1. Introduction

- Backward control (BC) is a construction where the null controller is superior to the overt controller, (1b).

  (1) a. Gus Hiddink persuaded him, [Δ to play center middle]
      b. Gus Hiddink persuaded Δ, [he, to play center middle] (hypothetical)

- BC was proposed in Japanese (Kuroda 1965; Harada 1973), Brazilian Portuguese (Farrell 1995), Tsez (Polinsky and Potsdam 2002) and Malagasy (Polinsky and Potsdam 2003).

- Korean object control predicates permit a nominative/accusative case alternation:

  (2) Cheolsu-neun Yeonghi-leul ka-te kae tollok seolteukha-eos-sa
      Cheolsu-Top Yeonghi-Acc Nom store-to go-Comp persuade-Past-Decl
      "Cheolsu persuaded Yeonghi to go to the store."

  - Accusative case: constituent of the matrix clause binding a null element Δ in the embedded clause, (3), (ordinary control)

      Cheolsu-Top Yeonghi-Acc store-to go-Comp persuade-Past-Decl
      "Cheolsu persuaded Yeonghi to go to the store." (ordinary control)

  - Nominative case: constituent of the embedded coindexed with a null element Δ in the matrix clause, (4), (backward control)

      Cheolsu-Top Yeonghi-Nom store-to go-Comp persuade-Past-Decl
      "Cheolsu persuaded Yeonghi to go to the store." (backward control)

- I argue that Korean licenses backward object control in (4).

2. Goals of the talk

- Provide empirical evidence for the forward control structure in (3) and the backward control structure in (4):
  1) clause membership of the persuadee DP
  2) existence of Δ

- Argue against a pro-based analysis of backward control in Cormack and Smith 2002.

- Demonstrate that a control-is-movement approach accounts for the facts.

3. Korean persuade is an object control predicate not ECM

- ECM predicates license a case alternation similar to (2) (JS Lee 1992).

  (5) John-eum Mary-leul ka yeppae-ta-ko mit-neun-ta
      John-Top Mary-Acc Nom pretty-Decl Comp believe-Pres-Decl
      "John believes Mary to be pretty.'

- Korean persuade selects for the case alternating DP and places selectional restrictions on it, while Korean ECM does not.

3.1 Non-control usage

- Non-control Korean persuade can license an additional overt internal argument:

  (6) Cheolsu-neun Yeonghi-leul/ke Suyeong-ka ka-yaha-n-ta-ko
      Cheolsu-Top Yeonghi-Acc/Dat Suyeong-Nom go-should-Pres-Decl-Comp
      seolteukha-eos-ta persuade-Past-Decl
      "Cheolsu persuaded Yeonghi that Suyeong be allowed to go to the store.'

- Korean ECM predicates cannot license an additional overt argument:

  (7) *Cheolsu-neun Yeonghi-leul Suyeong-i yeppae-ta-ko mit-eos-ta
      Cheolsu-Top Yeonghi-Acc Suyeong-Nom pretty-Decl Comp believe-Past-Decl
      (*Cheolsu believed Yeonghi Suyeong to be pretty.)
3.2 Passive/active synonymy

- Passive and active forms are not synonymous with persuade (as in the English translations):

(8) a. Cheolsu-neun Yeonghi-ka/eul Suyeong-eul inteophyu ha-tolok Cheolsu-Top Yeonghi-Nom/Acc Suyeong-Acc interview do-Comp seolteukha-eoss-ta persuade-Past-Decl
   ‘Cheolsu persuaded Yeonghi to interview Suyeong.’

   b. Cheolsu-neun Suyeong/eul Yeonghi-ek-e inteophyu pat-tolok Cheolsu-Top Suyeong-Nom/Acc Yeonghi-Dat interview Pass-Comp seolteukha-eoss-ta persuade-Past-Decl
   ‘Cheolsu persuaded Suyeong to be interviewed by Yeonghi.’ (≠ 8a)

- This lack of synonymy suggests that Korean persuade is selecting for the persuadee DP.
- Passive and active are synonymous with ECM:

   ‘Cheolsu believed (that) Yeonghi to have met Suyeong.’ (active)

   ‘Cheolsu believed (that) Suyeong to have been met by Yeonghi.’ (passive; ≠ 9a)

- Korean ECM predicates do not select for the case alternating DP. Korean persuade does.

3.3 Selectional restrictions

- A non-persuadable entity in the case alternating position creates an anomalous reading, (10).

(10) #Cheolsu-neun tol-i/eul tteoleoji-tolok seolteukha-eoss-ta Cheolsu-Top rock-Nom/Acc fall-Comp persuade-Past-Decl
   ‘Cheolsu persuaded the rocks to fall.’

- The same anomalous interpretation does not arise in ECM constructions:

(11) Cheolsu-neun tol-i tteoleoji-n-tya-ko mit-eoss-ta Cheolsu-Top rock-Nom fall-pres-Decl Comp believe-Past-Decl
   ‘Cheolsu believes the rocks to be falling.’

3.4 Summary of section

- Korean persuade selects for three semantic arguments while Korean ECM selects for two.
- Korean persuade places selectional restrictions on the case alternating DP.
- With the assumption that argument selection is local, these facts suggest a control analysis.

4. Constituent analysis of Korean persuade constructions

- Propose two constituent structure analyses to account for the case alternation.
- Argue that the nominative DP is a constituent of the embedded clause.

4.1 Proposed constituency structures

- Subject/Object Analysis: the nominative DP is a constituent of the embedded clause, (12a).

(12) Subject/Object Analysis (SOA)

      ‘Cheolsu persuaded Yeonghi to go to the store.’

      ‘Cheolsu persuaded Yeonghi to go to the store.’

- Object Analysis: the case alternating DP is a constituent of the matrix clause

(13) Object Analysis (OA)

   ‘Cheolsu persuaded Yeonghi to go to the store.’

4.2 Case in monoclusal structures

- In a monoclusal structure, nominative case is not permitted on the object DP.
- This is not predicted by the OA.
- The SOA makes this prediction because nominative case is not licensed in matrix object position.

(14) Cheolsu-neun Yeonghi-leul/ka seolteukha-eoss-ta Cheolsu-Top Yeonghi-Acc/Nom persuade-Past-Decl
   ‘Cheolsu persuaded Yeonghi.’
4.3 Temporal adverb distribution

- Temporal adverbs in Korean are clause-bound in their scope (J Yoon 1996).
- A matrix adverb is able to follow the accusative marked persuade DP (15).
- A matrix adverb is unable to follow the nominative marked persuade DP (16).

(15) Cheolsu-neun Yeonghi-leul naeil kake-e maeil ka-tolok seolteukha-l keo-ya Cheolsu-Top Yeonghi-Acc tom. store-to everyday go-Comp persuade-Fut-Decl
   "Tomorrow, Cheolsu will persuade Yeonghi to go to the store everyday.'

(16) *Cheolsu-neun Yeonghi-ka naeil kake-e maeil ka-tolok seolteukha-l keo-ya Cheolsu-Top Yeonghi-Nom tom. store-to everyday go-Comp persuade-Fut-Decl
   "Tomorrow, Cheolsu will persuade Yeonghi to go to the store everyday.'

4.3.1 OA analysis of adverb facts

- OA predicts (15): the matrix adverb can be interpreted with matrix scope.

   "Tomorrow, Cheolsu will persuade Yeonghi to go to the store everyday.'

- OA fails to predict the ungrammaticality of (16).

   "Tomorrow, Cheolsu will persuade Yeonghi to go to the store everyday.'

4.3.2 SOA analysis of adverb facts

- SOA correctly predicts (15).

   "Tomorrow, Cheolsu will persuade Yeonghi to go to the store everyday.'

- SOA also predicts (16): the matrix adverb is unable to take matrix scope.

(20) *Cheolsu-neun Yeonghi-ka naeil kake-e maeil ka-tolok seolteukha-l keo-ya Cheolsu-Top Yeonghi-Nom tom. store-to everyday go-Comp persuade-Fut-Decl
   "Tomorrow, Cheolsu will persuade Yeonghi to go to the store everyday.'

4.4 Scrumbling

- The embedded clause is unable scramble without the nominative marked DP:

(21) Cheolsu-neun [kake-e ka-tolok Yeonghi-leul*/ka seolteukha-eoss-ta Cheolsu-Top store-to go-Comp Yeonghi-Acc*/Nom persuade-Past-Decl
   "Cheolsu persuaded Yeonghi to go to the store.'

4.4.1 OA analysis of scrambling facts

- OA fails to predict a contrast between (22) and (23).

(22) Cheolsu-neun [kake-e ka-tolok], Yeonghi-leul t_i seolteukha-eoss-ta Cheolsu-Top store-to go-Comp Yeonghi-Acc persuade-Past-Decl
   "Cheolsu persuaded Yeonghi to go to the store.'

(23) *Cheolsu-neun [kake-e ka-tolok], Yeonghi-ka t_i seolteukha-eoss-ta Cheolsu-Top store-to go-Comp Yeonghi-Nom persuade-Past-Decl
   "Cheolsu persuaded Yeonghi to go to the store.'

4.4.2 SOA analysis of scrambling facts

- The SOA predicts the contrast between (24) and (25).

(24) Cheolsu-neun [kake-e ka-tolok], Yeonghi-leul t_i seolteukha-eoss-ta Cheolsu-Top store-to go-Comp Yeonghi-Acc persuade-Past-Decl
   "Cheolsu persuaded Yeonghi to go to the store.'

- The embedded clause is unable to scramble without the nominative persuadee.

(25) *Cheolsu-neun [kake-e ka-tolok, Yeonghi-ka t_i seolteukha-eoss-ta Cheolsu-Top store-to go-Comp Yeonghi-Nom persuade-Past-Decl
   "Cheolsu persuaded Yeonghi to go to the store.'

4.5 Summary of section 4

- A difference in case equates to a difference in syntactic position.
- When the persuadee DP is accusative, it is a constituent of the matrix clause, (3).
- When the persuadee DP is nominative, it is a constituent of the embedded clause, (4).
Cheolsu-neun Yeonghi-leul [Δ₃ kake-e ka-tolok] seolteukha-eoss-ta Cheolsu-Top Yeonghi-Acc store-to go-Comp persuade-Past-Decl 'Cheolsu persuaded Yeonghi to go to the store.' (ordinary control)

Cheolsu-neun Δ₃ [Yeonghi-ka, kake-e ka-tolok] seolteukha-eoss-ta Cheolsu-Top Yeonghi-Nom store-to go-Comp persuade-Past-Decl 'Cheolsu persuaded Yeonghi to go to the store.' (backward control)

5. Evidence for Δ

- Evidence supporting the existence of Δ in (4) is desired.
- Present evidence for the existence of Δ in the backward control construction with data from quantifier agreement and reflexive binding.

5.1 Quantifier agreement

- Postnominal quantifiers in Korean must agree in case with the head noun (Cho 2000):

  haksan-teul-i motu-ka/*leul us-eoss-ta restaurant-Nom all-Nom/*Nom laugh-Past-Decl 'All the restaurants laughed.' (Cho 2000:193)

  Mary-ka haksan-teul-eul motu-leul/*ka sohwana-eoss-ta student-Nom student-Nom all-Nom/*Nom call-Past-Decl 'Mary called all the students.' (Cho 2000:194)

- An accusative quantified DP can appear in post-embedded clause position:

  Cheolsu-neun [kake-e ka-tolok] ai-teul-eul motu-leul seolteukha-eoss-ta Cheolsu-Top child-Pi-Nom store-to go-Comp persuade-Past-Decl 'Cheolsu persuaded all the children to go to the store.'

- In (29), the quantified DP is nominative and a constituent of the embedded clause.
- The quantifier is accusative and a constituent of the matrix clause.
- This should be illicit.

  Cheolsu-neun [ai-teul-i, kake-e ka-tolok] motu-leul seolteukha-eoss-ta Cheolsu-Top child-Pi-Nom store-to go-Comp all-Nom persuade-Past-Decl 'Cheolsu persuaded all the children to go to the store.'

- The embedded subject is coindexed with Δ in the matrix clause.

5.2 Reflexive binding

- The reflexive anaphor keunyeojasin 'herself' is governed by Condition A (JM Yoon 1989).
- In (31), the reflexive is in a matrix VP adjunct and is coindexed with the embedded subject.
- This should be illicit.

  % Cheolsu-neun [Yeonghi-ka, kake-e ka-tolok] [Δ₃ keunyeojasin-eui, yuik-eul Cheolsu-Top Yeonghi-Nom go-Comp herself-gen benefit-Acc uihae] seolteukha-eoss-ta for persuade-Past-Decl 'Cheolsu for herself’s, benefit persuaded Yeonghi, to go.'

- Acceptability is due to Δ in the matrix clause satisfying Condition A.

  % Cheolsu-neun [Yeonghi-ka, kake-e ka-tolok] [Δ₃ keunyeojasin-eul, Cheolsu-Top Yeonghi-Nom go-Comp herself-Acc yuik-eul uihae] seolteukha-eoss-ta benefit-Acc for persuade-Past-Decl 'Cheolsu for herself’s, benefit persuaded Yeonghi, to go.'

6. Formal analysis

- Address the identity of Δ.
- PRO is inadequate for reasons discussed in Polinsky and Potsdam 2002.
- Present empirical problems for the pro-based analysis offered by Cormack and Smith 2002.
- Show the control-is-movement analysis accounts for the backward control data from Korean.

6.1 pro-based account

- The null element in (3) and (4) is pro.
- Korean is a null object language.

  Cheolsu-ka (Yeonghi-leul) manna-ass-ta Cheolsu-nom (Yeonghi-acc) meet-Past-Decl 'Cheolsu met Yeonghi.'
Polinsky and Potsdam 2002 argue for backward subject control in Tsez:

(34) \( \Delta_{x^1} \) [kidba\(_s\) ziya bli\(a\)] yqsi
\hspace{1em} girl-erg cow-abs feed-inf begin-past
The girl began to feed the cow.' (backward control; Polinsky and Potsdam 2002)

Polinsky and Potsdam 2002:fn.17 provide three arguments against a pro-based account:
1) pro c-commands its antecedent. This is a Condition C violation.
2) pro cannot account for the obligatory control relationship.
3) The null element does not alternate with an overt pronoun.

Cormack and Smith 2002 provides solutions to two of these three problems.

This structure is lexically determined.

(35) \( \{\} \) Cheolsu [\( \{\} \) Yeonghi, store go] \( [v_o, [\text{pro}] \) persuaded]]

A Meaning Postulate obligatorily coindexes the embedded agent with pro.

(36) \( \forall \psi \exists \psi \) [pro\(_x\), \( x, y \rightarrow y \) is an agent in the event given by \( x \)]
Where type \( x, y \rightarrow y \), type \( x \rightarrow \alpha \).

6.2 Problems with the pro-based account

- pro should be able to alternate with a pronoun.
- This is not the case:

(37) *Cheolsu-neun (keunyeo-leul) \{Yeonghi-ka, kake-e ka-tolok\}
Cheolsu-top she-acc Yeonghi-nom store-to go-comp
\{keunyeo-leul\) seolteukha-coss-ta
she-acc persuade-past-decl
Cheolsu persuaded Yeonghi to go to the store.'

A distributively quantified DP should be illicit in embedded subject position: no binding configuration.

Korean permits a quantified DP.

(38) Cheolsu-neun [kakkak-eui ai-ka sukjae-leul ha-tolok]
Cheolsu-top each-gen child-nom homework-acc do-comp
seolteukha-coss-ta persuade-past-decl
Cheolsu persuaded each child to do the homework.'

The Meaning Postulate incorrectly predicts that pro be interpreted with the agent of the passivized embedded clause.

(8b') Cheolsu-neun Suyeong-ka Yeonghi-eke inteoyphyu pat-tolok
Cheolsu-Top Suyeong-Nom Yeonghi-Dat interview Pass-Comp
seolteukha-coss-ta persuade-Past-Decl
Cheolsu persuaded Suyeong to be interviewed by Yeonghi.'
*Cheolsu persuaded Yeonghi that Suyeong interview her,'

Korean licenses both forward and backward control. We are required to posit a lexically marked structure for the backward control (4) and another structure for the forward control.

6.3 Control-is-movement account

Polinsky and Potsdam 2002 analyze backward control in Tsez with a control-is-movement approach (Hornstein 1999).

A default nominative case (DNC) mechanism is responsible for the case alternation.

(39) Default Nominative Case (DNC; YJ Kim 1990:180)
Default case marking inserts nominative case on a DP that lacks morphological case.

In the backward control structure, the DNC marks the DP Yeonghi, in spec,T* [\text{-tense] at Spell-Out, with nominative case at PF.

(4') Cheolsu-neun \( \Delta_{s} \) [Yeonghi-ka, kake-e ka-tolok] seolteukha-coss-ta
Cheolsu-Top Yeonghi-Nom store-to go-Comp persuase-Past-Decl
Cheolsu persuaded Yeonghi to go to the store.' (backward control)

I am assuming a case assignment system, metaphorically (actually adopting Chomsky 2000).

The forward control derivation:

(3') Cheolsu-neun Yeonghi-leul [Yeonghi kake-e ka-tolok] seolteukha-coss-ta
Cheolsu-Top Yeonghi-Acc store-to go-Comp persuade-Past-Decl
Cheolsu persuaded Yeonghi to go to the store.' (ordinary control)
The derivation of Yeonghi in **forward control**:
1) Merged in embedded spec,\( v^o \) and ‘absorbs’ the \( \theta \)-role of the embedded verb.
2) Raises into embedded spec,\( T^o \) to delete the uninterpretable \( \phi \)-features of \( T^o \).
3) The DNC is not ‘activated’.
4) Raises into matrix spec,\( V^o \) to ‘absorb’ the \( \theta \)-role of persuade.
5) Raises into matrix spec,\( V^o \) to delete the uninterpretable \( \phi \)-features of \( V^o \).
6) It is assigned accusative case in outer spec,\( v^o \).

The **backward control** derivation:

(4') Cheolsu-\( \text{neun} \) [Yeonghi-\( \text{ka} \), kake-e ka-tolok] seolteuka-eoss-ta
Cheolsu-Top Yeonghi-Nom store-to go-Comp persuade-Past-Decl
‘Cheolsu persuaded Yeonghi to go to the store.’ (backward control)
Backward object control in Korean

1. Backward object control in Korean

2. TP 3
   DP 3
   M°
   g
decl

3. DP 5
   vP 5
   T°
   g
   past

4. Yeonghi 5 DP 5
   v'
   3
   v'

5. Cheolsu 5 VP 3
   v'

6. DP 3
   T'
   g
   comp

7. Yeonghi 5 vP
   T°
   [-finite]

8. Yeonghi 5 VP 3
   v'

9. store-to-go

Yeonghi raises covertly into the matrix clause:
1) Raises into matrix spec,V° to ‘absorb’ the direct object 0-role of persuade.
2) Raises into matrix spec,v° to delete the uninterpretable 4-features of v°.
3) In spec,v°, the DP Yeonghi is assigned accusative case.

- Both an ‘unabsorbed’ 0-role and a case unassigned nominal motivate the covert movement.
- Covert movement in Polinsky and Potsdam was motivated solely by 0-requirements.
- Proposed that the default nominative case strategy is responsible for the case alternation.
- Tsez did not have this forward/backward control option, nor did it show a case alternation.

8. References

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