Cross-clausal A-dependencies

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1 Introduction

Traditional theories of case and agreement treat these phenomena as bound to contexts in which the elements involved originate within the same clause, unless a clause is considered to be incomplete—i.e., deficient or reduced in some way. This view captures the distribution in (1) vs. (2) in languages like English. (1a)/(2a) are cases of so-called *raising to object* or *exceptional case marking* (ECM—a configuration in which the case of the embedded subject is determined by the matrix predicate; in *(subject) raising* configurations like (1b)/(2b), the subject originates in the embedded clause and raises to matrix subject position; and in (1c)/(2c), the matrix verb agrees with the embedded subject. As shown in (1) vs. (2), these A-dependencies are only possible in (certain) infinitives and not across finite clause-boundaries. A common view is that the complements of ECM and raising verbs do not embed full clauses (e.g., they only combine with IPs/TPs and not CPs), hence *cross-clausal A-dependencies* (CCA) are possible.

(1) a. I believe **her** to have won the triathlon.
b. **She** seems to have won the triathlon.
c. There **seem** to be some misconceptions.

(2) a. *I believe (that) **her** won the triathlon.
b. ***She** seems that won the triathlon.
c. *It/There **seem** that (there) are some misconceptions.

While such an approach works well for English, it raises many questions once we look beyond English. In this paper I show that a different picture arises when considering CCA cross-linguistically. First, it has been observed for several (typologically different) languages that CCAs are not confined to reduced infinitives but can also occur across finite CPs (section 2), Thus from a universal perspective, clause reduction cannot be a necessary requirement for CCA. Second, a comparison with restructuring, a well-documented clause reduction phenomenon, shows that English-type clause reduction in ECM would be the odd case—the type of clause reduction that would be needed for ECM in English is largely in complementary distribution with other attested clause reduction phenomena. In particular, languages that demonstrably allow clause reduction do not necessarily allow CCA (section (12)). Clause reduction can therefore also not be a sufficient requirement for CCA. This will lead to the hypothesis that CCA in general (even in English) does not involve clause reduction. Third, we will see in section 4 that the DP involved in CCA can remain within the embedded clause (at least in overt syntax), which, based on various evidence from shifted indexicals, has to be a CP (at least in certain

contexts). Furthermore, CCA CPs will be shown to be (regular) locality domains. Assuming that there is a general prohibition against an A-dependency following an A′-dependency involving the same element, this will lead to the conclusion that the position occupied by a CCA.DP within the CP is an A-position. Section 5 then sketches an account that derives the cross-linguistic variation and brings CCA in line with locality considerations such as the question of how CPs can be crossed by A-dependencies.

2 Cross-clausal A-dependencies

2.1 Types of CCA

There are three basic types of CCA—subject raising, ECM, and agreement, which all exist across finite clause boundaries. In previous works, these phenomena have sometimes been referred to as *hyper raising/ECM* and *long-distance agreement*. An example of hyper raising is given in (3) from Brazilian Portuguese. It has been shown for examples like (3a) that the DP occuring in matrix subject position and agreeing with the matrix verb originates in the finite embedded clause. In addition to agreement, weak pronouns and quantifiers provide evidence that the movement involved is true subject (i.e., A-) movement and not an A′-operation like topicalization. As shown in (3b), the subject in such hyper raising contexts can be a weak pronoun or quantifier, whereas this is not possible for topicalization, as shown for weak pronouns in (3c) and quantifiers in (3d).

(3) Brazilian Portuguese

a. *Os meninos parecem que fizeram a tarefa.*
the boys seem.3.PL that did.3.PL the homework
'The boys seem to have done their homework.' [Nunes 2009: 5, (2)]

b. *Cê / Alguém parece que está doente.*
you.WEAK / someone seem that is sick
'You seem/Someone seems to be sick.' [Ferreira 2009: 24, (18)]

c. **Cê, João me disse que vai ser aprovada.*
you.WEAK, João me told that will be approved.FEM
'You, John told me will be approved.' [ibid.: 24, (19a)]

d. **Alguém, João me disse que seria aprovado.*
Someone, João me told that would.be approved.MASC
'Someone, John told me will be approved.' [ibid.: 24, (19b)]

Hyper ECM is illustrated here for Turkish (see Wurmbrand 2018 for other languages). The embedded subject occurs in a finite complement clause but its case is dependent on the properties of the matrix clause. As shown in (4a), ACC is not possible in passive predicates.

(4) Turkish

a. *Makarna-Ø/*yı ye-n-di.*
pasta-NOM/*ACC eat-PASS-PST
'Pasta was eaten.' [Şener 2011: 2, (5a)]

b. *John* [*makarna-yı ye-n-di diye*] *duy-du.*
John.NOM [pasta-ACC eat-PASS-PST COMP] hear-PST
'John heard that pasta was eaten.' [ibid.: 3, (5b)]

c. *[*Pelin-i Timbuktu-ya gi-ti diye*] *bil-in-iyor.*
[Pelin-ACC Timbuktu-DAT go-PST COMP] know-PASS-PRS
'Pelin is known to have gone to Timbuktu.' [ibid.: 3, (6b)]

In a CCA contexts like (4b), on the other hand, ACC is possible, despite an embedded passive predicate. If, however, the matrix predicate is passivized, as in (4c), embedded ACC is again impossible (NOM would be fine).

Lastly, hyper agreement is found, for instance, in Nez Perce. As shown in (5), the case of the embedded subject is determined in the embedded clause—NOM in (5a) and ERG in (5b), depending on the transitivity of the embedded predicate. Nevertheless, the embedded subject enters an agreement dependency with the matrix verb, which is observable through object agreement on the matrix verb and through the case of the matrix subject, which is ERG like in transitive contexts (hence Deal 2017 analyzes such configurations as involving covert raising to object).

(5) Nez Perce

a. *Harold-nim hi-*$\boxed{\textit{nees}}$*-nek-se* [$_{\text{CP}}$ *hitemenew'eet*
Harold-ERG 3.SBJ-O.PL-think-IPFV [$_{\text{CP}}$ student.NOM
hi-wsiix wiweepcux.]
3.SBJ-be.PRS.PL smart]
'Harold thinks the students are smart.' [Deal 2017: 5, (10)]

b. *Taamsas-nim hi-*$\boxed{\textit{nees}}$*-nek-se* [$_{\text{CP}}$ *mamay'as-nim*
Taamsas-ERG 3.SBJ-O.PL-think-IPFV [$_{\text{CP}}$ children-ERG
poo-payata-six Angel-ne.]
3/3-help-IPFV.S.PL Angel-ACC]
'Taamsas thinks the children are helping Angel.' [ibid.: 5, (11)]

2.2 CCA and Finiteness

While CCA is restricted to non-finite contexts in English, cross-linguistically, the situation is different. As shown in Table 1, there are four types of languages in terms of the finiteness distinction.

	Non-finite	**Finite**
English, Icelandic	✓	✗
Turkish, Buryat	✓	✓
German, Dutch ECM	✗	✗
Zulu	✗	✓

Table 1: CCA and finiteness

Icelandic, like English allows ECM only in non-finite contexts (see (6)), despite allowing movement to Spec,CP as part of the verb-second phenomenon. Since this form of movement cannot feed into CCA, the standard view is that it is A′-movement, and that A-phenomena cannot follow A′-phenomena.

(6) Icelandic [G. Harðarson, p.c.]

a. *Leó sá Astrid-i borða ís-inn.*
Leo saw Astrid-ACC eat.INF ice-the
'Leo saw Astrid eat the ice cream.'

b. **Leó sá Astrid-i borða-ð-i ís-inn.*
Leo saw Astrid-ACC eat-PST-3.SG ice-the
'Leo saw Astrid had eaten the ice cream.'

Languages like Turkish or Buryat allow CCA in finite and non-finite contexts. Complements in Buryat can be nominalized as in (7a), showing case and agreement properties like DPs. Since they allow limited tense and aspect markings and do not have any CP-properties, they are typically treated as reduced non-finite complements. As shown, CCA is possible (the embedded subject could also occur in GEN). Examples like (7b) are full CP-complements and CCA is possible.

(7) Buryat

a. *badmə* [$_{\text{NP}}$ *namɛjə tɜrgə ɜbdəl-h-ijə(-mni)*] *mɜd-ɜ.*
Badma [$_{\text{NP}}$ 1SG.ACC cart break-NMLZ-ACC(-1SG)] know-PST
'Badma found out that I broke the cart.' [Bondarenko 2017: 10, (40)]

b. *sajənə* [$_{\text{CP}}$*namɛjə tɜrgə ɜmdəl-ɜ(*-b) gɜžə*] *mɜd-ɜ.*
Sajana [$_{\text{CP}}$1SG.ACC cart break-PST(*-1SG) COMP] know-PST
'Sajana found out that I broke the cart.' [ibid.: 19, (82)]

German and Dutch are languages which do not allow ECM in either finite or non-finite contexts, as shown in (8). While verbs like *think* can combine with an infinitival complement, only a control structure is possible and ECM is excluded.

(8) German

a. *Sie glaubt (*ihn) Goldfische zu mögen.*
She believes (*him.ACC) goldfish to like
'She believes herself (control)/*him (ECM) to like goldfish.'

b. *Sie glaubt er / *ihn mag Goldfische.*
She believes he.NOM / *he.ACC like goldfish
'She believes he likes goldfish.'

Lastly, there are languages like Zulu where CCA is possible in finite, but not in non-finite contexts. Infinitives, (9a), do not allow raising, and according to Halpert (p.c.), ECM is not found in infinitives either. Raising and ECM are possible in finite contexts as in (9b).

(9) Zulu

a. **uZinhle u-bonakala* [*uku-*(*zo-*)*xova ujeqe.*]
AUG.1.Zinhle 1.S-seem [INF-(FUT-)make AUG.1.steamed.bread]
'It seems that Zinhle will make bread.' [Halpert 2016b: 186, (3)]

b. *Ngi-funa uSipho* [$_{\text{CP}}$ *ukuthi apheke iqanda.*]
1SG-want AUG.1.Sipho [$_{\text{CP}}$ that 1.SBJ.cook AUG.5.egg]
'I want Sipho to cook an egg.' [Halpert 2016a: 41, (66b)]

Thus finiteness does not appear to be a determining factor for CCA, at least cross-linguistically.

2.3 CCA and prolepsis

An important methodological issue is to distinguish CCA from configurations in which the DP involved in the A-dependency originates as an argument of the matrix predicate, as in prolepsis configurations in (10). In (10a), the DP *of Leo* is clearly an argument of the verb *know*. However, if in a language the matrix verb assigns ACC to this argument and *pro*-drop is possible, the surface string in (10b) and a CCA configuration, (10c), may be indistinguishable, in particular in head-final languages.

(10) a. I know of Leo that he left.
b. I know Leo.ACC [$_{CP}$ *pro* left.]
c. I know [$_{CP}$ Leo.ACC left.]

While many of the CCA languages may allow a prolepsis configuration, there is a diverse set of evidence that prolepsis is not the only option available in those languages and that, at least in certain contexts, the DP involved can be shown to originate in the lower clause, thus confirming the existence of CCA. I cannot reproduce all the evidence here, but among the tests are: idiomatic readings with the embedded predicate, impossibility of embedded overt pronominal subjects, licensing by embedded negation, scope under the matrix predicate, clefts, *Proper Binding Condition* violations, or island sensitivity (see, among others, Bondarenko 2017) for Buryat, Podobryaev 2014 for Mishar Tatar, Deal 2017 for Nez Perce, Bruening 2001 for Passamaquoddy, Zyman 2017 for P'urhépecha, Polinsky & Potsdam 2001 for Tsez, Şener 2008, 2011 for Turkish, Shklovsky & Sudo 2014 for Uyghur, and Halpert 2016a, Halpert & Zeller 2015 for Zulu). One argument I will replicate here is word order. As shown in (11),[1] in several languages, it is possible for the CCA.DP (the embedded ACC subject in (11a)-(11d), or the embedded subject agreeing with the matrix verb in (11e)) to follow embedded material such as time adverbials that modify the embedded clause and according to common assumptions cannot undergo movement. Given that the adverbials are in the embedded clause, anything to their right must be in the embedded clause as well. Together with the other properties mentioned above (see the references above and Wurmbrand 2018 for a summary), this leads to the conclusion that the CCA.DP can indeed occur in the embedded clause, thus is not (necessarily) base-generated as a matrix argument.

(11) a. *ojunə* [*üsəgəldər badm-ɨjə* *na:dənxɛ ab-a* *gɜžə*] *mɜd-ɜ.*
Ojuna [yesterday Badma-ACC toy take-PST COMP] know-PST
'Ojuna found out that yesterday Badma bought a toy.'
b. *John-ga* [*mada Mary-wo kodomo-da to*] *omotta.*
John-NOM [still Mary-ACC child-COP COMP] thought
'John thought that Mary was still a child.'

[1] The languages and sources are: (11a) Buryat (Bondarenko 2017: 17, (76)); (11b) Japanese (Hiraiwa 2001: 72, (11)); (11c) Uyghur (Shklovsky & Sudo 2014: 388, (18)); (11d) Turkish (Şener 2011: 5, (11)); (11e) Nez Perce (Deal 2017: 6, (13)).

c. *Tünügün Ahmet manga* [*ete Aygül-ni ket-idu*]
yesterday Ahmet 1SG.DAT [tomorrow Aygül-ACC leave-IPFV.3]
di-di.
say-PST.3
'Yesterday Ahmet said that Aygül would leave tomorrow.'

d. *Pelin* [*dün Mert-i sınav-a gir-di diye*]
Pelin.NOM [yesterday Mert-ACC exam-DAT enter-PST COMP]
bil-iyor.
know-PRS
'Pelin thinks that yesterday, Mert took an exam.'

e. *'Aayat-onm hi-nees-nek-se* [*watiisx mamay'ac*
woman-ERG 3.SBJ-O.PL-think-IPFV [1.day.away children.NOM
hi-pa-paay-no'.]
3SBJ-S.PL-arrive-FUT]
'The woman thinks the children will arrive tomorrow.'

3 Comparison with clause reduction

The observation that complement clauses sometimes come in smaller sizes is reflected in the cross-linguistically wide-spread phenomenon known as *restructuring*. While there are different approaches to restructuring in different languages, a core observation is that CPs block restructuring (see, among others, Bondaruk 2004, Marušič 2005, Dotlačil 2007, Wurmbrand 2001, 2014a, 2015). Comparing ECM and restructuring, we find that not only is there no correlation between ECM and other transparency (restructuring) effects, the two phenomena are sometimes even in complementary distribution. To illustrate, German and Dutch show extensive clause reduction effects—phenomena such as verb clusters, pronoun fronting, scrambling, or long passive (in German) are only possible in reduced infinitives. On the other hand, clausal ECM is entirely excluded, no matter what matrix verb is chosen.[2] As shown in (12a) and (12c), the complements of *decide* and *expect* allow pronoun fronting, which is only possible from reduced complements. However, ECM is excluded in both cases, (12b) and (12d), in fact, in general in the language. Thus even if there are independent restrictions that exclude ECM in *decide*-complements, like in English and Icelandic, it is still puzzling why *no* reduced infinitival complement allows ECM in languages like German and Dutch.

(12) German

a. *weil ihn$_i$ der Leo* [$_{\text{TP}}$ *t$_i$ zu reparieren*] *beschlossen hat*
since it.ACC$_i$ the.NOM Leo [$_{\text{TP}}$ t$_i$ to repair] decided has
'since Leo decided to repair it'

b. *weil ich (*den Leo) zu verreisen beschlossen habe*
since I (*the.ACC Leo) to travel decided have
'since I decided (*Leo) to travel'

[2] Clausal ECM refers to configurations with verbs like *believe*, *expect*; ECM-like configurations exist with causatives and perception verbs, but these involve non-clausal small clause complements.

c. ?*weil ihn$_i$ der Leo* [$_{\text{TP}}$ *t$_i$ zu treffen*] *erwartet hat*
since him.ACC$_i$ the.NOM Leo [$_{\text{TP}}$ t$_i$ to meet] expected has
'since Leo expected to meet him'

d. *weil ich (*den Leo) rechtzeitig anzukommen erwartet habe*
since I (*the.ACC Leo) on.time to.arrive expected have
'since I expected (*Leo) to arrive on time'

More generally, one can observe that cross-linguistically, the contexts that resist restructuring and are least likely to involve transparent (i.e., reduced) clauses involve verbs from the class of propositional attitude (such as *believe*) and speech predicates (such as *say*). Yet these predicates form the core of ECM verbs in English and Icelandic as shown in Table 2. In both languages, *believe*-type verbs trigger ECM, and in Icelandic *say*-type verbs do, too (the distribution of ECM shows significant variation across languages; see Christopoulos & Wurmbrand To appear). ECM is not possible, on the other hand with verbs such as *decide, plan* that combine with a future oriented complement, or verbs such as *try, begin, manage* that take tenseless complements, i.e., complements that cannot involve an independent temporal orientation (see Wurmbrand 2001, 2014b). Restructuring on the other hand is typically found with the latter class, and in some languages also with the future class.

	Attitude, speech	**Future**	**Tenseless**
Restructuring: Romance-type	✗	✗	✓
Restructuring: Germanic/Slavic-type	✗	✓	✓
ECM: English/Icelandic	✓	✗[3]	✗

Table 2: Clause reduction & ECM

It is obvious from this distribution that CP-reduction cannot be the major tool to derive both ECM and restructuring. Cross-linguistic research has shown that there is a (hypothetical universal) implicational restructuring hierarchy in that attitude/speech complements are the syntactically most complex, most independent, and least transparent types of clauses; future complements are somewhat less complex, less independent, and more transparent; and tenseless complements are the least complex, most dependent and most transparent (see Wurmbrand 2015, 2018). Even in languages where no surface restructuring properties like clitic climbing can be found, differences exist that follow the hierarchy. Furthermore, differences between the different types of complement clauses may be neutralized in certain languages, but what is remarkable is that there is no language or property where complexity and transparency go against the hierarchy—i.e., the hierarchy is implicational in that attitude/speech complements are never more transparent than future complements, and future complements never more transparent than tenseless complements. In whatever way this hierarchy is implemented syntactically, it seems clear that assuming reduced complements for attitude/speech complements (but not others) would be at odds with these cross-linguistic findings. Together with the observation from

[3]ECM is possible in English with *expect* which may be classified as a future-selecting verb (Wurmbrand 2014b). However, *expect* complements have also been argued to involve non-ECM structures, either an object control configuration or an empty complementizer configuration (see, e.g., Pesetsky 1992). Most other future-selecting verbs (*decide, plan...)*, do not allow ECM.

the previous sections that clause reduction cannot be a necessary condition for CCA (see the next section for further evidence that CCA must also be possible across CPs), the question arises whether one should continue to handle ECM via clause reduction in languages like English and Icelandic, or whether instead, the strategies (to be developed) that we find in languages which clearly allow CCA across CPs should be followed in all languages (with language-specific finiteness restrictions to capture the distribution in Table 1).[4] If one's goal is a general model of complementation, as I pursue, *believe*-type complements would not involve CP-omission, and CCA would thus have to be designed to be possible across CPs.

4 CPs in CCA

4.1 ACC vs. NOM

CCA across finite clause boundaries is typically optional. In languages with hyper ECM, an embedded ACC subject always alternates with a (regular) NOM subject. It has been shown, however, that the structural position for ACC DPs is different from corresponding NOM DPs. The specific configuration we find in several languages is given in (13)—CCA ACC DPs are above C (but still within the embedded clause), while NOM DPs are below C.

(13) $[_{CP}$ DP.ACC $[_{C'}$ C $[_{TP}$ DP.NOM T']]]

A first piece of evidence comes from the distribution of pronouns and anaphors in Uyghur. When the embedded subject is co-referent with the matrix subject, an embedded ACC subject must be an anaphor, (14a), and cannot be a pronoun, (14b); whereas an embedded NOM subject must be a pronoun, (14c), and cannot be an anaphor, (14d).

(14) Uyghur

a. *Men* [*peqet öz-em-ni-la nan ye-men*] *di-dim.*
1SG [only REFL-1SG-ACC-only bread eat-IPFV.1SG] say-PST.1SG
'I said that only I eat bread.' [Shklovsky & Sudo 2014: 391, (26a)]

b. **Men* [*peqet meni-la nan ye-men*] *di-dim.*
1SG [only 1SG.ACC-only bread eat-IPFV.1SG] say-PST.1SG
'I said that only I eat bread.' [ibid.: 391, (27b)]

c. *Men* [*peqet men-la nan ye-men*] *di-dim.*
1SG [only 1SG-NOM-only bread eat-IPFV.1SG] say-PST.1SG
'I said that only I eat bread.' [ibid.: 391, (27a)]

[4] A further argument for CPs being present in ECM comes from an interesting distributional fact of ECM. As shown in Christopoulos & Wurmbrand (To appear), the range of predicates allowing ECM in Germanic differs from language to language, but the distribution follows an implicational hierarchy: speech (*say*, Icelandic) > thought (*believe*, Icelandic, English) > evidential/knowledge (*consider*, Icelandic, English, Swedish). Notably, this hierarchy is also in effect in *indexical shift* (see next section) and has been argued to be modeled via a fine-grained CP-domain (see Sundaresan 2012, 2018). To derive the implicational property that languages that allow ECM with verbs of the highest domain (Icelandic, Buryat, Uyghur) also allow it with verbs of the lower domains, but not vice versa (English, Swedish, possibly Japanese), the properties of the CP domain must be accessible in ECM contexts. This can easily be achieved if ECM complements are CPs.

d. *?*Men* [*peqet öz-em-ø-la nan ye-men*] *di-dim.*
1SG [only REFL-1SG-NOM-only bread eat-IPFV.1SG] say-PST.1SG
'I said that only I eat bread.' [ibid.: 391, (26a)]

Thus, the embedded ACC subject is in the (binding) domain of the matrix subject, whereas the embedded NOM subject is not. This follows from a structure like (13), if CPs are phases and/or binding domains, where only the edge is accessible to/from the outside.

A similar argument can be provided by negative licensing in Buryat. If the embedded subject is an NPI as in (15), it must be licensed by matrix negation when it occurs in ACC (cf. (15a) vs. (15b)), but by embedded negation when it occurs in NOM (or GEN in nominalizations), as in (15c) vs. (15d). ACC subjects are thus in the (negation) domain of the matrix clause, whereas NOM subjects are not. This again follows from (13) if NPIs require negation in the same domain/phase (including again the edge of the lower phase) at the surface structure in Buryat.

(15) Buryat

a. *badma xɜn-i-šjə tɜrgə ɜmdəl-ɜ gɜžə xar-a-güj.*
Badma who-ACC-PTCL cart break-PST COMP see-PST-NEG
'B. didn't see anyone break the cart.' [Bondarenko 2017: 14, (63)]

b. **badma xɜn-i-šjə tɜrgə ɜmdəl-ɜ-güj gɜžə xar-a.*
Badma who-ACC-PTCL cart break-PST-NEG COMP see-PST
'Badma saw that nobody broke the cart.' [ibid.: 14, (64)]

c. *badma xɜn-šjə tɜrgə ɜmdəl-ɜ-güj gɜžə xar-a.*
Badma who.NOM-PTCL cart break-PST-NEG COMP see-PST
'Badma saw that nobody broke the cart.' [ibid.: 14, (65)]

d. **badma xɜn-šjə tɜrgə ɜmdəl-ɜ gɜžə xar-a-güj.*
Badma who.NOM-PTCL cart break-PST COMP see-PST-NEG
'Badma didn't see anyone break the cart.' [ibid.: 14, (66)]

Combining the test in (11) that shows that CCA.DPs can be in the embedded clause with tests that show a dependency between the CCA.DP and a matrix element provides the final piece of evidence that ACC subjects are indeed in the embedded clause as in (13) and not in the matrix clause. As shown in (16), an ACC NPI subject which follows an embedded adverbial can still be licensed by matrix negation, (16a); and an anaphoric element embedded in a post-adverbial ACC subject, as in (16b), can be bound by the matrix subject, whereas this is not possible when it is embedded in a NOM subject ((16c)).

(16) Buryat

a. *badmə* [*üsəgəldər xɜn-i-šjə tɜrgə ɜmdəl-ɜ gɜžə*]
Badma [yesterday who-ACC-PTCL cart break-PST COMP]
xar-a-güj.
see-PST-NEG
'Badma didn't see anyone break the cart yesterday.'
[Bondarenko 2017: 18, (78)]

b. *badmə* [*üsəgəldər örin-gö* *hamg-ijə zurəg zur-a*
Badma [yesterday POSS.SELF-REFL wife-ACC picture paint-PST
gɜžə] *mɜdə-nə.*
COMP] know-PRS
'B.$_i$ knows that his$_i$ wife painted a picture yesterday.' [ibid.: 18, (80)]

c. **badmə* [*örin-gö* *hamgən zurəg zur-a* *gɜžə*]
Badma [POSS.SELF-REFL wife.NOM picture paint-PST COMP]
mɜd-ɜ.
know-PST
'Badma$_i$ found out that his$_i$ wife painted the picture.' [ibid.: 13, (52)]

The conclusion is that an ACC subject is high enough in the CP to be visible from the outside, yet still in the embedded clause. In the next section, we will see one other argument for a structure in which the CCA.DP is above C.

4.2 Shifted indexicals

In a language like English, first and second person pronouns (indexicals) always refer to the speaker and addressee, respectively. However, in some languages, examples like (17a) can be interpreted with the embedded subject referring to the matrix subject. In other words, the indexical is interpreted like in a quote as in (17b). The works on this phenomenon have shown, however, that we are not dealing with quotes in these languages, but true embedding (the evidence involves, among others, *wh*-movement, negative licensing, distributive plural pronouns). First and second person pronouns that do not refer to the speaker but are 'shifted' to a matrix argument are called *shifted indexicals*.

(17) a. Leo said that I left. I = speaker
b. Leo said: "I left." I = Leo

Shifted indexicals are important for our purposes since they show a clear difference between ACC and NOM subjects—ACC (also GEN) subjects and any indexical embedded in them can never shift, whereas NOM subjects and indexicals embedded in a NOM subject can or must shift, depending on the language. I will illustrate these claims in what follows.

In Buryat, indexical shift exists and is optional (see Podobryaev To appear).

(18) Buryat

a. *sajənə bi* *tɜrgə ɜmdəl-ɜ-b* *gɜžə* *mɜd-ɜ.*
Sajana 1SG.NOM cart break-PST-1SG COMP know-PST
'S.$_i$ found out that she$_i$ broke the cart. ' [Bondarenko 2017: 19, (83)]
'Sajana found out that I broke the cart.' [T. Bondarenko, p.c.]

b. *sajənə naməjə* *tɜrgə ɜmdəl-ə*(**-b*) *gɜžə* *mɜd-ɜ.*
Sajana 1SG.ACC cart break-PST(*-1SG) COMP know-PST
*'Sajana$_i$ found out that she$_i$ broke the cart.'
'Sajana found out that I broke the cart.' [ibid.: 19, (82)]

As shown in (18a), a first person embedded NOM subject can either refer to the

speaker or be shifted to the matrix subject. An embedded ACC subject, on the other hand, (18b), must refer to the speaker and cannot undergo indexical shift.

In Uyghur, indexical shift is obligatory when possible, but the ACC/NOM difference still holds. This is illustrated for second person in (19): an embedded NOM subject obligatorily shifts and can only refer to the original hearer of the embedded statement and not the current hearer of the utterance, whereas the situation is reversed for ACC subjects, which cannot shift and only refer to the current hearer.

(19) Uyghur [Shklovsky & Sudo 2014: 386, (13)]

a. *Ahmet* [*sen* *ket-ting*] *di-di.*
Ahmet [2.SG.NOM leave-PST.2.SG] say-PST.3
'Ahmet said that the original hearer/*you left.'

b. *Ahmet* [*seni* *ket-ti*] *di-di.*
Ahmet [2.SG.ACC leave-PST.3] say-PST.3
'Ahmet said that you/*the original hearer left.'

Before turning to how the shifting difference between ACC and NOM subjects, in particular the fact that the former can never shift, relate to the structure of CCA configurations, it is important to note that this is not about ACC vs. NOM indexical pronouns, but an effect of syntactic domains. In Buryat, Uyghur, Turkish, and Mishar Tatar, it has been observed that indexical pronouns embedded in an ACC DP can never shift, whereas they can/must shift when embedded in a NOM DP (see also Şener & Şener 2011, Podobryaev 2014). In Buryat, as shown in (20a), a possessive pronoun (which is silent but agrees with the noun) embedded in a NOM subject can either refer to the speaker or be shifted to the matrix subject. If the pronoun is embedded in an ACC subject, shifting is impossible and the possessive can only refer to the speaker (note that the pronoun agrees with the noun in both cases).

(20) Buryat [T. Bondarenko, p.c.]

a. *badmə* [pro.1SG *ba:bɜ-mni*] *jab-a* *gɜžə* *mɜdə-nə.*
Badma.NOM [pro.1SG father.NOM-1SG] go-PST COMP know-PRS
'Badma$_i$ knows that his$_i$ father has left.'
'Badma knows that my father has left.'

b. *badmə* [pro.1SG *ba:bɜ-jə-mni*] *jab-a* *gɜžə* *mɜdə-nə.*
Badma.NOM [pro.1SG father-ACC-1SG] go-PST COMP know-PRS
*'Badma$_i$ knows that his$_i$ father has left.'
'Badma knows that my father has left.'

In Uyghur, the effect can be seen even clearer with overt pronouns. Non-modal adjectives take a nominalized complement (*-ish*, boxed in the examples), which can be NOM or ACC (when in a CCA context) as in (21). In both cases, the subject embedded in the nominalization is the same—a GEN pronoun. The examples differ in interpretation, however. When the nominalization is NOM, (21a) (NOM is unmarked), shifting of the GEN pronoun is obligatory, whereas shifting is impossible when the nominalization is marked ACC, (21b).

(21) Uyghur

a. *Ötkür* [*men-ɨŋ oqu-∫-im* *muhim*] *didi.*
Öktür [I-GEN read-NMLZ-1SG.POSS important] said
*'Öktür said that my studying is important.'
'Öktür said that his studying is important.' [Asarina 2011: 51, (96)]

b. *Ötkür* [*men-ɨŋ oqu-∫-im-ni* *muhim*] *didi.*
Öktür [I-GEN read-NMLZ-1SG.POSS-ACC important] said
*'Öktür said that his studying is important.'
'Öktür said that my studying is important.' [ibid.: 51, (97)]

The take-home message from the above facts is that shifting is not a property of actual pronouns, but that the syntactic context is an essential component of indexical shift—CCA ACC DPs, including anything contained in them, are outside the domain in which shifting can or must occur (note again that in some languages shifting is optional, however, even in those languages shifting is impossible in ACC contexts). An approach that captures this distribution (with some modifcation) is the so-called *monster* operator approach according to which there is an operator—👻—in the CP domain that changes the context such that indexicals do not refer to the actual speech context but the context of the matrix clause (see Anand & Nevins 2004, Anand 2006, Sudo 2012, Sundaresan 2012, 2018, Shklovsky & Sudo 2014, Podobryaev 2014, Messick 2016). If the shifting operator is in C, everything above it is outside its scope and cannot be affected by the operator. Since CCA ACCs (and anything contained in them) never shift, but they can still occur inside the embedded clause, the only possible position is Spec,CP (above C).

The final piece of evidence for the presence of a CP in CCA comes from constructions with multiple indexicals in Buryat (the data are from T. Bondarenko and S. Podobryaev). If both subject and object are indexicals and the subject is NOM, (22a), shifting is optional for both arguments (i.e., the two indexicals do not need to 'shift together' in this language).[5]

(22) Buryat

a. *badmə* [$_{CP}$ 👻 *mini* *ba:bɜ* *nam-da* *durə-güj*
Badma.NOM [$_{CP}$ 👻 1SG.GEN father.NOM 1SG-DAT love-NEG
gɜžə] *hanə-nə.*
COMP] think-PRS
'Badma$_i$ thinks that my/his$_i$ father doesn't love me/him$_i$.'

b. *badmə* [$_{CP}$ *mini* *ba:bɜ-jə* 👻 [$_{TP}$ *nam-da* *durə-güj*
Badma.NOM [$_{CP}$ 1SG.GEN father-ACC 👻 [$_{TP}$ 1SG-DAT love-NEG
gɜžə]] *hanə-nə.*
COMP]] think-PRS
'Badma$_i$ thinks that my father doesn't love me/him$_i$.'

If the subject is ACC as in (22b), which, as we have seen above, cannot shift, the

[5]The lack of a 'shift together' property may pose a challenge for some monster operator accounts and require adjustments. A promising direction is the proposal in Sundaresan (2018).

object indexical may still shift. The interpretation that is important here is the one where shifting applies. In this case a 👻-operator must be present, which entails the presence of a CP (see in particular Sundaresan 2012, 2018 and Messick 2016 for arguments that shifting is tied to CPs). Thus, (22b) clearly shows that CCA is possible into CPs, and that the CCA.DP must occur above C (if the ACC.DP could be lower in the structure, it should be possible to shift, which is not the case).

4.3 Against deficient CP domains

A common approach to reconcile the observation that CCA can apply across (finite) CPs with the view that A-phenomena across CPs are impossible is to distinguish between 'real' CPs (which block CCA) and deficient CPs, which although present, do not constitute 'true' CPs. This has been achieved via various mechanisms, for instance, domain extension, neutralization, or delay of phasehood (see, among others, Tanaka 2002, Zeller 2006, or Deal 2017). The common insight is that if CP is not a (strong) phase (yet), A-movement can proceed across it, like across a TP.

The reason why this direction may be too simplistic is that there is evidence that CCA CPs maintain their regular A′-domain status and appear to be only selectively transparent for A-phenomena, specifically only for the CCA.DP. This can be illustrated with ECM in Japanese where the CP remains a regular A′-domain for phenomena other than ECM, even in cases where CCA ECM takes place. As is well-known, short (i.e., clause-internal) scrambling can be A-movement in Japanese, as is illustrated in (23a) where scrambling of the object changes the binding relations and allows anaphoric binding into the subject after movement.

(23) Japanese [Tanaka 2004: (7)]

a. ??*Otagai$_i$-no supai-ga* [*Nissan-to Honda-ni*]$_i$ *kuwasii.*
each.other$_i$-'s spy-NOM [Nissan-and Honda-with]$_i$ familiar
'Each other' s spies are familiar with Nissan and Honda.'

b. [*Nissan-to Honda-ni*]$_i$ *otagai$_i$-no supai-ga kuwasii.*
[Nissan-and Honda-with]$_i$ each.other$_i$-'s spy-NOM familiar
'Lit. With Nissan and Honda, each other' s spies are familiar.'

Scrambling across finite clauses is invariably A′-movement (scrambling across certain infinitives can be A-movement, but this presumably is a restructuring effect involving CP omission). As shown in (24), when a finite CP is present, cross-clausal scrambling is possible, (24a), but it does not feed into A-binding, (24b), in contrast to short scrambling in (23b). What is remarkable about these examples, however, is that the embedded subject is marked ACC, i.e., it is a CCA configuration.

(24) a. [*Nissan-to Honda-ni*]$_i$ *Toyota-no supai-ga* [$_{\text{CP}}$ *John-o*
[Nissan-and Honda-with]$_i$ Toyota-'s spy-NOM [$_{\text{CP}}$ John-ACC
hoka-no dono-meekaa-yori t$_i$ *kuwasii-to*] *omot-teiru.*
other-'s whichever-maker-more.than t$_i$ familiar-COMP] think-PROG
'Toyota's spy thinks of John as more familiar with Nissan and Honda than any other manufacturers.' [Tanaka 2004: (8)]

b. ??[*Nissan-to Honda-ni*]$_i$ *otagai$_i$-no supai-ga* [$_{\text{CP}}$ *John-o*
[Nissan-and Honda-with$_i$ each.other$_i$-'s spy-NOM [$_{\text{CP}}$ John-ACC
hoka-no dono-meekaa-yori kuwasii-to] *omot-teiru.*
other-'s whichever-maker-more.than familiar-COMP] think-PROG
'With Nissan and Honda, each other's spies think of John more familiar than any other manufacturers.' [ibid.: (6)]

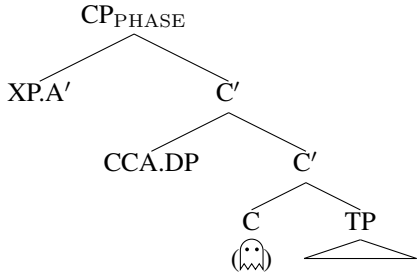
Thus while the CP appears to function as an A-domain as far as ECM is concerned, it continues to function as an A′-domain as far as scrambling is concerned.

A similar point can be made for CCA in Zulu and Nez Perce (see Halpert 2016a, Deal 2017). Matrix object agreement (Zulu) and matrix complementizer agreement (Nez Perce) are not possible with embedded non-CCA subjects, which can be taken to indicate that complement CPs are not generally transparent for A-phenomena. Yet these languages allow raising to object across finite CPs (in which case agreement also becomes possible, presumably because the CCA.DP occurs in the matrix clause then).

4.4 Where things stand

Putting everything together, again following the null hypothesis that the basic workings of CCA are the same across languages, the configuration we have ended up with is given in (25). The DP entering an A-dependency with an element in the matrix clause occurs above C, however, the CP behaves like a regular A′-domain for other operations (such as scrambling).[6]

(25)



The mixed A/A′ nature of CPs involving CCA also shows that in languages with CCA the *improper A-after-A′ constraint* in (26) is nevertheless active. If (26) would not hold in Japanese, for instance, it would not be clear why scrambling across a finite CP cannot be A-movement, not even when CCA applies. The structure in (25) together with (26) explains this—since the CP is a phase, scrambling has to go

[6]Whether the CCA.DP remains in Spec,CP or continues on to the matrix clause differs from language to language (see Wurmbrand 2018 for a summary). In Buryat and Uyghur, it optionally moves to the matrix clause (Bondarenko 2017, Shklovsky & Sudo 2014); in Turkish, it stays in Spec,CP (Şener 2008); in Zulu, it obligatorily moves to the matrix clause (but ECM is optional; Halpert 2016a, Halpert & Zeller 2015); and in Nez Perce, it moves obligatorily covertly (Deal 2017). The situation is controversial in English (see Wurmbrand 2018). The conclusion we can draw from the varied distribution is that movement to the matrix clause is not a necessary condition for CCA. Instead, this step seems to be subject to a language-specific EPP property on matrix *v*.

through Spec,CP, an A′-position for scrambling, which then cannot be followed by further A-movement. This finally leads to the conclusion that the position occupied by the CCA.DP has to be an A-position (or at least a mixed A/A′ position), since from that position, the DP can enter into further A-dependencies.

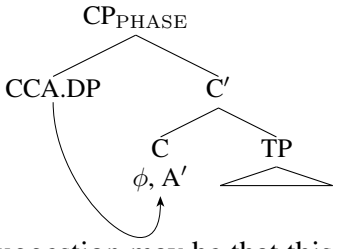
(26) *Improper A-after-A′ constraint*:
An A-dependency involving X cannot follow an A′-dependency with X.

5 Towards an account

The status of CP as a uniform A′-domain has been questioned in various works recently. In an extensive study on movement in Dinka, van Urk (2015) has shown that movement to Spec,CP has both A and A′-properties. Case, ϕ-agreement, the lack of *weak cross-over*, the possibility to establish new binding relations, and the lack of obligatory reconstruction provide evidence for the A-status of (movement to) Spec,CP. A′-locality and the lack of minimality effects of intervening A-positions provide evidence for the A′-status of Spec,CP. To reconcile these properties, van Urk (2015) suggests a composite probe approach (see also Coon & Bale 2014, Longenbaugh 2016), according to which a single head can have both A and A′-features, and any XP agreeing with both types of features of such a head then inherits the mixed A/A′-property of that head.

One approach to CCA is then to assume that (certain) C-heads can have A-features in addition to the usual A′-features, as in (27). If C has A-features, such as ϕ-features, a DP agreeing with it, inherits A-properties. The *improper A-after-A′ constraint* can still be maintained with the minor modification that an A-dependency involving X cannot follow a dependency of X that is *solely* an A′-dependency—i.e., A after A′ is excluded, but A after mixed A/A′ is possible. The advantage of a composite probe approach is that the language variation in Table 1 can be attributed to lexical differences in the featural content of the C head: if CCA is possible, C has ϕ-features (or other features that are responsible for the A-nature of a projection); if CCA is impossible, C is a plain A′-head. If a language shows finiteness differences in the distribution of CCA, the featural inventory of finite and non-finite C would be different. A remaining challenge for this approach is to restrict agreement with the A-features on C to CCA.DPs. In Japanese, for instance, scrambling of a DP across a finite CP (whether CCA applies in addition or not), can only be A′-movement, which means that scrambled DPs cannot Agree with the A-features of C. This issue is connected to the question of why CCA.DPs undergo movement to Spec,CP in the first place (in other words, what triggers movement and agreement with C).

(27)



A first suggestion may be that this movement is driven by case considerations, fol-

lowing the common view that the embedded subject in raising and ECM contexts is not case licensed in the embedded clause. This has been extended to CCA via the assumption that an embedded finite CP/TP can also be case deficient in certain languages (see, e.g., Zeller 2006, Carstens & Diercks 2013, Bondarenko 2017). Since non-case licensed DPs are still 'active', they can be attracted by a C-head with A-properties, motivating movement to this position. Although this may be an attractive solution, there are reasons to doubt that CCA CPs are case deficient. First, we have already seen that in Nez Perce, case is clearly determined in the embedded clause (see (5)), but CCA (in this case movement to object position, triggering ergative on the matrix subject, and object agreement) still applies.

Second, in Turkish, the embedded subject can agree with the embedded verb, even when CCA applies (but it is optional in this case), as shown in (28). Since agreement is typically dependent on NOM case (see Bobaljik 2008), the fact that ACC subjects apparently agree with the embedded verb could be seen as an indication that the subject has NOM at one stage in the derivation.

(28) *Pelin* [*sen-i* *Timbuktu-ya* *git-ti-*(*n*) *diye*] *bil-iyor-muş.*
Pelin [you-ACC Timbuktu-DAT go-PST-(2SG) COMP] know-PROG-EVID
'Pelin thought that you went to Timbuktu.' [Şener 2008: 2, (5)]

The above conjecture finds support in Janitzio P'urhépecha. As shown in (29), ECM can apply across a finite clause. Although the embedded subject occurs with ACC, due to CCA, it is associated with a NOM stranded quantifier.

(29) *Ueka-sïn-ø-ga=ni* *Alonzo-ni, Paku-ni ka Puki-ni*
want-HAB-PRS-IND1=1sS Alonzo-ACC, Paco-ACC and Wildcat-ACC
eska=sï *iamindu-eecha* *ch'ana-a-ø-ka.*
that=pS all-PL(NOM) play-FUT-PRS-SBJV
'I want Alonzo, Paco, and Puki [= three dogs] to all play.'
[Zyman 2017:12, (31)]

All of the above suggest that regular case is available for the subject in a CCA complement clause.

Although I cannot provide a full account of CCA movement, the restrictions on CCA we find in different languages may suggest a direction (for space reasons, I can only provide a summary and no illustrations; see the references given for the data). Cross-clausal agreement in Tsez (Polinsky & Potsdam 2001, Bobaljik & Wurmbrand 2005) and ECM in Turkish (Şener 2008, 2011) require the DP involved in CCA to be a topic. In Japanese and Korean, CCA is restricted to certain types of predication over the CCA.DP. In Korean, the CCA.DP must be a major subject (the most salient argument which expresses what the complement clause is about; Yoon 2007), and the specific restriction for Japanese is given in (30).

(30) Semantic/pragmatic constraint (Horn 2008: 6)
The proposition expressed by an accusative-quotative complement must be a property ascription on the referent of the accusative subject when evaluated with respect to the belief world of the agent of attitude (the referent of the matrix subject noun phrase).

A consequence of these predication requirements in Japanese and Korean CCA, among others, is a preference for individual-level matrix predicates and generic or habitual interpretations of the complement clause. Interestingly, this is also found in Norwegian. ECM in Norwegian is very restricted and not possible with verbs like *believe*. ECM is possible with *expect*, as shown in (31), but only when the embedded predicate is an individual-level predicate (or used as such), and eventive interpretations are impossible (see also Lødrup 2008 for further restrictions).

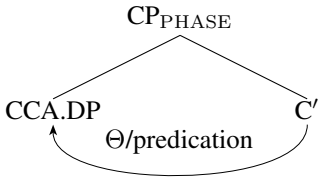
(31) Norwegian

a. *Ingen forventer lærere å være perfekte.*
nobody expects teachers to be perfect
'Nobody expects teachers to be perfect.' [Lødrup 2002: 3, (10)]

b. **Jeg forventer ham å drepe mus-en.*
I expect him to kill mouse-the
'I expect him to kill the mouse.'

Following Yoon (2007), the CCA.DP enters a predication/theta assignment relation with the embedded clause as in (32) (possibly also with the matrix verb if the CCA.DP functions as the *res* argument of the attitude verb). Given that thematic dependencies are inherently A-relations, this immediately accounts for the A-nature of the CCA position in the languages displaying the restrictions above. Furthermore, the mixed A/A′ properties of CCA CPs (as in (25)) can be derived if (at least in languages like Japanese) only a theta/predication-relation with C constitutes an A-dependency, whereas all other dependencies in the CP are A′-relations.

(32)



While an additional theta-role is plausible for the languages mentioned above, it raises certain questions for languages where we do not seem to find evidence for a topic or predication relation between the CCA.DP and the embedded clause, e.g., English. While the above restrictions are not active in English (e.g., (31b) is possible), this does not mean that CCA is unrestricted. There are three restrictions which have been observed for ECM in English. First, only non-agentive matrix predicates allow ECM in English (Pesetsky 1992), which is reflected in the lack of ECM with speech predicates (*say*) or verbs like *decide* which take future complements. Second, ECM constructions report attitudes of acceptance/belief (Moulton 2009a, 2009b). While speech statements do not ascribe beliefs to their subjects (e.g., they can be used to express a lie as in (33a)), predicates that are compatible with ECM do, and thus cannot be followed by a statement denying a belief as in (33b).

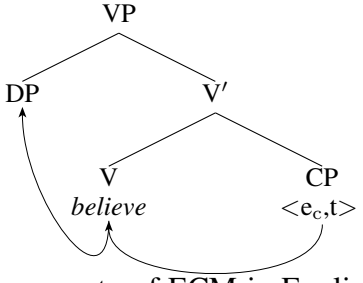
(33) a. He {whispered, said, asserted, declared, conjectured, ...} that Mary was guilty ... but he knew she wasn't. [Moulton 2009b: 171, (73)]

b. He {believed, held, fancied, suspected, understood, remembered, assumed...} her to be guilty/that she was guilty ... #but he knew she

wasn't. [ibid.: 171, (74)]

The concrete function of the ECM DP is not specifically discussed in these works, but Moulton (2009b) suggests that ECM is connected to the ascription/report of belief, which he hypothesizes is built into the embedded clause rather than the matrix verb.[7] A concrete implementation of this idea in Moulton (2009a), following Kratzer (2006), is that *believe*-type verbs do not take a proposition as their internal argument, but an individual argument corresponding to a content noun as in *I believe the rumor that ...*. The CP 'complement' then is a predicate of contents (the complementizer combines with a proposition and returns a description of an individual that carries content), which restricts the internal argument of *believe* when combining with the matrix verb (the CP functions more like a modifier in this approach). We thus have a configuration as in (34) (e_c refers to contentful individuals). Since the embedded CP restricts the thematic relation between the matrix DP and verb, it may be possible for the CP to inherit the A-nature of this relation.

(34)



Lastly, a property of ECM in English, which was pointed out to me by R. Larson and confirmed for about 40 verbs with other native speakers, is that ECM verbs are all compatible with an overt proleptic *of* DP (*I believe of her that...*), whereas most non-ECM predicates are not (see Wurmbrand 2018). This is in line with Moulton's observations that *believe* statements ascribe *de re* beliefs to their subjects and may also be involved in creating A-dependencies that spill over (in)to the embedded CP.

Setting aside some of the specifics, the above observations have in common that there are two factors that feed into ECM in English: the thematic configuration of the matrix predicate (agentivity, a content noun argument, and/or an additional proleptic argument) and a (hypothesized) A-dependency between the matrix predicate (V or *v*) and the embedded CP (such a dependency also plays an essential role in the CCA account for Zulu in Halpert 2016a, 2016b). These restrictions 'from above' then need to be bundled with a restriction 'from below' (only non-finite C can occur with A-properties) to define the possible CCA configurations in English.

In sum, there are at least three ways in which an A-position is possible in the CP domain: feature specification on C (see also Moulton 2009a for semantic differences between ECM and non-ECM C), additional thematic or topic relation of the CCA.DP, thematic dependencies as in (34). Language differences can then be seen as a result of which (combination) of these options are chosen to (dis)allow CCA.

[7] Moulton (2009a) assumes, following Pesetsky (1992), that ECM complements involve incorporation of the complementizer into the matrix predicate to effectively turn the embedded CP into a TP from which A-movement can apply. While this may be an option for English, it is not clear that it can be extended to CCA in general.

6 Conclusion

CCA phenomena that span finite clause boundaries have been shown to have the following properties: i. CCA across CPs (finite and non-finite) is possible; ii. the CCA.DP occurs very high in the CP, above the position hosting a monster operator; iii. the CP acts as a regular domain/phase for non-CCA operations; iv. regular case is available in CCA complements; v. movement to the matrix clause is not a necessary condition for CCA; vi. CCA occurs in contexts that do not allow clause reduction/restructuring, and configurations allowing clause reduction do not necessarily allow CCA; and vii. CCA comes with semantic and pragmatic restrictions which differ across languages. The direction proposed to bring all of these properties together is to assume a universal *improper A-after-A′ constraint*, but allow certain positions in certain CPs to qualify as A-positions from which further A-dependencies are possible.

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