

*The Coordinate Structure Constraint:
not a constraint on movement**

Dominique Sportiche[†]
UCLA

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Abstract

The Coordinate Structure Constraint (CSC) is typically taken to be a constraint on movement and is used as a movement diagnostic.

This note mostly merely recapitulates existing work, [Ruys \(1993\)](#), [Fox \(2000\)](#), [Lin \(2001\)](#), [Lin \(2002\)](#), [Johnson \(2009\)](#), adding some controls. These works demonstrate that both A and A-bar movement can systematically violate the CSC under the right conditions and suggest instead that the CSC should be viewed as a constraint on interpretation. This allows movement to violate the CSC, as long as the output (at LF) is interpretively well formed.

It next briefly discusses some consequences regarding binding, control theory, and clitic doubling.

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[†]Email contact: dominique.sportiche@ucla.edu

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1 Introduction

A still common assumption about the Coordinate Structure Constraint (CSC) much relied upon in the literature is exemplified by quotes various recent works. For example, [Bruening \(2021, p. 429, 430\)](#) discussing movement approaches to Condition A, here a case of *herself* in a coordination:¹ states:

In movement theories, then, (some part of) *herself* in such examples must move. However, coordinate structures constitute islands to movement. Movement should not be possible from just one conjunct of a coordinate structure.

...

However, the fact is that all movement processes that have been identified are unable to move a single conjunct out of a coordinated phrase.

The same argument could be leveled against the movement theory of control, given the following acceptable examples in English and French:

- (1) Mary (both) wants [[PRO to win] and [John to lose]]
 Mary veut (à la fois) [[PRO gagner] et [que Pierre perde]]

Such reasoning is far from isolated. Other recent examples are illustrated e.g. in [Paparounas and Salzmann \(2023, p. 1\)](#):

We investigate the syntax of the hitherto understudied phenomenon of first conjunct clitic doubling, with reference to Modern Greek. We argue that it provides crucial evidence against movement-based approaches to clitic doubling, which would incorrectly rule out first conjunct clitic doubling as a violation of the Coordinate Structure Constraint.

Or in [Messick and Raghotham \(2023, p.18\)](#):

The fact that we can have the case-copying reflexive inside a coordination without inducing a violation of the CSC suggests that movement is not involved in the dependency between the reflexive and its antecedent.

There is a substantial body of work, [Ruys \(1993\)](#), [Fox \(2000\)](#), [Lin \(2001\)](#), [Lin \(2002\)](#), [Johnson \(2017\)](#), showing that the Coordinate Structure Constraint (CSC) is not a constraint on movement but a constraint on interpretation. But this work is scattered across several publications, different authors and many years, with different agenda (QR, wh-in situ interpretation, Gapping...), where there is no general discussions about movement and the CSC: some work concentrate on QR or wh-in-situ (to understand scope shifting operations or the interpretation of indefinites), others with instances of A-movement (to understand how Gapping functions). As a consequence, the general results are not visible, as evidenced by the quotes above.

I will summarize this work, outline a formulation of the CSC as a constraint on interpretation and briefly return to the impact of this formulation as a constraint on interpretation on

¹ [Bruening \(2021\)](#)'s example, *The queen invited the baron and herself to tea* is not controlled for the exempt status of the anaphor. [Bruening \(2021\)](#) asserts that because a pronoun in place of the reflexive triggers a Condition B effect, the anaphor must be (able to be) non exempt. But this assertion is not justified and is false under certain approaches to Condition A and B (e.g. [Reinhart and Reuland, 1993](#), and descendants). So this example is not telling. However, there are examples with inanimates circumventing this confound, to wit *The MOMA sells pictures of its collection and pictures of itself*.

the analysis of Binding, Control or clitic doubling, showing that the above arguments have no force.

2 Background

2.1 Preliminaries

2.1.1 Islandhood and Movement

There are two (relevant) kinds of XP/XP Dependencies between a structurally high α and a structurally low β :

- (2) Binding of β by α :
Nobody $_{\alpha}$ thinks that (I believe that) you saw him $_{\beta}$
- (3) Movement from β to α (e.g. question or relative clause formation, topicalization):
 - a. Who $_{\alpha}$ does nobody think that (I believe that) you saw $_{\beta}$
 - b. The woman who $_{\alpha}$ nobody thinks that (I believe that) you saw $_{\beta}$
 - c. This woman $_{\alpha}$, nobody thinks that (I believe that) you saw $_{\beta}$

Binding and Movement are analyzed as having properties in common such as c-command of β by α) and properties not in common such as Island sensitivity. Movement only is assumed to be island sensitive: there cannot be any island boundary between β and α (where the latter is the most local binder of the former):

- (4) Movement and Islandhood : * $\alpha \dots [_{islandboundary} \dots \beta$
if α locally binds β as its immediate trace (i.e. one step movement).

But how do we evaluate whether (4) is correct? To do so, we must have an independent characterization of movement dependencies and check whether such so characterized dependencies obey islands.

However movement is defined, say Rmerge,² to evaluate the truth of (4), we must find a reliable way to detect all and only Rmerge cases.

One property of movement is Displaced interpretation, aka Reconstruction / Connectivity, namely the possibility in an α/β dependency for α to semantically behave as if it was structurally located where β is. This property is reliable. Why?

Firstly it is natural: given how first Merge functions, when first merged, a contentive α must enter into a function argument relation with some local element. It is not surprising therefore than when Rmerged, it should continue behaving as such semantically, that is as if it were in the position β (e.g. for binding and scope).

Secondly, reconstruction is reliable: in all the standard/agreed upon cases of movement and non movement, if movement has taken place, reconstruction is available (see Sportiche 2017). This can be used as a diagnostic.³

² Movement is defined as Rmerge: an element first merged in some position Q is rmerged in some position P c-commanding Q. However, new questions arise in the context of Chomsky (2021), which separates Internal Merge from "Form Copy", which are beyond the scope of this note.

³ Note that movement does entail the possibility of **total** reconstruction as movement may be an intrinsic scope shifting rule. Conversely, apart possibly from certain copular constructions which have special semantic properties (because of the verb *be*), cf. Sharvit, 1999, if reconstruction is available, movement is deemed to have taken place. This implication - if reconstruction then movement - is sometimes questioned, see e.g. Keine and Poole (2018), but, for reasons beyond the scope of this note, unconvincingly

Thirdly, the precise properties of reconstruction and how it correlates with movement is predictable: it is possible to construct a theory of how movement functions that predicts this correlation: Sportiche (2016) shows it follows from:

- Movement being the case of a single syntactic object having more than one structural address (=more than one occurrence).
- The Full Interpretation Principle applying to syntactic objects (not occurrences), implying that as long as one occurrence is interpreted, this principle is satisfied (thus licensing ‘total reconstruction’).
- Semantic compositional rules only composing sisters.

There are other movement diagnostic tools briefly discussed e.g. in Sportiche (2020, appendix), the application of which would be compatible with using reconstructability. Using reconstructability, Sportiche (2020) shows that some movement - namely French Clitic Left Dislocation - can violate (strong) islands. This illustrates the general point that the *kind* of movement involved matters when evaluating the scope of (4). And therefore, this means that some care must be taken using islandhood as a test for movementhood. Licitly being an island violating dependency does not mean not being movement.

2.1.2 CSC

The CSC, like many other island constraints, is formulated as a constraint on movement, blocking movement dependencies between inside and outside of these islands. Following Ross (1967, Ch.4:(84))’s first formulation, this is typically interpreted as applying universally, to all movements. This formulation must be amended due to a known exception to the CSC: the case of Across-the-Board extraction (ATB, cf. Williams (1977), Williams (1978)). Here is an amended version adapted from Mayr and Schmitt (2017):

- (5) The Coordinate Structure Constraint:
 In a coordinate structure, no element contained in a coordinate may be moved out of that coordinate unless it moves from all coordinates, nor may any coordinate be moved.⁴

This yields the following, with the first sentence ill formed as a CSC violation and the second well formed by ATB extraction:

- (6) a. *The people which_i Henry [_{VP} wanted to meet t_i] and [_{VP} met friends of Bill] left
 b. The people which_i Henry [_{VP} wanted to meet t_i] and [_{VP} met friends of t_i] left

Given the conclusion of the previous section, one should be careful about generalizing from the typical constructions used to illustrate the CSC - typically relative clause or question formation - to other kinds of dependencies, e.g. other A-bar movement dependencies, A-movement dependencies.

And indeed, investigating what happens more systematically will lead to the conclusion that in fact, (non ATB) movement can licitly violate the CSC, as long as the CSC is not violated at LF, as Ruys (1993) concludes.

in my view.

⁴ The last clause deals with such cases as:

(a) We know the people who_i Henry wanted to meet [_{DP} t_i] and [_{DP} friends of t_i]
 (b) We know the people who_i Henry wrote to [_{DP} t_i] and [_{DP} t_i]

3 Movement Violations of the CSC

3.1 The A-bar movement case: Ruys (1993), Fox (2000)

Ruys (1993) and Fox (2000) primarily discusses QR and provides arguments that it is best analyzed as a (covert) movement rule, and that the CSC is not a constraint on movement but a constraint holding at LF.

3.1.1 Wh-movement violations of the CSC

The kind of QR examples Ruys discusses can be adapted to overt wh-movement. Consider the following contrasts (both in French reflecting my own and others’s judgments, and English):

- (7) Which author_m didn’t you want to study t_m nor read ...
 Quel auteur_m ne voulais tu pas étudier t_m ni lire ...
- a. *Montesquieu’s essays
 *les essais de Montesquieu
 - b. his_{✓?m,*p} novels
 ses_{✓?m,*p} romans
 - c. any of his_{✓?m,*p} novels
 aucun de ses_{✓?m,*p} romans
 - d. anything that was said about him_{✓?m,*p}
 quoi que ce soi qu’on ait dit de lui_{✓?m,*p}
 - e. the other authors who knew him_{✓?m,*p}
 les autres auteurs qui le connaissait_{✓?m,*p}

(a) is a straight CSC violation. All others are much better than (a), even perfectly acceptable for some, as long as the pronoun they contain is understood as bound by the wh-phrase (else they are ill formed).⁵

How are these facts compatible with the CSC as a constraint of movement? First all these sentences involve movement from one conjunct at least, namely the first one. The reason is that in each of these first conjuncts, there is a gap in a position that is only licensed via movement. Now, no CSC violation would occur if we could analyze the acceptable cases as involving ATB. This would require moving from a position in the second conjunct disallowing a silent trace; and removing the violation, spelling the trace out as a pronoun. I will now discuss below why this is not the case.

Let now us try to assess the feasibility of an analysis of these sentences as involving ATB. We need an independent criterion to decide whether movement from the second conjunct is involved. We can use reconstructability, as discussed in section 2.1.1 and as did Aoun et al. (2001) for resumption in Lebanese: unsurprisingly, wh-movement does not reconstruct into islands, even in the presence of a resumptive pronoun. To illustrate, consider the putative movement structure involved from the second conjunct say in the (7d) example which would be out without the resumptive pronoun:

⁵ Note that these examples violate the ‘Parallelism Constraint on Operator Binding’ proposed in (Safir, 1984, p. 607, (6)). Safir does provide an example (p. 610, (15a)) of such a violation with coordination, but with the resumptive pronoun in the first conjunct and the gap in the second conjunct. These are degraded as compared to the good examples in (7) which needs to be understood. However, what matters to our purpose here is the acceptability of examples in (7).

- (8) Which author_m didn't you want to read whatever was said about him_m
 Quel auteur_m ne voulais tu pas lire quoi que ce soit qu'on ait dit de lui_m

And let us construct a parallel example where we attempt reconstruction (simplifying it somewhat. In (7d), we used negation and an NPI to guarantee that there was embedding. Here this is no longer necessary):

- (9) [Which description of himself_k]_m did you want to read what nobody_k
 [Quelle description de lui_k]_m voulais tu lire ce que personne_k
 said about it_m
 n'en_m avait dit

Without the portion of *himself/ de lui*, the sentence has the intermediate status of a resumption into an island. With it and *himself/it* intended to be bound by *nobody*, the sentence is unacceptable. We conclude there is no movement originating from the second conjunct in (at least some of) the examples (7) and that they only involve movement from the first conjunct, hence CSC violations: the CSC cannot be constraint on movement.

We take as significant the sharp acceptability contrast between (7a) and (7)b-e. Still these latter examples are not perfect. We expect their status to mirror that found with wh-questions together with resumption in an island position.⁶

3.1.2 QR violations of the CSC

Ruys (1993) and Fox (2000) primarily⁷ discuss QR, the mechanism for (some) scope assignment modeled as a movement rule.

First, QR is a type of A-bar movement. This is shown in Johnson and Tomioka (1998) which assimilates it to a kind of A-bar scrambling, and is supported by the analysis of Tiedeman's puzzle in Fox (2002, p.77), showing that QR can escape tensed clauses from object position. Next, it can be shown that QR obeys the CSC.⁸ However, since Ruys (1993), how inverse scope (object outscoping subject) is supposed to function has evolved (see e.g. Fox, 2000) in a way that many classic examples used to show that QR obeys the CSC are confounded.

⁶ We should control for one more, involved, confound. What this example shows is that there can't be movement from below *nobody*. But could there be movement from a position within the second conjunct outside of the island and resumed by the pronoun in the island, as argued in Sportiche (2020)? Sportiche (2020) argues that a preposed wh-phrase is always moved to its position, even in the presence of a resumptive pronoun bound by the wh-phrase, from an intermediate Topic position. If this is right, in the case of a conjoined structure, there must be at least one trace gap somewhere, either outside of the conjunction, or in some conjunct, e.g. the first conjunct (cf. footnote 5). Must there be a trace gap also in the second conjunct? Yes if the CSC is a constraint on movement. To prevent this, it suffices to make the conjuncts small enough so that there is no available Topic position in the second conjunct to extract from. Consider the following contrast:

- (i) *Who_m did you see pictures [[of t_m] and [of John's mother]]
 (ii) Who_m did you see pictures [[of t_m] and [of his_{✓?m,*p} mother]]

Here the conjuncts are too small to host an island external Topic position in the second conjunct. Yet we observe the contrast between a standard CSC violation in (i) and the milder resumptive case in (ii). If a trace gap is indeed required in resumption cases, that it is not required in the second conjunct suffices to reinforce the point under discussion, namely that the CSC is not a constraint on movement.

⁷ Ruys (1993) also discusses wh-in situ, which shows the same behavior as QR.

⁸ This is unexpected under a view such as Barker (2022), which suggests treating scope shifting via 'continuations', essentially an unbounded version of QR.

This is discussed in [Spector and Sportiche \(2013\)](#), which provides non confounded cases illustrating the sensitivity of QR to the CSC (see op. cit, for why). Consider:

(10) If at least one witness heard every robber come in...

This clearly can have an inverse scope reading, namely: ‘if it is the case that for every robber, there is at least one witness (possibly different for each robber) who heard this robber come in, ...’. Now consider (11):

- (11) a. If at least one witness heard [[every robber come in] and [a guard snore]], ...
 b. If at least one witness heard [[a guard snore] and [every robber come in]], ...

Here, in the absence of the CSC, an inverse-scope reading is predicted to be available, just as it is for (10). This reading would result from an LF in which the matrix subject *at least one witness* has been reconstructed to its VP-internal subject position and the subject of the first conjunct (*every robber*) has QR-ed to the edge of the matrix VP. This reading could be paraphrased as ‘If, for every robber, there is at least one witness (possibly a different one for each robber) and there is a guard (possibly a different one for each robber) such that this witness heard this robber come in and this guard snore, ...’. But this reading is clearly not available, which can thus be reasonably attributed to the CSC.

Now the the type of examples discussed by [Ruys \(1993\)](#) and [Fox \(2000\)](#) bearing on the CSC are as follows:

- (12) a. a different student admires every professor and hates the Dean
 b. a different student_m admires every professor_k and wants him_k to be on his_m committee

In the first example, the object of the first conjunct cannot outscope the subject:⁹ the choice of student cannot covary with the choice of professor. But in the second this is possible if this object binds a pronoun. In order for this binding to be allowed, this object must outscope the conjunction *and* so as to have the pronoun in its scope, and therefore violate the CSC.

Why is this allowed? It should be clear that the structure of such examples is parallel to the wh-movement cases discussed in the previous section. Intuitively, we return to this in section 4, violating the CSC in the first example would violate the ban on vacuous quantification in the second conjunct since the universal quantifier has nothing to bind in it. But not in the second example, given the presence of the pronoun.

A covert ATB analysis of such cases is implausible. If QR is analyzed as covert movement, there is no option to leave a resumptive pronoun as trace. If QR is analyzed as covert overt movement, that is as overt movement with the trace being spelled out instead of the highest occurrence, a copy of the quantifier would be expected in the locus of the resumptive pronoun or, implausibly, that the quantifier is somehow spelled out as a pronoun at PF. This is made even more implausible by the existence of examples with a pronoun in the second conjunct deeply embedded inside an island (here a possessive inside a reduced relative), making a movement analysis unavailable given the locality constraints on QR-ing quantifiers like *every*.

- (13) a different student admires every professor_k and tries to attend [all the lectures discussing his_k work]

⁹ This is not a CSC effect. See [Spector and Sportiche \(2013\)](#) as to why.

Lastly, it can be shown that there is no reconstruction of the QRed phrase into the second conjunct. Consider:

- (14) a. a different critic commented on [every portrait of Rothko_k]_m and wanted him_k to comment on it_m
 b. a different critic commented on [every portrait of Rothko_k]_m and wanted **him_k** to comment on [every portrait of **Rothko_k**]_m

We can understand the (a) example as meaning that for every portrait of Rothko, a different critic commented on it and wanted Rothko to comment on this painting. If there was ATB from the resumptive position, we would (given that QR is not A-movement, cf. e.g. Johnson and Tomioka (1998), Fox (2002)) erroneously it turns out, expect a condition C violation as shown in red in (b).

All such examples show that movement can violate the CSC.

3.1.3 A short note about some other cases

Overt violations of the CSC are also reported in other configurations. For example, such violations are reported in German and discussed in Johnson (2002) (and analyzed in a way similar to some of the A-movement CSC violations discussed in section 3.2) and in Mayr and Schmitt (2017). Similarly, overt violations have long been reported in South Slavic (cf. Arsenijević et al., 2020, and references therein). How to analyze these cases is still controversial. They seem consistent with what is concluded in section 4, but only further research can determine if they truly are.

3.2 The A-movement case: Lin (2001), Lin (2002), Johnson (2017)

Clear cases of A-movement violating the Coordinate Structure Constraint are found with Gapping constructions. This is discussed in various works of Kyle Johnson's since the early 1990's, see Johnson (2017) for a summary, as well as in Lin (2001), Lin (2002), which, adopting the view in Ruys (1993) and Fox (2000) concludes that the CSC is an interpretive constraint. Here is one case illustrating these violations (and a couple more are discussed below in section 4).

Consider the following from Johnson (2017, (88)-(90)):

- (15) a. X can be true and Y be false
 (i) because they are logically independent
 (ii) #but X can't be true if Y is false.
 b. It's possible for X to be true and Y to be false (because they are logically independent).
 c. X can be true and Y can be false (but X can't be true if Y is false).
compare
 # It's possible for X to be true and Y to be false but X can't be true if Y is false.

(15a) is unambiguous in a surprising way: it must mean that it is possible both for X to be true and Y to be false. More precisely, (15a) can express what (15b) does, and is therefore compatible with the continuation in (15a-i). This is the interpretation that arises if *can* outscopes *and*. But (15a) can't express what (15c) does, and is therefore, unlike (15c), incompatible with the continuation in (15a-ii). This means that the modal *can* must have

scope over the conjunct in cases like (15a) (see Johnson, 2017 for a discussion of when this arises).

What kind of syntax gives rise to this pattern? The syntax in (16a) below with clausal coordination would give the wrong result since it would allow the interpretation in (15c).

- (16) a. X can be true and Y can be false
 b. X_k can [[be t_k true] and [Y be false]]

The syntax in (16b) - the small conjunct analysis - correctly yields only the right one and is thus widely adopted (e.g. by Siegel, 1984 in essence, Coppock, 2001, Lin, 2002, Johnson, 2017, Potter et al., 2017), Hirsch, 2017). But this requires A-movement to be able to violate the CSC.

4 How to formulate the CSC

The CSC clearly does not block movement itself, neither in the A-bar movement case, not in the A movement case but seems instead to constrain the output of movement, as Ruys (1993) had concluded. How should it be formulated? Fox (2000, chap 2, (57)) adopts the following which would be consistent with the observed data on wh-movement and QR:

- (17) a. Extraction out of a coordinate structure is possible only when the structure consists of two independent substructures, each composed of one the coordinates together with material above it up to the landing site (henceforth, *component structures*.
 b. Grammatical constraints are checked independently in each of the component structures.

It would apply as follows. In a licit, ATB movement case, each component is well formed.

- (18) ATB WH-movement
 a. ✓ Which poet_k did you [[read t_k] and [love t_k]]?
 Component Structures:
 b. ✓ Which poet_k did you [read t_k]?
 c. ✓ Which poet_k did you [love t_k]?

In an illicit non ATB movement case, one component is ill formed, ruled out by the independent general principle in (20):

- (19) Non-ATB WH-movement
 a. *Which poet_k did you [[read t_k] and [love William Blake]]?
 Component Structures:
 b. ✓ Which poet_k did you [read t_k] ?
 c. *Which poet_k did you [love William Blake]?

- (20) Vacuous quantification is banned

In a licit non ATB movement case, with a bound pronoun, there is no vacuous quantification.

- (21) Non-ATB WH-movement

- a. ✓ Which poet_k did you [[read t_k] and [love all of his_k poems]]?
 Component Structures:
 b. ✓ Which poet_k did you [read t_k] ?
 c. ✓ Which poet_k did you [love all of his_k poems]?

To derive the right result here, we must make a bit more precise what is meant by ‘grammatical constraints’ in (17). Indeed (21c) on its own is less acceptable than (21a). A natural idea is to restrict them to LF relevant constraints, that is interpretive constraints.¹⁰ This is in part independently warranted (see below example (34) showing that agreement mismatch does not matter). From this point of view, (21c) is well formed but degraded for other non interpretive reasons.¹¹ As Lin (2002), proposes, this applies to the A-movement case just discussed. Accordingly, an example like (16b) or (22) below would be well formed provided that the subject *Bill* totally reconstructs in its trace position as in (22a), yielding the two components (22a-i) and (22a-ii), each interpretively well formed:¹²

- (22) Bill_k can’t [[be t_k right] and [Tom be wrong]]
 a. can’t [[be Bill_k right] and [Tom be wrong]]
 (i) can’t [be Bill_k right]
 (ii) can’t [Tom be wrong]
 b. Bill_k can’t [[be t_k right] and [Tom be wrong]]
 (i) Bill_k can’t [be t_k right]
 (ii) Bill_k can’t [Y be wrong]

Failing to totally reconstruct the subject *Bill* in its trace position as in (22b) would yield the two components (22b-i) and (22b-ii), the former interpretively ill formed (*Bill* not being the argument of anything). As Lin (2002) remarks this makes two correct predictions. First, the following sentence is ambiguous, but its gapping counterpart is not:

- (23) a. Many drummers can’t leave on Friday
 b. Many drummers can’t leave on Friday, and many guitarists arrive on Saturday

The ambiguity of (23a) arise because the subject may either scope over or under the negated modal. If the subject outscopes the modal, the sentence means that for many different individual drummers, it’s the case that they are unable to leave on Friday. If the subject is interpreted below the negated modal, this yields: it is not possible that a large group of drummers leave on Friday.

The above account correctly predict that only this second reading is available in (23b), where *many drummers* reconstructs under the negated modal.

¹⁰ Johnson (2009) suggests an even more restrictive version, fundamentally limiting them to (20) as follows:

Let α be a term outside a coordination, C. If α binds a variable in one conjunct of C, then it must bind a variable in all conjuncts of C.

This would work for the next examples if an A-movement trace is analyzed as a variable bound by its antecedent.

¹¹ That is whatever governs the availability of resumptive pronouns, for example, competition with alternatives lacking a resumptive, which would be responsible for why a pronoun in the trace position in the second conjunct of (18a) is perceived as deviant.

¹² As Lin (2002) notes, total reconstruction of *Bill* seems to contradict Fox’s 2000 Scope Economy condition barring vacuous scope shifting operation. This could be taken to mean that scope independent elements such as proper names do not fall under Scope Economy.

The second prediction takes care of the following kind of examples inspired by McCawley (1993, p.248, (15a)) and his discussion and discussed as well in Lin (2002, p.73, (23)):¹³

- (24) No one_k 's duck will [[t be moist enough] or [his_k mussels be tender enough]]
- a. No one_k 's duck will [t be moist enough]
- b. No one_k 's duck will [his_k mussels be tender enough]

The remarkable fact here is that the QP *no one's duck* in the first conjunct is able to bind the pronoun *his* in the second conjunct. First, this means, again, that we cannot be dealing with two coordinated full clauses (with ellipsis), since, as McCawley notes, the following sentence is ill formed as the pronoun is not in the scope of the quantifier:

- (25) *[No one_k 's duck will be moist enough] or /and his_i mussels ~~will~~ be tender enough.

Second, the subject outscopes the coordination as shown in (24): the sentence only means that there is nobody who is such that his duck will be moist enough and his mussels tender enough. This time, this option is predicted to be fine: the two components that such a sentence yields without reconstruction, namely (24a) and (24b), are both interpretively well formed, the QP in each of them binding a variable.¹⁴

We may wonder why Fox's generalization in (17) should hold? Why should each component independently be checked for LF well formedness, at least for the cases we have looked at? Recent work may suggest a natural answer. Schein (2017) and Hirsch (2017) defend in different ways an analysis of at least some cases of symmetric coordination (of the type discussed here) as involving conjunction reduction in the classical sense of taking arguments with (more or less) sentence meanings. As a result, each component must be checked for interpretability because these components are syntactically and semantically present (together with some ellipsis and its effects).

This said, Fox's generalization is good enough for our purposes here but is too coarse to handle all cases of (even symmetric) coordination. Many more questions arise than can even be hinted at here, regarding coordinations, the relation with plurality, with distributivity and so on (see e.g. Schmitt (2020)). A slightly more abstract characterization would take the following form:

(26) Coordinate Structure Constraint

¹³ Note the well known well-formedness of *Noone_k's mother scolded him_k*, showing that a possessor can scope like its DP container.

¹⁴ Combining the last two types of examples shows that the syntactic structure must be able to be a bit more complex than shown so far. Indeed, consider the French example (which apparently differs from comparable English examples reported in Lin (2002, p.81, (43b))):

- (i) Beaucoup de musiciens ne peuvent pas partir le jeudi et leurs remplaçants n'arriver
 Many musicians_k can't leave on Thursday, and their_k replacements arrive
 que le samedi
 only on Saturday

Given the presence of the pronoun in the second conjunct, reconstruction of *many musicians* under the negated modal should not be required. But this contradicts at least my judgement: the subject must scope under the modal. This shows that the subject must reconstruct below the modal but not so low as not to take the coordinated structure in its scope. This can be resolved if the structure is as below, with an intermediate trace on the spine, outside of the coordinated structure:

- (ii) Many musicians_k [can't t_k [[t_k leave on Friday] and [their_k replacements arrive only on Saturday]]

In a string containing a coordination, if binding into one conjunct is required for computing the interpretation, binding into to all conjuncts is required.

For example a moved wh-phrase cannot be interpreted without binding its trace. Then this phrase will have to bind something in each conjuncts. Similarly, since standardly A-moved DP will need to bind its trace to compute its θ -role, this DP will have to bind something in each conjuncts. It should be clear that Fox’s formulation is a subcase of this constraints where each components is interpretable by itself, something that is not necessarily the case (and underlies the debates regarding how to treat say conjunction, as Boolean or not).

The idea that the CSC is a constraint on interpretation makes it also apt to handle apparent CSC violations involved in asymmetric coordination (regardless of what the coordinator is, be it *and*, *or*, *etc.*) of the following kind:

- (27) a. How much can you [drink _ and still stay sober]? (Lakoff (1986, example 2))
 b. How many lakes can we [destroy _ and not arouse public antipathy]? (Pollard and Sag (1994, p. 201))
 c. He regards the limitless abundance of language as its most important property, one that any theory of language [must account for _ or be discarded]. (Campbell (1982, p. 183))

Indeed, characterizing such cases requires paying attention to the interpretive properties of the constructions. Thus a necessary condition for these type of violations to be allowed is failure of semantic symmetry defined as truth conditional invariance under conjunct permutation (cf. Mayr and Schmitt, 2017, for discussion).¹⁵ Thus the formulation in (26) could be restricted to symmetric coordination, precisely because it’s very symmetry is at the core of the requirement of ‘equal treatment’ of the conjuncts.

Finally, note that we have not discussed head movement. How to model head movement is controversial. What matters here is whether it could have interpretive effects. If not, it is predicted to be able to always violate the (classical) CSC. If yes, as some authors (e.g. Lechner, 2006, Roberts, 2010, Harizanov and Griбанова, 2019) argue, the prediction of the present account, to be verified, is that these interpretive effects should not arise when head movement violates the (classical) CSC (see below for one possible case).

5 Consequences

Binding: Some authors (Kayne, 2002, Drummond et al., 2011, Charnavel and Sportiche, 2021, 2022, 2023) have argued that the relation between an anaphor and its antecedent is one of movement of or from the anaphor (say ‘from’ here, for concreteness) to the antecedent. If it is movement, it must be allowed to violate the CSC as a constraint on movement:

- (28) The Orsay museum_k sells replicas [[of the Louvre]] and [of itself t_k]]


Would a derivation involving movement violates the CSC as a constraint on interpretation? The answer is negative.

The components given by the formulation of the CSC in (17) would be:

¹⁵ That a semantic property is a prerequisite casts doubts on pragmatic, rather than semantic, treatments of the CSC as in Kubota and Lee (2015).

- (29) a. The Orsay museum_k sells replicas of the Louvre
 b. The Orsay museum_k sells replicas of [itself t_k]

Both are well formed. Precisely because such a derivation would involve movement of the DP *the Orsay museum* to a θ -position, this DP is able, but, crucially, is not required, to bind anything (unlike in standard A-movement, where binding of a trace is needed to get a θ -role).

On the other hand, some analyses (Anagnostopoulou and Everaert, 1999, Spathas, 2010, Lechner, 2012, Patel-Grosz, 2013, Sauerland, 2013) invoke *self*-movement for reflexive binding, a potential case of head movement, as e.g. in:

- (30) a. John_i hurt him_iself \rightarrow
 b. John_i self-hurt him_i

which affects the meaning of the verb by turning it into a reflexive verb (roughly turning a dyadic $\lambda x.\lambda y.P(x, y)$ into a monadic $\lambda x.P(x, x)$). This predicts, wrongly, that such sentences as *The hammer_k damaged [the nail and itself_k]* should be ill formed as violations of the CSC. Some assumption must therefore be wrong: one possibility could be that such sentences do not have to involve *self* movement (although this undermines the appeal to such movement in the first place); the other is that *self* movement is simply not an option, as Angelopoulos and Sportiche, 2023 or Sportiche, 2022 conclude.

Control: It should be clear that exactly the same reasoning makes Hornstein’s 1999 analysis of Obligatory Control as movement immune to the CSC. Returning to example (1), its components are as given, and both well formed:¹⁶

- (31) Mary wants [[PRO to win] and [John to lose]]
 ↑
 a. Mary wants [PRO to win]
 b. Mary wants [John to lose]

The CSC is thus not relevant to decide the feasibility of this approach to control.

Clitic Doubling Paparounas and Salzmann (2023) references a situation in Greek in which a clitic here cl_k^1 doubles the first conjunct of a coordination of direct objects, here DP₁ as below:

- (32) ... cl^1 ... [DP [DP₁ X] and [DP₂ Y]]

Would movement to cl_k^1 of DP₁ violate the CSC as an LF condition? This would yield the following structure, with its components once total reconstruction has applied (as it would have to, else one component will be ill formed):

- (33) [DP₁ X] cl^1 ... [DP [DP₁ t] and [DP₂ Y]]
 ↑
 a. ... cl^1 ... [DP₁ X]
 b. ... cl^1 ... [DP₂ Y]

¹⁶ Note incidentally that this is true even if movement completely vacates one of the conjuncts (see footnote 4). This would also hold in the binding case above if, as argue, the reflexive is the trace (as opposed to containing the trace of) of its antecedent.

Are these interpretively well formed? It all depends on the status of the clitic. If the clitic has some interpretive property crucially linked to his DP associate, the second component should be ill formed since the clitic has no associate. Angelopoulos and Sportiche (2021) however argues (i) that such clitics in Greek (or in French) do not contribute any semantics: they are probes agreeing with their goals the way T agrees with its goal; (ii) that phrases doubled by clitics can totally reconstruct. If this right, components as above are available (under total reconstruction) and clitics are from an interpretive point of view invisible, even with some ϕ features or Case values specified. These would behave like the features on the verb *be* in the following French Gapping case, which translate the English examples (22) with the same interpretation (requiring total reconstruction of the subject). They are well formed despite the mismatch in ϕ features:

- (34) Ces propositions ne peuvent pas être vraies et celle-ci être fausse
 these propositions can't-3rdprs-plural be true and this one be false
- a. ne peuvent pas [ces propositions être vraies]
 can't-3rdprs-plural [these propositions be true]
- b. ne peuvent pas [celle-ci être fausse]
 can't-3rdprs-plural [this one be false]

In other words, these components would be interpretively well formed. What this all mean is that an argument against movement being involved with Clitic Doubling based on putative CSC violations is not convincing, for now. Interestingly, Angelopoulos and Sportiche (2021) leaves open the status of Dative clitics, mentioning that they may have interpretive import (e.g. possibly animacy, or inducing affectedness on their associate). If they do, the expectation would that one of the corresponding components in a situation like (33) would be ill-formed. Preliminary consultations with native speakers of Greek suggest this is a correct prediction: first conjunct doubling of Datives is ill formed.

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