**Noname manuscript No.**
(will be inserted by the editor)

# Between triviality and redundancy:

## evidence from Korean for the ban on CP conjunction

**Tatiana Bondarenko**

Date: 2024/02/08

**Abstract** In many languages, conjunction of embedded CPs obligatorily takes wide scope with respect to the embedding verb (Bassi and Bondarenko 2021; Bjorkman 2013; Szabolcsi 1997, 2016). With the data from embedded conjunction in Korean, this paper argues that the impossibility of narrow scope stems from the fact that true intersective conjunction of embedded CPs is impossible in natural languages. I propose that the functional elements at the left periphery of embedded clauses have meanings which make intersective conjunction of embedded CPs always either logically trivial or redundant, leading to ungrammaticality of sentences containing it. Strings of the form *'V(erb) CP and CP'* on this view arise when the sentence involves conjunction of higher constituents (e.g., conjunction of matrix VPs) followed by ellipsis, which leads to the obligatory wide scope.

While Korean data provides support for the general approach to the wide scope of embedded CP conjunction proposed in (Bassi and Bondarenko 2021), according to which semantics of displacement in clausal embedding is making true CP conjunction illicit, it also calls for its refinement. Comparing clauses that combine with two kinds of nouns (nouns like *cwucang* 'claim' and nouns like *sanghwang* 'situation') suggests that complementizers are not the elements that introduce displacement, and thus equality semantics of displacement is not sufficient to explain all instances of the ban on embedded CP conjunction. I propose that complementizers introduce exemplification (Kratzer 1989, 2020) into the meanings of embedded clauses, which rules out intersective conjunction of embedded clauses whose meanings do not involve displacement.

**Keywords** clausal embedding · Korean · conjunction · triviality · redundancy

Tatiana Bondarenko
Harvard Linguistics Department
Boylston Hall, Room 318, Cambridge, MA 02138
Tel.: +1 617-496-4516 E-mail: E-mail: tbondarenko@fas.harvard.edu

## 1 Introduction

It has been observed that cross-linguistically, embedded CP conjunction (sentences containing strings *'CP and CP'* embedded under a predicate) does not have the same meaning as embedded TP conjunction (sentences containing strings *'Comp TP and TP'* embedded under a predicate), (Bassi and Bondarenko 2021; Bjorkman 2013; Szabolcsi 1997, 2016). [1] For example, we naturally understand a sentence like (1a), which has two complementizers, as saying that the speaker both doubts that Masha sang and doubts that Dina danced—i.e., the conjunction seems to take wide scope over the predicate.[2] TP conjunction on the other hand takes narrow scope: the speaker in (1b) doubts the truth of the conjunctive proposition.

(1) a. **CP conjunction:** *'CP and CP'* *and > doubt*
I doubt [[**that** Masha sang] and [**that** Dina danced]].

b. **TP conjunction:** *'Comp TP and TP'* *doubt > and*
I doubt [**that** [Masha sang] and [Dina danced]].

This contrast becomes evident if we consider a context like (2). If the speaker finds it likely that Masha sang, and it's only the combination of Masha singing and Dina dancing that they find unlikely, then the sentence with the CP conjunction in (1a) is judged by most speakers as infelicitous. The sentence with the TP conjunction in (1b) is on the other hand fine in this context.

(2) *Narrow Scope Context (Bassi and Bondarenko 2021:588):*
Masha's singing is quite likely, but Dina's dancing is very unlikely. Thus, the combination of these too events is also very unlikely.
#*'CP and CP'*, ✓*'Comp TP and TP'*

The contrast between embedded CP conjunction and TP conjunction seems to be cross-linguistically stable: in addition to English (Bjorkman 2013; Szabolcsi 1997), the same facts hold at least for Hungarian (Szabolcsi 1997, 2016), Hebrew, Italian and Russian (Bassi and Bondarenko 2021).

This raises the question of what underlies this restriction: why does embedded CP conjunction always take wide scope? Note that this constraint is not expected if we make a common assumption that complementizers are semantically vacuous, (3): if both CPs and TPs denote sets of possible worlds or situations, then both CP conjunction and TP conjunction will result in the

[1] Acknowledgements redacted for review. This paper follows the Leipzig glossing conventions with the following additions: ADN = adnominal marker, ALSO = 'also', CONJ = conjunction, DECL = declarative marker, HON = honorific, ONLY = 'only'.

[2] As Bassi and Bondarenko (2021) note, there is some interspeaker variation in whether the narrow scope of conjunction in sentences with strings *'CP and CP'* is allowed: it seems that with stress on *and*, some people find such readings acceptable. They suggest that such speakers employ a non-Boolean conjunction to get such readings (Bassi and Bondarenko 2021:597–599). I adopt their idea, though the concrete solution of this issue will not be crucial for us: Korean conjunctions we will consider do not seem to have such non-Boolean readings.

embedding predicate combining with a conjunctive proposition, and thus in both cases the narrow scope of conjunction is predicted.

(3) $[\![[_{CP}$ that Masha sang] and $[_{CP}$ that Dina danced$]\!]$ =
{w: Masha sang in w} ∩ {w: Dina danced in w} =
{w: Masha sang and Dina danced in w} =
$[\![$that $[_{TP}$ Masha sang] and $[_{TP}$ Dina danced$]\!]$

There have been two proposals in the literature that try to derive the obligatory wide scope of embedded CP conjunction. Szabolcsi (1997, 2016) proposed that complementizers have meanings of "lifting" type-shifters, which reverse argument-predicate relations and thus ensure wide scope of embedded conjunction with respect to the verb. I will call this view *Comp-As-Lift theory*. Bassi and Bondarenko (2021) proposed a different account, which relies on the idea that the source of displacement in sentences with clausal embedding is within the embedded clause, (Kratzer 2006, 2016), and furthermore that the semantics of displacement involves equating the propositional content of some event or individual and the embedded proposition (Elliott 2020; Moulton 2009). According to their account, complementizers are the source of displacement, and the meanings that they have—in particular, the equation of two propositions that they introduce, make CP conjunction logically trivial, and thus ungrammatical. Thus, on their view, true CP conjunction is never possible, and strings *'CP and CP'* arise from structures where higher constituents are coordinated followed by Conjunction Reduction, which explains the wide scope interpretations of conjunction in such sentences. I will call this proposal *Conjunction Reduction theory* or *CR theory*.

Both approaches make correct predictions for the languages that have been considered in the literature: both predict that in sentences with strings like (4a) we should see the wide scope of conjunction, whereas in sentences with strings like (4b) narrow scope of conjunction is expected. Thus, it is difficult to differentiate between the two approaches on empirical grounds.

(4) *Predictions:*

| | | |
|---|---|---|
| a. | V COMP TP AND COMP TP | ✗*verb* > AND, ✓AND > *verb* |
| b. | V COMP TP AND TP | ✓*verb* > AND, ✗AND > *verb* |

In this paper I investigate embedded conjunction in Korean, focusing on embedded clauses that combine with content nouns like *cwucang* 'claim' and nouns like *sanghwang* 'situation'. I argue that data from Korean can help us adjudicate between the two proposals in favor of the *Conjunction Reduction theory*, but also that it necessitates certain refinements to that approach.

Here is a brief preview of the argument. Korean morphologically distinguishes conjunctions that occur in Conjunction Reduction structures (*kuliko*) from the ones that do not (*ko*). CR theory predicts that we will see ungrammaticality of *'CP and CP'* strings with the conjunction that cannot occur in CR structures, and wide scope of the conjunction that is compatible with CR.

Comp-as-Lift theory does not expect the type of conjunction to matter for the grammaticality of *'CP and CP'* strings: all sentences should be grammatical and receive wide scope readings. I show that the data is in line with the predictions of the CR theory, thus providing support for that approach.

While Korean data generally supports the CR theory, we will also see that equality semantics of displacement cannot be the only reason for the impossibility of narrow scope of embedded CP conjunction. Korean data from clauses combining with two kinds of nouns (nouns like *cwucang* 'claim' and nouns like *sanghwang* 'situation') provides evidence for a more fine-grained periphery of embedded CPs, and I will propose that there are in fact two functional elements responsible for the constraints that we observe with embedded conjunction: a displacement-introducing head (Cont), and a complementizer head (Comp) that introduces *exemplification* relation (Deigan 2020; Kratzer 1989, 2020). Thus, in addition to the equality semantics of displacement (Bassi and Bondarenko 2021), the exemplification relation introduced by complementizers is another source of logical triviality and ungrammaticality of CP conjunctions.

One implication of my proposal is that true conjunction of constituents above TP is never possible: meanings of sentences involving such structures are always deviant—either trivially false, or redundant. And the ban on CP conjunction is a direct consequence of the semantics of clausal embedding, for which we have independent motivation (Elliott 2020; Moulton 2009)

This paper is structured as follows. Section 2 discusses two explanations for the the wide scope of CP conjunction proposed in the literature: the Comp-as-Lift theory (Szabolcsi 1997, 2016), and the Conjunction Reduction theory (Bassi and Bondarenko 2021). Section 3 makes a proposal about the syntax and semantics of two kinds of clauses in Korean, building on the ideas suggested in (Bondarenko 2021): clauses that combine with nouns like *cwucang* 'claim' and clauses that combine with nouns like *sanghwang* 'situation'. Section 4 discusses the predictions for embedded conjunction under my proposal, as well as under an alternative proposal of the Comp-as-Lift theory. Section 5 shows the results and argues that the data from Korean embedded CP conjunction provides an argument for the CR theory. Section 6 observes that appealing to logical triviality is not enough in order to account for the ungrammaticality of CP conjunction, and suggests that a ban on redundancy is needed to supplement the current proposal. Section 7 concludes the paper.

## 2 Two explanations for the wide scope of CP conjunction

### 2.1 Comp-as-Lift Theory

Comp-as-Lift theory (Szabolcsi 1997, 2016) proposes that the complementizers have meanings equivalent to the type-shifter Lift, (5): they take a

proposition ($p$) and a set of propositions ($V$ = *verbal meaning*), and return 1 iff the proposition is in that set.[3]

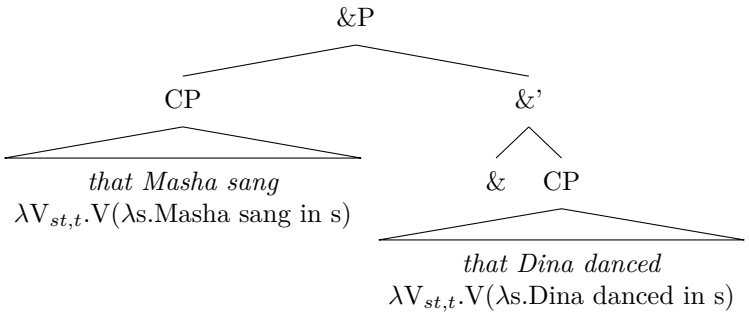
(5) $[\![\text{that}]\!]^s = \lambda \text{p}_{st}.\lambda \text{V}_{st,t}.\text{V(p)}$

On this account, *'CP and CP'* strings are instances of true conjunction: the two clauses have the same type and thus can be conjoined by Generalized Conjunction (Partee and Rooth 1983). Thus, CP conjunctions like in (6a) will have the structure in (6b) and the interpretation in (6c).

(6) ***'CP and CP'* on the Comp-as-Lift Theory**

a. [$_{CP}$ that Masha sang] and [$_{CP}$ that Dina danced]

b.




c. $[\![[_{CP}$ that Masha sang] and [$_{CP}$ that Dina danced]$]\!]^s =$
$\lambda \mathbf{V}_{st,t}.\ \mathbf{V}(\lambda$s'.Masha sang in s') $\wedge\ \mathbf{V}(\lambda$s'.Dina danced in s')

CP conjunction takes the verbal meaning as its argument, and applies it twice: both to the proposition *Masha sang*, and to the proposition *Dina danced*. This will derive the wide scope of conjunction in the sentence, (7).

(7) $[\![$I doubt [[**that** Masha sang] and [**that** Dina danced]]$]\!]^s =$
*doubt*(Speaker)(λs'.Masha sang in s')
$\wedge$ *doubt*(Speaker)(λs'.Dina danced in s')
$\rightsquigarrow$ *The speaker must both doubt that M. sang and doubt that D. danced*

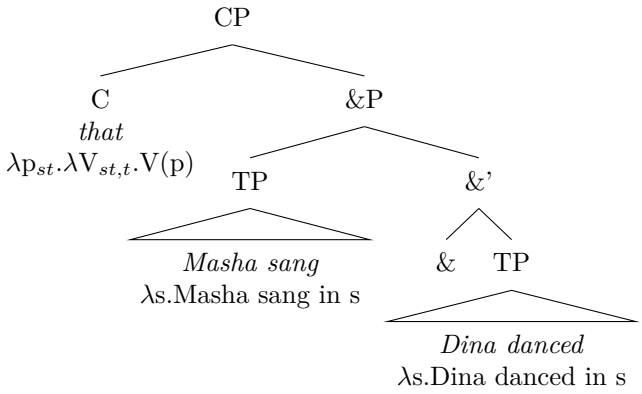
When we conjoin two TPs under a single complementizer, the resulting CP will denote a function that takes the verbal meaning, and applies it once to the conjunctive proposition, (8).

(8) ***'Comp TP and TP'* on the Comp-as-Lift Theory**

a. [[$_{CP}$ that [$_{TP}$ Masha sang] and [$_{TP}$ Dina danced]]

[3] I reformulate the lexical entries to be in line with the framework of situation semantics that I will adopt in this paper (Kratzer 1989, 2020). This should not affect any predictions of the proposal as far as I can tell.

b.




c. $[\![[[_{CP}$ that $[_{TP}$ Masha sang] and $[_{TP}$ Dina danced]]$]\!]^s$ =
$\lambda \mathbf{V}_{st,t}$. $\mathbf{V}$(λs'.Masha sang in s' ∧ Dina danced in s')

This correctly derives the narrow scope of embedded conjunction, (9).

(9) $[\![$I doubt [**that** [Masha sang] and [Dina danced]]$]\!]^s$ =
*doubt*(Speaker)(λs'.Masha sang in s' ∧ Dina danced in s')
⇝ *It's sufficient that the Speaker doubts that the combination of Masha singing and Dina dancing took place.*

To sum up, according to the Comp-as-Lift theory, complementizers are "lifting" type-shifters that reverse argument-predicate relations, and this is what ensures the wide scope of embedded CP conjunction. Since the wide scope arises as a direct consequence of COMP's semantics, we do not expect the syntax of conjunction to matter: e.g., whether conjunction at hand is sensitive to the presence of ellipsis or not should not make a difference.

## 2.2 Conjunction Reduction (CR) Theory

Conjunction Reduction (CR) theory (Bassi and Bondarenko 2021) builds off the proposal that the source of displacement in attitude reports—shift to some other situations distinct from the situation of evaluation (von Fintel and Heim 1997-2020; Hockett 1960)—is within the embedded clause: clauses denote properties of particulars that have propositional content (Kratzer 2006). It adopts a particular version of this approach (Elliott 2020; Moulton 2009), according to which semantics of displacement involves *equating* two propositions (henceforth, *equality semantics* of displacement): the propositional content associated with some particular and the embedded proposition. The complementizers on this view have the denotation in (10), where CONT is a partial function, (11), that is defined for particulars with propositional content (e.g., ideas, thoughts, beliefs, saying events, etc.), and returns the proposition associated with such a particular. Thus, embedded CPs have denotations as in (12).

(10) $[\![\text{that}]\!]^s = \lambda p_{st}.\lambda x.\textsc{Cont}(x) = p$

(11) CONT(ENT) is a partial function: $D_e \rightarrow D_{st}$,
where $D_e$ is the domain of individuals; $D_s$ is the domain of situations;
$D_s \subset D_e$ (all situations are individuals).

(12) $[\![\text{that Masha sang}]\!]^s = \lambda x.\text{CONT}(x) = \{s\text{': Masha sang in s'}\}$

One piece of evidence in favor of the equality semantics comes from the *Maximize Presupposition!* effect with the noun *fact* (Elliott 2020): when this noun combines with an embedded clause, the use of the definite article is required, (13). Elliott (2020) shows that this effect is unexpected if semantics of clausal embedding involves establishing a subset relation between propositional content of entities and embedded propositions: there can never exist a unique fact such that in all situations *compatible with its content* it is raining.[4] There however can be a unique fact whose content *equals* the embedded proposition, under the assumption that every true proposition is the content of a unique fact, and every fact has as its content a unique true proposition.

(13) a. Darcy mentioned a fact (*that it's raining).
b. Darcy mentioned the fact (that it's raining).
c. Darcy mentioned two facts (*that it's raining).
(Elliott 2020:146)

The equality semantics predicts that two embedded CPs should never be able to conjoin via Generalized Conjunction. Consider (14):

(14) $[\![[_{CP}$ that Masha sang] and $[_{CP}$ that Dina danced$]\!]^s =$
$\lambda x.\ \text{CONT}(x) = \{s\text{': Masha sang in s'}\}$
$\wedge\ \text{CONT}(x) = \{s\text{': Dina danced in s'}\} = \varnothing$

Because CONT is a function, it cannot take the same entity as its argument and return two distinct propositions. This means that sentences which contain true CP conjunction, (14), will always be false. Bassi and Bondarenko (2021) propose that this semantic deviance that we observe leads to ungrammaticality. Note that on their account CONT is contributed by a functional (= "logical") element—the complementizer. Thus, sentences with constituents like in (14) are *L-analytic*, (15): trivially false in the virtue of their logical structure. It has been proposed that L-analyticity leads to ungrammaticality (Barwise and Cooper 1981; Chierchia 2013; von Fintel 1993; Gajewski 2002, a.m.o.), and hence we expect sentences with true CP conjunction to be impossible.

(15) *L(ogical)-analyticity* (Gajewski 2002)
a. L-analytic sentences are those that are true or false in virtue of their logical structure.
b. L-analytic sentences are ungrammatical.

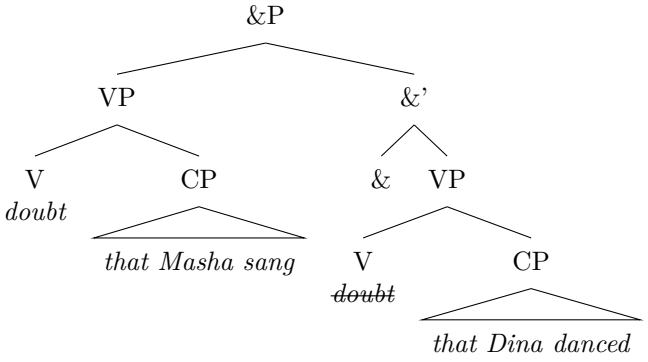
[4] For example, if it is true in the world that it is raining, and it is also true that it is Tuesday, then there is a fact whose content is *"It is raining and it is Tuesday"*, and it is a fact such that in all situations *compatible with its content* it is raining. Thus, in any world there will always be numerous facts that satisfy the description *fact that it's raining* on the subset semantics. This makes an incorrect prediction that the indefinite article should be used.

This of course raises the question of how sentences containing strings like *'CP and CP'* are derived. Bassi and Bondarenko (2021) argue that such strings arise from structures in which higher constituents (at least matrix VPs) are conjoined, followed by Conjunction Reduction—non-pronunciation of some of the repeated material in one of the conjuncts. For example, *'doubt that Masha sang and that Dina danced'* can correspond to the structure in (16b).

(16) ***'CP and CP'* on the Conjunction Reduction Theory**

a. $[_{VP}$ doubt [that Masha sang]] and $[_{VP}$ ~~doubt~~ [that Dina danced]]

b.




c. $[\![[_{VP}$ doubt $[_{CP}$ that Masha sang]]$]\!]^s$ =
$\lambda$s'. doubt(s')$_s$ $\wedge$ CONT(s') = {s: Masha sang in s}

d. $[\![[_{VP}$ doubt [that Masha sang]] and $[_{VP}$ ~~doubt~~ [that Dina danced]]$]\!]^s$
= $\exists$s'[doubt(s')$_s$ $\wedge$ CONT(s') = {s: Masha sang in s}]
$\wedge$ $\exists$s"[doubt(s")$_s$ $\wedge$ CONT(s") = {s: Dina danced in s}]

Assuming that *doubt* denotes a predicate of doubting situations,[5] we can combine it with the embedded clause by Predicate Modification (Elliott 2020), and the VP will thus denote a set of doubting situations such that the propositional content associated with them equals the embedded proposition, (16c). Because the sentence with a string *'CP and CP'* in fact involves VP conjunction, *and* will take wide scope with respect to the verb: (16d) asserts that there are two distinct doubting situations, one of doubting that Masha sang, and another one of doubting that Dina danced. Thus, the sentence will be false if the speaker only finds the combination of the two propositions unlikely, (17).

(17) $[\![$I doubt [[**that** Masha sang] and [**that** Dina danced]]$]\!]^s$ =
$\exists$s'[doubt(s')$_s$ $\wedge$ Exp(s')=Speaker $\wedge$ CONT(s')={s: M. sang in s}]
$\wedge\exists$s"[doubt(s")$_s$ $\wedge$ Exp(s")=Speaker $\wedge$ CONT(s")={s: D. danced in s}]
$\rightsquigarrow$ *The speaker must both doubt that M. sang and doubt that D. danced*

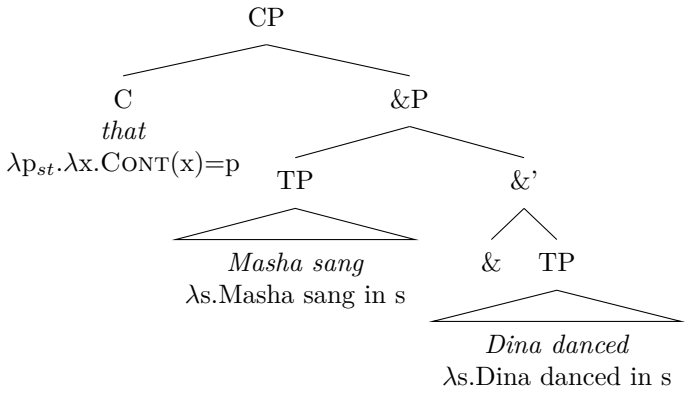
[5] One might wonder what it means to be a doubting situation. It seems that the following simplifying assumption can be made: a situation $s$ is a doubting situation with propositional content $p$ if $s$ is a mental state with propositional content $p$ such that the attitude holder of $s$ considers $p$ (= the content of $s$) unlikely to be true in the situation of evaluation.

In sentences with TP conjunction, the complementizer equates the conjunctive proposition with the content of the individual argument, (18).

(18) ***'Comp TP and TP'* on the Conjunction Reduction Theory**

a. [[$_{CP}$ that [$_{TP}$ Masha sang] and [$_{TP}$ Dina danced]]

b.




c. ⟦[[$_{CP}$ that [$_{TP}$ Masha sang] and [$_{TP}$ Dina danced]]⟧$^{s}$ =
λx.CONT(x) = {s': Masha sang in s' and Dina danced in s'}

This correctly derives the narrow scope of embedded conjunction, (19).

(19) ⟦I doubt [**that** [Masha sang] and [Dina danced]]⟧$^{s}$ =
∃s'[doubt(s')$_{s}$ ∧ Exp(s')=Speaker ∧ CONT(s') = {s: Masha sang in s and Dina danced in s}]
⇝ *It's sufficient that the speaker finds the combination of Masha singing and Dina dancing unlikely to have occurred.*

To sum up, according to the CR theory, the complementizers introduce displacement: they equate the embedded proposition with the propositional content of some entity (situation or proper individual). The equality semantics makes true intersective CP conjunction L-analytic, and thus ungrammatical. On this view, the wide scope in sentences with *'CP and CP'* strings arises because they involve conjunction of higher constituents (e.g., VP conjunction) followed by Conjunction Reduction. Thus, this approach expects the availability of ellipsis to matter: in cases when Conjunction Reduction is unavailable, we expect to see ungrammaticality of sentences with *'CP and CP'* strings.

## 3 Proposal: structure & meaning of Korean embedded CPs

We have seen that both Comp-as-Lift theory and CR theory successfully account for the wide scope of embedded CP conjunction. However, they make different cross-linguistic predictions: Only the CR theory expects the grammaticality of *'CP and CP'* strings to depend on availability of CR in a given

configuration. With the data from Korean, I would like to argue that we do in fact find such dependence (sections 4-5). However, we need to make certain modifications to the CR proposal (section 3.2) in order to account for the patterns of clausal embedding that we see in Korean (section 3.1).

### 3.1 Two kinds of embedded CPs: Cont-CPs and Sit-CPs

Both Comp-as-Lift theory and CR theory assumed that embedded clauses are uniform in their structure and meaning, and that sentences containing them always involve displacement (von Fintel and Heim 1997-2020; Hockett 1960): shift from the situation of evaluation to the set of situations determined by the clause-embedding verb. Moreover, CR theory relied on the nature of displacement (*equality semantics*) in order to account for the wide scope of embedded CP conjunction. These assumptions however cannot be maintained: embedded clauses can have different structures, and not all sentences with them introduce displacement. Let us illustrate this with data from Korean.

Korean has several ways of combining clauses with verbs and nouns. (20) illustrates three common complementation strategies with verbs, (Shim and Ihsane 2015), and (21) shows two kinds of clauses that we see with nouns. First, note that the endings of clauses which modify verbs and nouns differ: verbs combine with clauses with the complementizer *ko*, (20a), nouns combine with clauses that bear the so-called "adnominal marker" *-nun*, (21). In addition, verbs can combine with nominalized clauses, which consist of a bleached noun *kes* 'thing' modified by a clause with the adnominal marker, (20b)-(20c).

(20) *Three complementation patterns with verbs in Korean*

a. Kibo-nun [Dana-ka i chayk-ul ilk-**ess-ta-ko**]
Kibo-TOP Dana-NOM this book-ACC read-**pst-decl-comp**
yukamsulewehay-ss-ta /mit-ess-ta.
regret-PST-DECL /believe-PST-DECL
'Kibo regretted/believed that Dana read this book.'

b. Kibo-nun [Dana-ka i chayk-ul ilk-**ess-ta-nun**
Kibo-TOP Dana-NOM this book-ACC read-**pst-decl-adn**
**kes-ul**] yukamsulewehay-ss-ta /mit-ess-ta.
**thing-acc** regret-PST-DECL /believe-PST-DECL
'Kibo regretted/believed that Dana read this book.'

c. Kibo-nun [Dana-ka i chayk-ul ilk-**un** **kes-ul**]
Kibo-TOP Dana-NOM this book-ACC read-**adn thing-acc**
yukamsulewehay-ss-ta /mit-ess-ta.
regret-PST-DECL /believe-PST-DECL
'Kibo regretted/believed that Dana read this book.'
(Shim and Ihsane 2015:131, ex. (4))

Shim and Ihsane (2015) claim that clauses like (20a) and (20b) are full CPs, but clauses like (20c) are reduced. Indeed, we see that the past tense

morpheme and the so-called "declarative marker" *-ta* are absent from these clauses: the adnominal marker combines directly with the verbal root. The same distinction can be observed with clauses that combine with nouns, (21a)-(21b).[6] In this paper I focus on clauses that combine with nouns, although my proposal will extend to the clauses that combine with verbs as well.

(21) *Two complementation patterns with nouns in Korean*

a. [Swuna-ka mwuncey-lul phwul-**ess-ta-nun**] cwucang-i
Swuna-NOM problem-ACC solve-**pst-decl-adn** claim-NOM
/somwun-i sasil-i-ta. *Cont-CP*
/rumor-NOM fact-COP-DECL
'The claim/rumor that Swuna solved the problem is a fact.'

b. [Swuna-ka mwuncey-lul phwul-**un**] sanghwang-i
Swuna-NOM problem-ACC solve-**adn** situation-NOM
/kyengwu-ka hungmilop-ta *Sit-CP*
/case-NOM interesting-DECL
'The situation/case that Swuna solved the problem is interesting.'

The distinction in the size of the clauses in (21) goes hand in hand with a difference in what kinds of nouns the clauses combine with (Bondarenko 2021). Clauses that contain overt tense and the declarative marker combine with nouns that describe entities with propositional content, like rumors, claims, beliefs, etc. Following (Bondarenko 2021), I will call such nouns content nouns (Cont-NPs), and clauses that combine with them Cont(ent)-CPs. Clauses that lack these morphemes combine with nouns that describe situations or circumstances of some kind: situation, case, event, etc. I will call such nouns situation nouns (Sit-NPs), and clauses that combine with them Sit(uation)-CPs.

Cont-CPs in Korean obligatorily contain overt tense and declarative morphemes in their structure, (22). Sit-CPs lack these markers, (23).

(22) a. [Swuna-ka norayha-**yess-ta-nun**] cwucang-i
Swuna-NOM sing-**PST-DECL-ADN** claim-NOM
'the claim that Swuna sang'
b. *[Swuna-ka norayha-ta-nun] cwucang-i
c. *[Swuna-ka norayha-yess-(n)un] cwucang-i
d. *[Swuna-ka norayha-(nu)n] cwucang-i

(23) a. [Swuna-ka norayha-**n**] sanghwang-i
Swuna-NOM sing-**ADN** situation-NOM
'the situation that Swuna sang'
b. *[Swuna-ka norayha-yess-ta-nun] sanghwang-i
c. *[Swuna-ka norayha-yess-(n)un] sanghwang-i
d. *[Swuna-ka norayha-ta-nun] sanghwang-i

[6] Unless noted otherwise, the Korean data presented in this paper comes from elicitations with 4 native speakers of Korean that the author conducted in 2020–2023. All of the speakers are currently graduate students in linguistics in US, but lived in Korea most of their lives.

While Sit-CPs cannot contain morphemes like *-ess* (PST), temporal distinctions are nevertheless expressed in these clauses. The adnominal marker in Sit-CPs shows allomorphic variation conditioned by the tense of the embedded eventuality: *-(u)n* for past tense, *-nun* for present tense, *-(u)l* for future tense.[7] For example, in (24)-(25) we see that if the embedded eventuality is in the past, *-(u)n* must be used, but if it is in the future, *-(u)l* must be used.

(24) Mina-ka [Swuna-ka mwuncey-lul phwul-**un**] sanghwang-ul
Mina-NOM Swuna-NOM problem-ACC solve-**PST.ADN** situation-ACC
kiekha-n-ta
remember-PRS-DECL
'Mina remembers the situation that Swuna solved the problem.'
*(**solve** < **remember**, *solve ∼ remember, *remember < solve)*

(25) Mina-ka [Swuna-ka mwuncey-lul phwul-**ul**] sanghwang-ul
Mina-NOM Swuna-NOM problem-ACC solve-**FUT.ADN** situation-ACC
kiekha-n-ta
remember-PRS-DECL
'Mina remembers the situation that Swuna will solve the problem.'
*(*solve < remember, *solve ∼ remember, **remember** < **solve**)*

Moreover, we will later see (section 5) that morphemes like *-ess* can occur in Sit-CPs when they are not adjacent to the adnominal marker. Thus, I will assume that both Cont-CPs and Sit-CPs contain a TP in their structures.

The main morphosyntactic difference between Cont-CPs and Sit-CPs then is that only the former contain the declarative marker *-ta*. This difference goes hand-in-hand with a semantic distinction (Bondarenko 2021): whereas Cont-CPs are *referentially opaque*, Sit-CPs are *referentially transparent* (see Barwise 1981; Higginbotham 1983; Perry and Barwise 1983, a.o.). For example, compare the sentences in (26) and (27).

(26) *Opacity with Cont-CPs:* from {(a), (b)} ⇏ (c)

a. Swuna-ka [**hoysa-ka** hyepsang-ul ha-l
Swuna-NOM **company-NOM** negotiation-ACC do-FUT.ADN
cwunpi-ka toy-ess-**ta**-nun kes-ul]
preparation-NOM become-PST-**DECL**-ADN thing-ACC
kuncengcek-ulo haysekha-yess-ta.
positive-as interpret-PST-DECL
'Swuna interpreted that the company is ready for negotiations as a good thing.'

b. I hoysa-ka kacang khun sekyuhoysa-i-ta.
this company-NOM most large oil.company-COP-DECL

[7] In Cont-CPs, only two of the allomorphs can be used, *-(u)n* and *-nun*, and they show free variation: both options are usually judged as acceptable, but they do not express any temporal information about the embedded event—tense in Cont-CPs is always expressed by morphemes preceding the declarative marker. It seems that the insertion of the head hosting the declarative marker blocks allomorphy between T and the adnominal marker.

'This company is the biggest oil company.'

c. Swuna-ka [**kacang khun sekyuhoysa-ka**
Swuna-NOM **most large oil.company-NOM**
hyepsang-ul ha-l cwunpi-ka
negotiation-ACC do-FUT.ADN preparation-NOM
toy-ess-**ta**-nun kes-ul] kuncengcek-ulo
become-PST-**DECL**-ADN thing-ACC positive-as
haysekha-yess-ta.
interpret-PST-DECL
'Swuna interpreted that the biggest oil company is ready for negotiations as a good thing.'

(27) *Transparency with Sit-CPs:* from {(a), (b)} ⇒ (c)

a. Mina-ka [**Swuna-ka** mwuncey-lul phwul-un] sanghwang-ul
Mina-NOM **Swuna-NOM** problem-ACC solve-ADN situation-ACC
kiekhay-ss-ta.
remember-PST-DECL
'Mina remembers (the situation) that Swuna solved the problem.'

b. Swuna-ka pan-eyse kacang khi-ga khu-ta.
Swuna-NOM class-LOC most height-NOM large-DECL
'Swuna is the tallest girl in the class.'

c. Mina-ka [**pan-eyse kacang khi-ga khun sonye-ka**
Mina-NOM **class-LOC most height-NOM large girl-NOM**
mwuncey-lul phwul-un] sanghwang-ul kiekhay-ss-ta.
problem-ACC solve-ADN situation-ACC remember-PST-DECL
'Mina remembers (the situation) that the tallest girl in the class solved the problem.'

(26) has a reading under which (26a) and (26b) can be true, but (26c) is false. The company under consideration might be the biggest oil company in the actual world, but Swuna interpreting some statement, according to which the company is ready for negotiations does not imply that she interpreted a statement according to which the biggest oil company is ready for negotiations: in situations according to the statement that she interpreted, the company might not be the biggest oil company. In (27) the premises, (27a)-(27b), necessitate the truth of (27c): as soon as Swuna is the tallest girl in the class in the actual world, Mina remembering Swuna solving the problem implies Mina remembering the tallest girl in the class solving the problem, even if she is not aware that Swuna is the tallest girl. The availability of referentially opaque readings tracks the presence of *displacement* (von Fintel and Heim 1997-2020; Hockett 1960): the reason that the entailment in (26) does not go through is that it is possible to understand predicates of the embedded clause being evaluated at some set of situations distinct from the matrix situation of evaluation (situations according some statement/claim that Swuna interpreted). The same is not possible with Sit-CPs, which lack displacement.

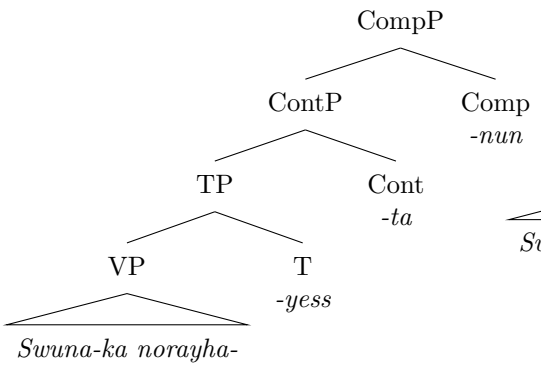
### 3.2 Two heads at the left periphery: Cont and Comp

I adopt the proposal sketched in (Bondarenko 2021) for the syntax and semantics of Cont-CPs and Sit-CPs. According to it, there are two functional projections at the left periphery that are responsible for the semantics of clausal embedding: Cont(ent), which is a head responsible for introduction of displacement, and Comp(lementizer), which is a head responsible for introducing the *exemplification* relation (Kratzer 1989, 2020) into the meanings of embedded clauses. Sit-CPs lack Cont, and so lack displacement. While in some languages some of these heads might be null, I would like to suggest that in Korean both receive overt expression: the declarative marker *-ta* is the exponent of Cont (see also Moulton, Bogal-Allbritten, and Shimoyama 2020), and the adnominal marker (*-(u)n /-nun/-(u)l*) is the exponent of Comp. Thus, the clauses modifying nouns in (28)-(29) will have the structures in (30)-(31) respectively.

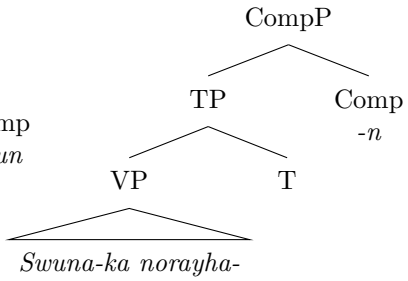
(28) [Swuna-ka norayha-**yess-ta-nun**] cwucang-i
Swuna-NOM sing-**PST-DECL-ADN** claim-NOM
'the claim that Swuna sang'

(29) [Swuna-ka norayha-**n**] sanghwang-i
Swuna-NOM sing-**ADN** situation-NOM
'the situation that Swuna sang'

(30) **Structure of Cont-CPs**




(31) **Structure of Sit-CPs**




Now let us turn to the semantics of the Cont and Comp heads, and the resulting embedded clauses. I will adopt the framework of situation semantics (Kratzer 1989, 2020), in which propositions are viewed as sets of (potentially non-minimal) situations. I will also assume that the domain of situations is a proper subset of the domain of individuals ($D_s \subset D_e$). I propose that the heads Cont and Comp have the denotations in (32) and (33) respectively, and the exemplification relation introduced in (33) is defined in (34).

(32) $[\![\text{Cont}]\!]^s = \lambda p.\lambda x.\ \textsc{Cont}(x) = p$

(33) $[\![\text{Comp}]\!]^s = \lambda p.\lambda x.\ x \Vdash_e p$

(34) **Exemplification** (based on Deigan 2020; Kratzer 1990, 2002, 2020)
For any individual $x \in D_e$ and predicate $p \in D_{et}$:
x exemplifies p $=_{abbr}$ x $\Vdash_e$ p $=_{def}$
$x \in p \quad \wedge \quad (\forall x'[x' \sqsubset x \Rightarrow x' \in p] \quad \vee \quad \forall x'[x' \sqsubset x \Rightarrow x' \notin p])$

The definition in (34) comes from Kratzer's work (1990; 2002; 2020)[8] and aims to capture the idea that certain entities are *minimal* entities of the relevant sort—the ones which contain everything needed to make the predicate true, but nothing "extra" (cf. also *truthmaker semantics*—Fine 2017a,b,c). An $x$ exemplifies $p$ if that $x$ is a member of $p$, and *the homogeneity condition* holds: either no proper part of $x$ is a member of $p$ (and then $x$ is the minimal entity of which p holds), or $p$ is true of all proper parts of $x$.[9] The two ways to satisfy the homogeneity condition seem to correspond to *telic* vs. *atelic* predicates (Krifka 1998, a.o.): a situation exemplifying *"Swuna sang the song"* will not contain any proper parts that can be described as *"Swuna sang the song"*, whereas a situation exemplifying *"Swuna was singing"* are made up of proper parts in all of which *"Swuna was singing"* is true.

Note that according to this definition, the same situation cannot exemplify two distinct propositions that describe what happens *in* the situation.[10] To see that this is the case, imagine that a situation $s$ was to exemplify both {s': Swuna sang the song in s'} and {s': Hani danced the dance in s'} at the same time. If $s \Vdash_e$ {s': Swuna sang the song in s'}, then it means that $s$ is a situation in which Swuna sang the song. For this to be true, there has to be some part of $s$, let's call it $s'$, that contains just the Swuna singing of the song, and nothing else—no irrelevant things. Let us hypothesize that $s'$ is a proper part of $s$. Since $s' \in$ {s': Swuna sang the song in s'}, and $s$ exemplifies this proposition, this proposition must be true in all proper parts of $s$. But if we take the complement of $s'$ — the part of $s$ that contains everything but $s'$, then {s': Swuna sang the song in s'} will not be true in it. Existence of a part of $s$ in which the proposition is false is at odds with our previous conclusion that the proposition is true in all proper parts of $s$. Since the assumption that $s'$ is a proper part of $s$ gave rise to a contradiction, it must be false, and $s = s'$. But this means that $s$ does not contain anything irrelevant to the truth of the proposition {s': Swuna sang the song in s'}, and so it cannot contain Hani and her dancing the dance. Thus, $s$

[8] In these works, exemplification is a relation that is defined to hold between situations and propositions. I here generalize it as a relation that holds between any individual (situation or not) and a set of individuals (a proposition or a set of non-situational individuals).

[9] In (Kratzer 1990, 2002, 2020) what I here call *the homogeneity condition* is stated in a slightly different (but logically equivalent) form (see Deigan 2020): *"A situation s exemplifies a proposition p if whenever there is a part of s in which p is not true, then s is a minimal situation in which p is true"* (Kratzer 2020).

[10] The definition of exemplification allows the same situation to exemplify two distinct properties of situations if one of them does not describe the internal make-up of the situation. For example, a situation $s$ can exemplify both {s: there is thinking by Mina in s} and {s: Cont(s) = {s': Swuna sang in s'}}: it can be a situation of Mina thinking whose propositional content is *"Swuna sang"*, such that all of its proper parts are also situations of Mina thinking the proposition *"Swuna sang"*. No contradiction arises in this case, because the second proposition describes *the content* of $s$, not what happens *in* $s$.

$\notin$ {s': Hani danced the dance in s'}, which contradicts our initial assumption that *s* exemplifies {s': Hani danced the dance in s'}. The same logic applies to any other two propositions describing the internal make-up of a situation.

Now let us turn to the semantics of CPs. Consider first the semantics of Sit-CPs, which lack the ContP. The complementizer combines with the proposition (= the set of potentially non-minimal situations), and returns the set of situations which exemplify the embedded proposition. So for example, the meaning of the Sit-CP in (29) will be as in (35): it will be a set of situations exemplifying the proposition *Swuna sang*. This set can then combine with the noun 'situation' by Predicate Modification, resulting in (36): a set of minimal situations of Swuna singing.

(35) $[\![\text{Swuna-ka norayha-n}]\!]^s =$
$\lambda$x. x $\Vdash_e$ {s: Swuna sang in s}

(36) $[\![\text{Swuna-ka norayha-n sanghwang}]\!]^s =$
$\lambda$x. situation$_s$(x) $\wedge$ x $\Vdash_e$ {s: Swuna sang in s}

Note that if we didn't introduce exemplification, the meaning of the Sit-CP would be identical to the meaning of the TP: a set of all possible situations (of different sizes) in which Swuna sang. This would leave it unexplained why TPs cannot combine with Sit-NPs without adding the CompP layer, (37), and make some incorrect predictions about the meaning of Sit-CPs (see Bondarenko 2021, 2022). Moreover, we will later (sections 4-5) see that without exemplification we will make wrong predictions about embedded CP conjunction.

(37) *[talamcuy-ka ttangkhong-ul mek-(ess)] sanghwang-i
squirrel-NOM peanut-ACC eat-(PST) situation-NOM
'the situation that the squirrel ate the peanut'

Now let us consider Cont-CPs. Note that the semantics of displacement introduced by Cont, (32), is exactly the same as has been proposed in literature arguing for equality semantics (Bassi and Bondarenko 2021; Bondarenko and Elliott 2024; Elliott 2020; Moulton 2009): the propositional content of some entity is equated with the embedded proposition. But importantly, it is not the complementizer (top-most element of the left periphery) that introduces displacement, but a projection lower in the structure of the clause. Korean provides us with morphological evidence for this: both Cont-CPs and Sit-CPs contain the adnominal marker, the highest element, but only Cont-CPs contain the declarative marker, which is structurally below it, and which tracks the presence/absence of displacement, (26)-(27). While it seems difficult to definitively show that the adnominal marker in Cont-CPs also contributes the exemplification semantics, attributing it such semantics does not seem to lead to any bad predictions, and so I will assume that the meaning of Comp is uniform across the two kinds of clauses. Thus, the meaning of the Cont-CP in (28) is in (38), and the meaning of the noun phrase containing it is in (39).

(38) $[\![\text{Swuna-ka norayha-yess-ta-nun}]\!]^s =$
$\lambda x.\ x \Vdash_e \{y: \textsc{Cont}(y) = \{s: \text{Swuna sang in } s\}\}$

(39) $[\![\text{Swuna-ka norayha-yess-ta-nun cwucang}]\!]^s =$
$\lambda x.\ \text{claim}_s(x) \wedge x \Vdash_e \{y: \textsc{Cont}(y) = \{s: \text{Swuna sang in } s\}\}$

The Cont-CP in (38) denotes a set of entities that exemplify the set of entities whose propositional Content is *Swuna sang*. The Cont-NP, (39), then denotes a set of claims exemplifying things with content *Swuna sang*. The restriction that the exemplification relation imposes on Cont-CPs is as follows. It requires that either all proper parts of the contentful individual at hand have the same propositional content as this individual, or none of them do. I leave the question of whether this requirement is a desired constraint on mereology of entities with propositional content for future work.[11]

## 4 Predictions for Conjunction

Let us now assess predictions for conjunction that the modified version of the Conjunction Reduction theory (section 3.2) and the Comp-as-Lift theory make. They are summarized in tables 1 and 2 respectively.

| | VP | TP | ContP | CompP |
|---|---|---|---|---|
| non-CR structure | narrow scope | narrow scope | * | * |
| CR structure | wide scope when syntactically well-formed | | | |

Table 1: Predictions of the modified Conjunction Reduction Theory

[11] Entities that instantiate both disjuncts of this condition seem to be attested. If someone made a *claim that Swuna danced beautifully*, no part of that claim is *the claim that Swuna danced beautifully*—the proper parts of the claim should probably be attributed contents distinct from the content of the claim, e.g. there might be a part with the content *Swuna danced*, a part with the content *There is dancing*, etc. But there also might be particulars all of whose proper parts have the same content: e.g., if Mina is thinking over and over the same thought *Swuna danced beautifully*, we might suggest that she is engaged in a dynamic thinking event all of whose proper parts have the same content, *Swuna danced beautifully*. What exemplification bans is contenful individuals whose proper parts are not homogeneous: e.g., an individual whose content is *Swuna danced beautifully*, and which has one proper part with content *Swuna danced beautifully*, but another part with a different content, e.g. *Swuna danced*. Or an individual a proper part of which does not have any propositional content (e.g., a claim part of which is a chair). These in general seem to be plausible restrictions, but more research is needed on whether exemplification makes the right generalization about how contents of particulars can be related to contents of their proper parts.

| | VP | TP | ContP | CompP |
|---|---|---|---|---|
| non-CR structure | narrow scope | narrow scope | narrow scope | wide scope |
| CR structure | wide scope when syntactically well-formed | | | |

Table 2: Predictions of the Comp-as-Lift Theory

The amended Conjunction Reduction theory predicts that the availability of conjunction of C-layer projections, ContP and CompP, depends on the availability of Conjunction Reduction. If the possibility of CR is excluded, such conjunctions should be ungrammatical, as their meanings are L-analytic. The impossibility of intersective ContP conjunction is derived in the same way as in (Bassi and Bondarenko 2021): the fact that CONT is a function makes ContP conjunction semantically deviant—it denotes an empty set, (40). Adding exemplification—conjoining CompPs instead of ContPs—will not eliminate this deviance, (41). If $x$ exemplifies a predicate, the predicate must be true of it, (34), and so (41) also asserts that two distinct propositions (*"Swuna sang"* and *"Hani danced"*) are the propositional content of a single individual ($x$), leading to a trivial meaning, and thus ungrammaticality.

(40) *ContP conjunction is trivial*
$[\![[_{ContP}$ [Swuna-ka nolayha-yess-ta]-ko
$[_{ContP}$ Hani-ka chwumchwu-ess-ta]$]\!]^s$ =
$\lambda$x. CONT(x) = {s': Swuna sang in s'}
$\wedge$ CONT(x) = {s': Hani danced in s'} = $\varnothing$

(41) *CompP conjunction in Cont-CPs is trivial*
$[\![[_{CompP}$ [Swuna-ka nolayha-yess-ta-nun]-ko
$[_{CompP}$ Hani-ka chwumchwu-ess-ta-nun]$]\!]^s$ =
$\lambda$x. x $\Vdash_e$ {y: CONT(y) = {s': Swuna sang in s'}}
$\wedge$ x $\Vdash_e$ {y: CONT(y) = {s': Hani danced in s'}} = $\varnothing$

Now let us consider conjunction of Sit-CPs. Since complementizers introduce the exemplification relation, Sit-CP conjunction will have the meaning in (42): a situation that exemplifies Swuna singing, and exemplifies Hani dancing.

(42) *CompP conjunction in Sit-CPs is trivial*
$[\![[_{CompP}$ Swuna-ka nolayha-n(un)]-ko
$[_{CompP}$ Hani-ka chwumchwu-n(un)] $]\!]^s$ =
$\lambda$x. x $\Vdash_e$ {s: Swuna sang in s} $\wedge$ x $\Vdash_e$ {s: Hani danced in s} = $\varnothing$

The predicate in (42) cannot be true of any situation, as a single situation cannot exemplify two distinct propositions (see section 3.2): if $x$ is a minimal situation of Swuna singing, it won't contain any *Hani-dancing* parts inside of it. Conversely, if $x$ is a minimal situation of Hani dancing, it won't contain any *Swuna-singing* parts. Thus, the predicate in (42) will always be an empty set, making the Sit-CP conjunction trivial and sentences containing it ungrammatical. What Sit-CPs show us then is that equality semantics of displacement is

not the only possible cause of the impossibility of CP conjunction: the exemplification relation is another logical element responsible for semantic deviance.

When a structure involves Conjunction Reduction, with matrix VPs or higher projections being conjoined, we are likely to encounter syntactic or phonological constraints on which elements in one of the conjuncts could remain unpronounced. But whenever a structure allows CR, we expect the conjunction to take wide scope with respect to the embedding predicate.

Now let us turn to the predictions of the Comp-as-Lift theory, which does not expect the availability of Conjunction Reduction to matter for the availability and the possible interpretations of embedded CP conjunction. Note that according to this theory, displacement in clausal embedding is introduced by the predicate (verb or noun), not by the embedded clause. In section 3.1 we have seen that the presence of displacement correlates with the presence of the declarative marker *-ta*, which I am assuming occupies a syntactic projection between the TP and the Comp(lementizer) phrase. So the question that the Comp-as-Lift theory has to address is why such correlation holds, if *-ta* is not the element introducing displacement. I think a plausible hypothesis that this theory could adopt is that *-ta* has no semantic contribution, but it is an agreement marker of some sort on a head between TP and CompP that agrees with the verbal or nominal predicate above it, and expones some syntactic feature that indicates the introduction of displacement by the predicate.

Assuming that *-ta* has no semantic contribution, the Comp-as-Lift theory predicts that conjunctions of embedded VPs, TPs, ContPs and CompPs should all be grammatical in structures that do not involve Conjunction Reduction. VP, TP and ContP conjunctions are predicted to result in narrow scope, as in all of these cases it is the two embedded propositions that are conjoined. CompP conjunction is on the other hand predicted to have wide scope, due to the lifting semantics of the complementizer, (43). Finally, the prediction about structures with Conjunction Reduction are the same as in the CR theory: we expect to observe some syntactic restrictions on what material can remain unpronounced—some deletions might not be possible, but when grammatical, sentences should result in wide scope readings.

(43) $[\![[_{CP}$ that Masha sang] and $[_{CP}$ that Dina danced$]\!]^s$ =
$\lambda \mathbf{V}_{st,t}$. $\mathbf{V}$(λs'.Masha sang in s') ∧ $\mathbf{V}$(λs'.Dina danced in s')

Korean provides a good testing ground for the predictions outlined above, as it uses two different conjunctions, *ko* and *kuliko*, depending on whether the structure involves Conjunction Reduction or not. Let us illustrate this with conjunction in sentences without embedded clauses. When two VPs are coordinated and no material is elided in them, conjunction *ko* must be used, (44), using *kuliko* results in ungrammaticality.

(44) ***Non-CR conjunction: ko***

[Mary-ka sakwa-lul mek]-**ko**/*kuliko
Mary-NOM apple-ACC eat- CONJ
[Swuna-ka panana-lul mek]-ess-ta.
Swuna-NOM banana-ACC eat-PST-DECL

'Mary ate an apple and Swuna ate a banana.'

If however there is some material missing in one of the conjuncts, conjunction *kuliko* must be used, (45a)-(45b).

(45) ***CR conjunction: kuliko***

a. *Mary-ka [motun sakwa-lul ~~mek-ess-ta~~]-**ko**
Mary-NOM every apple-ACC ~~eat-PST-DECL~~-**CONJ**
[motun panana-lul] mek-ess-ta.
every banana-ACC eat-PST-DECL
'Mary ate every apple and every banana.'

b. Mary-ka [motun sakwa-lul ~~mek-ess-ta~~] **kuliko**
Mary-NOM every apple-ACC ~~eat-PST-DECL~~ **CONJ**
[motun panana-lul mek-ess-ta].
every banana-ACC eat-PST-DECL
'Mary ate every apple and every banana.'

Note that *kuliko* can have as its "conjuncts" strings that do not form constituents, like for example the subject and the indirect object in (46). This suggests that we are not just dealing with a cross-categorial coordinator, but looking at a structure which involves some kind of ellipsis in one of the conjuncts.

(46) [Swuni-ka Mary-eykey ~~kulim-ul cwu~~], kuliko
Swuni-NOM Mary-DAT CONJ
[Mini-ka Juni-eykey kulim-ul cwu]-ess-ta.
Mini-NOM Juni-DAT picture-ACC give-PST-DECL
'Swuni gave Mary a picture (*some other object ≠ picture), and Mini gave Juni a picture.'

Verbless coordination like the one with *kuliko* has received a variety of analyses in the literature: an ATB movement analysis (Kuno 1978; Saito 1987), analysis with movement of certain constituents followed by ellipsis (Abe and Hoshi 1997; Kim 1997; Sohn 2001), in situ string deletion analysis (Mukai 2003), multiple dominance analysis (D. Chung 2004), an analysis combining several of the approaches above (Ahn and Cho 2006). For our purposes, the exact mechanism that leads to non-pronunciation of constituents in sentences with *kuliko* is not important: all approaches assume that sentences with *kuliko* signal conjunction of higher constituents with some material remaining unpronounced (a configuration we're calling "Conjunction Reduction"), whereas sentences with *ko* are incompatible with such a configuration, and that is all we need for testing the two theories.

Let us update the predictions of the two theories with the information about the two conjunctions in Korean, tables 3–4.

| | VP | TP | ContP | CompP |
|---|---|---|---|---|
| | Verb | tense (e.g. *-ess*) | *-ta* | *-nun/-(u)n/-(u)l* |
| *ko* | narrow scope | narrow scope | * | * |
| *kuliko* | wide scope when syntactically fine | | | |

Table 3: Predictions of the modified Conjunction Reduction Theory

| | VP | TP | ContP | CompP |
|---|---|---|---|---|
| | Verb | tense (e.g. *-ess*) | *-ta* | *-nun/-(u)n/-(u)l* |
| *ko* | narrow scope | narrow scope | narrow scope | wide scope |
| *kuliko* | wide scope when syntactically fine | | | |

Table 4: Predictions of the Comp-as-Lift Theory

In sentences with the CR conjunction *kuliko*, both theories expect to see wide scope readings when the sentence is grammatical, just like in other languages discussed in the literature (English, Hebrew, Italian, Russian). But in sentences with the non-CR conjunction *ko*, predictions of the two theories diverge: the CR theory expects ContP and CompP conjunctions to be ungrammatical, whereas Comp-as-Lift theory expects both to be grammatical, with ContP conjunction resulting in narrow scope readings, and CompP conjunction resulting in wide scope readings. These predictions should hold in both Cont-CPs and Sit-CPs, barring ContP conjunctions with Sit-CPs, which are impossible due to the general impossibility of ContPs in their structure.

## 5 Results: an argument in favor of the CR theory

The results of testing embedded *ko* and *kuliko* conjunctions are summarized in table 5. As we see, they exactly match the predictions of the CR theory.

| | VP | TP | ContP | CompP |
|---|---|---|---|---|
| | Verb | tense (e.g. *-ess*) | *-ta* | *-nun/-(u)n/-(u)l* |
| *ko* | narrow scope | narrow scope | * | * |
| *kuliko* | * | * | * | wide scope |

Table 5: Grammaticality of *ko* and *kuliko* as embedded conjunctions

In section 5.1, I discuss the key data that argues in favor of the CR theory; data from ContP and CompP conjunction in sentences without Conjunction Reduction. In section 5.2, I show that embedded VP and TP conjunctions have narrow scope, as is expected on both accounts. In section 5.3, I discuss what happens in Conjunction Reduction structures with *kuliko*: only CompPs can be conjoined, and only wide scope readings are available, as is expected.

### 5.1 Impossibility of CP conjunction

The crucial pieces of Korean data are presented in (47)-(49): they show us the impossibility of true embedded CP conjunction.

(47) *ContP conjunction with Cont-CP*
*Mina-ka [Swuna-ka nolayha-yess-**ta**]-**ko** [Hani-ka
Mina-NOM Swuna-NOM sing-PST-**decl-conj** Hani-NOM
chwumchwu-ess-**ta**]-nun cwucang-ul kiekha-n-ta
dance-PST-**decl**-ADN claim-ACC remember-PRS-DECL
'Mina remembers the claim that Swuna sang and that Hani danced.'

(48) *CompP conjunction with Sit-CP*
*Mina-ka [Swuna-ka nolayha-**nun**]-**ko** [Hani-ka
Mina-NOM Swuna-NOM sing-**adn-conj** Hani-NOM
chwumchwu-**n(un)**] sanghwang-ul kiekha-ss-ta
dance-**adn** situation-ACC remember-PST-DECL
'Mina remembered the situation that Swuna sang and that Hani danced.'

(49) *CompP conjunction with Cont-CP*
*Mina-ka [Swuna-ka nolayha-yess-ta-**nun**]-**ko** [Hani-ka
Mina-NOM Swuna-NOM sing-PST-DECL-**adn-conj** Hani-NOM
chwumchwu-ess-ta-**nun**] cwucang-ul kiekha-n-ta
dance-PST-DECL-**adn** claim-ACC remember-PRS-DECL
'Mina remembers the claim that Swuna sang and that Hani danced.'

In (47) we see an attempt to conjoin two ContPs inside of the Cont-CP. On the CR theory, this is predicted to be impossible, because the equality semantics of displacement, introduced by the declarative marker *-ta*, makes the resulted conjunction L-analytic. (48) illustrates the impossibility of CompP conjunction with Sit-CPs. Note that the ungrammaticality of (48) does not follow from the account proposed in (Bassi and Bondarenko 2021): since the semantics of Sit-CPs involves no displacement, it can't be the equality semantics of displacement that makes (48) bad. However, if complementizers introduce the exemplification relation, impossibility of Sit-CP conjunction is expected. Finally, (49) is correctly predicted to be ungrammatical by the CR theory, for the same reason as the ill-formedness of (47): since in order for an entity to exemplify a predicate the predicate must be true of it, equality semantics introduced by the CONT function predicts (49) to be L-analytic too.

The Comp-as-Lift theory makes wrong predictions: it expects (47) to be possible and have the narrow scope of the conjunction, and (48)-(49) to also be well-formed, but have the wide scope reading of conjunction, as the latter contains the type-shifting complementizer. As we see, this is not borne out.

### 5.2 *V*P and TP conjunction within embedded CPs

When it comes to VP and TP conjunction by *ko*, both theories account well for the data: such conjunction is indeed possible, and gives rise exclusively to narrow scope readings. To illustrate this, I will be using the emotive verb *silh* 'dislike'. I chose this verb because it is not distributive: it is possible to dislike a combination of things without disliking all the parts that make them up individually. (50) presents a narrow scope context for Sit-CP conjunction: in the described scenario, the speaker likes Swuna solving the problem, but not the teacher's concealing of this fact. We see that in such case it's possible for the speaker to utter (50), followed by both VP conjunction, (51), and TP conjunction, (52), within a clause under the noun *sanghwang* 'situation'.[12,13]

(50) **Narrow scope context for Sit-CPs:**
There is a competition: the first student in class to solve the problem wins. Swuna was the first student to solve the problem, but the teacher didn't tell the students right away that there already was a winner, and they kept trying to solve it for a while. The speaker likes it that Swuna was the first to solve the problem, but doesn't like that the teacher concealed the fact that there was a winner.

Na-nun Swuna-ka mwuncey-lul phul-un sanghwang-i
I-TOP Swuna-NOM problem-ACC solve-ADN situation-NOM
silh-ci.anh-ta...
dislike-NEG-DECL

'I don't dislike the situation that Swuna solved the problem...'

(51) *VP conjunction with Sit-CPs, narrow scope context in (50)*
...Na-nun [Swuna-ka mwuncey-lul phul]-**ko** [sensayngnim-kkeyse
I-TOP Swuna-NOM problem-ACC solve-**conj** teacher-HON.NOM
sungca-ka iss-ta-ko malssumha-si-ci.anh]-un
winner-NOM exist-DECL-COMP say.HON-HON-NEG-ADN
sanghwang-i silh-ta.
situation-NOM dislike-DECL

'...I dislike the situation that Swuna solved the problem and the teacher didn't tell us that there is a winner.'

[12] Note that (52) shows us that it is possible to have overt past tense *-ess* in Sit-CPs, as long as tense is not adjacent to the adnominal marker, as is the case in the first conjunct.

[13] I leave distinctions between VP conjunction and TP conjunction for future research. The expectation is that the eventualities of the conjoined VP-level propositions should be co-temporaneous, but the eventualities of the conjoined TP-level propositions need not.

(52) *TP conjunction with Sit-CPs, narrow scope context in (50)*

...Na-nun [Swuna-ka mwuncey-lul phul-**ess**]-**ko**
I-TOP Swuna-NOM problem-ACC solve-**pst-conj**
[sensayngnim-kkeyse sungca-ka iss-ta-ko
teacher-HON.NOM winner-NOM exist-DECL-COMP
malssumha-si-ci.anh-∅**pst**]-un sanghwang-i silh-ta.
say.HON-HON-NEG-**pst**-ADN situation-NOM dislike-DECL

'...I dislike the situation that Swuna solved the problem and the teacher didn't tell us that there is a winner.'

The context for the narrow reading of conjunction in Cont-CPs is in (53). Again, in (54) and (55) we see that embedded VP and TP conjunctions are possible in this context: it could be that the speaker dislikes the claim *"The candidate owned a big company and did money laundering"* without disliking part of this claim with content *"The candidate owned a big company"*.

(53) **Narrow scope context for Cont-CPs:**
There are elections held between two parties. The party that is opposing ours made some statements about our candidate in attempt to draw voters away from her. The speaker thinks that having experience owning a big company would be considered a virtue for a candidate, but laundering money wouldn't be.

Na-nun wuli-uy hwupo-ka khun hoysa-lul
I-TOP we-GEN candidate-NOM big company-ACC
soyuha-yess-ta-nun cwucang-i silh-ci.anh-ta...
own-PST-DECL-ADN claim-NOM dislike-NEG-DECL

'I don't dislike the claim that our candidate owned a big company...'

(54) *VP conjunction with Cont-CPs, narrow scope context in (53)*

...Na-nun [wuli-uy hwupo-ka khun hoysa-lul soyuha]-**ko**
I-TOP we-GEN candidate-NOM big company-ACC own-**conj**
[ton.seythak-ul ha]-yess-ta-nun cwucang-i silh-ta..
money.laundring-ACC do-PST-DECL-ADN claim-NOM dislike-DECL

'...I dislike the claim that our candidate owned a big company and she did money laundering.'

(55) *TP conjunction with Cont-CPs, narrow scope context in (53)*

...Na-nun [wuli-uy hwupo-ka khun hoysa-lul
I-TOP we-GEN candidate-NOM big company-ACC
soyuha-**yess**]-**ko** [ton.seythak-ul ha-**yess**]-ta-nun cwucang-i
own-**pst-conj** money.laundring-ACC do-**pst**-DECL-ADN claim-NOM
silh-ta..
dislike-DECL

'...I dislike the claim that our candidate owned a big company and she did money laundering.'

Now let us show that the wide scope of the VP and TP conjunction is impossible. Here we will have a context where for some $x$ and $y$, the speaker claims that they not only dislike $x$ (and thus the conjunction $dislike(x \sqcup y)$), but that they also dislike $y$ ($dislike(y)$). For Sit-CPs this is the context in (56).

(56) **Wide scope context for Sit-CPs:**
There is a competition: the first student in class to solve the problem wins. Swuna was the first student to solve the problem, but the teacher didn't tell the students right away that there already was a winner, and they kept trying to solve it for a while. In addition to that, Mina and Swuna don't get along well, and really didn't want each other to win. Mina is annoyed:

Na-nun [sensayngnim-kkeyse sungca-ka iss-ta-ko
I-TOP teacher-NOM winner-NOM be.exist-DECL-COMP
malssumha-si-ci.anh-un] sanghwang-man silh-un kes-i
say.hon-HON-NEG-ADN situation-ONLY dislike-ADN thing-NOM
ani-ta...
be.NEG-DECL

'I don't only dislike that the teacher didn't say that there is a winner...' (lit. 'It's not the case that I dislike only the situation of the teacher not saying that there's a winner'.)

A natural continuation of (56) suggested by my consultants involves conjunction with *kuliko* and two NPs:

(57) *Natural continuation of (56): 'NP kuliko NP'*
...Na-nun [sengsayngnim-kkeyse sungca-ka iss-ta-ko
I-TOP teacher-HON winner-NOM be.exist-DECL-COMP
malssumha-si-ci.anh-un] **sanghwang** kuliko [Swuna-ka
say.HON-HON-NEG-ADN **situation** CONJ swuna-NOM
mwuncey-lul phwul-un **sanghwang**]-i motwu silh-ta.
problem-ACC solve-ADN **situation**-NOM both dislike-DECL

'...I dislike both the situation that the teacher didn't say that there is a winner and the situation that Swuna solved the problem. '

Using in this context a Sit-CP with VP conjunction or TP conjunction within the embedded clause is infelicitous, (58)-(59).[14] The modifier *motwu* 'both', which we see in (57) is ungrammatical with VP and TP conjunctions.

[14] My consultants gave ratings between 2 and 3 on a 5-point scale to the sentences with embedded VPs and TPs inside Sit-CPs and Cont-CPs in wide scope contexts. I attribute the fact that *-ko* conjunction is not judged as completely infelicitous to the fact that these sentences are actually true in the provided contexts, they are just pragmatically odd, as they convey the information that is part of the common ground when these sentences are uttered.

(58) *VP conjunction with Sit-CPs, wide scope context in (56)*

#...Na-nun [sengsayngnim-kkeyse sungca-ka iss-ta-ko
I-TOP teacher-HON winner-NOM be.exist-DECL-COMP
malssumha-si-ci.anh]-**ko** [Swuna-ka mwuncey-lul phwul]-un
say.HON-HON-NEG-**conj** swuna-NOM problem-ACC solve-ADN
sanghwang-i (*motwu) silh-ta.
situation-NOM (both) dislike-DECL
'...I dislike the situation that the teacher didn't say that there is a winner and that Swuna solved the problem. '

(59) *TP conjunction with Sit-CPs, wide scope context in (56)*

#...Na-nun [sengsayngnim-kkeyse sungca-ka iss-ta-ko
I-TOP teacher-HON winner-NOM be.exist-DECL-COMP
malssumha-si-ci.anh-**ess**]-**ko** [Swuna-ka mwuncey-lul
say.HON-HON-NEG-**pst-conj** swuna-NOM problem-ACC
phwul-∅**pst**]-un sanghwang-i (*motwu) silh-ta.
solve-**pst**-ADN situation-NOM (both) dislike-DECL
'...I dislike the situation that the teacher didn't say that there is a winner and that Swuna solved the problem. '

In the wide scope context for Cont-CPs, (60), using *kuliko* between two NPs is again the most natural way to express that the speaker disliked both claims about the candidate that were made (61). Using embedded VP or TP conjunction inside an embedded CP modifying a noun is again degraded, (62)-(63).

(60) **Wide scope context for Cont-CPs:** There are elections held between two parties. The party that is opposing our party made some statements about our candidate in attempt to draw voters away from her. The speaker thinks that both owning a big company and laundering money are things that, if believed about our candidate, would disadvantage them.

Na-nun [wuli-uy hwupo-ka ton.seythak-ul
I-TOP we-GEN candidate-NOM money.laundry-ACC
ha-yess-ta-nun] cwucang-man silh-un kes-i ani-ta...
do-PST-DECL-ADN claim-ONLY dislike-ADN kes-NOM be.neg-DECL
'I don't only dislike the claim that our candidate did money laundering...' (lit. 'It's not the case that I dislike only the claim that our candidate did money laundering')

(61) *Natural continuation of (60): 'NP kuliko NP'*

...Na-nun [wuli-uy hwupo-ka ton.seythak-ul
I-TOP we-GEN candidate-NOM money.laundry-ACC
ha-yess-ta-nun] **cwucang-(i)** kuliko [khun hoysa-lul
do-PST-DECL-ADN **claim-(nom)** CONJ big company-ACC
soyuha-yess-ta-nun] **cwucang-i** motwu silh-ta.
own-PST-DECL-ADN **claim-nom** both dislike-DECL

'...I dislike both the claim that our candidate did money laundering and the claim that she owned a big company. '

(62) *VP conjunction with Cont-CPs, wide scope context in (60)*

#...Na-nun [wuli-uy hwupo-ka ton.seythak-ul ha]-**ko**
I-TOP we-GEN candidate-NOM money.laundry-ACC do-**conj**
[khun hoysa-lul soyuha]-yess-ta-nun **cwucang-i** silh-ta.
big company-ACC own-PST-DECL-ADN **claim-nom** dislike-DECL

'...I dislike the claim that our candidate did money laundering and she owned a big company. '

(63) *TP conjunction with Cont-CPs, wide scope context in (60)*

#...Na-nun [wuli-uy hwupo-ka ton.seythak-ul
I-TOP we-GEN candidate-NOM money.laundry-ACC
ha-**yess**]-**ko** [khun hoysa-lul soyuha-**yess**]-ta-nun **cwucang-i**
do-**pst-conj** big company-ACC own-**pst**-DECL-ADN **claim-nom**
silh-ta.
dislike-DECL

'...I dislike the claim that our candidate did money laundering and she owned a big company. '

## 5.3 Conjunction Reduction with *kuliko*

*Kuliko* is the conjunction that occurs in sentences with Conjunction Reduction. It can't be used to coordinate VPs, TPs and ContPs, as is shown in (64)-(65), (66)-(67), and (68) respectively. This is true for both Sit-CPs and Cont-CPs.

(64) *VP conjunction with Sit-CP*

*Mina-ka [Swuna-ka nolayha] **kuliko** [Hani-ka chwumchwu]-n
Mina-NOM Swuna-NOM sing **conj** Hani-NOM dance-ADN
sanghwang-ul kiekha-n-ta
situation-ACC remember-PRS-DECL

'Mina remembers the situation that Swuna sang and Hani danced.'

(65) *VP conjunction with Cont-CP*

*[Swuna-ka nolayha] **kuliko** [Mina-ka chwumchwu]-ess-ta-nun
Swuna-NOM sing **conj** Mina-NOM dance-PST-DECL-ADN
cwucang-i iss-ess-ta
claim-NOM exist-PST-DECL

'There was a claim that Swuna sang and Mina danced.'

(66) *TP conjunction with Sit-CP*

*Na-nun [Swuna-ka mwuncey-lul phul-**ess**] **kuliko**
I-TOP Swuna-NOM problem-ACC solve-**pst** **conj**
[sensayngnim-kkeyse sungca-ka iss-ta-ko
teacher-HON.NOM winner-NOM exist-DECL-COMP
malssumha-si-ci.anh-∅**pst**]-un sanghwang-i silh-ta.
say.HON-HON-NEG-**pst**-ADN situation-NOM dislike-DECL

'I dislike the situation that Swuna solved the problem and the teacher didn't tell us that there is a winner.'

(67) *TP conjunction with Cont-CP*

*[Swuna-ka nolayha-**yess**] **kuliko** [Mina-ka
Swuna-NOM sing-**pst** **conj** Mina-NOM
chwumchwu-**ess**]-ta-nun cwucang-i iss-ess-ta
dance-**pst**-DECL-ADN claim-NOM exist-PST-DECL

'There was a claim that Swuna sang and Mina danced.'

(68) *ContP conjunction with Cont-CP*

*[Swuna-ka nolayha-yess-**ta**] **kuliko** [Mina-ka
Swuna-NOM sing-PST-**decl** **conj** Mina-NOM
chwumchwu-ess-**ta**]-nun cwucang-i iss-ess-ta.
dance-PST-**decl**-ADN claim-I exist-PST-DECL

'There was a claim that Swuna sang and Mina danced.'

This is not a surprising restriction if the sentences above involve matrix VP conjunction with an elided verb and a noun, as all of the sentences above would require the ellipsis to target material across a clausal boundary. For example, the sentence in (68) would require us to keep unpronounced the verb and the noun in one of the conjuncts but then also the complementizer, (69).

(69) [$_{\&P}$[[[NP V-T-Cont-~~Comp~~] ~~N~~] ~~V~~] [& [[[NP V-T-Cont-Comp] N] V]]]

This kind of Conjunction Reduction seems impossible in other languages as well: e.g., consider the example in (70) from Russian.[15]

(70) Mina [uslyšala [slux, [čto Svuna budet pet']] včera], i
Mina heard rumor COMP Swuna FUT sing yesterday CONJ
[~~uslyšala~~ [~~slux~~, [*(čto) Xani *(budet) tanzevat']] pozavčera].
(COMP) Hani (FUT) dance before.yesterday

'Mina heard a rumor that Swuna will dance yesterday, and ~~heard a rumor~~ that Hani will dance the day before yesterday.'

In (70) we know that we are conjoining two VPs (or even higher constituents) because we have two different temporal adverbs modifying the two hearing events. In this configuration, the verb and the noun can be elided, but

[15] This is the judgment of the author, who is a native Russian speaker.

the material inside of the embedded clause cannot be deleted: e.g., the complementizer and the tense marker cannot remain unpronounced. It's likely that we observe in Korean the same syntactic restriction on Conjunction Reduction.

It is possible however to have *kuliko* occur between two CompPs. In such cases, we get obligatory wide scope of conjunction in both Sit-CPs and Cont-CPs. Let us consider Sit-CPs first. In a wide-scope context, (71), the sentence with the string *'CompP kuliko CompP'* is felicitous, (72), and we get exactly the same reading as with matrix VP conjunction, (73).

(71) **Wide scope context:**
There is a competition: the first student in class to solve the problem wins. Swuna was the first student to solve the problem, but the teacher didn't tell the students right away that there already was a winner, and they kept trying to solve it for a while. In addition to that, Mina and Swuna don't get along well, and really didn't want each other to win. Now Mina says:

Na-nun [sensayngnim-kkeyse sungca-ka iss-ta-ko
I-TOP teacher-HON winner-NOM exist-DECL-COMP
malssumha-si-ci.anh-un] sanghwang-man silh-un kes-i
say.HON-HON-NEG-ADN situation-ONLY dislike-ADN thing-NOM
ani-ta...
be.NEG-DECL

'I don't only dislike the situation that the teacher didn't tell us there was a winner...' (lit. 'It's not the case that I dislike only the situation that the teacher didn't tell us there was a winner...')

(72) *CompP AND CompP: ✓ in the context in (71)*
Na-nun [sengsayngnim-kkeyse sungca-ka iss-ta-ko
I-TOP teacher-HON winner-NOM exist-DECL-COMP
malssumha-si-ci.anh-un] **kuliko** [swuna-ka mwuncey-lul
say.HON-HON-NEG-ADN **conj** Swuna-NOM problem-ACC
phwul-un] sanghwang-i (motwu) silh-ta.
solve-ADN situation-NOM (both) dislike-DECL

'I dislike (both) the situation that the teacher didn't tell us there was a winner and ~~dislike the situation~~ that Swuna solved the problem.'

(73) *$VP_{matrix}$ AND $VP_{matrix}$: ✓ in the context in (71)*
na-nun [sengsayngnim-kkeyse sungca-ka iss-ta-ko
I-TOP teacher-HON winner-NOM exist-DECL-COMP
malssumha-si-ci.anh-un sanghwang-i silh]-**ko** [swuna-ka
say.HON-HON-NEG-ADN situation-NOM dislike-**conj** Swuna-NOM
mwuncey-lul phwul-un sanghwang-i silh]-ta.
problem-ACC solve-ADN situation-NOM dislike-DECL

'I dislike the situation that the teacher didn't tell us there was a winner and dislike the situation that Swuna solved the problem.'

Narrow scope is not available for *kuliko* with Sit-CPs: (75) is an infelicitous continuation of (74), just as matrix VP coordination (76).

(74) **Narrow scope context:**
There is a competition: the first student in class to solve the problem wins. Swuna was the first student to solve the problem, but the teacher didn't tell the students right away that there already was a winner, and they kept trying to solve it for a while. The speaker has no negative feelings about Swuna solving the problem.

Na-nun Swuna-ka mwuncey-lul phul-un sanghwang-i
I-TOP Swuna-NOM problem-ACC solve-ADN situation-NOM
silh-un kes-i ani-ta...
dislike-ADN thing-NOM be.NEG-DECL

'I don't dislike the situation that Swuna solved the problem...'
(lit. 'It's not the case that I dislike the situation that Swuna solved the problem')

(75) *CompP AND CompP: ✗ in the context in (74)*

#Na-nun [Swuna-ka mwuncey-lul phul-un] **kuliko**
I-TOP Swuna-NOM problem-ACC solve-ADN **conj**
[sensayngnim-kkeyse sungca-ka iss-ta-ko
teacher-HON winner-NOM exist-DECL-COMP
malssumha-si-ci.anh-un] sanghwang-i silh-ta.
say.HON-HON-NEG-ADN situation-NOM dislike-DECL

'I dislike the situation that Swuna solved the problem and the teacher didn't say that there was a winner.'

(76) *$VP_{matrix}$ AND $VP_{matrix}$: ✗ in the context in (74)*

#Na-nun [Swuna-ka mwuncey-lul phul-un sanghwang-i
I-TOP Swuna-NOM problem-ACC solve-ADN situation-NOM
silh]-**ko** [sensayngnim-kkeyse sungca-ka iss-ta-ko
dislike-**conj** teacher-HON winner-NOM exist-DECL-COMP
malssumha-si-ci.anh-un sanghwang-i silh]-ta.
say.HON-HON-NEG-ADN situation-NOM dislike-DECL

'I dislike the situation that Swuna solved the problem and dislike the situation that the teacher didn't say that there was a winner.'

A felicitous follow-up to (74) would require conjunction of smaller constituents within the embedded clause (see section 5.2).

*Kuliko* conjunction with Cont-CPs also obligatorily takes wide scope. The possibility of the wide scope is illustrated in (77)-(79), and we see that *'CompP kuliko CompP'* strings here again pattern with matrix *v*P conjunction, (79).

(77) **Wide scope context:**
There are elections held between two parties. The party that is opposing to ours made some statements about our candidate in attempt

to draw voters away from her. The speaker thinks that both owning a big company and laundering money are things that, if known about a candidate, would disadvantage them.

Na-nun [wuli-uy hwupo-ka ton.seythak-ul
I-TOP we-GEN candidate-NOM money.laundering-ACC
ha-yess-ta-nun] cwucang-man silh-un kes-i
do-PST-DECL-ADN claim-ONLY dislike-ADN thing-NOM
ani-ta...
be.NEG-DECL

'I don't only dislike the claim that our candidate did money laundering...' (lit. 'It's not the case that I dislike only the claim that our candidate did money laundering...')

(78) *CompP AND CompP: ✓ in the context in (77)*

Na-nun [wuli-uy hwupo-ka ton.seythak-ul
I-TOP we-GEN candidate-NOM money.laundering-ACC
ha-yess-ta-nun] **kuliko** [khun hoysa-lul soyuha-yess-ta-nun]
do-PST-DECL-ADN **conj** big compamy-ACC own-PST-DECL-ADN
cwucang-i silh-ta.
claim-NOM dislike-DECL

'I dislike the claim that our candidate did money laundering and ~~dislike the claim~~ that she owned a big company.'

(79) *$VP_{matrix}$ AND $VP_{matrix}$: ✓ in the context in (77)*

Na-nun [wuli-uy hwupo-ka ton.seythak-ul
I-TOP we-GEN candidate-NOM money.laundering-ACC
ha-yess-ta-nun cwucang-to silh]-**ko** [khun hoysa-lul
do-PST-DECL-ADN claim-ALSO dislike-**conj** big compamy-ACC
soyuha-yess-ta-nun cwucang-i silh]-ta.
own-PST-DECL-ADN claim-NOM dislike-DECL

'I dislike the claim that our candidate did money laundering and dislike the claim that she owned a big company.'

The impossibility of the narrow scope is shown in (80)-(81), and we see that *'CompP kuliko CompP'* strings here are infelicitous, as is matrix VP conjunction, (82). The intuition that my consultants report is that the sentences in (81) and (82) in the provided context feel contradictory: the speaker has just told us they do not dislike the claim that the candidate owned a big company, but now says that they do dislike it.

(80) **Narrow scope context:**
There are elections held between two parties. The party that is opposing ours made some statements about our candidate in attempt to draw voters away from her. The speaker thinks that owning a big

company would be considered a virtue for a candidate, but laundering money wouldn't be.

Na-nun [wuli-uy hwupo-ka khun hoysa-lul
I-TOP we-GEN candidate-NOM big company-ACC
soyuha-yess-ta-nun] cwucang-i silh-ci.anh-ta...
own-PST-DECL-ADN claim-NOM dislike-NEG-DECL

'I don't dislike the claim that our candidate owned a big company...'

(81) *CompP AND CompP: ✗ in the context in (80)*

#Na-nun [wuli-uy hwupo-ka khun hoysa-lul
I-TOP we-GEN candidate-NOM big company-ACC
soyuha-yess-ta-nun] **kuliko** [ton.seythak-ul
own-PST-DECL-ADN **conj** money.laundering-ACC
ha-yess-ta-nun] cwucang-i silh-ta.
do-PST-DECL-ADN claim-NOM dislike-DECL

'I dislike the claim that our candidate owned a big company and did money laundering.'

(82) *$VP_{matrix}$ AND $VP_{matrix}$: ✗ in the context in (80)*

#Na-nun [wuli-uy hwupo-ka khun hoysa-lul
I-TOP we-GEN candidate-NOM big company-ACC
soyuha-yess-ta-nun cwucang-i silh]-**ko** [ton.seythak-ul
own-PST-DECL-ADN claim-NOM dislike-**conj** money.laundering-ACC
ha-yess-ta-nun cwucang-i silh]-ta.
do-PST-DECL-ADN claim-NOM dislike-DECL

'I dislike the claim that our candidate owned a big company and dislike the claim that she did money laundering.'

As with Sit-CPs, a felicitous follow-up to (80) with a Cont-CP would also require embedded VP or TP conjunction.

To sum up, we have seen that in structures with Conjunction Reduction, where the conjunction is spelled out as *kuliko*, the strings *'CompP AND CompP'* are grammatical. In resulting sentences the conjunction always takes wide scope with respect to the matrix verb. In other words, in sentences with *kuliko* we see in Korean the exact same pattern that is reported in the literature for other languages — English, Hungarian, Hebrew, Italian, Russian (Bassi and Bondarenko 2021; Bjorkman 2013; Szabolcsi 1997, 2016). While the wide scope of *kuliko* would be predicted on both Comp-as-Lift theory and CR theory, only CR theory expects the contrast between *ko* and *kuliko* that we observe in Korean. According to CR theory, there is no true conjunction of embedded CPs, and thus whether a conjunction can occur in Conjunction Reduction configurations or not is predicted to correlate with whether strings like *'CP AND CP'* would be attested. In Korean we see that this is borne out.

## 6 The Ban on Redundancy

According to my proposal, the impossibility of CP conjunction is due to L-analyticity (Barwise and Cooper 1981; Chierchia 2013; von Fintel 1993; Gajewski 2002). Recall that I argued that both ContP conjunctions and CompP conjunctions come out as *logically trivial*: due to the semantics of functional elements Cont and Comp, sentences containing such conjunctions are always false, as the same entity cannot have two distinct propositional contents, or exemplify two distinct propositions. The meanings we get for ContP conjunction and CompP conjunction in Sit-CPs are repeated in (83) and (84).

(83) *ContP conjunction is trivial*
$[\![[_{ContP}$ [Swuna-ka nolayha-yess-ta]-ko
$[_{ContP}$ Hani-ka chwumchwu-ess-ta]$]\!]^s$ =
$\lambda$x. $\textsc{Cont}$(x) = {s': Swuna sang in s'}
$\wedge$ $\textsc{Cont}$(x) = {s': Hani danced in s'} = $\varnothing$

(84) *CompP conjunction in Sit-CPs is trivial*
$[\![[_{CompP}$ Swuna-ka nolayha-n(un)]-ko
$[_{CompP}$ Hani-ka chwumchwu-n(un)] $]\!]^s$ =
$\lambda$x. x $\Vdash_e$ {s': Swuna sang in s'} $\wedge$ x $\Vdash_e$ {s': Hani danced in s'} = $\varnothing$

As stated, this proposal faces a problem: it predicts that if the two propositions in the embedded clauses are identical, sentences containing conjoined embedded CPs should no longer be logically trivial and give rise to ungrammaticality. This is so because when the two conjoined CPs contain the same embedded proposition, the resulting meaning will be just equivalent to a single CP with that proposition, (85)-(86).

(85) *ContP conjunction is not trivial with identical propositions*
$[\![[_{ContP}$ [Swuna-ka nolayha-yess-ta]-ko
$[_{ContP}$ Swuna-ka nolayha-yess-ta]$]\!]^s$ =
$\lambda$x. $\textsc{Cont}$(x) = {s': Swuna sang in s'}
$\wedge$ $\textsc{Cont}$(x) = {s': Swuna sang in s'}
= $\lambda$x. $\textsc{Cont}$(x) = {s': Swuna sang in s'}

(86) *CompP conjunction in Sit-CPs is not trivial with identical propositions*
$[\![[_{CompP}$ Swuna-ka nolayha-n(un)]-ko
$[_{CompP}$ Swuna-ka nolayha-n(un)] $]\!]^s$ =
$\lambda$x. x $\Vdash_e$ {'s: Swuna sang in s'} $\wedge$ x $\Vdash_e$ {s': Swuna sang in s'}
= $\lambda$x. x $\Vdash_e$ {s': Swuna sang in s'}

This is however not borne out: neither ContPs, (87), nor CompPs, (88)-(89), can be conjoined even when the two embedded propositions are the same.

(87) *ContP conjunction with Cont-CP*
*Mina-ka [Swuna-ka nolayha-yess-**ta**]-**ko** [Swuna-ka
Mina-NOM Swuna-NOM sing-PST-**decl-conj** Swuna-NOM
nolayha-yess-**ta**]-nun cwucang-ul kiekha-n-ta
sing-PST-**decl**-ADN claim-ACC remember-PRS-DECL
'Mina remembers the claim that Swuna sang and that Swuna sang.'

(88) *CompP conjunction with Sit-CP*
*Mina-ka [Swuna-ka nolayha-**nun**]-**ko** [Swuna-ka
Mina-NOM Swuna-NOM sing-**adn-conj** Swuna-NOM
nolayha-**n(un)**] sanghwang-ul kiekha-ss-ta
sing-**adn** situation-ACC remember-PST-DECL
'M. remembered the situation that Swuna sang and that Swuna sang.'

(89) *CompP conjunction with Cont-CP*
*Mina-ka [Swuna-ka nolayha-yess-ta-**nun**]-**ko** [Swuna-ka
Mina-NOM Swuna-NOM sing-PST-DECL-**adn-conj** Swuna-NOM
nolayha-yess-ta-**nun**] cwucang-ul kiekha-n-ta
sing-PST-DECL-**adn** claim-ACC remember-PRS-DECL
'Mina remembers the claim that Swuna sang and that Swuna sang.'

Thus, the modified CR theory argued for in this paper needs something additional to account for the ungrammaticality of sentences like (87)-(89). I would like to suggest that the reason that the sentences above are deviant is that they are *redundant*: the second conjunct does not contribute anything to the meaning of the embedded clause. I.e., (87)-(89) are bad for the same reason that sentences like (90a)-(90c) are bad.[16]

(90) a. #It's raining and it's raining.
b. #This is the student who came to the party who came to the party.
c. #Mary told this story after John left after John left.

The notion of redundancy that we will need has to be relativized to *the local context*: the idea about the sentences in (87)-(89) is that they are redundant because the second conjunct does not provide any new information once the first conjunct is taken to be true. I will adopt the ban on redundancy in (91), based on the previous literature that claims that parts of a sentence cannot contribute information that's entailed by their local context (van der Sandt 1992; Mandelkern and Romoli 2018; Mayr and Romoli 2016; Romoli and Mandelkern 2018; Schlenker 2009a, 2010; Singh 2008; Stalnaker 1974, 1978).[17]

(91) **Ban on Redundancy:**
A sentence $p$ is redundant in a context $c$ if part $q$ of $p$ is entailed by the local context of $q$ in $c$.

[16] It's not quite clear to me whether these cases should be regarded as infelicitous or ungrammatical. I assume that they are infelicitous for now.

[17] Mandelkern and Romoli (2018) call this ban *"Triviality Condition"*, but I opted to call it *"Ban on redundancy"*, as the resulting sentences are not trivially true or false.

The are different views in the literature on how the notion of a local context should be defined: some accounts propose parsing-based definitions (Schlenker 2009b, 2010), others argue for hierarchical definitions based on c-command (Ingason 2016; Romoli and Mandelkern 2018). W. Chung (2023) in recent work based on Korean and other head-final languages suggests a hybrid theory which takes into account both linear order and syntactic structure. All of these theories, as far as I can see, have definitions of a local context that are able to derive the redundancy of CP conjunction with identical propositions in (87)-(89). Parsing-based theories and W. Chung's (2023) hybrid theory predict that in a structure with conjunction of CPs, the local context for the linearly right conjunct is the global context intersected with the denotation of the left conjunct (while the local context for the linearly left conjunct is just the global context). For c-command based theories, the predictions will depend on the hypothesized structure of the conjunctions as in (87)-(89) (*e.g., do these structures have a head-final conjunction with a rightwards-linearized specifier?*), but in any case, there should be an asymmetry, and one of the conjuncts should constitute the local context for the other, but not vice versa.

As long as one of the two ContPs/CompPs is a local context for the other, then the sentences in (87)-(89) will be redundant, because for any entity $x$, if it is a member of a set A, and set A = B, then it is a member of set B:

(92) For any x:
x ∈ {y: Cont(y) = {s: Swuna sang in s}}
⇒ x ∈ {y: Cont(y) = {s: Swuna sang in s}}

(93) For any x:
x ∈ {y: y $\Vdash_e$ {s: Swuna sang in s}}
⇒ x ∈ {y: y $\Vdash_e$ {s: Swuna sang in s}}

Thus, we can conclude that the sentences in (87)-(89) are redundant. They have a part—one of the conjuncts in the embedded conjunction—that is entailed by its local context: this is so because the other conjunct entails them.[18]

The fact that the sentences (87)-(89) are redundant does not automatically explain why they are ungrammatical: we can in principle produce sentences that are pragmatically deviant. What seems to be special about (87)-(89) is that they can never be used felicitously: either these sentences are redundant (when the two embedded propositions are identical), or they are trivially false (when the two embedded propositions are different). I propose a modification to our definition of L-analyticity that captures the effect of redundancy:

[18] Note that the conjuncts in the cases under considerations are not propositions, but predicates of individuals. This raises a question of how their meanings would be intersected with the global context, and then how it would be evaluated whether the local context entails the predicate denoted by the other conjunct. I leave this question open, but we could imagine that we are not in fact doing such intersection in these cases: perhaps when two predicates are conjoined and one of them constitutes a local context for the other, we are just checking entailment between the two predicates (i.e., whether all individuals that the second predicate is true of are also individuals that the first ("local context") predicate is true of).

(94) *L(ogical)-analyticity (modified)*

a. L-analytic sentences are those that cannot be felicitously asserted: whenever they are not redundant, they are true or false in virtue of their logical structure.

b. L-analytic sentences are ungrammatical.

To sum up, embedded CP conjunction is ungrammatical because sentences containing it are always either redundant or trivially false—and thus L-analytic under the definition in (94).

## 7 Conclusions

In this paper I argued that true CP conjunction — intersective conjunction of projections in the C-layer of the clause (ContP, CompP) — is impossible. The argument for this claim was based on investigation of embedded conjunction in Korean clauses that combine with nouns. We have seen that Korean morphologically distinguishes conjunctions that occur in structures with ellipsis (*kuliko*) from conjunctions in structures where no ellipsis took place (*-ko*). This allowed us to test conjunction of VPs, TPs, ContPs and CompPs with and without Conjunction Reduction. Our results revealed that without ellipsis, only embedded VPs and TPs can be conjoined, and such conjunction takes narrow scope with respect to the matrix predicate. In structures with Conjunction Reduction on the other hand, only *'CompP and CompP'* strings are available, and conjunction obligatorily takes wide scope with respect to the verb, in line with the idea that such sentences involve coordination of (at least) matrix VPs. These observations are exactly what CR theory (Bassi and Bondarenko 2021) expects to see: if conjoining CPs leads to L-analyticity and thus ungrammaticality, *'CP and CP'* strings must only be possible in sentences with Conjunction Reduction. Comp-as-Lift theory (Szabolcsi 1997, 2016) does not make this prediction, and thus cannot explain why CPs in Korean cannot be intersectively conjoined (by *-ko*), and why only conjunction that occurs in structures with ellipsis can occur in *'CP and CP'* strings.

While our results generally support CR theory proposed in (Bassi and Bondarenko 2021), they also reveal that equality semantics of clausal embedding cannot be the only reason for the impossibility of true CP conjunction. We have seen that clauses that combine with situation nouns like *sanghwang* 'situation' lack displacement, and thus lack the Cont function in their semantics. Nevertheless, CPs can't be conjoined under situation nouns either. I proposed that the complementizer ("the adnominal marker" *-nun*) introduces the exemplification relation, and it makes conjunction of two Sit-CPs also L-analytic, and hence ungrammatical. Thus, the implication of the present proposal is that there are two "logical" elements that we see at the clausal periphery, Cont and Comp, and both of them have meanings that make conjoining CP-level constituents trivial. And so it's not only the nature of displacement that makes true CP conjunction impossible in natural languages.

While this paper was concerned with embedded conjunction structures with clauses that combine with nouns, my proposal also makes correct predictions for clauses that combine with verbs. Let us consider "bare" embedded clauses—clauses that have not undergone nominalization. Such clauses behave like verbal modifiers[19] and can for example co-occur with nominal complements, (95). Their structures contain tense (TP), the declarative marker (ContP), and also attach *-ko*, which is usually considered to be a complementizer homophonous with the conjunction.[20]

(95) Swuna-ka [hoysa-ka hyepsang-ul ha-l
Swuna-NOM company-NOM negotiation-ACC do-FUT.ADN
cwunpi-ka toy-**ess-*(ta)-ko**] [ku palphyomwun-ul]
preparation-NOM become-**pst-decl-comp** DEM statement-ACC
haysekha-yess-ta.
interpret-PST-DECL
'Swuna interpreted that statement, (and her interpretation was) that the company is ready for negotiations.'

Because CPs that combine with verbs contain ContP, our proposal predicts that it should not be possible to conjoin them outside of the cases of Conjunction Reduction—i.e., to conjoin them with *-ko*. It also predicts that we shouldn't be able to stack two CPs. In (96)-(97) we see that this is borne out.[21]

(96) *Mina-nun [Swuna-ka nolayha-yess-ta-**ko**]-**ko** [Hani-ka
Mina-TOP Swuna-NOM sing-PST-DECL-**comp-conj** Hani-NOM
chwumchwu-ss-ta-**ko**] nollaweha-n-ta.
dance-PST-DECL-**comp** be.surprised-PRS-DECL
'Mina is surprised that Swuna sang and that Hani danced.'

(97) *Mina-nun [Swuna-ka nolayha-yess-ta-**ko**] [Hani-ka
Mina-TOP Swuna-NOM sing-PST-DECL-**comp** Hani-NOM
chwumchwu-ss-ta-**ko**] nollaweha-n-ta.
dance-PST-DECL-**comp** be.surprised-PRS-DECL
'Mina is surprised that Swuna sang and that Hani danced.'

We make this prediction because if clauses like in (95) are verbal modifiers, then they modify the situation described by the verb and specify the propositional content associated with that eventuality. But if we conjoin two constituents containing ContPs, or stack them, then we will again arrive at a

[19] See (Bondarenko 2022) for discussion of how clauses integrate with verbs, and of the modifier vs. argument distinction.

[20] An alternative analysis would be to argue that *-ko* in sentences like (95) in fact *is* the conjunction. This would work well with the theory of complementation argued for in this paper (both the ContP and the verb are of the same type — <e,t>—and thus could be conjoined), but at the moment I do not commit to this idea and leave the issue open.

[21] One might worry that the sentence in (96) is ungrammatical due to the repetition of *-ko*. If that was so, we would probably expect haplology to occur, and one of the *-ko*s be deleted, which would give us the string in (97). However, we see that that is ungrammatical as well.

logically trivial meaning, (98): we will attribute to the same situation both the content *"Swuna sang"* and the content *"Hani danced"*, which can never be true.

(98) $[\![[_{ContP}$ Swuna sang] (and) $[_{ContP}$ Hani danced] be surprised$]\!]^s$ =
$\lambda$s'. be-surprised$_s$(s') $\wedge$ Cont(s') = {s: Swuna sang in s}
$\wedge$ Cont(s') = {s: Hani danced in s} = $\varnothing$

Furthermore, it is possible to "conjoin" two CPs that combine with verbs with the help of *kuliko*, and then we obligatorily get the wide scope reading of conjunction, (99). This is predicted by my proposal: since *kuliko* signals a structure with Conjunction Reduction, in (99) we are conjoining matrix VPs.

(99) Mina-nun [Swuna-ka nolayha-yess-ta-ko] **kuliko** [Hani-ka
Mina-TOP Swuna-NOM sing-PST-DECL-COMP **conj** Hani-NOM
chwumchwu-ss-ta-ko] nollaweha-ss-ta.
dance-PST-DECL-COMP be.surprised-PST-DECL
'Mina was surprised that Swuna sang and that Hani danced.'
✓ *kuliko > surprise:* Mina was surprised by Swuna's singing, and was surprised by Hani's dancing.
✗ *surprise > kuliko:* Mina was surprised by the combination of Swuna's singing and Hani's dancing (but, for example, Swuna's singing on its own is not surprising to her).

Thus, embedded conjunction in structures where clauses combine with verbs supports our previous findings: *'CP and CP'* strings, when possible, give rise to wide scope readings because this is not true CP conjunction—we are in fact conjoining higher constituents followed by Conjunction Reduction.

My proposal made another modification to the CR theory proposed in (Bassi and Bondarenko 2021): I argued that we need to add a ban on redundancy to rule out sentences in which two CPs with the same embedded proposition undergo conjunction. This motivated a modification in the definition of L-analyticity: I suggested that it should make reference to redundancy, and that L-analytic sentences are those that always come out as either redundant or trivial—i.e., are sentences that can never be felicitously asserted.

If this proposal is on the right track, it contributes to the growing pool of arguments for the equality semantics of displacement in sentences with embedded clauses (Bondarenko and Elliott 2024; Elliott 2020; Moulton 2009). This implies that the semantics of clausal embedding is at its core non-mononotic, and makes it highly important to investigate how one could model within this approach monotonicity of attitude predicates that in fact are monotonic.

## References

Abe, Jun, and Hiroto Hoshi. 1997. Gapping and P-stranding. *Journal of East Asian Linguistics* 6 (1): 101–136.

Ahn, Hee-Don, and Yongjoon Cho. 2006. A dual analysis of verb-less coordination in Korean. *Language Research* (1): 47–68.

Barwise, Jon. 1981. Scenes and other situations. *The Journal of Philosophy* 78 (7): 369–397.
Barwise, Jon, and Robin Cooper. 1981. Generalized Quantifiers and Natural Language. In *Philosophy, Language, and Artificial Intelligence*, 241–301. Springer.
Bassi, Itai, and Tatiana Bondarenko. 2021. Composing CPs: Evidence from disjunction and conjunction. In *Semantics and Linguistic Theory*. Vol. 30, 583–602.
Bjorkman, Bronwyn. 2013. A syntactic answer to a pragmatic puzzle: The case of asymmetric *and*. In *Syntax and its Limits*, ed. by Raffaella Folli, Christina Sevdali, and Robert Truswell. Oxford University Press.
Bondarenko, Tatiana. 2021. The dual life of embedded CPs: Evidence from Russian čto-clauses. In. Semantics and Linguistic Theory 31.
Bondarenko, Tatiana. 2022. Anatomy of an attitude. PhD diss., Massachusetts Institute of Technology, Cambridge, MA.
Bondarenko, Tatiana, and Patrick Elliott. 2024. On the monotonicity of attitudes: NPIs and clausal embedding. Talk at NELS 54. MIT.
Chierchia, Gennaro. 2013. *Logic in grammar: Polarity, free choice, and intervention*. OUP Oxford.
Chung, Daeho. 2004. A multiple dominance analysis of right node sharing constructions. *Language Research* 40 (4).
Chung, WooJin. 2023. Local context is calculated domain by domain, for each maximal projection. *Glossa: a journal of general linguistics* 8 (1).
Deigan, Michael. 2020. A plea for inexact truthmaking. *Linguistics and Philosophy* 43 (5): 515–536.
Elliott, Patrick. 2020. Elements of Clausal Embedding. PhD diss., UCL (University College London).
van der Sandt, Rob. 1992. Presupposition projection as anaphora resolution. *Journal of Semantics* 9 (4): 333–377.
Fine, Kit. 2017a. A Theory of Truthmaker Content I: Conjunction, disjunction and negation. *Journal of Philosophical Logic* 46 (6): 625–674.
Fine, Kit. 2017b. A Theory of Truthmaker Content II: Subject-matter, common content, remainder and ground. *Journal of Philosophical Logic* 46 (6): 675–702.
Fine, Kit. 2017c. Truthmaker Semantics. *A Companion to the Philosophy of Language* 2: 556–577.
von Fintel, Kai. 1993. Exceptive Constructions. *Natural Language Semantics* 1 (2): 123–148.
von Fintel, Kai, and Irene Heim. 1997-2020. Intensional Semantics. MIT.
Gajewski, Jon. 2002. On Analyticity in Natural Language. Manuscript, MIT.
Higginbotham, James. 1983. The logic of perceptual reports: an extensional alternative to situation semantics. *The Journal of Philosophy* 80 (2): 100–127.
Hockett, Charles Francis. 1960. Logical Considerations in the Study of Animal Communication. In *Animal Sounds and Communication*, ed. by W.E. Lanyon and W.N. Tavolga, 392–430. American Institute of Biological Sciences: Washington, DC.
Ingason, Anton Karl. 2016. Context updates are hierarchical. *Glossa: a journal of general linguistics* 1 (1): 1–9.
Kim, Jeong-Seok. 1997. Syntactic Focus Movement and Ellipsis: A minimalist approach. PhD diss., The University of Connecticut.
Kratzer, Angelika. 1989. An investigation of the lumps of thought. *Linguistics and Philosophy* 12 (5): 607–653.
Kratzer, Angelika. 1990. How specific is a fact? URL: `https://www.semanticsarchive.net/Archive/mQwZjBjO/facts.%20pdf`.
Kratzer, Angelika. 2002. Facts: Particulars or information units? *Linguistics and Philosophy* 25 (5/6): 655–670.
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.
Kratzer, Angelika. 2020. Situations in Natural Language Semantics. In *The Stanford Encyclopedia of Philosophy*, ed. by Edward N. Zalta. Fall 2020. Metaphysics Research Lab, Stanford University.

Krifka, Manfred. 1998. The Origins of Telicity. In *Events and Grammar*, ed. by Susan Rothstein, 197–235. Springer.
Kuno, Susumu. 1978. Japanese: A characteristic OV language. In *Syntactic Typology*, ed. by W. Lehmann, 57–138. University of Texas Press Austin.
Mandelkern, Matthew, and Jacopo Romoli. 2018. Hurford conditionals. *Journal of Semantics* 35 (2): 357–367. URL: `http://users.ox.ac.uk/~sfop0776/Hurford.pdf`.
Mayr, Clemens, and Jacopo Romoli. 2016. A puzzle for theories of redundancy: Exhaustification, incrementality, and the notion of local context. *Semantics and Pragmatics* 9: 7–1.
Moulton, Keir. 2009. Natural Selection and the Syntax of Clausal Complementation. PhD diss., UMass Amherst.
Moulton, Keir, Elizabeth Bogal-Allbritten, and Junko Shimoyama. 2020. Things we embed. Talk given at BCGL 13: The Syntax and Semantics of Clausal Complementation.
Mukai, Emi. 2003. On verbless conjunction in Japanese. In *North East Linguistics Society (NELS)*. Vol. 33, 205–224.
Partee, Barbara, and Mats Rooth. 1983. Generalized Conjunction and Type Ambiguity. In *Meaning, Use, and Interpretation of Language*, ed. by R. Bauerle, C. Schwartz, and A. von Stechow, 361–383. Berlin: De Gruyter.
Perry, John, and Jon Barwise. 1983. *Situations and Attitudes*. MIT Press Cambridge, MA.
Romoli, Jacopo, and Matthew Mandelkern. 2018. Hierarchical structure and local contexts. In *Proceedings of Sinn und Bedeutung*. Vol. 21. 2, 1017–1034.
Saito, Mamoru. 1987. Three notes on syntactic movement in Japanese. *Issues in Japanese Linguistics*: 301–350.
Schlenker, Philippe. 2009a. Local Contexts. *Semantics and Pragmatics* 2 (3): 1–78.
Schlenker, Philippe. 2009b. Local contexts. *Semantics and Pragmatics* 2: 3–1.
Schlenker, Philippe. 2010. Presuppositions and local contexts. *Mind* 119 (474): 377–391.
Shim, Ji Young, and Tabea Ihsane. 2015. Facts: The interplay between the matrix predicate and its clausal complement. *Newcastle and Northumbria Working Papers in Linguistics* 21 (1): 130–144.
Singh, Raj. 2008. Modularity and locality in interpretation. PhD diss., Massachusetts Institute of Technology.
Sohn, Keun-Won. 2001. Deletion and Right Node Raising in Korean and English. *Studies in Generative Grammar* 11 (2): 485–501.
Stalnaker, Robert. 1974. Pragmatic presuppositions. In *Semantics and philosophy*, ed. by M. Munitz and D. Unger, 197–213. New York University Press.
Stalnaker, Robert. 1978. Assertion. In *Pragmatics*, 315–332. Brill.
Szabolcsi, Anna. 1997. Quantifiers in Pair-List Readings. In *Ways of Scope Taking*, 311–347. Springer.
Szabolcsi, Anna. 2016. Direct vs. indirect disjunction of *wh*-complements, as diagnosed by subordinating complementizers. Manuscript, New York University.