Selective opacity & clausal embedding*

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1. Introduction

This paper is concerned with the phenomenon of *selective opacity*: the same constituent being transparent to some syntactic dependencies, but opaque to others. Consider (1):

(1) a. Who does it seem [$_{CP}$ that Alice followed]?
b. *Alice seems [$_{CP}$ (that) followed the white rabbit].

We see that English CPs are transparent to *wh*-movement, but are opaque to raising. Why would this be the case, and how should such selectivity be modeled?

In this paper, I discuss two approaches to selective opacity (section 2)—*the Missing Triggers Approach*[1] (van Urk 2015, Longenbaugh 2019, Grano and Lasnik 2018, a.m.o.) and *the Level Embedding Approach* (Williams 2003, 2011, Poole 2022, Meadows 2023, Egressy 2025, 2026, a.o.). I provide new data from Georgian that corroborates a key challenge for the Missing Triggers Approach (Meadows 2023, 2024): it requires additional constraints on possible orderings of feature triggers that do not follow from the phase theory on its own. The Level Embedding Approach faces challenges too: besides issues of hyperraising and intermediate phases (see Meadows 2023 for discussion), none of the existing implementations are fully compatible with recent developments in theories of clausal embedding (section 3), which suggest that there are two different paths of how embedded clauses can combine with matrix verbs (Bondarenko 2020, Özyıldız 2020, Roberts 2020, Bochnak and Hanink 2021, Bondarenko 2022, Özyıldız and Uegaki 2023, 2024, a.o.). Since assumptions about how clauses are embedded are critical to the Level Embedding Approach, it is im-

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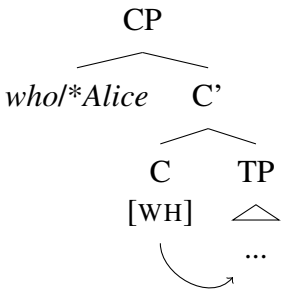
[1]As far as I am aware, this name for the approach according to which selective opacity is modeled by assuming lack of certain triggers at phasal edges has been first used by Meadows (2024).

portant to see if the two strands of research can be reconciled with each other. In this paper, I show that they can (section 4): that the framework in which clauses are treated as predicates of entities that modify either the event argument of the verb or its nominal argument (Kratzer 2006, 2016, Moulton 2009, Bogal-Allbritten 2016, Elliott 2020, a.o.) naturally allows for Late Merge (Lebeaux 1988) and Wholesale Late Merge (Takahashi and Hulsey 2009) of clausal complements, in line with the late-insertion requirement of the Level Embedding Approach. My proposal makes a prediction: that we should see selective opacity effects regardless of whether the clause combines by modifying the nominal argument or the event argument of the verb. I examine the case of Georgian (section 5), and show that this prediction is borne out. Section 6 concludes the paper, outlining some open questions that the Level Embedding Approach needs to address.

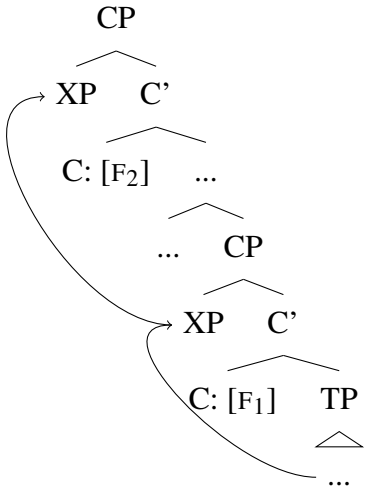
2. Two approaches to selective opacity

The Missing Triggers Approach (van Urk 2015, Longenbaugh 2019, Grano and Lasnik 2018, a.o.) claims that certain constituents are selectively opaque due to the constellation of three factors: (i) existence of phases (CP, *v*P) that all exiting movements must pass through specifiers of; (ii) requirement for movement to be featurally triggered (Chomsky 1995, McCloskey 2002, Abels 2012, van Urk 2015); (iii) absence of certain featural triggers on the (intermediate) phasal heads. For example, to explain the contrast between *wh*-movement and raising in English, (1), we can say that English C has a [WH] feature, but lacks a [ϕ] feature, (2). Because C is a phase head and all movements are featurally triggered, the featural specification of C will determine locality profiles of different movements: if a C lacks certain movement-triggering feature, the corresponding movement will be clause-bound. Thus, raising out of CPs, (1b), is ungrammatical because C lacks the [ϕ] feature which triggers raising, and so DPs like *Alice* cannot get to the escape hatch and move out.

(2) C has [WH] but lacks [ϕ]



(3) XP moves via [F_1], then [F_2]



Meadows (2023, 2024) points out that the assumptions we introduced above are insufficient for capturing selective opacity. Without imposing additional constraints, we expect

that as long as there is *some* feature on C that can get an XP to Spec,CP, it should be able to move freely into the matrix clause, (3). Consider (4). The example in (4a) shows us that embedded C must have a [TOP] feature, because we can topicalize across the CP boundary. If that's the case, we face the question of why (4b) is ungrammatical: what prevents us from getting to embedded Spec,CP via [TOP], and then raising to matrix Spec, TP via [ϕ]?

(4) a. [The rabbit], it seems [$_{CP}$ t$_{Top}$ [$_{TP}$ Alice followed t$_{Top}$]].
b. *[The rabbit] seems [$_{CP}$ t$_{Raising}$ [$_{TP}$ Alice followed t$_{Top}$]].

The answer to this particular case is usually the Ban on Improper Movement (May 1979, Chomsky 1981, a.o.), (5). The movement chain in (4b) is bad because it involves A-bar movement of the XP (*topicalization*) followed by an A-movement (*raising*). Thus, it seems that the Missing Triggers Approach needs to at least be supplemented by a constraint that forbids A-triggers accessing XPs which have moved via A-bar triggers.

(5) **Ban On Improper Movement (BOIM):**
An XP that has A-bar moved cannot subsequently A-move.

Here one might object that the A vs. A-bar distinction might be an epiphenomenon, i.e., that exclusion of sentences like (4b) might not in fact require an additional constraint on Merge or Agree, but be related to the differences in type/size of the moving phrases (Safir 2019), or the type of semantic traces that such movement leave (van Urk 2015, Grishin 2025).

I would like to suggest that Meadows's point can be strengthened in a way that does not make it contingent on our approach to the BOIM and ways of deriving the ungrammaticality in (4b). Let us constrain ourselves to movements that are A-bar. The Missing Triggers Approach expects that the configuration in (3) should be grammatical if both [F$_1$] and [F$_2$] are A-bar features, as these cases would not fall under the BOIM. However, this is not what we find: the same syntactic constituent can be transparent to some A-bar dependencies but not others (see Müller and Sternefeld 1993, a.m.o.). For example, Russian *when*-clauses are transparent for scrambling, but not for *wh*-movement (examples from Zemskaja 1973 via Yadroff 1992), (6)-(7). The question then is: what prevents the *wh*-word in (6) from moving to the embedded Spec,CP via the [SCR] feature, and then moving out of there via the matrix [WH] feature?[2] Restrictions like this do not fall under the purview of BOIM or independently needed assumptions of the Missing Triggers Approach.

(6) *Kto$_1$ ty videl [kogda t$_1$ pod'ezžal]?
who.NOM you saw when was.arriving
'Who did you see when (s/he) was arriving?'

[2]One might think that maybe there is an inherent semantic issue with having both [SCR] and [WH] features at the same time. This does not seem to be the case, as *wh*-phrases have been reported to undergo scrambling in languages like Japanese (Saito 1989, Sabel 2001).

(7) Ty doktor$_1$ videl [kogda t$_1$ pod'ezžal]?
you doctor.NOM saw when was.arriving
'Did you see when the doctor was arriving?'

There have been attempts to explain such data by imposing constraints on binding of movement traces of different types (Müller and Sternefeld 1993), or by imposing an ordering on possible triggers of movement steps (Abels 2009).[3]

(8) **Universal Constraint on the Ordering of Operations in Language (UCOOL)**
a. θ<...<Case<...<Scr<...<Wh<...<Top
b. No constituent may undergo movement of type τ if it has been affected by movement of type σ, where $\tau < \sigma$ under the ordering in (a).

Crucially, these additional constraints are designed to explain (im)possibility of movement chains consisting of movement steps of different types (e.g., subtypes of A-bar movement: scrambling vs *wh*-movement vs topicalization) and don't place restrictions on operations of the same type. An important contribution of Meadows (2023, 2024) is that he shows that the same constituent can be transparent or opaque to the same kind of movement, depending on the position that this movement targets. This is an issue for constraints like (8).

In particular, Meadows (2023) looks at three types of relativization in Swahili and shows that they have three distinct locality profiles. Consider the contrast in (9)-(10):

(9) *Relativization targeting CP can proceed from CP*
Ni-li-nunua **kisu**$_1$ [amba-cho Lizzie a-li-amini
1SG-PST-buy 7knife COMP-7REL Lizzie 1-PST-believe
[$_{CP}$ kwamba Jini a-li-ki-vunja **t**$_1$]]
COMP Jini 1-PST-7-break
'I bought the knife that Lizzie believed that Jini broke.'

(10) *Relativization targeting TP cannot proceed from CP*
*Ni-li-nunua [**kisu**$_1$ a-li-cho-amini Lizzie
1SG-PST-buy 7knife 1-PST-7REL-believe Lizzie
[$_{CP}$ kwamba Jini a-li-ki-vunja **t**$_1$]]
COMP Jini 1-PST-7-break
'I bought the knife Lizzie believed that Jini broke.'

Meadows (2023) shows that relativization with the complementizer *amba* targets CP, but the one in (10) (*amba-less#1*) targets TP, and that only the former can proceed from CP-sized clauses. This is a problem for the Missing Triggers Approach, even with addition of constraints like UCOOL: (10) shows us that there must be a [REL] feature available

[3]Here I am simplifying Abels's proposal, omitting the notion of *affectedness*, and collapsing the ordering and the ban on movements of certain kind under one constraint.

on the embedded C. If so, what prevents relativization in (10)? The Missing Triggers Approach then is forced to postulate distinct features for relativizations with distinct locality profiles ([REL_1], [REL_2], [REL_3] for Swahili), and impose additional constraints on them co-occurring within the same movement chain. While we can refine the inventory and ordering of feature triggers to give us just the right result, such an approach misses a generalization: the landing site of relativization is correlated with its locality profile, (11).

(11) **Fseq:** CP $\prec$ TP $\prec$ AspP $\prec$ LModP $\prec$ AgrSP $\prec$ VoiceP

Movement \ Embedded	CP	AspP	LModP	VoiceP
relativization to CP (*amba*)	✓	✓	✓	✓
relativization to TP (*amba*-less#1)	✗	✓	✓	✓
relativization to AgrSP (*amba*-less#2)	✗	✗	✗	✓

Table 1: Relativization in Swahili (Meadows 2023: 118)

Georgian is another language that corroborates this issue for the Missing Triggers Approach. Georgian also has three types of relativization, illustrated in (12)-(14).

(12) *c-Relativization: CP-level*

me c'avik'itxe c'erili [romeli-**c** **sabednierod** st'udent'-ma dac'era]
I read letter.NOM which-**FOC** **fortunately** student-ERG write.PST.3SG

'I read the letter that fortunately the student wrote.'

(13) *rom-Relativization: CP-level*

me c'avik'itxe c'erili [st'udent'-ma **sabednierod rom** dac'era]
I read letter.NOM student-ERG **fortunately** **ROM** write.PST.3SG

'I read the letter that fortunately the student wrote.'

(14) *Participial Relativization: AspP-level*

me [st'udent'-is mier or saat-ši da-c'er-ili] c'igni c'avik'itxe
I student-GEN by two hour-in PVB-write-PART.NOM book read.PST.1SG

'I read the book that the student wrote in two hours.'

The sizes of these relative clauses differ. Relativizations which involve the focus particle *-c* (together with a *wh*/relative words like *romeli* 'which') and the marker *rom* seem to be CP-size clauses. They are finite clauses that show no temporal restrictions (all TAM forms are possible) and exhibit the same case and agreement patterns as matrix clauses. Furthermore, they allow speech-oriented adverbs like *sabednierod* 'fortunately' inside of them. Participial relativization on the other hand, (14), involves a clause of a reduced size. Such clauses are temporally restricted: for example, for object relativization with the verb

like ‘to write’, there are only two forms, a past participle and a future/modal participle. Participial clauses lack agreement that we see in independent clauses, and their arguments must either receive genitive case or be expressed as PPs. I suggest that these clauses are AspP-sized, as such clauses permit (a)telicity adverbials, and can distinguish some TAM-related distinctions (past vs. future/modal-oriented participles).[4]

Again, if one of these relativizations can move across a CP boundary, we expect the other two to be able to do so as well, as it would indicate that the [REL] feature is present on the embedded C. However, preliminary results from an ongoing project with Jacob Fernandes indicate that this is not what we find. Instead, we seem to find a pattern similar to Swahili: only CP-level relativization is possible out of CP-sized complements; reduced-size participial relativization cannot proceed from them, (15)-(17).

(15) gogo [$_{CP}$ **romel-sa-c**$_1$ mariami ambobs, [$_{CP}$ rom šota **t**$_1$ xat’avs]]
girl which-ACC-FOC Mariam says ROM Shota.NOM is.painting
‘girl which Mariam says Shota is painting’

(16) gogo [$_{CP}$ **Op**$_1$ mariami **rom** ambobs, [$_{CP}$ rom šota **t**$_1$ xat’avs]]
girl Mariam ROM says ROM Shota.NOM is.painting
‘girl which Mariam says Shota is painting’

(17) *[$_{AspP}$ **Op**$_1$ mariam-is mier natkvami,
Mariam-GEN by say.PART.NOM
[$_{CP}$ rom šota **t**$_1$ xat’avs]] gogo
ROM Shota.NOM is.painting girl
‘Intended: ‘girl which Mariam says Shota is painting’
(ungrammatical with all possible placements of the *rom*-clause)

On the Missing Triggers Approach, we would need to postulate two relativization features in Georgian, [REL$_1$] (CP-level relativization) and [REL$_2$] (AspP-level relativization), and add a constraint that prevents an XP which has moved to the edge of CP via [REL$_1$] to be later targeted by the [REL$_2$] feature. The fact that in both Georgian and Swahili there is a correlation between which combinations of [REL] triggers are disallowed and the size of the relative clauses that [REL]-driven movements create is an accident.

When we consider different sizes of embedded clauses (Bondarenko and Fernandes 2026), we see that the generalization holds up, (18): relativizations that target a higher position are less restricted than the relativization that targets a lower position. Thus, we can conclude that the Missing Triggers Approach is missing a generalization. Putting the issue of A vs. A-bar movement aside, we see that in order to account for selective opacity, we still need an independent constraint on the ordering of possible feature triggers within a movement chain. This ordering does not follow from any other assumptions, and both the

[4] Agreement and regular case seem to be absent in Georgian in all clauses that are smaller than TPs.

data that motivated UCOOL, (8), and the data from relativization in Swahili and Georgian suggest that the relevant ordering is that of projections in the clausal functional sequence.[5]

(18) **Fseq:** CP ≺ TP ≺ ModP ≺ AspP ≺ VoiceP

Movement \ Embedded	CP	TP	ModP	VoiceP
relativization to CP #1 (*romeli-c*)	✓	✓	✓	✓
relativization to CP #2 (*rom*)	✓	✓	✓	✓
relativization to AspP	✗	✗	✗	✓

Table 2: Relativization in Georgian.

Level Embedding Approach (Williams 2003, 2011, Poole 2022, Meadows 2023, Egressy 2025, 2026) embraces the intuition that movement is constrained by the functional sequence, setting as its goal to derive the generalization in (19), known as the *Williams Cycle*.

(19) **The Williams Cycle (WC):**
Movement must not land lower in the clausal functional sequence than any projections crossed along the way.

If our theory derives (19), it will automatically account for relativization in both Swahili and Georgian, as both represent instances of the same pattern—relativization to a lower landing site can cross less amount of functional structure than higher-landing relativization. While (19) seems to be able to account for a variety of different patterns across unrelated languages (English, Swahili, Georgian, Hungarian, a.o.), there are also several classes of known exceptions. For example, generalization in (19) is incompatible with existence of raising to object and hyperraising, as well as intermediate movement steps at *v*P phases.

This raises the issue of what is the right methodological move in studying locality and selective opacity. Should we abandon (19) and rethink the data that motivated it, or rethink the counterexamples to it, or perhaps weaken the generalization in a way that only limited violations of (19) are allowed?[6] I will follow the view that sees inherent value in pursuing

[5] Abels (2009) suggests that the ordering in UCOOL and the functional hierarchy are indeed the same, but argues that it is impossible to dispense with UCOOL as a separate constraint and make it follow from the cartographic hierarchy in a direct way.

[6] Part of the difficulty in knowing what the right strategy is is that while the cross-linguistic investigation of WC-violating dependencies has been growing (van Urk 2015, van Urk and Richards 2015, Halpert 2019, Fong 2019, Lohninger et al. 2022, Mikkelsen et al. 2024, a.m.o.), we don't yet have a predictive theory of when WC-violating operations are possible. For example, to my knowledge there is no theory that predicts whether a given clause with a given verb in a given language will allow hyperraising or not from independently observable properties of verbs and clauses. While we can *describe* the difference by appealing to the featural specification of different syntactic heads, we don't seem to have an empirical generalization about what unites cases that (dis)allow such operations, making it hard to *explain* the cross-linguistic variation.

the strongest hypothesis[7], and that it is thus worth pursuing a theory that derives (19) and then searches for the right weakening that rules in attested cases that violate WC while still ruling out the unattested ones.[8] So let us see how a theory that derives (19) could look like.

The WC generalization can be stated more precisely as *Generalized Ban on Improper Movement (GBOIM)*, (20), and the question then is: what does GBOIM follow from?

(20) **Generalised Ban on Improper Movement**
Movement to [Spec, XP] cannot proceed from [Spec, YP] or across YP, where Y is higher than X in the functional sequence.
(based on Williams 2003, via Poole 2022)

One proposal, advanced by Keine (2016, 2019), is to derive GBOIM from two ingredients: (i) each probe having its own locality condition (*a horizon*), restricted by its location in the clausal spine, and (ii) *category inheritance* of labels within a functional sequence. Another proposal, originating with Williams (2003, 2011), is to derive GBOIM via the *Strict Cycle Condition*, together with the assumption that the size of the clause determines when in the derivation it will be embedded. On this view, a clause, due to its size, can be embedded too late to participate in certain syntactic dependencies. Here I will focus on the second approach, focusing on the implementation in (Meadows 2023, 2024).[9]

The first ingredient is an assumption about the timing of structure-building, (21).

(21) **Parallel Derivation of Main and Embedded Clauses** (Meadows 2023:141)
a. Main and embedded clauses are built in separate workspaces.
b. The Merge of a component of clausal functional sequence applies in parallel across all workspaces.
c. Syntactic dependencies involving Merge/Agree cannot be established across workspaces.

[7]Meadows (2024) suggests borrowing the term from David Pesetsky's foreword to Sheehan et al. (2017): *"enlightened persistence in the face of apparent counterevidence"*.

[8]A theory which would for example allow certain instances of hyperraising, but would at the same time rule out a language in which the same embedded clause is transparent to relativization that lands lower in the clausal spine but opaque to relativization that lands higher in the clausal spine.

[9]Horizons provide a weaker account of the size-height correlations, primarily because probes could have empty horizons regardless of where in the clausal spine their occur. Thus, this theory doesn't in fact derive (20). For example, it is compatible with a hypothetical pattern in (i), in which movement to Asp can proceed from clauses of all sizes, but movement to higher positions (CP, TP) is more restricted. This pattern could arise because probes on heads low in the functional spine could have empty horizons.

(i) *Hypothetical language: violates WC, allowed by Horizons*

Probe	Horizon	CP	TP	AspP
C	⊣‖CP	✗	✓	✓
C	⊣‖CP	✗	✓	✓
T	⊣‖TP	✗	✗	✓
T	⊣‖TP	✗	✗	✓
Asp	⊣‖∅	✓	✓	✓

While one might have thought that embedded clauses are built before matrix ones, according to (21), that is not the case. Instead, (21) suggests that all VPs are built in parallel, then all VoicePs, then all TPs, then all CPs—functional structure is added at once to all clauses which will be part of the sentence, proceedings from cycle to cycle across workspaces. (22) illustrates this for the sentence *Tom thinks that Alice followed the rabbit*.

(22) Tom thinks that Alice followed the rabbit.

a. *VP cycle*:
[$_{VP}$ thinks] [$_{VP}$ followed the rabbit]

b. *VoiceP cycle*:
[$_{VoiceP}$ Tom Voice [$_{VP}$ thinks]] [$_{VoiceP}$ Alice Voice [$_{VP}$ followed the rabbit]]

c. *TP cycle*:
[$_{TP}$ Tom T [$_{VoiceP}$ ~~T.~~ thinks]] [$_{TP}$ Alice T [$_{VoiceP}$ ~~A.~~ followed the rabbit]]

d. *CP cycle*:
[$_{CP}$ C [$_{TP}$ Tom thinks]] [$_{CP}$ C$_{that}$ [$_{TP}$ Alice followed the rabbit]]$\rightsquigarrow$
[$_{CP}$ C [$_{TP}$ Tom thinks [$_{CP}$ that Alice followed the rabbit]]]

Parallel Derivation has as its consequence the *Level Embedding Conjecture*, (23): it is impossible to embed a clause before it has been built, and so if all clauses are built in parallel, an XP-sized clause must only be embedded at the XP cycle or later. In our toy example in (22), since the embedded clause is a CP, it will have to be embedded at the CP cycle.

(23) **Level Embedding Conjecture (LEC)**
An XP can only be embedded in a structure that is also built up to an XP.
(Williams 2003, Poole 2022)

The final ingredient of this approach is the *Strict Cycle Condition*, (24): a constraint that demands that syntactic operations could not (exclusively) target domain which has already been completed. For example, once we have built clauses up to the CP level, there cannot be an operation that alters only features of the elements inside TP.

(24) **Strict Cycle Condition (SCC)**
Once a cyclic domain D$_x$ has been affected by an operation, no subsequent operation may exclusively affect a cyclic domain D$_{x-1}$ that is a proper subdomain of D$_x$.
(Müller 2023:12)

Taken together, Level Embedding Conjecture and Strict Cycle Condition derive the Williams Cycle generalization. To see this, consider again the example of English raising, (1b), repeated below in (25). At the TP cycle, the ϕ-probe on T searches for possible goals, but cannot find any: due to Parallel Derivation, the embedded clause is not yet part of the matrix workspace. At the CP cycle, the embedded CP becomes part of the matrix workspace, but due to SCC, it is too late for T to probe. Thus, T's search fails, and we do not see raising.

(25) *Alice seems that followed the rabbit.

a. *TP cycle*:
[$_{TP}$ T$_{\boldsymbol{\chi}[\phi]}$ [$_{VoiceP}$ seems]] [$_{TP}$ Alice T [$_{VoiceP}$ ~~A.~~ followed the rabbit]]

b. *CP cycle*:
[$_{CP}$ C [$_{TP}$ T$_{\boldsymbol{\chi}[\phi]}$ seems]] [$_{CP}$ C$_{that}$ [$_{TP}$ Alice followed the rabbit]]$\rightsquigarrow$
[$_{CP}$ C [$_{TP}$ T$_{\boldsymbol{\chi}[\phi]}$ seems [$_{CP}$ that Alice followed the rabbit]]]

This generalizes to how the Level Embedding Approach derives Williams Cycle. Lower landing sites require smaller embedded clauses because the clause needs to be already embedded for the movement dependency to proceed, and an XP-sized clause can only be embedded at the XP cycle. Moving to a lower landing site later in the derivation is not an option because that would violate the Strict Cycle Condition.

One might notice that as it stands, this proposal has a big problem: taken together, LEC and SCC seem to predict that only VPs can ever be embedded as complements to V—a prediction that is very clearly wrong. Something very special needs to be said about how clauses of different sizes can be embedded in order to maintain the Level Embedding Approach. Two ideas have been pursued in the literature. The first idea (Williams 2003, Poole 2022), inspired by Tree Adjoining Grammar (Joshi et al. 1975, Kroch and Aravind 1985), assumes that embedded clauses are arguments of verbs, and to satisfy selectional requirements, at the VP-cycle matrix verbs combine with placeholders. At the cycle when the embedded clause is completed, this placeholder is substituted by the clause, (26).

(26) *Clausal Embedding via placeholders (↓CP)*

a. *VP cycle*:
[$_{VP}$ thinks ↓CP] [$_{VP}$ followed the rabbit]

b. *CP cycle*:
[$_{CP}$ C [$_{TP}$ Tom thinks ↓CP]] [$_{CP}$ C$_{that}$ [$_{TP}$ Alice followed the rabbit]]$\rightsquigarrow$
[$_{CP}$ C [$_{TP}$ Tom thinks [$_{CP}$ that Alice followed the rabbit]]]

The second idea (Meadows 2023) assumes that embedded clauses are verbal adjuncts, and clausal embedding, like adjunction in general, is not featurally triggered: there is no syntactic selection between V and CP. On this implementation, Strict Cycle Condition concerns only featurally-triggered operations, and thus embedding CP as a sister to V at the CP cycle does not constitute a SCC violation. The derivation thus proceeds exactly as depicted in (22). This refined version of SCC (Meadows 2023) is summarized in (27).

(27) **The Featural Extension Requirement (FER)**
Featural triggers (e.g. [uREL]) on a clausal F can only be representationally altered (valued, checked, satisfied etc.) at the cycle at which they are introduced. Each clausal F is introduced in its own cycle.

On this view, we can still maintain that syntax is largely featurally driven. Agree and most cases of Merge (e.g., building clausal and nominal spine, selection of arguments) will be still triggered by syntactic features. But adjunction will be free, and thus allowed to occur counter-cyclically, as will complementation as a type of adjunction.

It is notable that both ideas require us to totally rethink how clauses are embedded, and they take polar opposite stances on the role that embedded clauses play in the argument structure of the verb: complement clauses are arguments on the first view, and adjuncts on the second view. In the next section I examine whether these assumptions about clausal embedding, which were made within theories in order to explain selective opacity, are consistent with what we independently know about clausal embedding.

3. Two paths of clausal embedding

Cross-linguistically, we find that there are two distinct paths that languages use for embedding clauses (Özyıldız 2020, Roberts 2020, Bochnak and Hanink 2021, Bondarenko 2020, 2022, Özyıldız and Uegaki 2023, 2024, a.o.):

	Nominalized clauses	**Bare clauses**
morphology	nominal (case, possessivity, determiners)	non-nominal/adverbial
syntax	distribution of DPs	distribution similar to other verbal modifiers
semantics	the same interpretations that DPs receive	propositional content of the event argument

Table 3: Nominalized vs. bare clauses cross-linguistically.

Nominalized clauses involve nominal structure built on top of the verbal structure; the resulting DP becomes an argument of the verb. In some languages, these clauses bear overt morphological exponents of nominal structure, such as case, possessive markers, or determiners. But there are also languages in which the nominal structure has zero exponence. Nominalized clauses have distributions of DPs, and receive the same interpretations that DPs receive. *Bare clauses* have no nominal projections in their structures, and function as modifiers to the embedding predicate. In some languages, these clauses bear adverbial/converbial markers. Bare clauses have similar distribution to other verbal modifiers, and in most cases, describe the propositional content associated with the verb's event argument.[10] To appreciate this distinction, consider (28)-(29), (Bondarenko 2022:287-288).

(28) Swuna-ka [hoysa-ka hyepsang-ul ha-l cwunpi-ka
Swuna-NOM company-NOM negotiation-ACC do-ADN.FUT preparation-NOM
toy-ess-ta-**nun** **kes-ul**] kuncengcek-ulo haysekha-yess-ta.
become-PST-DECL-**ADN** **thing**-**ACC** positive-as interpret-PST-DECL

[10] See chapter 4, section 4.2. of (Bondarenko 2022) for a systematic exception with verbs of occurrence.

'Swuna interpreted (the claim) that the company is ready for negotiations as a good thing.'
✓ **THEME**: 'The claim that the company is ready for negotiations is the object of Swuna's interpretation, she interpreted this as a positive thing.'
✗ **CONTENT-OF-UTTERANCE**: 'Swuna's interpretation of some other thing (as a positive thing) was that that the company is ready for negotiations.'

(29) Swuna-ka [hoysa-ka hyepsang-ul ha-l cwunpi-ka
Swuna-NOM company-NOM negotiation-ACC do-ADN.FUT preparation-NOM
toy-ess-ta-**ko**] haysekha-yess-ta.
become-PST-DECL-**COMP** interpret-PST-DECL
'Swuna interpreted that the company is ready for negotiations.'
✗ **THEME**: 'The claim/situation that the company is ready for negotiations is the object of Swuna's interpretation.'
✓ **CONTENT-OF-UTTERANCE**: 'Swuna provided an interpretation for some situation/statement, and it was *The company is ready for negotiations*.'

The clauses in (28) and (29) are combining with the same verb *haysekha* 'interpret', but they have very different morphosyntax and receive different interpretations. In (28), the clause contains an overt noun *kes* 'thing' that bears accusative case which is modified by a clause that bears the so-called "adnominal" marker *-nun*. This nominalized clause can only be understood as describing some claim/idea that is being interpreted. The clause in (29) lacks nominal structure and attaches *-ko*, which in Korean is also used as conjunction. This bare clause can only be understood as specifying the content of the interpreting event—what was said as an interpretation of some situation or statement.

It is important to note that the two paths are not mutually exclusive: in (30) we see an example from Barguzin Buryat in which the verb *hanaxa* 'think' combines with both a nominalized clause bearing case and possessive markers, and a "bare" clause that attaches an adnominal marker onto the complementizer derived from the verb of speech *gə* 'say'.

(30) **Context:** Last night Badma returned from Kurumkan and made a lot of noise in the middle of the night. Sajana heard the noise and was convinced that a burglar entered the house. She later recalled this event when I spoke with her.

Sajana [Badm-i:n Xurumxa:n-ha: jər-ə:d bai-ga:š-**i:jə-n'**]
Sajana Badma-GEN Kurumkan-ABL come-CVB2 be-PART-**ACC**-**3**
[gər-tə xulgaišan or-o: gə-**žə**] han-a:.
house-DAT burglar go.in-PST COMP-**ADV** think-PST

'Sajana recalled the/an event of Badma returning from Kurumkan, (thinking) that a burglar entered the house.' (Bondarenko 2020:ex. (21))

The interpretations of the two embedded clauses are fixed: the nominalized clause must describe the event/situation that is being recalled, and the bare CP must describe the thoughts that Sajana is having in the process of recalling this event/situation.

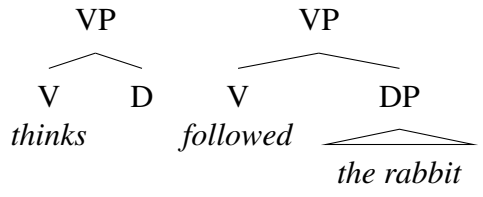
The upshot is that the cross-linguistic study of clause embedding strategies suggests that there are two different paths of how clauses can be integrated with the verb, and thus neither "embedding via placeholders" (Williams 2003, Poole 2022) nor "embedding via adjunction" (Meadows 2023) can be the whole story. Since assumptions about how clauses are embedded are central to the Level Embedding Approach, we have to ask: can this theory be reconciled with the idea that there are two paths of clausal embedding? On the empirical side, we'd also like to know if selective opacity is observed with both clause embedding strategies, and if there are any path-specific restrictions. Next section explores these issues.

4. Proposal

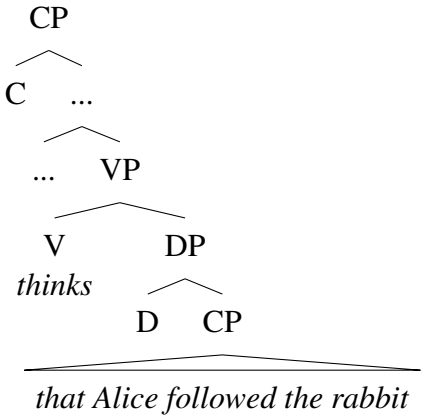
I would like to suggest that there is a natural way to marry the theories of clausal embedding with the Level Embedding theories of selective opacity. What the Level Embedding Approach needs is a license to merge embedded clauses counter-cyclically. On the traditional view, according to which embedded clauses are syntactic and semantic arguments of verbs, counter-cyclic introduction of embedded clauses into the structure is unjustified: why would this case of selection be different from others? However, on the emerging view that embedded clauses denote predicates of individuals or events that act as nominal or verbal modifiers (Kratzer 2006, Moulton 2009, Bogal-Allbritten 2016, Elliott 2020, Bondarenko 2022, a.o.), counter-cyclicity should not come as a surprise: modifiers are known to be able to merge late (Lebeaux 1988, Takahashi and Hulsey 2009, a.m.o.).

Here is my implementation of the Level Embedding Approach. I assume that cycles of clausal and nominal structure building are fully out of sync (Meadows 2023). For sentences with nominalized clauses, I propose to use nominal structure in lieu of placeholders (Williams 2003, Poole 2022). Nominalized clauses differ in how much nominal structure they possess. Some only have the D layer, others include the lexical noun (N) as well, and potentially other projections (e.g. see ch. 4 in Bondarenko 2022). Let us consider a nominalized CP with only a DP layer above CP. At the VP cycle, the matrix verb will combine with the D, which will satisfy its selectional requirements, (31). At the CP cycle, after the embedded clause is completed, it undergoes *Wholesale Late Merger* (Takahashi and Hulsey 2009) to the D head, (32). If the nominalized clause includes a lexical noun or other nominal projections, they can be merged together with D at the VP-cycle, when the noun phrase combines with the verb. The CP in such cases will only constitute part of the restrictor, and undergo *Late Merge* (Lebeaux 1988) to the nominal predicate, (33). Thus, the clausal component of nominalized clauses can always be merged late.

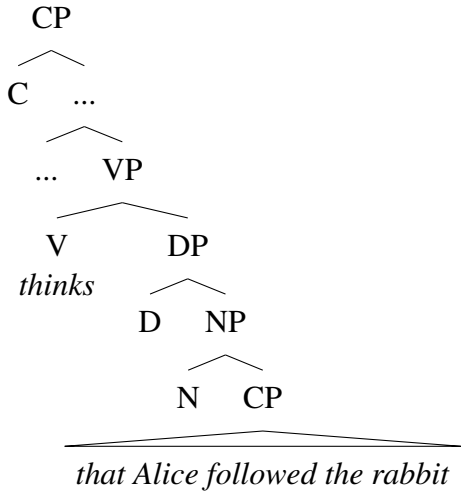
(31) *VP-cycle: nominalized clause*



(32) *CP-cycle: Wholesale Late Merger*



(33) *CP-cycle: Late Merge*



Bare clauses lack the nominal structure and are semantic modifiers of the verb describing propositional content associated with the event. As such, they don't need to be merged with the verb at the VP-cycle, (34). Once the clause is built to its full size, it will be able to combine with the verb counter-cyclically via Late Merge, (35).

(34) *VP-cycle: bare clause*
[$_{VP}$ thinks] [$_{VP}$ followed the rabbit]

(35) *CP-cycle: bare clause*
[$_{CP}$ C [$_{...}$ ... [$_{VP}$ V$_{thinks}$ [$_{CP}$ that Alice followed the rabbit]]]]

What both strategies of clausal embedding have in common is clausal constituents that can merge late because they denote predicates of individuals or events (Kratzer 2006, Moulton 2009, Bogal-Allbritten 2016, Elliott 2020, Bondarenko 2022, a.o.), e.g. like in (36).[11]

(36) $[\![\text{that Alice followed the rabbit}]\!]^w =$
$\lambda x.\text{CONT}_w(x) = \lambda w'$. Alice followed the rabbit in w'

The clause in (36) can function as a restrictor of a determiner, or as a modifier of a lexical noun, or as a modifier of the event argument of the verb. In all three cases, late merger is permitted because the output representation receives a well-formed semantic interpretation (see Takahashi and Hulsey 2009). It will not violate the Featural Extension Requirement, (27), because clausal embedding is not featurally driven, and thus no featural triggers on V will be altered at later cycles when clauses are embedded.[12]

[11] Not all embedded clauses describe individuals with propositional content; clausal constituents can denote other kinds of predicates, see e.g. (Moltmann 2021, Bondarenko 2025) for discussion.

[12] This proposal might raise concerns given that embedded clauses have been claimed to disallow Late Merge based on principle C data (Safir 1999). However, Moulton (2009) shows that once certain confounds

This proposal makes a prediction: nominalized and bare clauses should exhibit selective opacity effects in a parallel way, provided the sizes of the clauses are controlled for. In the next section, I argue that this prediction is borne out based on data from Georgian.

5. Case study: Georgian

Georgian verbs, including those that embed clauses, have different morphology based on their argument structure. One of the distinctions that morphology is sensitive to is whether a verb has an internal argument or not (see Harris 1981, Aronson 1990, a.o.). For example, in (37) we see two verbs formed from the same root *pikr* 'think'. While *i-pikr-a* 'thought', which has a "preradical vowel (pv)" *i-* (Aronson 1990) can take an internal argument DP, *da-pikr-d-a*, which has no preradical vowel, but has an intransitivity-marking suffix *-d* and an aspectual preverb (PVB), cannot combine with DPs. (38) shows another intransitive clause-embedding verb: *še-c'ux-d-a* 'was disturbed' can't take DP complements either.

(37) šota-m rağac saintereso i-pikr-a
Shota-ERG something interesting.**NOM** pv-think-PST.3SG
/*da-pikr-**d**-a
/PVB-think-**INTR**-PST.3SG
'Shota thought something interesting.'

(38) giorgi am mosazreba-ze /*mosazreba-**s** še-c'ux-**d**-a
Giorgi.NOM this idea-on /idea-**ACC** PVB-be.disturbed-**INTR**-PST.3SG
'Giorgi got disturbed by this idea.'

Clauses that combine with transitive verbs can optionally be accompanied by an overt demonstrative *is* 'that', but this is impossible for clauses with intransitive verbs:[13]

(39) šota-m i-pikr-a **(is)**, rom es mxat'vrebi suratebs gaqidian.
Shota-ERG pv-think-PST.3SG **(DEM)** ROM these painters pictures will.sell
'Shota thought that these painters will sell the pictures.'

(40) šota da-pikr-**d**-a (*__imas__ /*__is__),
Shota.NOM PVB-think-**INTR**-PST.3SG (**DEM.ACC /DEM.NOM**)
rom es mxat'vrebi suratebs gaqidian.
ROM these painters pictures will.sell
'Shota thought that these painters will sell the pictures.'

---

are controlled for, we see that CPs that combine with nouns in English in fact allow Late Merge. See also (Adger et al. 2017, Bruening and Al Khalaf 2019, Wierzba et al. 2021), a.o., for debates about reconstruction for principle C and argument vs. adjunct distinction.

[13]Note that in the past tense as in (39)-(40), transitive verbs mark Agents with ergative case and Patients with nominative case ("active" system), whereas unaccusative verbs mark their only Patient argument with nominative. With clausal arguments, transitive verbs have clausal demonstrative in nominative case, whereas unaccusative verbs disallow demonstratives regardless of its case marking.

Thus, Georgian provides an easy way to compare the two composition paths with respect to selective opacity: we can test whether nominalized CPs that are internal arguments of transitive verbs exhibit the same extraction patterns as bare CPs that combine as modifiers of intransitive verbs. What we find is that they do, as is illustrated in table 4.[14]

Movement / Clause	bare CP	nominalized CP
relativization to CP #1 (*romeli-c*)	✓	✓
relativization to CP #2 (*rom*)	✓	✓
Topicalization to CP	✓	✓
wh-movement to TP	✗	✗
A-scrambling to TP	✗	✗
relativization to AspP	✗	✗

Table 4: Selective opacity in nominalized and bare CPs.

First, there are two types of relativizations, (41)-(42), and topicalization, (43), which are possible from both bare CPs and CPs that are part of the nominal argument of the verb: both *rom*-clauses that combine with transitive *ipikra* 'thought' and intransitive *dapikrda* 'thought' are transparent to these dependencies. Note that in the examples below the displaced constituent contains an anaphor *ertmaneti* 'each other' which is bound by the subject of the embedded clause. This ensures that we are dealing with a genuine case of displacement as opposed to base-generation in the matrix clause.

(41) me vici [ertmanetis$_2$ es suratebi]$_1$, [romel-sa-c šota-m ipikra
I know of.each.other these pictures which-ACC-FOC Shota-ERG thought.**TR**
/šota dapikrda, [rom [es mxat'vrebi]$_2$ t$_1$ gaqidian]].
/Shota.NOM thought.**INTR** ROM these artists will.sell
'I know these pictures of each other that Shota thought these artist will sell.'

(42) me vici [ertmanetis$_2$ es suratebi]$_1$, [šota-m rom ipikra
I know of.each.other these pictures Shota-ERG ROM thought.**TR**
/šota rom dapikrda, [rom [es mxat'vrebi]$_2$ t$_1$ gaqidian]].
/Shota.NOM ROM thought.**INTR** ROM these artists will.sell
'I know these pictures of each other that Shota thought these artist will sell.'

(43) [ertmanet-is$_2$ am suratebs]$_1$ šota-m ipikra
each.other-GEN these pictures.ACC Shota-ERG thought.**TR**
/šota dapikrda, [rom [es mxat'vrebi]$_2$ t$_1$ gaqidian].
/Shota.NOM thought.**INTR** ROM these painters.NOM will.sell
'These pictures of each other, Shota thought that these painters will sell.'

[14]This is true as long as we are looking at clauses that do not have an overt demonstrative *is* 'that'. As in many other languages (see e.g. chapter 4 in Bondarenko 2022), extraction from clauses with overt nominal elements in the left periphery in Georgian is very restricted, which could be a linearization-related constraint.

These three dependencies target the CP-level in the clause (Bondarenko and Fernandes 2026). With relativization, the evidence comes from the fact that relative clauses are fully finite, are unrestricted with respect to TAM and adverbial modification. With topicalization, the displaced constituent targets the leftmost periphery of the sentence.

Wh-movement (Borise 2023) and A-scrambling in Georgian target lower positions in the clausal structure—other constituents can precede *wh*- and A-scrambled phrases, and both dependencies interact with case (Berulava and Bondarenko 2026) and binding, pointing to lower landing sites within the TP domain. Interestingly, we see that neither of these two dependencies is possible when it comes to CPs, regardless of their composition path:[15]

(44) a. *ra-m_1 pikrobs mariami,
what-ERG thinks.**TR** Mariam.NOM
[rom sabednierod t_1 me gamağiziana]?
ROM fortunately 1SG.NOM annoyed.me
'What does Mariam think that fortunately annoyed me?'

b. *ras_1 dapikrda giorgi, [rom es mxat'vrebi t_1 gaqidian]?
what.ACC thought.**INTR** Giorgi.NOM ROM these painters.NOM will.sell
'What did Giorgi think that that these painters will sell?'

(45) a. *šota-m [ertmanet-is_2 es suratebi]$_1$ ipikra,
Shota-ERG each.other-GEN these pictures.NOM thought.**TR**
[rom [am mxat'vreb-ma]$_2$ t_1 gaqides]
ROM these painters-ERG sold
'Shota thought that these painters sold these pictures of each other.'

b. *šota [ertmanet-is_2 am surateb-s]$_1$ dapikrda,
Shota.NOM each.other-GEN these pictures-ACC thought.**INTR**
[rom [es mxat'vrebi]$_2$ t_1 gaqidian]
ROM these painters.NOM will.sell
'Shota thought that these painters will sell these pictures of each other.'

Finally, participial relativization targets a projection lower than TP, which is the domain for case assignment in Georgian. I assume that it is AspP, as participles do express certain aspectual distinctions. Because of this size, DPs inside participial clauses cannot get cases they would receive in finite clauses. We also see no agreement and no morphology that sup-

[15]There are several things worth noting about *wh*-extraction. First, there are cases where long-distance *wh*-extraction is possible in Georgian, and in such environments there are non-trivial restrictions on the case of the extracted DP (Berulava and Bondarenko 2026). Both examples in (44) obey the "case-matching" rules and so should not be bad due to case restrictions. Second, verbs that take *rom*-clauses differ in whether they allow *wh*-extraction from these complements. It seems that *rom*-clauses can come in different sizes, and while CPs are opaque for *wh*-extraction, smaller *rom*-clauses are transparent. Composition path of a clause affects its possible size (see ch. 4 in Bondarenko 2022): while nominalized clauses can come in a variety of sizes, bare clauses with speech and mental predicates must be CPs. In (44a) I control for the size of the embedded *rom*-clause by inserting a high adverb *sabednierod* 'fortunately' into the structure. Without this adverb, some people can interpret the clause as being a smaller size, and accept the "case-matching" *wh*-extraction.

ports argument-structure alternations: in (46) for example, we see that the same participle *šec'uxebuli* 'disturbed' can be used both transitively and intransitively.[16]

(46) a. me davinaxe [t_1 še-c'ux-eb-ul-i] st'udent'i$_1$.
I saw PVB-disturb-TS-PART-NOM student.NOM
'I saw a disturbed student.'

b. me [šotas t_1 še-c'ux-eb-ul-i] mxat'vari$_1$ davinaxe.
I Shota.GEN PVB-disturb-TS-PART-NOM painter.NOM saw
'I saw the painter disturbed by Shota'

Participial relativization is impossible from *rom*-clauses. While *šec'uxebuli* 'disturbed' could in principle correspond to either transitive or intransitive variant of the verb, in neither case is it possible to relativize out of a *rom*-clause, (47). While in (47) the *rom*-clause is extraposed, there is no position that the CP could occupy to make the extraction grammatical.

(47) *me [šotas t_2 še-c'ux-eb-ul-i] mxat'vari$_1$ davinaxe,
I.ERG Shota.GEN PVB-disturb-TS-PART-NOM painter.NOM I.saw
[rom t_1 suratebs gaqidis]$_2$.
ROM pictures.ACC will.sell
'I saw the painter such that Shota was disturbed that (s)he will sell the pictures.'

Thus, both nominalized CPs and bare CPs in Georgian show the same kind of selective opacity consistent with the WC generalization (19): movements that target CP are possible out of these clauses, but those that land lower in the structure (TP, AspP) cannot exit them.

6. Conclusion

In this paper, I provided additional evidence from Georgian that the Missing Triggers Approach does not work unless it is supplemented by additional restrictions which track the height of the movement's landing site in the functional sequence. I have argued that the Level Embedding Approach, which has been attempting to embrace the functional sequence as the restricting factor of movement dependencies, can be naturally reconciled with our understanding of how clausal embedding works if we assume that clauses are predicates of entities/events which can undergo Late Merge and Wholesale Late Merge. This proposal predicts that nominalized clauses and bare clauses should both exhibit selective opacity effects. We have seen that in Georgian, this prediction is borne out—both kinds of CPs show WC-effects across the six movement dependencies we considered.

If this approach is on the right track, the undergeneration problem that it faces needs to be addressed. What are the cases in which the WC-violating movements *are* allowed, and what distinguishes them from the many cases where they are not? How can the Level Embedding Approach be weakened, but still correctly capture, e.g., that relativization that lands higher can proceed from bigger clauses compared to relativization that lands lower?

[16] TS stands for 'thematic suffix'.

References

Abels, Klaus. 2009. Some implications of improper movement for cartography. In *Alternatives to Cartography*, ed. by J.V. Craenenbroeck, 325–359. de Gruyter Berlin.

Abels, Klaus. 2012. *Phases: An essay on cyclicity in syntax*. Mouton de Gruyter.

Adger, David, Alex Drummond, David Hall, and Coppe Van Urk. 2017. Is there Condition C reconstruction? In *North East Linguistics Society (NELS) 47*, ed. by Andrew Lamont and Katerina Tetzloff, volume 1, 21–30. Amherst: GLSA.

Aronson, Howard I. 1990. *Georgian: A Reading Grammar*. Slavica Publishers, Inc.

Berulava, Tamari, and Tatiana Bondarenko. 2026. Case-matching effects in Georgian long-distance wh-questions. Talk presented at the CauLaGeNet Workshop, Boğaziçi University.

Bochnak, Ryan, and Emily Hanink. 2021. Clausal embedding in Washo: Complementation vs. modification. *Natural Language & Linguistic Theory* 1–44.

Bogal-Allbritten, Elizabeth. 2016. Building meaning in Navajo. Doctoral dissertation, University of Massachusetts Amherst.

Bondarenko, Tatiana. 2020. Factivity from pre-existence: Evidence from Barguzin Buryat. *Glossa: a journal of general linguistics* 5:1–35.

Bondarenko, Tatiana. 2022. Anatomy of An Attitude. Doctoral dissertation, Massachusetts Institute of Technology.

Bondarenko, Tatiana. 2025. On the source of displacement: two meanings of embedded CPs. *Natural Language Semantics* 33:619–662.

Bondarenko, Tatiana, and Jacob Fernandes. 2026. Williams Cycle in Georgian: a Level-Embedding Approach. Ms. in preparation.

Borise, Lena. 2023. The syntax of wh-phrases, narrow foci, and neg-words in Georgian. *The Linguistic Review* 40:173–215.

Bruening, Benjamin, and Eman Al Khalaf. 2019. No argument–adjunct asymmetry in reconstruction for Binding Condition C. *Journal of Linguistics* 55:247–276.

Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.

Chomsky, Noam. 1995. *The minimalist program*. MIT press.

Egressy, János. 2025. Williams Cycle effects in Hungarian. *Journal of Uralic Linguistics* 4:51–78.

Egressy, János. 2026. Size- and Position-dependent opacity in Hungarian. URL https://ling.auf.net/lingbuzz/009270, manuscript under review,.

Elliott, Patrick D. 2020. Elements of Clausal Embedding. Doctoral dissertation, UCL (University College London).

Fong, Suzana. 2019. Proper movement through Spec-CP: An argument from hyperraising in Mongolian. *Glossa: a journal of general linguistics* 4.

Grano, Thomas, and Howard Lasnik. 2018. How to neutralize a finite clause boundary: Phase theory and the grammar of bound pronouns. *Linguistic Inquiry* 49:465–499.

Grishin, Peter. 2025. Could the Ban on Improper Movement be about binding after all? Talk at NELS 55, NYU.

Halpert, Claire. 2019. Raising, unphased. *Natural Language & Linguistic Theory* 37:123–165.

Harris, Alice C. 1981. *Georgian Syntax: a study in relational grammar*. Cambridge Studies in Linguistics 33.

Joshi, Aravind K., Leon S. Levy, and Masako Takahashi. 1975. Tree adjunct grammars. *Journal of Computer and System Sciences* 10:136–163.

Keine, Stefan. 2016. Probes and their horizons. Doctoral dissertation, UMass Amherst.

Keine, Stefan. 2019. Selective opacity. *Linguistic Inquiry* 50:13–62.

Kratzer, Angelika. 2006. Decomposing Attitude verbs. Talk given at the Hebrew University of Jerusalem.

Kratzer, Angelika. 2016. Evidential moods in Attitude and Speech reports. Talk given at the 1st Syncart Workshop.

Kroch, Anthony, and K. Joshi Aravind. 1985. The linguistic relevance of Tree Adjoining Grammar. Ms., Technical Report MS-CIS-85-16, University of Pennsylvania.

Lebeaux, David. 1988. Language Acquisition and the Form of the Grammar. Doctoral dissertation, UMass Amherst.

Lohninger, Magdalena, Iva Kovač, and Susanne Wurmbrand. 2022. From prolepsis to hyperraising. *Philosophies* 7:32.

Longenbaugh, Nicholas. 2019. On expletives and the agreement-movement correlation. Doctoral dissertation, Massachusetts Institute of Technology.

May, Robert. 1979. Must COMP-to-COMP movement be stipulated? *Linguistic Inquiry* 10:719–725.

McCloskey, James. 2002. Resumption, successive cyclicity, and the locality of operations. In *Derivation and explanation in the Minimalist Program*, ed. by Samuel David Epstein and Daniel Seely, 184–226. Blackwell.

Meadows, Tom. 2023. Size Matters: Clause structure and locality constraints in Swahili relatives. Doctoral dissertation, Queen Mary University of London.

Meadows, Tom. 2024. Improper Movement and the Williams Cycle. Lecture notes from a class taught at EGG summer school "Advanced Syntax: The Williams Cycle".

Mikkelsen, Line, Ellen Thrane, Kutay Serova, and Madeline Snigaroff. 2024. Hyperraising in Kalaallisut. In *Proceedings of CLS*, volume 59, 297–317.

Moltmann, Friederike. 2021. Situations, alternatives, and the semantics of 'cases'. *Linguistics and Philosophy* 44:153–193.

Moulton, Keir. 2009. Natural Selection and the Syntax of Clausal Complementation. Doctoral dissertation, UMass Amherst.

Müller, Gereon. 2023. Challenges for cyclicity. In *Cyclicity. linguistische Arbeits Berichte 95*, ed. by Mariia Privizentseva, Felicitas Andermann, and Gereon Müller, 3–72.

Müller, Gereon, and Wolfgang Sternefeld. 1993. Improper movement and unambiguous binding. *Linguistic Inquiry* 24:461–507.

Özyıldız, Deniz. 2020. Embedded clauses in Turkish: Both argumenthood and modification are paths to composition. Talk at LSA 2020, New Orleans.

Özyıldız, Deniz, and Wataru Uegaki. 2023. Two question-embedding strategies and answer-orientedness. In *Semantics and Linguistic Theory*, 320–340.

Özyıldız, Deniz, and Wataru Uegaki. 2024. Clauses can be modifiers, or arguments: Evidence from alternations in factivity and answer-orientedness in Turkish and Japanese. *manuscript submitted for review* URL https://ling.auf.net/lingbuzz/008187.

Poole, Ethan. 2022. Improper case. *Natural Language & Linguistic Theory* 41:347–397.
Roberts, Thomas. 2020. Argument saturation and intransitive modification: The double life of embedded clauses. In *North East Linguistics Society (NELS) 51*. Université du Québec à Montréal.
Sabel, Joachim. 2001. Wh-questions in Japanese: Scrambling, reconstruction, and wh-movement. *Linguistic Analysis* 31.
Safir, Ken. 1999. Vehicle Change and Reconstruction in $\bar{A}$-chains. *Linguistic Inquiry* 30:587–620.
Safir, Ken. 2019. The a/ā distinction as an epiphenomenon. *Linguistic Inquiry* 50:285–336.
Saito, Mamoru. 1989. Scrambling as Semantically Vacuous A'-movement. In *Alternative Concepts of Phrase Structure*, ed. by M.R. Baltin and A.S. Kroch, 182–200. Chicago: University of Chicago Press.
Sheehan, Michelle, Theresa Biberauer, Ian Roberts, and Anders Holmberg. 2017. *The final-over-final condition: A syntactic universal*, volume 76. MIT Press.
Takahashi, Shoichi, and Sarah Hulsey. 2009. Wholesale late merger: Beyond the a/ā distinction. *Linguistic Inquiry* 40:387–426.
van Urk, Coppe. 2015. A uniform syntax for phrasal movement: A case study of Dinka Bor. Doctoral dissertation, Massachusetts Institute of Technology.
van Urk, Coppe, and Norvin Richards. 2015. Two components of long-distance extraction: Successive cyclicity in Dinka. *Linguistic Inquiry* 46:113–155.
Wierzba, Marta, Martin Salzmann, and Doreen Georgi. 2021. An experimental investigation of reconstruction for Condition C in Cerman $\bar{A}$-movement. In *The Chicago Linguistic Society (CLS) 56*.
Williams, Edwin. 2003. *Representation Theory*. Cambridge, MA: MIT Press.
Williams, Edwin. 2011. *Regimes of Derivation in Syntax and Morphology*. New York: Routledge.
Yadroff, Michael. 1992. Scrambling and Relativised Minimality. Unpublished manuscript. Indiana University, Bloomington, IN.
Zemskaja, Elena. 1973. *Russkaja razgovornaja reč (Russian colloquial speech)*. Moscow: Nauka.

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