

Things we embed

Keir Moulton, Elizabeth Bogal-Allbritten, Junko Shimoyama

University of Toronto, NTNU, McGill

BCGL 13 ~ CRISSP KU Leuven ~ 16 December 2020

1 Nouny CPs and referential propositions

From the beginning of research on clausal complementation there have been many proposals for **nominal and determiner structure above the CP**

Rosenbaum 1967, Kiparsky and Kiparsky 1970, Han 2005, Davies and Dubinsky 2010, Takahashi 2010, Hartman 2012, and others

There have also been proposals that clauses can trade in the semantics associated with DPs as **“referential propositions”**.

De Cuba 2007, Haegeman and Ürögdi 2010, Sheehan and Hinzen 2011, De Cuba 2017

A example of this line of research: Kastner (2015) argues that CPs are nominalized by a **meaningful definite determiner** (overt in some languages) if they complement presuppositional factives and response stance verbs.

- (1) non-stance: We believe/think/said [CP that they won]
 factives: We know/remember/regret [$DP \ \emptyset_D$ [CP that they won]]
 response stance: We confirm/deny/accept/admit/agree [$DP \ \emptyset_D$ [CP that they won]]

Response stance complements are an interesting case for probing possible ‘referential’ properties for propositional expressions since they are not factive but are “familiar” or presupposed (Cattell 1978, Hegarty 1992)

- Honcoop (1998, p. 167) “response stance verbs presuppose that their complements express assumptions or claims held by someone possibly other than the speaker which are part of the common ground.”

- (2) Alice agreed/admits/confirmed [that Ron called]...
 #...but no one had said that Ron called.

Kastner’s hypothesis: “This D endows the proposition with referentiality, turning it into a DP along the way.” (Kastner, p. 172)

Some open questions:

#1 Do we know what *really* triggers the presupposition?

- For Kastner, the presupposition comes from the D, which he treats like a Heimian anaphoric definite.
 - Kastner presents good evidence from extraction for D, but there are also open questions about distribution:
- (3)
- a. It was agreed/denied/accept that he lost.
 - b. His denial/agreement/acceptance that he lost.
 - cf. *It was denied that claim./his denial *(of) that claim
- However English plays out, response stance verbs do not help us ‘isolate’ the source(s) or the content of the presupposition associated with nouny/referential propositional complements.

#2 What *is* a referential proposition?

- It is unclear what a referential proposition is.
 - **A good place to look:** Work on response particles and other propositional anaphora have argued that various ‘chunks’ of the clause can introduce discourse referents, several of them propositional.
- (4) **Available propositional discourse referents proposed in Krifka (2013, (4a))**

Ede didn't steal the cookie.

$$\begin{array}{ccccc} [_{ActP} \text{ASSERT} [_{NegP} \text{Ede did-n't} [_{TP} t_{Ede} t_{did} [_{vP} \text{steal the cookie}]]]] \\ \hookrightarrow d_{speechact} & \hookrightarrow d'_{prop} & & \hookrightarrow d''_{prop} & \end{array}$$

- (5)
- a. **That** was a lie. $\hookrightarrow d$
 - b. **No** (he didn't) $\hookrightarrow d'$
 - c. **Yes** (he did) $\hookrightarrow d''$
- I think so $\hookrightarrow d''$

Do “referential propositions” refer to these kinds of discourse referents?

- So far, we are finding the answer is ‘no’.

What we are going to show you today

§2 Korean and Japanese nominalized clauses:

- (6) a. Na-nun [kay-ka swukecey-lul ta ha-yass-ta-nun **kes-ul**] mit-e.
I-TOP he-NOM hmwrk-ACC all do-PST-DEC-ADN *kes*-ACC believe-DEC
- b. Watashi-wa [kare-ga shukudai-o zembu shi-ta-to-yuu-**no-o**] shinji-teiru.
I-TOP he-NOM homework-ACC all do-PST-*to-yuu-no*-ACC believe-ASP
'I believe that he finished his homework.'

- These embedded clauses are **anaphoric**, and this can be shown to be the case independently of a response stance embedding verb.
- But! The kinds of propositional antecedents that support such clauses are more **limited than the schema from Krifka in (4) would suggest**.
 - We hypothesize that these nominalized clauses can only refer to assertions and other ‘things’ that describe individuals that carry propositional content.

§3 Propositional anaphora

- We then re-appraise the facts surrounding propositional anaphora proper (Asher 1993, Snider 2017) in English.
 - Once we separate ‘true’ propositional anaphora (*that, it*) from elliptical propositional anaphora (*so*) a similar profile emerges: not just any salient proposition will support anaphora.

Working hypothesis: Referential propositions? Not exactly

- Reference is only to individuals (‘things’) with propositional content, e.g. Asher’s (1993) abstract objects or Moltmann’s (2020) ‘attitudinal objects’.
- We speculate that these ‘things’ are evoked by only certain pieces of language, e.g. Speech Acts and certain clausal complements, but not all the propositional chunks of language in (4).

2 Nominalized propositions in Korean and Japanese

2.1 Korean *kes* clauses

We focus on two complementation strategies in Korean:

(7) **Embedded by Comp *ko***

Na-nun [kay-ka swukecey-lul ta ha-yass-ta-**ko**] mit-e.
I-TOP he-NOM homework-ACC all do-PST-DEC-*ko* believe-DEC
'I believe that he finished his homework.'

(8) **Nominalized with *kes***

Na-nun [kay-ka swukecey-lul ta ha-yass-ta-nun **kes-ul**] mit-e.
I-TOP he-NOM hmwrk-ACC all do-PST-DEC-ADN *kes*-ACC believe-DEC
'I believe that he finished his homework.'

kes nominalizes the clause (Kim 1984, Jo 2003):

- *kes* must take a case marker (*-ul* ACC), unlike *ko*.
- *kes* is preceded by adnominal *-(n)un* ADN as with nominal modification generally
- *kes* is not synchronically a full-fledged noun, but is translated often as “thing”.
- *kes*-headed clauses have a very flexible use (Kim 2009): used in perception and factive reports, and *kes* is the ‘nominalizing’ element of internally headed relatives:

(9) a. **Internally-headed relative clause (IHRC) construction:**

John-un [totwuk-i tomangka-n-un **kes-ul**] cap-ess-ta.
J.-TOP thief-NOM run.away-IMPF-ADN *kes*-ACC catch-PSST-DEC.
'John caught the thief that was running away.'

b. **Perception construction:**

John-un [totwuk-i tomangka-n-un **kes-ul**] po-ess-ta.
J.-TOP thief-NOM run.away-IMPF-ADN *kes*-ACC see-PST-DEC
'John saw (the event) of the thief running away.'

c. **Factive construction:**

John-un [totwuk-i tomangka-n-un **kes-ul**] al-ess-ta.
J.-TOP thief-NOM run.away-IMPF-ADN *kes*-ACC know-PST-DEC
'John knew (the fact) that the thief was running away.'

Role of declarative *-ta*

Unlike the factive, perception, and internally headed relative *kes*-constructions, the *kes* construction of interest to us contains that *ta*- declarative (DECL) marker.

- *-ta* must be present for the *kes*-construction to be interpreted non-factively (Kim 2011, Shim and Ihsane 2015):

(10) **No *ta* ⇒ factive**

Kibo-nun [Dana-ka i chayk-ul ilk-un **kes-ul**] mit-ciahn-ess-ta,
 K.-TOP D.-NOM this book-ACC read-ADN NMLZ-ACC believe-NEG- PST-DEC
 #kulente sasil-un Dana-nun i chayk-ul ilk-ci anh-ass-ta.
 but fact-TOP D.-TOP this book-ACC read-NEG-PST-DEC
 ‘Kibo didn’t believe (the fact) that Dana read this book, #and in fact D. didn’t read it.’

(11) ***ta* ⇒ non-factive**

Kibo-nun [Dana-ka i chayk-ul ilk-ess-**ta**-nun **kes-ul**] mit-ess-ta,
 K.-TOP D.-NOM this book-ACC read-PST-DEC-ADN NMLZ-ACC believe-PST-DEC
 kulente sasil-un Dana-nun i chayk-ul ilk-ci anh-ass-ta.
 but fact-TOP D.-TOP this book-ACC read-NEG-PST-DEC
 ‘Kibo believed that Dana read this book, but D. didn’t read it.’
 (Shim and Ihsane 2015: 140)

We follow the literature and refer to these as the ***ta-nun-kes*** construction.

2.1.1 Structure and category of *ta-nun-kes*

ta-nun-kes constructions resemble complex NP constructions headed by nouns like *claim/news/rumour* (12); these also require *-ta*.

- (12) Mina-ka posek-ul hwumchi-ess-*(**ta**)-nun somwun/sosik/cwucang.
 Mina-NOM jewelry-ACC steal-PAST-DECL-ADN rumour/news/claim
 ‘the rumour/news/claim that Mina stole the jewelry.’ (Kim 2011: (4a,b))

But *kes* is not a (dummy) noun, since unlike a bona fide noun like *cwucang* ‘claim’, *kes* cannot be modified by adjectives.

- (13) a. pi-ka on-ta-nun **calmostoy-n** cwucang
 rain-NOM come-DECL-ADN wrong-ADN claim
 ‘the wrong claim that it is raining’
 b. pi-ka on-ta-nun (***calmostoy-n**) kes
 rain-NOM come-DECL-ADN wrong-ADN KES
 ‘the wrong that it is raining’

- This fits the typological observations in Alexiadou (2020) and Iordăchioaia (2020) that nominalizers that take TPs or larger are D rather than *n*.

- We therefore **treat *kes* as a D** (Kim (2007, 2009))

Structure below D: *ta-nun-kes* construction have been analyzed as involving a hidden Comp *ko* and hidden verb of saying *ha* ‘say’ (Lee 2019) although this is not uncontroversial (see Yeom 2018).

(14) [TP] -ta-COMP-SAY-nun-kes

We will provide evidence that something like (14) is correct for *ta-nun-kes*, if not in the syntax itself then at least in the semantics.

2.2 Japanese

At times we will also refer to Japanese, which has a similar contrast between clauses headed by the element *to* and nominalized clauses headed by *no/koto*:

- *to-yuu-no/koto*, (= *to* + *yuu*, a grammaticalized verb of saying + *no/koto*) is analogous to *ta-nun-kes* (Kim, Shin-Sook 2011).

(15) **Embedded by Comp *to***

Watashi-wa [kare-ga shukudai-o zembu shi-ta-**to**] shinji-teiru.
 I-TOP he-NOM homework-ACC all do-PST-*to* believe-ASP
 ‘I believe that he finished his homework.’

(16) **Nominalized with *to-yuu-no/koto***

Watashi-wa [kare-ga shukudai-o zembu shi-ta-**to-yuu-no/koto-o**]
 I-TOP he-NOM homework-ACC all do-PST-*to-yuu-no/koto*-ACC
 shinji-teiru.
 believe-ASP
 ‘I believe that he finished his homework.’

Like *ta-nun-kes*-clauses...

- *to-yuu-no/koto*-clauses can be interpreted non-factively under *believe*¹
- *no* is the nominalizer used elsewhere for IHRCs and perception complements
- *no* is often treated as a definite element

¹Nominalized clauses with *-no/koto*, but without *-to-yuu*, can be interpreted factively. Unlike the *-ta*-less forms in Korean, the Japanese *-to-yuu*-less forms can also be interpreted non-factively.

2.3 The anaphoric properties of *ta-nun-kes/to-yuu-no* clauses

Korean *ta-nun-kes* clauses are a good candidate for Kastner's D+CP, since they are possible under response stance verbs (in fact required):

- a *ko*-clause is simply ungrammatical

- (17) a. Na-nun [Lee-ka wa-ss-ta-nun **kes-ul**] incengha/pwuiha-n-ta.
 I-TOP L.-NOM come-PST-DECL-ADN *kes*-ACC accept/reject-PRES-DECL
 'I agree/reject that Lee came.'
- b. *Na-nun [Lee-ka wa-ss-ta-**ko**] incengha/pwuiha-n-ta.
 I-TOP L.-NOM come-PST-DECL-COMP accept/reject-PRES-DECL
 'I accept/reject that Lee came.'

But! We cannot be sure the familiarity meaning comes from the embedding verb or from the *ta-nun-kes* complement itself (or both).

Strategy: we use a non response-stance verb (a 'believe' verb), try both *ko/to* and *ta-nun-kes/toyuu-no* clauses, and isolate the effects of the complement type.

Korean:

ϕ is given in the discourse: *believe...* ✓ ϕ -*ta-nun-kes*
 ✓ ϕ -*ta-ko*

- (18) **A:** Na-nun swukecey-lul ta ha-yass-e. Pakk-ey naka nola-to toy?
 I-TOP homework-ACC all do-PST-DEC outside-at go play-also can
 'I finished my homework. Can I go outside and play?'
- B:** An toy. **A:** Na-lul an mit-e?
 not can I-ACC not believe-INT
 'No.' 'Don't you believe me?'
- B:** Um. Na-nun [ney-ka swukecey-lul ta ha-yass-**ta-nun kes-ul**] mit-e.
 Yes. I-TOP you-NOM homework-ACC all do-PST-DEC-ADN NMLZ-ACC believe-DEC
 Haciman cikum-un cenyek siksa sikan-i-ya.
 but now-TOP evening meal time-COP-DEC
 'Yes, I believe that you finished your homework. But it's dinner time.'
- B':** Um. Na-nun [ney-ka swukecey-lul ta ha-yass-**ta-ko**] mit-e. Haciman
 Yes. I-TOP you-NOM homework-ACC all do-PST-DEC-*ko* believe-DEC but
 cikum-un cenyek siksa sikan-i-ya.
 now-TOP evening meal time-COP-DEC
 'Yes, I believe that you finished your homework. But it's dinner time.'

This is somewhat surprising because propositional antecedents can typically be sourced from a range of things, including the part of a polar question minus the Q-component (what Krifka calls the ‘partitioning proposition’):

- (23) **Partitioning propositions (d') introduces a discourse referent (Krifka 2013, (21))**

Did Ede steal the cookie?

$$[_{ActP} \text{ did-QUEST } [_{TP} \text{ Ede } t_{did}\text{-PAST } [_{vP} \text{ steal the cookie }]]]$$

$\hookrightarrow d_{speechact}$ $\hookrightarrow d'_{prop}$ $\hookrightarrow d''_{event}$

- (24) Did Ede steal cookie?
Yes (=anaphoric to d')

German propositional correlative constructions *es...dass* constructions behave similarly to response particles, and unlike *no/kes* clauses.

- Under non-factive verbs *es...dass* constructions are anaphoric (they can't be used to answer a question such as (25) (Sudhoff 2003).
- They can refer back to the partitioning proposition (26).

- (25) **A:** Was happened?
B: Max behauptet (*es), dass sie krank ist.
Max claims it that she ill is
'Max claims that she is ill.' (Schwabe, Frey, and Meinunger 2016: (3))

- (26) **A:** Ist Lea krank?
Is Lea ill?
'Is Lea ill?'
B: Max behauptet es, (dass sie krank ist).
Max claims it that she ill is
'Max claims that she is ill.' (Schwabe, Frey, and Meinunger 2016: (4))

The preajcent of negation also licenses anaphoric *es...dass* constructions:

- (27) a. Lea ist nicht krank...
Lea is not ill
'Lea is not ill...'
b. obwhol Max es behauptet, (dass sie krank ist).
even.though Max it claims that she ill is
'even though Max claims that she is ill.' (Bernhard Schwarz, p.c.)

However *ta-nun-kes* clauses cannot find such an antecedent:

NEG(ϕ): *believe... X ϕ -ta-nun-kes*
 $\checkmark\phi$ -*ta-ko* (not shown)

(28) **A:** Kibo has certainly heard in his geography class that Toronto is not the capital of Canada...

A: ...#Kulayto Kibo-nun [Toronto-ka Canada-uy swuto-**la**-nun **kes**-ul]
 even.so K.-TOP T.-NOM C.-GEN capital-DEC-ADN NMLZ-ACC
 mit-e.

believe-DEC

‘Even so, Kibo still believes that Toronto is the capital of Canada.’

Han’s Comment, p.c.: “This sounds really odd to me, if Kibo has never heard anybody tell him that Toronto is the capital of Canada.”

Japanese *to-yuu-no* works the same way as (28).

2.3.1 Dispelling an easy solution: *-ta* does not require direct quotation

For good measure, it’s important to show that these stricter antecedent requirements are not because the clause needs to be a direct quotation.

- In (29), *ta-kes* (and *ta-ko*) are licit even though A had previously asserted she had eaten peas, which only **entails** ϕ that she has eaten vegetables.

(29) *Context:* B has a rule that A must eat vegetables before having cake.

A: I ate peas! Can I have cake now?

B: No, you can’t. **A:** But why? Don’t you believe me?

B: Na-nun [ney-ka yachae-lul mek-ess-**ta**-nun **kes**-ul] mit-e...
 I-TOP you-NOM veg.-ACC eat-PST-DEC-ADN NMLZ-ACC believe-DEC
 ‘I believe that you ate vegetables (but the cake’s not ready).’

B’: Na-nun [ney-ka yachae-lul mek-ess-**ta-ko**] mit-e...
 I-TOP you-NOM vegetable-ACC eat-PST-DEC-*ko* believe-DEC
 ‘I believe that you ate vegetables (but the cake’s not ready).’

2.4 Analysis: reference to *things* with content

Of the the discourse referents that utterances provide, our data suggest that *ta-nun-kes/to-yuu-no* clauses refer to assertions, and not other propositional discourse referents evoked by clauses.

(30) Johnny finished his homework.

$$\begin{array}{c}
 [_{ActP} \text{ ASSERT } [_{TP} \text{ Johnny finish-PAST } [_{vP} \text{ t}_{finish} \text{ his homework }]]] \\
 \hookrightarrow d_{speechact} \qquad \qquad \hookrightarrow d'_{prop} \qquad \qquad \hookrightarrow d''_{event}
 \end{array}$$

In Bogal-Allbritten and Moulton (2018) we proposed that *ta-nun-kes* clauses literally referred to assertion events.

- This view essentially predicts that *ta-nun-kes* clauses refer to **claims**.
- This is too strong given (31), as noted by Yeom (2018):

(31) Mina-ka ttena-ss-ta-nun {kes/*?cwucang}-i somwun-uy nayyong-i-ta.
 Mina-NOM leave-PAST-DECL-ADN KES/claim-NOM rumour-of content-be-DECL
 ‘The {thing/*?assertion} that Mina left is the content of the rumor.’ (Yeom 2018: (63))

- A similar argument can be constructed from Japanese (32):

(32) [Hottoshiteiru to-yuu-no/*shuchoo]-ga ima-no kimochi desu.
 relieved TO-YUU-NO/claim-NOM current-GEN feeling COP
 ‘The {thing/*assertion} that I’m relieved is my current feeling.’

Here we present a revised analysis, whereby *kes* (and *to-yuu-no*) constructions denote things with content, of which assertion events are just one type.

Proposal ingredients

We give the proposal for Korean, but the idea carries over straightforwardly to Japanese, because *yuu* of *toyuu* is transparently a bleached verb of saying (Saito 2019).

- **Declarative -ta** in *ta-nun-kes* encodes³ the meaning of a bleached verb of saying (Lee 2019); its subject argument x_c denotes a thing with propositional content (c for content).
- x_c : individuals, abstract or concrete, with propositional content: rumors, ideas, news reports, and crucially also objects associated with **assertions** (for a more sophisticated semantics for these objects, see Moltmann 2013, 2020).

$$(33) \quad \llbracket \mathbf{-ta} \rrbracket = \lambda p. \lambda x_c. \lambda w [\text{CONT}(x_c)(w) = p]$$

- The content CONT function (defined below after Kratzer 2013, p.25) allows the proposition p to identify the content of x_c .

$$\text{CONT}(x_c)(w) = \{w' : w' \text{ is compatible with the intentional content determined by } x_c \text{ in } w\}$$

- **Nominalizer kes**, following Kim (2007), contributes definiteness
 - We add the requirement that it is **anaphoric definite**.
 - Following Schwarz (2009), the D has an argument y that gets saturated by a free variable whose value is determined by the context via an assignment function g (requires an entity in the context)

$$(34) \quad \llbracket \mathbf{kes} \rrbracket = \lambda P. \lambda y. \lambda w : \underline{\exists! x [P(x)(w) \ \& \ x = y]}. \iota x [P(x)(w) \ \& \ x = y]$$

Putting the pieces together, the *kes*-construction in (35) then denotes (36):

$$(35) \quad \begin{array}{l} [\text{Johnny-ka swukcey-lul} \quad \text{ta ha-yass-ta-nun} \quad \mathbf{kes-ul}] \\ \text{J.-NOM} \quad \text{homework-ACC} \quad \text{all do-PST-DEC-ADN} \quad \mathbf{kes-ACC} \\ \text{'that Johnny finished his homework.'} \end{array}$$

$$\llbracket (35) \rrbracket^g = \lambda w : \underline{\exists! x_c [\text{CONT}(x_c)(w) = p \ \& \ x_c = g(1)]}. \iota x_c [\text{CONT}(x_c)(w) = p \ \& \ x_c = g(1)]$$

$$\text{where } p = \{w' : \text{Johnny finished homework in } w'\}$$

³We could also decompose in the syntax; we leave this for future work.

Describing the data

- (36) **A:** Johnny finished his homework.
 $[_{ActP} \text{ ASSERT } [_{TP} \text{ Johnny finish-PAST } [_{vP} \text{ t}_{finish} \text{ his homework }]]]$
 $\hookrightarrow d_{speechact}$ $\hookrightarrow d'_{prop}$ $\hookrightarrow d''_{event}$
= thing₁ with content
- B:** I [Johnny-finished-his-homework-*ta-nun-kes*] believe.
presupposes there's an individual g(1) with content that Johnny finished his homework: **SATISFIED**
- (37) **A:** Has Johnny finished his homework?
 $[_{ActP} \text{ QUESTION } [_{TP} \text{ Johnny finish-PAST } [_{vP} \text{ t}_{finish} \text{ his homework }]]]$
 $\hookrightarrow d_{speechact}$ $\hookrightarrow d'_{prop}$ $\hookrightarrow d''_{event}$
≠ thing with content
- B:** I [Johnny-finished-his-homework-*ta-nun-kes*] believe.
presupposes there's an individual g(1) with content that Johnny finished his homework: **FAILURE**

What else introduces things with content?

Embedded clauses can introduce a thing with content:

- (38) a. yuna-nun inho-ka hayngpokha-ta-ko malha-yess-ta...
Yun-TOP Inho-NOM happy-DECL-COMP say-PAST-DECL
‘Yuna said Inho was happy.’
- b. mina-nin inho-ka hayngpokha-ta-nun **kes**-ul mit-ess-ta.
Mina-TOP Inho-NOM happy-DECL-ADN KES-ACC believe-DECL-DECL
‘Mina believed Inho was happy.’ (Yeom 2018 (41))

Work to be done: The embedding verb plays a role; Yeom (2018) reports that anaphoric reference to *think*-complements (39) is much worse than *say*-complements (38):

- (39) a. yuna-nun inho-ka hayngpokha-ta-ko sayngkakha-yess-ta...
Yun-TOP Inho-NOM happy-DECL-COMP think-PAST-DECL
‘Yuna thought Inho was happy.’
- b. ??mina-nun inho-ka hayngpokha-ta-nun **kes**-ul mit-ess-ta.
Mina-TOP Inho-NOM happy-DECL-ADN KES-ACC believe-DECL-DECL
‘Mina believed Inho was happy.’ (Yeom 2018 (42))

Media and information repositories (books, etc.) can also introduce referents that support *kes* clauses:

- (40) *Context:* One day Kibo reads in his geography textbook that Toronto is the capital of Canada. His teacher tells the class that that was an error in the textbook. But Kibo missed geography class that day.

Kulayse acikto Kibo-nun [Toronto-ka Canada-uy swuto-la-nun kes-ul]
so still Kibo-TOP Toronto-NOM Canada-GEN be-DECL-ADN *kes-acc*
mit-e.

believe-PAST

‘Even still Kibo believed that Toronto is the capital of Canada.’

2.5 Summary so far

- *ta-nun-kes* clauses are anaphoric.
- Not just any salient proposition evoked in the discourse provides an antecedent. Reference is to things (assertions, claims, reports)—individuals with content.

Should you be surprised or care?

A jaded reaction:

- If *ta-nun-kes* and *to-yuu-no* clauses have a bleached verb of saying in them, should we be surprised if the proposition referred to must be somehow ‘said’?
- And are we surprised nominalizations need to refer to individuals?

A response to the jaded:

- Maybe, but the deeper question is why such structures are required for successful propositional reference: recall, *ta-* is required in *ta-nun-kes* clauses that refer to propositions (as opposed to facts).
- Moreover, in the next section we’re going to see similar patterns for propositional anaphora, where a hidden verb of saying cannot be invoked.

3 Tip of the iceberg? Other propositional anaphora

Surprisingly, we are starting to see similar restrictions on these as the nominalized clauses (work in progress)

Japanese propositional anaphora

Japanese *sore* ‘it/that’ vs. *soo* ‘so’ (both related to the medial series in the demonstrative system).

When the antecedent proposition is asserted or presented as a complement of *say*, anaphoric reference by *sore* and *soo* are possible:

(41) Declarative root clause antecedent:

- A: Johnny-wa shukudai-o zenbu yatta tte minna itteru yo.
Johnny-top homework-acc all did TO everyone say PRT
‘Everyone’s saying that Johnny finished his homework.’
- B: Watashi-mo soo/?sore-o shinjiteru/omotteru yo.
I-also so/it-acc believe/think PRT
‘I also believe/think so/that.’

However, when the target antecedent is merely the partitioning proposition in a polar question, *sore* is not felicitous while *soo* is.

(42) Polar Question antecedent:

- A: Johnny-wa moo shukudai-o zenbu yatta no?
Johnny-top already homework-acc all did Q
‘Has Johnny already done all the homework?’
- B: Watashi-wa soo/#sore-o shinjiteru/omotteru yo.
I-top so/it-acc believe/think PRT
‘I believe/think so/#it.’

Likewise, the preajcent of negation is not an available antecedent for *sore* while it is for *soo*.

(43) Negation

- Johnny-wa Toronto-wa Canada-no shuto-ja nai to kiita hazu
Johnny-WA Toronto-WA Canada-gen capital-COP.WA neg TO heard must
na-no-ni, mada ?soo/#sore-o shinjiteru-rashii.
COP-NO-DAT still so/it-ACC believe-REP
‘Johnny must have heard that Toronto is not the capital of Canada, Even so, he still believes so/it, I hear.’

Korean propositional anaphora

Korean has two relevant propositional anaphors too: *kukes* ‘that/it’ and *kulehkey* ‘so’. Early reports suggest that *kukes* is constrained like *ta-nun-kes* clauses:

- (44) **A:** Johnny-nun swukcey-lul ta ha-yass-ni?
J.-TOP homework-ACC all do-PST-Q
‘Has Johnny finished his homework?’
- B:** Johnny-uy emma-nun [**kulehkey**/#**kukes**-ul] mit-e
Johnny-GEM mom-TOP so/#that believes.
‘Johnny’s mother believes so.’

3.1 English *that* vs. *so*

English *that/it* is much less successful at referring to the partitioning proposition than *so*.⁴

- (45) A: Has Johnny finished his homework?
B: I believe so/#that/#it.

- This is surprising since the partitioning proposition is a salient enough antecedent to support *so* and response particles (yep—we’ll get to ellipsis!)

It can’t be about anaphoric *that* in general; *that* can refer to an eventuality (not a proposition—e.g. argument of *happen*):

- (46) A: Did Johnny finish his homework?
B: I believe **that** happened.

And *that* can be anaphoric to the question speech act (see Krifka above):

- (47) A: Did Johnny finish his homework?
B: I asked **that** (but didn’t get an answer).

And to an assertion act (either embedded or root):

- (48) A: (Someone said) Johnny finished his homework.
B: Ok, yeah, I believe **that**.

⁴We are not the first to test this data point. Snider (2017) concludes that propositional anaphor *that* can refer successfully here; we discuss Snider’s examples in the appendix.

Emerging picture

- If response particles are elliptical (Holmberg 2013) and if *so* is so too⁵, then neither refer.
- Pronominal anaphora must be recruited to refer to propositions, but not just any salient proposition in the discourse is available.

A (strong) hypothesis: there is no anaphoric reference to propositions.

- *that/it/sore* do involve reference, but only to ‘things’.
- Not to just any salient proposition in the discourse evokes such things.
- This might fit in a larger program: variables are uniformly individual types (Chierchia 1984, Landman 2006, Poole 2017); .

Prediction: even deictic reference by propositional anaphora should be constrained to individuals with content.

- Last piece: deictic propositional anaphora

⁵Ample evidence for this: e.g., *so* needs a linguistic antecedent (Hankamer and Sag 1976):

- (i) Watching you get a hole in one:
I don't believe it/*so.

3.2 Deictic propositional reference (Moulton 2020)

Since Hankamer and Sag (1976), it has been accepted that propositional proforms such as *this*, *that* and *it* can be either “surface” or “deep” anaphors.

(52) **Surface propositional anaphor:**

A: Julie just said that Fred resigned.

B: Yeah, I had suspected **that/this/it**.

that/this/it = that Fred resigned

(53) **Deep/deictic/exophoric propositional anaphor:**

[Mom walks into the living room, and sees her three children standing around the broken remains of a lamp.]

[Mom:] Who broke the lamp?

[Two of the children look at Dewey.]

[Dewey:] **That's** not true!

(Snider 2017: (89))

Re-appraising the data

Context: I've been inside a windowless lab all day, and do not know that it is snowing. I know that you've been outside recently and know the weather. On exiting the building together, I see the snow and say the following:

(54) a. You didn't tell me **this**.

b. I am surprised by **this**.

c. I didn't expect **this**.

d. **This** is crazy.

e. **This** was unlikely given the heat yesterday.

this = that it is snowing

But! There is something much odder about the following, even though the proposition 'it is snowing' is salient.

(55) a. #You didn't say **this** before.

b. #I didn't think **this**.

c. #I believed **this** already.

d. #Had you claimed **this** before, I'd have thought you were crazy!

These are all fine with a linguistic antecedent:

(56) You: Look, it's snowing!

Me: (i) You didn't say **this/that** before.

(ii) ?I didn't think **this/that**.

(iii) I believed **this/that** already.

(iv) Had you claimed **this/that** before, I'd 'a thought you were crazy!

Diagnosis: facts/possibilities vs. propositions

- (57) Different selectional properties
- ✓Deictic propositional anaphor
tell someone __, __ *surprise, expect* __, __ *be crazy, be unlikely*
 - ✗Deictic propositional anaphor
believe/say/think/claim __

The predicates in (57a) select different DP arguments than those in (57b).

- (58) a. You didn't tell me **this fact** before.
b. I am surprised by **this outcome**.
c. I didn't expect **this loveliness**.
d. **This situation** is crazy.
e. **This possibility** was unlikely given the heat yesterday.
- (59) a. *You didn't say **this fact** before.
b. *I didn't think **this outcome**.
c. *I believed **this possibility** already.
d. *When you claimed **this situation**, I thought you were crazy!

- What these objects refer to is not clear to me (facts or possibilities (Asher 1993), states-of-affairs (Zucchi 1993)) they are different from **propositions proper**:

(60) *That fact/situation/possibility/outcome is true/false.

Diagnosis: No deictic reference to propositions (once facts/possibilities are factored out).

- Non-linguistic 'things' can deictic propositional reference, as long as they bear content:

- (61) [Mom walks into the living room, and sees her three children standing around the broken remains of a lamp.]
[Mom:] Who broke the lamp?
[Two of the children look at Dewey.]
[Dewey:] **That's** not true! (Snider 2017: (89))

The non-linguistic, but communicative gestures made by the two children:

- are required for successful reference by *that*.
- may not be utterances, but they evoke an assertion or claim, a thing with content:

- (62) The children's looks **say** that Dewey did it.

Summary: Just as anaphoric propositional proforms (and *kes/toyuu*-clauses) must refer to 'things with content' so do deictic propositional proforms.

4 Conclusion: a to do list

- Do canonical D+CP constructions (e.g. Greek, Roussou (1991)) exhibit similar anaphoric constraints?
- What about the German *es...dass* construction?
 - Not all Ds on CP might be anaphoric though—some might be weak uniqueness definites (Hankamer and Mikkelsen 2020).
- What ‘chunks’ of language evoke content individuals? (Speech acts? Embedded clauses? anything else?) and why these?

Acknowledgments: We gratefully thank Chung-hye Han, Kyeong-min Kim, Dorothy Ahn, and Nayoun Kim for sharing their judgments of Korean. This research was supported, in part, by SSHRC Insight Grant (#435-2015-0454) to Junko Shimoyama and Keir Moulton.

References

- Alexiadou, Artemis. 2020. D vs. n nominalizations within and across languages. In *Nominalization: 50 years on from chomsky’s remarks*, ed. Artemis Alexiadou and Hagit Borer, 87–110. Oxford: Oxford University Press.
- Asher, Nicholas. 1993. *Reference to abstract objects in English*. Kluwer Academic Press.
- Bogal-Allbritten, Elizabeth, and Keir Moulton. 2018. Nominalized clauses and reference to propositional content. In *Proceedings of Sinn und Bedeutung*, volume 21, 215–232.
- Cattell, Ray. 1978. The source of interrogative adverbs. *Language* 54:61–77.
- Chierchia, Gennaro. 1984. Topics in the syntax and semantics of infinitives and gerunds. Doctoral Dissertation, University of Massachusetts, Amherst.
- Davies, William D., and Stanley Dubinsky. 2010. On the existence (and distribution) of sentential subjects. In *Hypothesis A/hypothesis B: Linguistic explorations in honor of David M. Perlmutter*, 211–228. MIT Press.
- De Cuba, Carlos. 2017. Noun complement clauses as referential modifiers. *Glossa: a journal of general linguistics* 2.
- De Cuba, Carlos Francisco. 2007. On (non) factivity, clausal complementation and the CP-field. Doctoral Dissertation, State University of New York at Stony Brook.
- Haegeman, Liliane, and Barbara Ürögdi. 2010. Referential CPs and DPs: An operator movement account. *Theoretical Linguistics* 36:111–152.
- Han, Hye Jin. 2005. A dn/np-shell for subject cps. In *Annual Meeting of the Berkeley Linguistics Society*, volume 31, 133–144.
- Hankamer, Jorge, and Line Mikkelsen. 2020. Cp complements to d. *Linguistic Inquiry* 1–78.
- Hankamer, Jorge, and Ivan Sag. 1976. Deep and surface anaphora. *Linguistic Inquiry* 7:391–428.
- Hartman, Jeremy. 2012. Varieties of Clausal Complementation. Doctoral Dissertation, Massachusetts Institute of Technology.
- Hegarty, Michael. 1992. Adjunct extraction without traces. In *The Proceedings of the Tenth West Coast Conference on Formal Linguistics*, ed. Dawn Bates, 209–222. Stanford, California: Center for the Study of Language and Information.

- Holmberg, Anders. 2013. The syntax of answers to polar questions in english and swedish. *Lingua* 128:31 – 50. SI: Polarity emphasis: distribution and locus of licensing.
- Honcoop, Martin. 1998. *Dynamic excursions on weak islands*, volume 13. Holland Academic Graphics The Hague.
- Iordăchioaia, Gianina. 2020. D and n are different nominalizers. *Glossa: a journal of general linguistics* 5.
- Jo, Mi-Jeung. 2003. The correlation between syntactic nominalization and the internally headed relative constructions in korean. *Studies in Generative Grammar* 13:535–564.
- Kastner, Itamar. 2015. Factivity mirrors interpretation: The selectional requirements of presuppositional verbs. *Lingua* 164:156–188.
- Kim, Min-Joo. 2007. Formal Linking in Internally Headed Relatives. *Natural Language Semantics* 15:279–315.
- Kim, Min-Joo. 2009. E-type anaphora and three types of *kes*-construction in Korean. *Natural Language and Linguistic Theory* 27:345–377.
- Kim, Nam-Kil. 1984. *The grammar of Korean complementation*. Center for Korean Studies.
- Kim, Shin-Sook. 2011. Noun complements and clause types in Korean (and Japanese). *18th Japanese/Korean Linguistics* 18:278–290.
- Kiparsky, Paul, and Carol Kiparsky. 1970. Fact. In *Progress in linguistics*, ed. M. Bierwisch and K.E. Heidolph, 143–73. The Hague: Mouton.
- Kratzer, Angelika. 2013. Modality for the 21st Century. In *L'interface Langage-Cognition/The Language-Cognition Interface: Actes du 19^e Congrès International des Linguistes Genève*, ed. Stephen R. Anderson, Jacques Moeschler, and Fabienne Reboul, 179–199. Librairie Droz.
- Krifka, Manfred. 2013. Response particles as propositional anaphors. In *Semantics and linguistic theory (SALT)*, ed. Todd Snider, volume 23, 1–18. CLC Publications.
- Landman, Meredith. 2006. Variables in natural language. Doctoral Dissertation, UMass.
- Lee, Chung-min. 2019. Factivity alternation of attitude ‘know’ in korean, mongolian, uyghur, manchu, azeri, etc. and content clausal nominals. *Journal of Cognitive Science* 20-4:449–508.
- Moltmann, Friederike. 2013. *Abstract Objects and the Semantics of Natural Language*. Oxford University Press.
- Moltmann, Friederike. 2020. Truthmaker semantics for natural language: Attitude verbs, modals, and intensional transitive verbs. *Theoretical Linguistics* 46:159—200.
- Moulton, Keir. 2020. Remarks on propositional nominalization. In *Nominalization: 50 years on from chomsky's remarks*, ed. Artemis Alexiadou and Hagit Borer, 255–276. Oxford: Oxford University Press.
- Poirier, Paul. 2020. Nominalization in Japanese: the case of *koto and no*. Forum Paper, University of Toronto.
- Poole, Ethan. 2017. Movement and the semantic type of traces. Doctoral Dissertation, UMass.
- Rosenbaum, Peter S. 1967. *The grammar of English predicate complement constructions*. Cambridge, Massachusetts: MIT Press.
- Roussou, Anna. 1991. Nominalized clauses in the syntax of Modern Greek. *UCL Working Papers in Linguistics* 3:77–100.
- Saito, Hiroaki. 2019. Grammaticalization and the root and category theory. In *Proceedings of the chicago linguistics society*. Chicago, IL.
- Schwarz, Florian. 2009. Two types of definites in natural language. Doctoral Dissertation, UMass.
- Sheehan, Michelle, and Wolfram Hinzen. 2011. Moving towards the edge. *Linguistic Analysis* 37:405–458.
- Shim, Ji Young, and Tabea Ihsane. 2015. Facts: The Interplay Between the Matrix Predicate

- and Its Clausal Complement. In *Newcastle and Northumbria Working Papers in Linguistics*, ed. Alison Biggs, Ma Li, Aiqing Wang, and Cong Zhang, volume 21:1, 130–144. Newcastle, UK: Centre for Research in Linguistics and Language Sciences.
- Snider, Todd. 2017. Anaphoric reference to propositions. Doctoral Dissertation, Cornell University.
- Sudhoff, Stefan. 2003. *Argumentsätze und es-Korrelate: zur syntaktischen Struktur von Nebensatzeinbettungen im Deutschen*. wvb, Wiss. Verlag Berlin.
- Takahashi, Shoichi. 2010. The hidden side of clausal complementation. *Natural Language and Linguistic Theory* 28:343–380.
- Yeom, Jae-il. 2018. Embedded declaratives in Korean. *Language and Information* 22:1–27.
- Zucchi, Alessandro. 1993. *The Language of Propositions and Events*. Dordrecht: Kluwer.

5 Appendix A: Snider's examples

Snider (2017, p. 100(202–203)) provides examples that he argues show that English propositional anaphora *can* refer to the partitioning proposition of a polar question:

- (63) Did Barb go to the party? Because Nancy told me that (and she's unreliable).
#that: Did Barb go to the party? / whether... matrix clause
✓that: Barb went to the party. partitioning prop.
#that: Barb didn't go to the party. complement prop
- (64) Did Barb go to the party? Steve refuses to believe that.
#that: Did Barb go to the party? / whether... matrix clause
✓that: Barb went to the party. partitioning prop.
#that: Barb didn't go to the party. complement prop

We suggest these discourses invite an accommodated referent, that there was a claim that Barb went to the party.

6 Appenix B: Hankamer and Sag's examples

Hankamer and Sag's original example supporting the existence of deep propositional anaphora:

- (65) Hankamer [observing Sag successfully ripping a phone book in half]:
I don't believe **it**. (Hankamer & Sag 1976: (32))

The phrasing *don't/can't believe* is quite different from vanilla *believe*. It can combine with situation-denoting expressions better than plain *believe* can.

- (66) [Watching a trashy television show:]
a. #I believe this garbage!
b. I can't believe this garbage!
- (67) [Lamenting the fact that Trump won:]
a. #I believe this outcome/situation. (I expected it all along.)
b. I can't believe this outcome/situation. (I never expected it.)

Best to avoid *can't/don't believe* if we really want to test proposition-selecting verbs.