparently asymmetric conjunction, see Sec. 5.4).[15]

(53)  a. Gianni ha sia mangiato la mela che (mangiato) la pera.

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**14**  Not much would change if *sia* was realized in T, as a defective verb in need of identification, though (51) would need to be extended to phonologically overt cases, when they are defective.

**15**  In this case, *sia* and *both* take up the role of scope markers. Without elements marking the left edge of coordination, the possibility of left-peripheral deletion (i.e. elision) to apply multiple times in the right conjunct would make it impossible to understand from the string $X_0 X_1 X_2 \& X_2$ in (i) what is actually being conjoined.

(i)   a. $[_{X0P} X_0 [_{\&P} [_{X1P} X_1 [_{X2P} X_2 ]]] \& [_{X1P} \cancel{X}_1 [_{X2P} X_2 ]]]]$
       b. $[_{X0P} X_0 [_{X1P} X_1 [_{\&P} [_{X2P} X_2 ]] \& [_{X2P} X_2 ]]]$

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b.



Gianni has both eaten the apple and (eaten) the pear

The V/C evidence of Italian *sia/che* is missing in English *both/and*, and in the cases cited in Johannessen (2005) where the initial scope marker seems to be a part of what moves to focus. The way I read these differences is that the core requirement of D-Conj is the creation of sets of alternatives, generated by each conjunct, that are mutually compatible. This is normally obtained by raising the conjuncts to separate FocPs, plus the requirement of marking the scope of the coordination (see ft. 14). The rest – the exact position of the marker and the factorization obtained by remnant movement – may be solved differently in different languages. (54) gives a tentative derivation for *both/and*, assuming the base structure in (46) and a movement to [Spec,TP] like in Italian.

(54)  a. $[_{TP}$ $T^0$ both $[_{\&P}$ $[_{CP}$ $C^0$ $[_{FocP}$ $Foc^0$ $[_{TP}$ I saw Mary$]]]$ and $[_{CP}$ $C0$ $[_{FocP}$ $Foc^0$ $[_{TP}$ I saw John$]]]]]]$
      b. $[_{TP}$ $T^0$ both $[_{\&P}$ $[_{CP}$ $C^0$ $[_{FocP}$ Mary$_i$ $Foc^0$ $[_{TP}$ I saw $t_i]]]$ and $[_{CP}$ $C^0$ $[_{FocP}$ John$_j$ $Foc^0$ $[_{TP}$ I saw $t_j]]]]]]$
      c. $[_{TP}$ $[_{TP}$ I saw $t]$ $[_{T'}$ T0 both $[_{CP}$ $C^0$ $[_{FocP}$ Mary$_i$ $Foc^0$ $t_k]]$ and $[_{CP}$ $C^0$ $[_{FocP}$ John$_j$ $Foc^0$ $t_k]]]]$

Alternatives are certainly possible, including analyses where *both* is actually part of the first conjunct. This fits with the fact that a *both*-like word may count as the 1rst-position constituent in Norwegian V2 (Johannessen 2005, ex. (15)) and that the scope markers *either* (Larson 1985a, 235) (55) and even *both* (56) (Caroline Heycock and Graham Katz, p.c.) can appear at VP level. However, this option is problematic with non-verbal conjuncts, like *both John and Mary*. In what follows I will continue to mark *both* externally, but nothing of importance hinges on this point.

(55)  [Mary either is driving to the airport] or [she is taking a cab]].

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(56) a. Who [has both been singing] and [has played the flute].
     b. I know [that both John left] and [that he will return].

Note, finally, that the movement of the non-shared lexical elements to a FocP position selected by a complementizer accounts for a curious property of D-Conj, its reluctance to accept adverbial modifiers (e.g. *then* or *possibly*) which may be inserted in normal coordinations. Contrast (57) with the Italian distributive examples in (58):

(57) a. I will call John and then Mary.
     b. John, Karl and possibly Mary will come along.

(58) a. Chiamerò sia Gianni che (*{poi / anche}) Maria.
        I will call BOTH John AND (*{then / also}) Mary
     b. Sia Gianni che Carlo che (*forse) Maria saranno presenti.
        BOTH Gianni AND Carlo AND ( maybe) Maria will be present

If adverbs are hosted in functional projections of their own, below Focus, (Cinque 1999), the structure in (45) simply leaves no room to insert them.

## 4 Scope Facts

Conjunction reduction has a long history as a possible strategy to explain 'plain' coordination.[16] Obviously, the analysis of D-Conj as sentential conjunction, together with its restricted distribution raises intriguing questions also for the treatment of plain conjunction. If the latter is also clause-level, how come it doesn't show any of the limitations discussed in Sec. 2.2 and 2.3? Could it be that the reduction of a plain clausal-level *and* does not involve movement? Or that plain *and* is just ambiguous between a restricted, clause-level form, to be reduced, and a small-constituent form, unrestricted? If so, how could a child learn this state of affairs?

These are bigger questions than this paper can address, but we can start by comparing the *scope* of two operators, plain and D-Conj *and*, keeping in mind that in the analysis proposed for D-Conj 'scope' can be translated as 'amount of reconstruction' of the ATB-extracted element. Assuming that the Xs and Ys in *both X and Y* or *sia X che Y* are capable of transmitting their features to the whole construction, if nothing is reconstructed D-Conj would have exactly the meaning

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**16** See Chomsky 1957; Gleitman 1965; Oirsouw 1987; Camacho 2004 on the syntax side; Partee, Rooth 1983 and Schein 1997 pursue more semantic approaches, but very much in the same spirit.

of plain *and*; full reconstruction, on the other hand, would give us the semantics of a biclausal construction. Anaphoric examples such as (59) show that at least in non-argumental ATB extraction cases some syntactic reconstruction must be possible, to bring the reflexive within the conjuncts.

(59) Which portraits of himself do you think Rembrandt has painted and Piranesi drawn?

Determining scope can be a tricky empirical enterprise, ideally requiring a pool of speakers and a range of cases. In Italian, reconstruction of *modals* seems to be at least a solid possibility: (60a) and (61a) (where the wide scope of the modal, 'It is possible that a destroyed car is given as a gift' is blocked by pragmatic considerations) can be easily interpreted as the sentential conjunctions in (60b) and (61b).[17]

(60) a. Mario potrebbe sia distruggere la macchina che regalarla.
    Mario might both destroy the car and give it away as a gift
    b. Mario might destroy the car and (then again) he might give it away as a gift.

(61) a. Mario potrebbe sia vendere che non vendere la macchina – non sappiamo
    Mario might both sell and not sell the car – not we.know
    ancora cosa farà.
    yet what he.will.do
    b. Mario might sell the car and (then again) he might not sell it – we don't know
    yet what he will end up doing.

This contrasts with a normal conjunction, for which it is extremely difficult to take scope over the modal; (62) have nearly only pragmatically contradictory readings.

(62) a. Mario potrebbe distruggere la macchina e regalarla.
    Mario might destroy the car and give it away as a gift.
    b. Mario potrebbe vendere e non vendere la macchina.
    Mario might sell and not sell the car

Indefinite subjects, too, seem capable of being interpreted in the scope of distributively conjoined object. In (63a), Paula and her daughter may have been married by the same or by different millionaires,

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[17]  In English scoping *both/and* over the modal seems more difficult than in Italian. However, all the speakers I have asked agreed that plain conjunction cases in (62) are worse at wide-scoping. It is worth noticing that a certain disagreement exists in the literature on whether plain *and* can take scope over other operators, cf. Clark 1992 vs. Larson 1985b.

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a reading difficult to obtain with plain *e/and*. The same applies to *someone* in (63b).

(63) a. Pensa: un milionario ha sposato sia Paula che sua figlia!
    Imagine: a millionaire has married BOTH Paula AND her daughter!
  b. Pare incredibile, ma qualcuno deve pur esser nato sia in quella capanna
    it_seems incredible, but someone must indeed be born BOTH in that shed
    che in quella grotta.
    AND in that caves

The scopes of D-Conj are notably affected by negation. In contrast with the natural wide-scope of coordination in e.g. (60) and with at least the possibility of clausal scope in (63), (64) does not have a reading in which the coordination takes wide overt the whole clause, past negation, yielding the meanings in (65).

(64) a. Un milionario non ha sposato sia Carla che sua figlia.
    a millionaire not has married BOTH Carla AND her daughter
  b. Qualcuno non ha vissuto sia in quella capanna che in quella grotta.
    someone not has lived BOTH in that hut AND in that cave

(65) a. One millionaire didn't marry Carla and (another) one didn't marry her daughter.
  b. No-one lived in that hut, and no-one lived in that cave.

The effect is likely due to the tendency of negation to associate with focus elements, like *sia* or *both*, keeping in its scope. The obligatory wide scope of negation in these cases nicely accounts for the impossibility of negative polarity items (*alcuno/nessuno* 'any$_{negpol}$' in object position) inside D-Conj:

(66) *Carlo non ha visto sia {alcun ragazzo che Maria / Maria che alcun ragazzo /
    John not has seen BOTH {any boy AND Mary / Mary AND any boy /
    alcun ragazzo che alcuna ragazza / nessun ragazzo che nessuna ragazza}.
    any boy AND any girl / no boy AND no girl}
    '*John did not see both {any boy and Mary / Mary and any boy / any boy and
    any girl}'

Since *not* negates the conjunction, *John did not see both any boy and Mary* entails the disjunction of (67a) and (67b); in the first member, the negative polarity item is not in the scope of negation, leading to ungrammaticality.[18]

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18  A reviewer points out the interesting minimal pair *Conosco sia Maria che nessun altro* 'I know both Maria and nobody else' vs. *Conosco Maria e nessun altro* 'I know Maria and nobody else'.

(67)  a. *John saw any boy but he didn't see Mary
      b. John didn't see any boy but he saw Mary

Taking stock: when not anchored down by negation, D-Conj takes wide scope much more readily than plain conjunction. While the scope data for plain *e/and* are not completely clear, this seems to rule out the idea that plain *and* might have all the scope options of D-Conj and more. However, this could also be a pragmatic effect: *and* could be felt to have narrow scope precisely because, if wide(r) scope was intended, the speaker could have used D-Conj.

## 5 Explaining the Data

We are now in a position to return to the data in Sec. 2 and state their not-so-hidden generalization:

(68)  Generalization:
      Constituents which cannot undergo movement to FocP cannot be conjoined by D-Conj.

The conjoined categories (argumental DPs, predicates, VPs, embedded CPs, adjuncts) in 2.1 are all cases where focus or topic movement is independently attested. Quantifiers and possessors cannot move alone to a clausal Focus position, but their NP part may be extracted. I will return to these cases in Sec. 5.1.

The impossible cases in Sec. 2.2 are due to a number of reasons: the constituent's X′ status, its position, the presence of elements which block raising (see the PP-internal conjunctions), etc. To start, consider the ban on distributive coordination of full TPs seen in (27), regardless of whether the sentence contains further material that selects the TP (29) (or modifies it, see (69), modeled after (27b)).

(69)  *Sia [Carlo partì] che [Maria tornò] (ieri / quando eri piccolo)
      BOTH [Carl left] AND [Mary returned] (yesterday / when you.were young)
      '*Both [Carl left] and [Mary returned] (yesterday / when you were young)'

In principle, these cases could be derived by moving the two TPs as wholes to their respective Focus positions, stranding modifiers in the remnant; alternatively, they could be obtained by leaving the two TP

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structures in (45) or (46) in place. The first option is ruled out by that fact that bare TPs cannot be left dislocated (see the cleft in (70)).[19]

(70)  *It's [Mary left] that John refuses to believe (that)

The second strategy – leaving the two TPs *in situ* – could be successful insofar it is possible to create alternatives by assigning focus *in situ*. The typological variability in the possibility of applying *both/and*-equivalents to root clauses reported in Johannessen (2005) could thus reduce to the extent to which languages can carry out this operation successfully.

Embedded CPs, on the other hand, may be moved to the [Spec,FocP] of the clause selecting them, so they are predicted to be possible as distributive conjuncts (see Sec. 2.2, ex. (21)), unless their movement is independently blocked, as is the case with relative CP (35), which can famously undergo right dislocation in English (*I spoke with a man yesterday [who gave me sound advice]*), but not left dislocation (see the cleft in (71)).

(71)  *It's [that/who gave me sound advice] that I spoke with a man.

Similarly, small clauses ('PredPs' in Bowers's (1993) terminology) under *consider* or *appoint* verbs cannot be extracted (72), and are correctly predicted to be out as distributive conjuncts (31).

(72)  a. *[GIANNI UBRIACO], Mario considera (non Luigi malato)
            [Gianni drank], Mario considers (not Luigi ill)
            cf. '*it's John drunk that Mario considers'
        b. *ᴇ' [Gianni capo divisione] che {considero / nomino}.
            It's [Gianni head of division] that {I.consider / I.appoint}

## 5.1    X′-Extraction Cases

Neither Italian or English can distributively coordinate constituents introduced by a finite auxiliary (30a) (again, unlike plain coordination). This follows from the structure in (73) (simplified).

(73)  sia/both [$_{FocP}$ Foc$^0$ [$_{TP}$ Maria [$_{T}$' ha/has [$_{VP}$ dormito/slept ]]]] che/and [$_{FocP}$ Foc$^0$ [$_{TP}$ Maria [$_{T}$' ha/has [$_{VP}$ sognato/dreamed]]]]]

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**19**  Unless, that is, the TP is a quotation, in which case D-Conj also improves:

(i)   Gianni ha detto sia "Marco è un bastardo!" che "Gliela farò pagare!", vostro onore.
      Gianni has said BOTH "Marco is a bastard!" AND "Him I_will_make pay", your honor
      'Gianni said both "Marco is a bastard" and "I will make him pay", Your Honor.'

Moving the *has slept / has dreamed* to Focus stranding *Maria* would cut at the T' joint, arguably an illicit operation (cf. *\*It's has slept what Mary (did)*). Moving *Maria* across-the-board out of the conjunction, e.g. to the Spec of the highest TP, focusing the remnant TPs, then reconstructing the order would incur in the same problems with TP movement seen above, plus the unmotivated extraction of the subject *Maria*.

Recall that English and Italian contrast with respect to main verbs ((40) above). This now follows from the well-known fact that English finite main verbs remain lower than TP at PF, as shown by adverb positions (Pollock 1989). In English, a derivation along the lines of (53b) is possible, while in Italian, where Vfin is in T, (74) reduces to the impossible auxiliary conjunction seen above.

(74)  *Maria sia vide Mario che salutò Eva
      Mary BOTH saw Mario AND greeted Eva

The impossibility of extracting at X' could also be at the heart of the English contrast in (75). In the latter, the genitive *-'s* remains attached to each possessor phrase, and it is not subject to ATB raising. (25a), repeated as (75a) contrasts with (75b).

(75)  a. I touched both John's and Mary's fingers.
      b. *I touched both John and Mary's fingers.

A derivation like (76), which moved the possessors *John* and *Mary* to [Spec,FocP] would violate the Left Branch Constraint responsible for (77).

(76)  *[$_{DP}$ $t_{i/j}$-s fingers]$_k$ [ both [$_{FocP}$ John$_i$] $t_k$ and [$_{FocP}$ Mary$_j$] $t_k$]...

(77)  a. *Whose did you meet friend?
      b. *It's John that I met 's friend.

The alternative would be to move both possessive DPs to their respective [Spec,FocP] positions, then apply an operation that factors the material in final position (Right-Node-Raise, RNR, in the terminology of Ross 1967, see e.g. *John bought and Mary drank an expensive bottle of cognac*). Leaving aside for a moment the nature of RNR (see Sec. 7 for the broader picture), the approach might work in (75a), and could be used to derive the conjunctions of Qs we saw in (24) (*both too much and too little water*), see (78).

(78)  [ both [$_{FocP}$ [$_{DP}$ too much $t_k$] Foc$^0$...] and [$_{FocP}$ [$_{DP}$ too little $t_k$] Foc$^0$ [$_{NP}$' water ]$_k$... ]]

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In (75b), however, the shared part is *'s fingers*. If the genitive marker is in D, this translates into an extraction at X' level, again in violation of the Structure Preservation Hypothesis.

(79)  $*[_{D'}$ -s fingers$]_k$ [ both [$_{FocP}$ [$_{DP}$ John $t_k$] Foc⁰ ...] and [$_{FocP}$ [$_{DP}$ Mary $t_k$] Foc⁰ ...]]]

## 5.2    Downward Movements

In some cases, the constituent which ought to be moved to FocP is simply attached higher than its landing site and cannot be lowered. This is probably the reason for the failure of WH-DPs in direct questions (e.g. *both who and what did you see?* in (36)) and for the difference between Individual Level (or 'atemporal') and Stage-Level (or 'temporal') absolute modifiers, seen in (39). Let's look at them in turn.

The case of root WH-elements in (36) could be resolved as downward movement if we assume that these elements normally target a CP layer *above* FocP, whose head is incompatible with their +Wh features.[20] One question, then, is what prevents the interrogative elements to stop in their respective FocPs, then move higher, pied-piping *sia/che*, to a place that can check these features. My hypothesis is that when the upper clause is root it might not license a proper CP landing side above *sia*, due to its defective status. However, if a higher interrogative verb selects the clause containing *sia*, its [Spec,CP] becomes a possible checking site for an interrogative D-Conj, as we saw in (37) above.[21]

Absolute constructions may appear before or after the sentence they modify. However, post-sentential IL-modifiers are separated by a slight pause, which is not required with SL-modifiers (let's assume for a moment that "being a linguist" is a timeless property).

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**20**   Rizzi (1997, 298) proposed that WH-elements stop in [Spec,FocP], to explain their incompatibility with focused element, in either order (WH-FOC-TP and FOC-WH-TP). However, there are good semantic reasons why focus would be incompatible with WH, in particular the fact that, by definition, one cannot question a presupposition. Note that even Focus in-situ is impossible in direct questions:

(i)    *A chi dovrebbero dare IL PREMIO NOBEL, mica il Bancarella?

       to whom they should give the Nobel price, not the Bancarella?

If Wh-element did target the FocP position, their features might also be incompatible with the creation of declarative alternatives that seems to be essential for D-Conj.

**21**   In Italian, an alternative analysis could capitalize on the idea that Wh- must move to [Spec,FocP], as Rizzi proposes, but in the *sia/che* construction they are blocked by the declarative force of the complementizer *che* selecting FocP. In the embedded case the whole subordinate CP moves to [Spec,FocP] and no direct clash arises. However, this analysis would not extend to English.

(80) a. He was hired, being a linguist.
　　b. He touched the ceiling standing on a chair.

A negation in the main clause may take scope over the latter, not the former:

(81) a. ??He wasn't hired being a linguist (, he was hired being a normal human being)
　　b. He didn't touch the ceiling standing on a chair (, he touched it using a broom)

(81a) is only interpretable by forcing *being a linguist* to mean *when he was a linguist* or perhaps *in his guise as a linguist*. The fact that SL-modifiers may appear under negation suggest that these clauses are attached to a sentence-internal position, perhaps a very low VP position (see Kayne 1994, ch.9) from which they can raise to a topic position when they appear on the left. Examples such as (39)b above (*Both standing on a chair and jumping, Carl manages to touch the ceiling*) could be derived from (82). Individual level modifiers, on the other hand, would be attached at or over CP, and couldn't appear within the coordination.

(82) ... $[_{CP}$ [ standing on a chair]$_i$ Foc$^0$ $[_{TP}$ Carl can touch the ceiling $[_{VP}$ ... $t_i$]] and $[_{CP}$ $[_{FocP}$ jumping]$_j$ Foc $[_{TP}$ Carl can touch the ceiling $[_{VP}$ ... $t_j$]]]]]]

The same analysis applies to other cases: the apparent parallelism between *because* and *although* (83a) breaks down when negation is inserted, suggesting that *although* is placed in a high clausal position. Predictably, *because* allows *both/and*, *although* does not.

(83) a. She was hired {because / although} she was a linguist.
　　b. She wasn't hired {because / ??although} she was a linguist.　　*NOT>B/A.*

(84) a. She was hired both because she was a linguist and because she knew python.
　　b. *She was hired both although she was a linguist and although she only knew COBOL.

## 5.3　Prepositions and Relative Clauses

The English/Italian contrast with conjunctions and PP selected by verbs (41), repeated below, follows straightforwardly from the fact the intermediate representation would strand a preposition (*con/with* in (85)), which is licit in English but not in Italian. *Sia/che* over two PPs (illustrated in (23) above), is fine as expected.

(41) a. ??Gianni ha parlato con sia Maria che Eva
　　　John has spoken with BOTH Mary AND Eva

   b. *Vado a sia Roma che Bologna
      I.will.go to BOTH Roma AND Bologna
   c. *Hanno combattuto contro sia i Visigoti che i Vandali
      they.have fought against BOTH the Visigoths AND the Vandals

(85)  a. … [$_{FocP}$ Maria$_i$ Foc$^0$ [$_{TP}$ Gianni ha parlato con $t_i$]]..
      b. … [$_{FocP}$ Maria$_i$ Foc$^0$ [$_{TP}$ Gianni has spoken with $t_i$]]…

Prepositions, however, raise additional questions. In contrast with the deviance of small clauses under *consider* (see (31)), small clauses selected by P are fully acceptable (see (32b), repeated below). To key to understand these examples, however, is that here the application of *sia/che* or *both/and* is *not* equivalent to main clause conjunction (see (86a)), in contrast to what happens with e.g. the *because* modifiers in (84a). (32b) is not saying that the absence of just one of the two players will result in disaster. This is all the more surprising considering that these small clauses always contain stage-level predicates (see *with my baby {a boy / male}, Grandma will be happy*).

(32b) Con sia Gianni espulso che Marco infortunato, la partita sarà un disastro. ≠ (a)
      With both John out and Marc injured, the match will be a disaster
   a. Con Gianni espulso, la partita sarà un disastro e con Marco infortunato,
      With John out the match will be a disaster and with Marc injured
      la partita sarà un disastro.
      the match will be a disaster

In these examples, D-Conj does not take scope over the whole sentence, only over the modifiers. The same is true with nominal cases in general (PP and RC): to the extent they are acceptable, the scope does not extend over the modified noun.

(86)  a. Voglio un auto con sia l'airbag che il condizionatore
      I.want a car with both the airbag and the air-conditioner
      ≠"I want a car with the airbag and I want a car with the air-conditioner"
   b. Conosco un uomo che parla sia Tagalog che Inuit
      I.know a man who speaks both Tagalog and Inuit
      ≠"I know a man who speaks Tagalog and I know a man who speaks Inuit"

Nominal cases where the conjunction can appear either inside or outside the PP give rise to subtler judgments. Thus (87a) refers to a single meeting between the speaker, Maria and Paula, whereas (87b) also has a reading where two separate meetings are referred to (the speaker and Maria, the speaker and Paula).

(87)  a. ?Un incontro con sia Maria che Paula potrebbe essere utile.
      a meeting with both Maria and Paula could be useful.

b. Un incontro sia con Maria che con Paula potrebbe essere utile.
   a meeting both with Maria and with Paula could be useful

Next, the failure of (88a), which can be reduced to the nonsensical (88b), shows that at least the preposition must be in the scope of D-Conj.

(88) a. *La distanza tra sia Roma che Milano è grande.
        the distance between both Rome and Milan is large
     b. *The distance between Rome and (the distance) between Milan is large

The picture which begins to emerge is the following. In relative clause cases such as (86) (assuming the head-internal analysis of Kayne 1994 and Bianchi 1999), D takes as its complement a CP which contains the projections to which the various *sia/che* remnants are fronted (89a). *Tagalog* and *Inuit* are moved to FocP, the remnant is ATB-extracted to the defective TP below the higher CP (89b), then *uomo* "man" is fronted onto a position at the edge of the CP from which it can function as a restrictive property for the determiner.

(89) a. Un $[_{CP}$ che $[_{TP}$ T$^0$ $[_{VP}$ sia $[_{CP}$ $[_{FocP}$ uomo parla Tagalog] che $[_{FocP}$ uomo parla Inuit]]]]]
        A $[_{CP}$ that $[_{TP}$ T$^0$ $[_{VP}$ both $[_{CP}$ $[_{FocP}$ man speaks Tagalog] and $[_{FocP}$ man speaks Inuit]]]]]
     b. Un $[_{CP}$ che $[_{TP}$ $[_{TP}$ uomo parla]$_i$ T$^0$ $[_{VP}$ sia $[_{CP}$ $[_{FocP}$ Tagalog $t_k$] che $[_{FocP}$ Inuit $t_i$]]]]]
     c. Un $[_{CP}$ uomo$_k$ che $[_{TP}$ $[_{TP}$ $t_k$ parla]$_i$ T$^0$ $[_{VP}$ sia $[_{CP}$ $[_{FocP}$ Tagalog $t_k$] *che* $[_{FocP}$ Inuit $t_i$]]]]]

In the small-clause under *con* "with" (32b) we have to assume that the element which undergoes ATB-raising and selects the small-clause is *con* "with" or perhaps a semantically equivalent gerundive predicate *having*, overtly realized as *con*. This element must have enough of a clausal structure to contain a FocP:

(90) both $[_{FocP}$ Foc$^0$ [ having/with $[_{SC}$ John drunk]]] and $[_{FocP}$ Foc$^0$ [ having/with $[_{SC}$ Mario injured]]]...

Next, the small clauses are moved to their focus positions, and the verbal/prepositional remnant *having/with* is extracted ATB. The same can be assumed, more transparently, of perception verbs, in

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(32a). The following examples from Italian show that in these cases smallclauses can in fact be topicalized and focalized:[22,23]

(91) a. [Gianni {ubriaco / in giardino}], l' ho visto spesso.
    [Gianni {drunk / in giardino}], it$_{CL}$ I.have seen often
    "John drunk, I have often seen"
   b. [LA BIRRA IN FRIGO], ho, (mica il te in caldo)!
    the beer in the fridge I have, (not the tea in hot)
    "Beer in the fridge, I have, (not tea on the stove)!"

All the other nominal cases containing *with* must be reduced to one of these two cases (if they are really distinct). For instance, *a car with both the airbag and the air-conditioner* should be assumed to come either from *a car which has both the airbag and the air-conditioner* or from *a car with both the airbag and the air-conditioner installed*.

Other prepositional cases could be derived along the same lines, assuming with Kayne (1994) that a clausal structure for DPs is at least a possibility. In these cases the predicate raised ATB should minimally include the head noun, as in (92), and perhaps also the article (see Zamparelli 2000), when the conjunction has scope over it (93). I leave the details of the derivation open.

(92) a. [$_{DP}$ this [ both [ friend of Paula] and [ friend of Maria]]]
   b. [$_{DP}$ this [ friend of $t_{i/j}$] [ both Paula$_i$ and Maria$_j$]]

(93) a. [$_{DP}$ D⁰ [ both [ a relative of Paula] and [ a relative of Maria]]]
   b. [$_{DP}$ D⁰ [ a relative of $t_{i/j}$] [ both Paula$_i$ and Maria$_j$]]

---

**22**  It is important not to mix (91) with a case where the two elements have been independently topicalized. This gives a characteristic pause in between the two topics (ia), and leads to ungrammaticality in (ib).

(i)  a. Gianni, in giardino, l'ho visto.

     Gianni, in_the garden, him_I_have seen

   b. *LA BIRRA, IN FRIGO, ho!

     the beer, in fridge, I_have!

     cf. '*Beer, in the fridge, I have!'

**23**  On the other hand, despite the possibility of D-Conj with infinitival predicates under verbs of perception, this type of SCs cannot be easily left dislocated, see (ib):

(i)  a. Ho visto sia [Carla partire presto] che [Fabio tornare tardi]

     I_have seen BOTH [Carlo leave early] AND [Fabio return late]

   b. ?E' [Carla partire presto] che vedo, non [Fabio tornare tardi].

     It's [Carla leave early] that I_see, not [Fabio return late]

I can speculate that at the end of the derivation the infinitive should remain in a position where it can be licensed by the perception verb.

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### 5.4 The Role of Ellipsis

Sometimes, D-Conj appears to join simple Vs (94).

(94) Maria ha sia visto che salutato Carlo.
    Mary has both seen and greeted Carl

(95) During his career, Karl has both created and inherited vast properties.

In the present account, *sia/che* coordination cannot apply to heads, which could not move to [Spec,FocP]. (95) must therefore be derived either via Right Node Raising of the first object. Following Wilder (2018, Sec. 27.4.3), I will assume that backward deletion is a possible implementation of RNR (and arguably, one more promising than rightward ATB-extraction). I will then assume VP raising-to-Focus, after which RNR deletes the object in first conjunct under identity with the second object.

(96) $[_{TP}[_{TP}$ Maria ha $t_k]_j$ sia $[_{VP}$ visto ~~Carlo~~$]_j$ che $[_{VP}$ salutato Carlo$]_k\, t_j]$

Consider a second possibility: deriving the effect via a double ATB-extraction, first of the shared subject and auxiliary, then of the shared direct object. The derivation is schematized in (97): the two VPs move to FocP, the TPs is ATB-raised, then the shared object *Carlo* is ATB-raised, giving (97d). The word order is reestablished by moving the bigger TP embedding the *sia/che* all the way to the left periphery (97e).

(97) a. $[_{TP}$ T$^0$ sia $[_{FocP}$ Foc$^0[_{TP}$ Maria ha visto Carlo ]] che $[_{FocP}$ Foc$^0[_{TP}$ Maria ha salutato Carlo]]]
    b. $[_{TP}$ T$^0$ sia $[_{FocP}$ visto Carlo $[_{TP}$ Maria ha $t$ ]] che $[_{FocP}$ salutato Carlo $[_{TP}$ Maria ha $t$ ]]]
    c. $[_{TP}[_{TP}$ Maria ha $t$ ] T$^0$ sia $[_{FocP}$ visto Carlo $t_k$ ]] che $[_{FocP}$ salutato Carlo $t_k$ ]]
    d. $[_{DP}$ Carlo$]_i[_{TP}[_{TP}$ Maria ha $t_k]$ sia $[_{VP}$ visto $t_i]$ che $[_{VP}$ salutato $t_i]]$
    e. $[_{TP}[_{TP}$ Maria ha $t_k]$ sia $[_{VP}$ visto $t_i]$ che $[_{VP}$ salutato $t_i]] [_{DP}$ Carlo$]_i$

While this sequence does get the ordering right, it has little else to recommend it. The participles *visto* 'seen' and *salutato* 'greeted' do not form a constituent with their shared object; *Maria ha* 'Mary has' is a constituent, to the exclusion of the participles; adding a PP after *Carlo* e.g. *in cucina* 'in the kitchen' creates yet more additional order possibilities, often unwanted. I will return to these issues in Sec. 7, to propose a radical solution to the problem.

It is also fair to say that backward ellipsis is a debated operation (see a critique in Toosarvandani 2013), yet its existence appears hard to shake off at least for plain nominal conjunction cases like (98): *Many intelligent* is not a constituent, and neither is *the three smallest*.

The missing object does not need to be identical in reference: in (99), the properties at issue are most likely not the same.

(98)  a. Many intelligent and some diligent students passed the exam.
      b. The three smallest and the two biggest boxes should be packed together.

(99)  During his career, Karl has both purchased and inherited vast properties.

Regardless of their exact derivation, the fact that (94) are not true head coordinations predicts that those phrases which don't make possible *sia/che* targets will continue to be deviant when they are trimmed down to apparent head-sized conjunctions. The deviance of (100), the apparent coordination of two modals or auxiliaries, reduces to that of T' case seen in (30a).[24]

(100) a. *Maria sia aveva che ha fortuna.
          ?Mary BOTH had AND has good fortune
      b. ??Maria sia può che deve partire.
          Mary BOTH can AND must leave

Other cases where the second constituent is smaller could be derived by the (less controversial) operation of *forward ellipsis* (left-peripheral deletion in Wilder 1997). Variants of this derivation, illustrated in (53b) above, have been proposed several times (see McCawley 1988, Ch. 16; Vicente 2010).

(101) Gianni ha [ sia [$_{VP}$ mangiato la pera] che [$_{VP}$ ~~mangiato~~ la mela]]
      Gianni has [ BOTH [$_{VP}$ eaten the pear] AND [$_{VP}$ ~~eaten~~ the apple]]

Once again, supporting evidence comes from the fact that categories which do not undergo ellipsis, e.g. P and D, must be present in the second conjunct:

(102) a. *Sia [mio fratello] che [cugino] sono qui.
          *BOTH [my brother] AND [cousin] are here
      b. *Voglio un auto sia [con l' airbag] che [il condizionatore].
          ??I.want a car BOTH [with the airbag] AND [the air-conditioner]
      c. *Ho parlato sia [con mia figlia] che [moglie]
          *I spoke BOTH [with my daughter] AND [wife]

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**24**  As a reviewer points out, this contrasts with the grammatical *Marco nè può nè deve partire* 'Marco neither can nor must leave'. This follows from the observation that *né/né* differs from *sia/che* in allowing matrix clause coordination (see (28b) above), and that Italian subjects can be topicalized.

These cases are akin to impossible gapping cases like (103).

(103) *I spoke with my daughter, and Jack, ~~spoke with my wife~~ wife.

Vicente (2010), working of *not/but* constructions, shows that the item contrasted cannot originate inside an island. The same applies to *sia/che*. (104) illustrates with a relative clause islands.

(104) *Carlo ha rotto sia il vaso che Maria ha portato dalla Cina che dal Giappone.
    Carlo has broken BOTH the vase that Maria has brought from Cina AND from Japan

This would have to be derived either by (105), but this is not a possible elision (compare gapping: *Karl broke the vase that Mary brought from China and Marc, from Japan*).

(105) Carlo has broken the vase that Maria has brought from Cina
    and ~~the vase that Maria has brought~~ from Japan.


## 6 Multiple *sia* and *che*

As mentioned on Sec. 1.1, ex. (11), Italian has other ways of doing distributive coordination using the words *sia* or *che*: (i) *sia* followed by multiple *che* (see (10a), repeated below); (ii) multiple *sia*, no *che* (106).

(10a) Sia Gianni che Carlo che Marco votarono "sì".
    IS Gianni THAT Carlo THAT Marco voted yes
    'Gianni, Carlo and Marco all voted in favor'

(106) Ho visto sia Carlo, sia Luigi (, sia Marco, sia…)
    I.have seen IS Carlo IS Luigi (, IS Marco, IS…)
    'I have seen both Carlo, Luigi and Marco'

Both constructions allow exactly the same range of categories as *sia/che*, suggesting that the analysis should be parallel. My proposal is that the cases in (10a) (where the first *sia* is obligatory) should receive the same analysis as the non-binary *both/and* (see (47) above), i.e.

(107) sia $[_{CP}$ FocPj$_1$ che $[_{CP}$ … ~~sia~~ $[_{CP}$ FocP$_2$ che FocP$_3$]

This structure requires forward ellipsis of all but the first instance of *sia* 'be', which is functionally possible since now *che*$_\&$ plays the role of the scope marker. The "one *sia*, many *che*" constraint is the same we see with the word *with* in (108).

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(108) I spoke {with Martha, Anna and Sue / with Martha, with Anna and with Sue / *with Martha, with Anna and Sue}

The case in (106), on the other hand, suggest an analysis which brings it much closer to English *both/and*: *sia* in this case does not select *che*$_{\&}$, but a single sentence containing a Focus projection to which the elements to be contrasted move. In turn, all the *sia*-headed clauses are asyndetically conjoined.[25] So, the order of the scope marker and the actual coordination is inverted, but in all other respects the derivation proceeds as above, with ATB-extraction across all conjuncts to (presumably) the position targeted by the remnant in English *both/and*.

(109) a. $[_{\&P} [_{VP}$ sia...[FocP [ Contrasting_element_1 Shared_remnant ]]] &...& [ sia... [FocP Contrasting_element_n Shared_remnant ]]]

b. $[_{\&P} [_{VP}$ sia...[FocP Contr._element_1 Foc$^0$[ $t$ Shared_remnant ]]] &...& [ sia [$_{FocP}$ Contrasting_element_n Foc$^0$[ $t$ Shared_remnant ]]]]

c. $[_{TP} t$ Shared_remnant] $[_{\&P} [_{VP}$ sia...[FocP Contrasting_element_*1*. Foc$^0 t$]] &...& [ sia [$_{FocP}$ Contrasting_element_*n* Foc$^0 t$ ]]]

To complete the picture, Italian has an adjacent *sia+che* construction, illustrated in (110), where *sia che* (adjacent) takes up a *disjunctive* meaning:

| (110) | Sia che parli, | sia che non parli, sarà lo stesso. |
|---|---|---|
| | IS THAT he.speaks$_{Subj}$, | IS THAT not he.speaks$_{Subj}$, it will be the same |
| | 'whether he speaks or he does not, it will be the same' | |

In this case, the elements after *che* 'that' must be full clauses, not anything smaller, and the verb must obligatorily go in the subjunctive form. This switch of content size and coordination type could seem surprising, but I believe it has a very natural explanation. The alternatives generated by Focus, we have seen, play an important role in the characterization of our meaning: beyond distributivity, which may not be perceivable in certain positions, the semantic effect of D-Conj is that of excluding each conjunct from the false alternatives of the other. The construction in (110), I suggest, is just *an overt spelling out of the alternatives*. Each conjunct is *sentential* because alternatives are propositions, *subjunctive* (the irrealis mood) because it is given as a mere possibility, and *disjunctive* because alternatives are, by

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**25** This might come from a reinterpretation of *sia* as a coordinator, on the model of the Italian *either/or* construction: *Puoi prendere o carne o pesce* lit. 'you can take or meat or fish'.s

definition, in a disjunction. Indeed, the existence of this construction strengthens the case for a clausal derivation for the other cases.

# 7 The Price of Non-Finality

As it should be obvious by now, the cases where a clausal derivation for D-Conj is more problematic are those where the D-Conj is not in a final position (modulo RNR/backward deletion), and many complex and often frankly stipulative movements appear to be necessary to obtain the desired word order. We have seen one such case in (97), but here at least deletion of the first obj provides an alternative. Consider a classic edge case: D-Conj on *subjects*, as in (111). The verb agreement is plural, here, as with most DP conjunctions.

(110) Sia [Gianni] che [Maria] {hanno/ ??ha} mangiato una pera

both [Gianni] and [Maria] {have/ has} eaten a pear

Any attempt to derive (111) with the familiar syntactic tools (A′ movement, possibly done across-the-board, and ellipsis – if distinct from movement) should start from (112a):

(112) a.

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b.
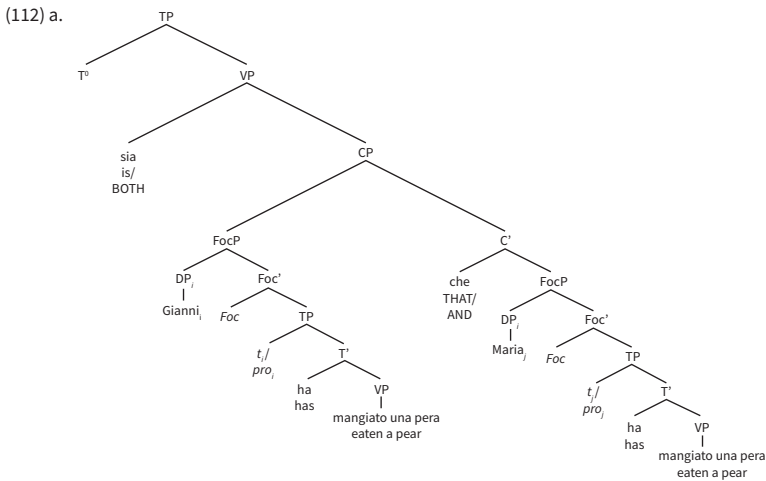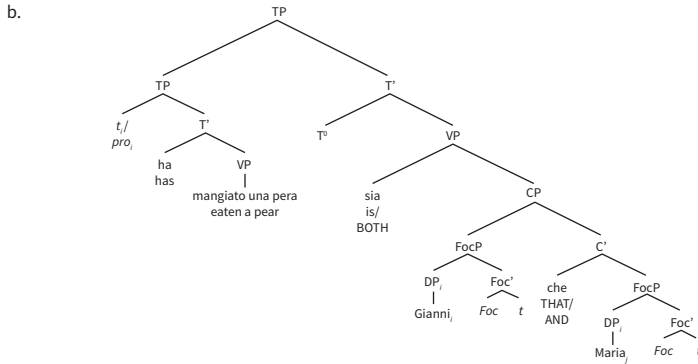


A language like Italian has the option of having the subject after the verb, canonically accounted for with the presence of a *pro* in [Spec,TP]. The ATB fronting of the two *pro*-containing TPs, in (112b), could thus be the final step in the derivation: a sentence with a post-verbal subject. If the subject in each conjunct is singular, the verbal agreement after TP fronting may remain singular (113a), suggesting that the *pro* in the raised [Spec,TP] retains the formal features of the individual DP it is coindexed with. The option of singular number is not available in plain post-verbal conjunction (*Gianni e Luigi*, (113a)), or with a plural distributive post-verbal subject such as *entrambi i musicisti* "both$_{DP}$ the musicians" (113b). Thus, this agreement option is not due to coordination or distributivity *per se*, but it is specific to *sia/che* conjunction.

(113) a. Di questo fatto era contento {sia Gianni che Luigi / *Gianni e Luigi}
      for this fact was happy {both Gianni and Luigi / Gianni and Luigi}

    b. Ha suonato {sia Simon che Garfunkel / * entrambi i musicisti}
      Has played {both$_{and}$ Simon and Garfunkel / * both$_{DP}$ the musicians}

What about the *preverbal* subject position in (111)? In Bianchi and Zamparelli (2004), it was derived by further movement of the whole complex subject (in our case, *sia Gianni che Maria*) to a functional (topic?) position beyond the landing site of the remnant TP.

(114) $[_{FP} [_{VP}$ sia Gianni $t_i$ che Maria $t_j]_k$ F⁰ $[_{TP} [_{TP} t_{i+j}$ has criticized$]_m t_k]]$

Toosarvandani (2013) criticizes an analogous proposal for English, pointing out that a correlative subject ('*not* X *but* Y' in his case) may well be preceded by additional topic material (115). (Toosarvandani 2013, ex. (40)). The point is valid, and examples like (116) are even more natural in Italian.

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(115) THE NEUTRON, not a mathematician but a physicist discovered.

(116) [ A casa] [ sia Gianni che Maria] ci stanno bene.
    [ at home]$_i$ [ BOTH Gianni AND Maria] CL$_i$ stay well]

Before reviewing yet more complex positions for D-Conj, let's state a minimal set of requirements that, in my opinion, any order-reconstructing derivation should meet:

(117) Requirements
    a. The reconstruction should not allow otherwise unattested word orders.
    b. The final constituency structure should be standard.
    c. The parsing complexity should be manageable.

Proposals that use (a sequence of) remnant movements to derive the final form of a clause may strive to satisfy Requirement (117a), but the other two are not less important. Requirement (117b) is motivated by the need to make sure that, for instance, a verb and it object form a single constituent regardless of whether the object is or isn't a D-Conj, thus allowing e.g. (118). (117b) is obviously not respected by the derivation in (97).

(118) a. [To see both Mary and Marc] is always a joy.
    b. John has high hopes [to see both Mary and Marc] and [to have fresh news of both Sue and Bill]

To see the impact of Requirement (117c), consider (119):

(119) [Both Karl, Marco and Luis] have both [emailed and called] [both Anna, Martha and Lisa].

This is no doubt a complex sentence, yet not much worse than the equivalent without *both* (i.e. plain conjunction). However, if each D-Conj coordination creates two copies of the original sentence, we have 3×2×3 = 18 base sentences (without counting the upper clauses postulated for *sia/che*), recombined and factored into (119) by an extremely elaborate set of movements. I don't know of empirical studies on the parsing complexity of distributive coordination, but I venture that any difference with plain *and*, if found, would not be exponential.

    With these desiderata in mind, consider a ditransitive verb and a D-Conj in medial position, like the Italian (120):

(120) Carlo ha dato [sia un libro che un quaderno] a Marta.
    Carlo has given [BOTH a book AND a notebook] to Marta
    Schematically, a possible derivation for (120) would start as:

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(121) $\begin{bmatrix} Subj\,[V\,[DO_1\,PP]] \\ Subj\,[V\,[DO_2\,PP]] \end{bmatrix}$      *original biclausal structure*

(122) $\begin{bmatrix} DO_1\,[Subj\,V\,PP] \\ DO_2\,[Subj\,V\,PP] \end{bmatrix}$      *moving DOs to Foc*

(123) $[Subj\,\,[V\,PP]]\begin{bmatrix} DO_1 \\ DO_2 \end{bmatrix}$      *factoring the remnant*

Now the PP should be attracted out of the TP to an even higher position, the shared object moved past it, and the [Subj V] remnant, raised over both. Beyond being anticyclic, this movement would violate (117a) (nothing seems to stop an order where the conjunction moves first), (b) (the result disrupts constituent order), and probably (c). No identifiable features force this movement, which seems to boil down to a drive to just 'set the order right'.

Starting by moving the shared PP to FocP along with the DO (124), then ATB-fronting the PP, would not fare batter, as the reader can verify by trying to continue the derivation.

(124) $\begin{bmatrix} DO_1\,PP\,[Subj\,V\,] \\ DO_2\,PP\,[Subj\,V\,] \end{bmatrix}$      moving DO+PP to Foc

The same applies to examples like (125) (from ITWAC).

(125) a. La sua attività didattica si è svolta sia in Italia che all'estero,
the her activity didactic $SI_{cl}$ is carried-out BOTH in Italy AND abroad,
quest'ultima per periodi ampi.
this last_one for periods ample
'her didactic activity has been carried out both in Italy and abroad, the latter for long periods of time.'
  b. ... ha svolto la sua attività sia di ricerca che di didattica
... she_has carried out the her activity BOTH of research AND of teaching
presso l'Università della Borgogna
at the University of_the Borgogne.

## 8     The Role of Generalization

We have concluded that there is no way to generate the order in (120), or any intermediate D-Conj without violating the structural requirements listed in (117). The same conclusion is reached by Toosarvandani (2013) for non-final *not/but* correlatives.

Consider however the alternatives. *Sia/che* and *both/and* could simply be *lexical* markers of distributivity – a 'complex

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[i.e. discontinuous] quantificational determiners' in the terminology of Keenan (1987), as discussed in Toosarvandani (2013, Sec. 2.3). Apart from the uneasy status of such structures in modern syntax, the key problem is that this would have to stipulate all the distributional restrictions we saw in Sec. 2, which a movement analysis explains down to cross-linguistic differences, preposition types and Stage/IL-level modifiers (Sec. 5). None of these effects applies to plain *and*. How can a child possibly learn all this?

We have reached an impasse. A lexical analysis is not explanatory. A movement analysis is possible for clause-final positions, maybe possible for preverbal subjects, at a cost, impossible anywhere else.

And yet, I want to argue, impossibly-to-derive positions simply *do not matter*. What matters is that there is *some* position in the sentence where a full-blown clausal derivation is possible. This is the mold, so to speak – the place from which we learn which constituents can or cannot be distributively conjoined. All the other positions, I propose, are just *generalizations*. We hear or produce (126a), with its convoluted, movement-derived constituent structure, and we 'reparse' it as (126b), a normal object conjunction with a normal structure, introduced by something which is no longer felt as a verb, but as an adverb: a *both*.

(126) a. [$_{TP}$ Carlo mangia ] [$_{VP}$ sia [$_{CP}$ [$_{FocP}$ [$_{DP}$ le pere]] che [$_{Foc}$ [$_{DP}$ le mele]]]]
    [$_{TP}$ Carlo eats ] [ BOTH [$_{CP}$ [$_{FocP}$ [$_{DP}$ the pears]] AND [$_{Foc}$ [$_{DP}$ the apples]]]]
  b. [$_{TP}$ Carlo mangia [$_{DP}$ sia [$_{DP}$ le pere ] che [$_{DP}$ le mele ]]]

A constituent in object position is normally possible in any other argumental positions, so the push to generalize (126b) is very strong here.[26] The final position shows what constituents can be conjoined; if the conjuncts are DPs, as in (126), the D-Conj is naturally interpreted as a *plural* DP. Consider again the case of post-verbal subjects in Italian: while (113) showed that the verb may agree in the singular, (127) shows that plural agreement is also a possibility:

(127) In questa casa {ha / hanno} abitato sia Mozart che Goethe.
    in this house {has / have} dwelt BOTH Mozart AND Goethe.
    'Both Mozart and Goethe *has/have dwelt in this house.'

If the subject is moved before the auxiliary, however, the singular form is much stranger (though not outright impossible).

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**26**   The obvious exception in Italian and other Romance languages is *bare plural/mass noun*, which are much more restricted in subject than in object position (Contreras 1986; Longobardi 1994). While conjunction of any type has an ameliorating effect on bare elements (Heycock, Zamparelli 2003), D-Conj of pre-verbal bare plurals are intriguingly common.

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(128) In questa casa sia Mozart che Goethe {??ha / hanno} abitato a lungo.
    In this house BOTH Mozart AND Goethe {has / have} dwelt for long.
    'Both Mozart and Goethe *has/have dwelt in this house.'

This suggests that the object position is ambiguous: the D-Conj could be derived from sentential conjunction (singular, in this case), or it could have been reparsed as DP coordination (plural, in this case). The first option is virtually impossible in (128), so the D-Conj must be plural. Crucially, even in this case the distributive semantics derived from the final, biclausal derivation is maintained. We may think of (126b) as a 'compiled' version of the derivation in (53b), where what gets combined is crucially *small-conjuncts*, not clauses. Our processing concerns apropos (119) can thus be laid to rest.

Many other cases considered in this paper could similarly be ambiguous between a clause-derived form and a generalized 'small conjunction' – including cases whether the generalization is actually wrong. For instance, the fact that focused modals may be taken by D-Conj in English (see (43), repeated below) could be due to a reanalysis that maps them onto non-finite verb forms, since they do not show any agreement.

(43)  John both CAN and SHOULD speak out.

The generalization path is also crucial to explain the case of D-Conj inside islands, see e.g. (129).

(129) If [[both John and Mary] or Sue] come, the party will be a nightmare.

Without a small-conjunct derivation, (129) would require extracting *John* and *Mary* from each coordinated conjunct (*John$_i$ ... [ t$_i$ or Sue] and Mary$_j$ ... [ t$_j$ or Sue]*) then ATB-factoring the disjunctive remnants. But the first step violates the Coordinate Structure Constraint.

## 9    Conclusions

The goal of this paper was to examine the distribution and possible derivation of a type of conjunction with distributive meaning, D-Conj, in Italian and in English. The constituents this construction can join are a lot more restricted than those in plain coordination, and different also from the distributive constructions that use *all/both* plus plurals. This can be explained as the combination of two possible derivation strategies: one that obtains the conjoined constituents from clause coordination (at the level of the main clause or of its subordinates, including modifiers that functions like implicit relative clauses), the other that reparses the result of the first operation and

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generalizes it to positions where a full clausal derivation would fail to give the right word order or constituent structure. Distributivity falls out naturally from the first strategy, which uses a combination of syntactic operations (Focus fronting, ATB- extraction) which are independently attested, therefore learnable, and predicts a reduced range of possible conjuncts: those XPs that can move without violating language-general or language-specific rule (say, coordination islands, preposition standing). Instead of assuming that the landing site for the ATB remnant movement is a functional projection in the Comp area, I have proposed that it is the TP of a defective main clause whose verb, *sia* 'be/let' takes the conjunction as its sentential complement. The trigger for this raising is the necessity to license the defective main clause by moving some contentful material in it. Alternative analyses in terms of movement to the Comp area would have trouble explaining why the ATB movement is obligatory yet specific to TP; why it has no detectable semantic effects, and why it doesn't block further extractions from the moved TP.

Believers in the strict parallelism between syntax and semantics might find this approach hard to accept. They might find it suspiciously convenient that a 'local' (or, 'generalized') version of a complex sentential rule could achieve the same semantic effect. If the compiled version is so convenient – they might say – why bother with the long derivation even in those positions where it could be possible? Part of the answer must lie in the fact that *sia/che* is but one of a range of constructions with a distributive semantics that share focus-related properties: Italian has *tanto/quanto* 'as-much/how-much', *così/come* 'so/how' (see ft. 10), *non (solo)/ma (anche)* 'not (only)/but (also)' (Bianchi, Zamparelli 2004); all of these cases contain words that have other uses with none of the constraints we find in the correlative structure. Clearly, a learner that would list them as odd forms of conjunction with odd properties would miss a generalization.

The situation is actually reminiscent of the discussion about the pragmatic vs. grammatical status of scalar implicatures (Horn 1989; Sauerland 2004 vs. Levinson 2000; see Sauerland 2012 for a review). In (130), the hearer could reason as follows: *all* is close to *some* in meaning, yet stronger, so more informative; if the speaker had known that all the students came, he or she would have said so; the fact that *all* was not used is thus signaling that this stronger statement must be false, and that only *some* holds.

(130) Some students came to the party. *Implicature*: not *all* students came.

But of course, *some⇒not all* could also be a pre-compiled piece of information in the lexical entry for *some*, fast and easy to compute without any of this complex reasoning. On the other hand, there are many possible pragmatic scales, and in each of them the implicatures

are sensitive to the direction of entailment (downward or upward) found in the context; a solution that sees this aspect of meaning as a pure lexical fact would once again miss a generalization.

In the present case, it would be impossible to understand the limits of D-Conj without admitting that the actual derivation has a place in the mind of the speaker. A corollary is that the view that once we have a grammaticalized version of *sia/che* we should always use it cannot be maintained; at the very least, it would not explain the optionality of number agreement with post-verbal subjects, as we see it in (127): both options must remain open when available. But as we have seen, there are syntactic configuration where a movement-derived D-Conj could not be obtained without inventing ad-hoc rules – rules that could easily overgenerate impossible constituents. This opens up the possibility of empirical studies that compare the processing of D-Conj in different positions and configurations. I leave this for future work.

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