Control and Raising, Back and Forth

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1. Introduction

1.1 Controller-controllee relationship

CONTROL: a dependency between two argument positions in which the referential properties of the overt CONTROLLER determine the referential properties of the silent CONTROLLEE:

(1) Bradley tried [___ i to cut in line]
    CONTROLLER CONTROLLEE

(2) Basic assumption: Controller is structurally higher than controllee

(3) *___ i tried [Bradley i to cut in line]
    CONTROLLEE CONTROLLER

Is this assumption necessary?

1.2 Control as A-movement

Two innovations in syntactic theory:
- analysis of control as movement (Hornstein 1999, 2003, and many others)
- the copy-and-delete view of movement (Chomsky 1993 and many others)

(4) Assumptions
    a. θ-roles are features that are checked/deleted in a derivation
    b. a DP bears a θ-role by checking the θ-role feature of a verb that it merges with
    c. there is no upper bound on the number of θ-roles in a chain
    d. movement involves copying and deletion

(5) a. Bradley tried to cut in line
    b. [TP Bradley [VP tried [TP Bradley to [TP cut in line]]]]

(6) Consequences
    a. raising and control are instances of A-movement
    b. original copy may not undergo deletion (Pesetsky 1998, Bošković 2002, Ghomeshi et al. 2004, and many others)
    c. backward control and backward raising should be possible

<table>
<thead>
<tr>
<th>Higher element pronounced</th>
<th>Lower element pronounced</th>
<th>Resulting structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>✗</td>
<td>forward control/raising</td>
</tr>
<tr>
<td>✗</td>
<td>✓</td>
<td>backward control/raising</td>
</tr>
<tr>
<td>✓</td>
<td>✓</td>
<td>copy control/raising</td>
</tr>
</tbody>
</table>

Are backward patterns possible?

Outline of the talk:
- Evidence for backward patterns (section 2)
- Why are backward patterns rare? (section 3)
- What motivates backward patterns? (section 4)
- Conclusions and open questions (sections 5-6)

2. Evidence for backward patterns

Main components:
- Evidence for control/raising
- Evidence for biclausal structure
- Evidence that the overt DP is in the embedded clause
- Evidence for the silent element in the matrix clause (the higher copy, although deleted, has structural effects)
Patterns that have been empirically attested:
• Backward subject control
• Backward object control
• Backward raising

2.1 Backward subject control

Backward subject control attested: Tsez (Polinsky 2000; Polinsky and Potsdam 2002), Bezhta (Polinsky 2002), Tsaxur (Kibrik 1999), Kabardian (Kumaxov and Vamling 1998), Adyghe (Say 2004), Malagasy (Polinsky and Potsdam 2003)

**Tsez (Nakh-Daghestanian)** (Polinsky 2000; Polinsky and Potsdam 2002)
- SOV basic word order, relatively free in root clauses
- head-final
- pro-drop
- no passive
- ergative-absolutive case system
- agreement

Verb obligatorily agrees with its absolutive argument in noun class

(7) kid-bā ziya yi-ik’-i-s
   girl.CLASS II.ABS II-go-PAST
   ‘The girl went away.’ (intransitive predicate)

(8) kid-bā ziya b-išer-si
    girl.ERG cow(CLASS III.ABS III-feed-PAST
    ‘The girl fed the/a cow.’

(9) *kid-bā ziya y-išer-si
    girl.CLASS II-ERG cow.ClASS III.ABS. II-feed-PAST
    (‘The girl fed the/a cow.’)

**But:** Agreement pattern with the verbs -oqa ‘begin’, -iča ‘continue’ is different; the verb agrees with the non-absolutive argument

\[^{1}\text{ABS}\text{—absolutive, CLASS} + \text{ROMAN NUMERAL} — \text{noun class, ERG—ergative, FUT—future, INF—infinitive, NMLZ—nominalizer, PAST—past, PL—plural, PRES—present, REFL—reflexive, SG—singular, VAL—validator. Roman numerals in glosses show noun class agreement (e.g., II means ‘class II agreement’).}\]

\[^{1}\text{ABS}\text{—absolutive, CLASS} + \text{ROMAN NUMERAL} — \text{noun class, ERG—ergative, FUT—future, INF—infinitive, NMLZ—nominalizer, PAST—past, PL—plural, PRES—present, REFL—reflexive, SG—singular, VAL—validator. Roman numerals in glosses show noun class agreement (e.g., II means ‘class II agreement’).}\]

**Impossible:** Regular agreement with the absolutive DP (10b) or agreement with the sentential complement (10c)

\[^{1}\text{ABS}\text{—absolutive, CLASS} + \text{ROMAN NUMERAL} — \text{noun class, ERG—ergative, FUT—future, INF—infinitive, NMLZ—nominalizer, PAST—past, PL—plural, PRES—present, REFL—reflexive, SG—singular, VAL—validator. Roman numerals in glosses show noun class agreement (e.g., II means ‘class II agreement’).}\]

**Why?**

**Proposal:** the ergative NP is in the embedded clause; it is co-indexed with an absolutive empty category (represented as Δ) in the main clause; this is an instance of backward subject control

(11) a. oqa, V, <AGENT EVENT>
    b. iča, V, <AGENT EVENT>

(12) a. kid-bā ziya b-išr-a y-oq-si
    girl.ERG cow.ABS III-feed-INF II-begin-PAST.EVID
    ‘The girl began to feed the cow.’
    b. Δ₁ [kid-bā ziya bišra yoqsi]
    EC girl.ERG cow.ABS feed began

(13) Obligatory control properties in Tsez

<table>
<thead>
<tr>
<th></th>
<th>‘try’, ‘intend’</th>
<th>‘begin’, ‘continue’</th>
</tr>
</thead>
<tbody>
<tr>
<td>allows \text{PRO}_{arb} reading (no antecedent)</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>permits strict reading under ellipsis</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>paraphrasable with a pronoun</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>allows a non-local antecedent</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>allows a non-c-commanding antecedent</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>allows for partial control reading</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>
(14) Analysis of the puzzling construction as backward subject control
(Polinsky 2000; Polinsky and Potsdam 2002)

<table>
<thead>
<tr>
<th>Analytical component</th>
<th>Evidence for the analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obligatory control</td>
<td>selectional restrictions, imperative formation; typical OC properties (13)</td>
</tr>
<tr>
<td>Biclausal structure</td>
<td>event quantification, null complement anaphora, distribution of the root clause clitic</td>
</tr>
<tr>
<td>The subject of the complement verb (ERG) is in the lower clause</td>
<td>scrambling with clause-mate elements, case-marking determined by the lower verb, scrambling of the entire embedded clause as a constituent, inability of the lower subject to interact with the root clause clitic</td>
</tr>
<tr>
<td>The subject of the matrix verb (‘begin’, ‘continue’) is a co-indexed empty category</td>
<td>depictive licensing, control of local agreement, control of Long-Distance Agreement, binding of clause-mate reflexive</td>
</tr>
</tbody>
</table>

the agreement problem is solved, as the matrix controller has the same agreement features as the embedded controller, and determines agreement in a standard local fashion
the puzzling construction is backward subject control

Difference between forward and backward control

(15) Forward control

kidbā [Δ₁ ziya bišra] hakarat nelsi
girl.ERG cow.ABS feed.INF attempt gave
‘The girl tried to feed the cow.’

(16) Backward control

Δ₁ [kidbā ziya bišra] yoqsi
girl.ERG cow.ABS feed.INF began
‘The girl began to feed the cow.’

| Forward Control vs Backward control: pronunciation of the higher vs lower element of the movement chain |

(17) Forward control

[[IP girl.ERGATIVE [VP [IP girl.ERGATIVE [VP feed the cow] try]]]]
A-chain

(18) Backward control

[[IP girl.ABSOLUTIVE [VP [IP girl.ERGATIVE [VP feed cow] begin]]]]
A-chain

Korean (Monahan 2003)

gochomp persuaded
‘Chelswu persuaded Yenghi to go to the store.’ (Forward control)

b. Chelswu-nun Yenghi-lul [Yenghi-ka kakey-ey ka-tolok]
Chelswu-TOPEC Yenghi-ACC Yenghi-NOM store-to
go- COMP persuaded
‘Chelswu persuaded Yenghi to go to the store.’ (Backward control)
(20) Analysis of (19b) as backward object control (Monahan 2003)

<table>
<thead>
<tr>
<th>Analytical component</th>
<th>Evidence for the analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence for control</td>
<td>selectional restrictions, passive/active synonymy</td>
</tr>
<tr>
<td>Biclausal structure</td>
<td>event quantification, case distribution (as compared to monoclausal constructions)</td>
</tr>
<tr>
<td>The subject of the complement verb (NOM) is in the lower clause</td>
<td>case assignment, scrambling, NPI licensing</td>
</tr>
<tr>
<td>The object of the matrix verb ('persuade', 'force') is a co-indexed empty category</td>
<td>honorific licensing, case agreement on post-nominal quantifiers, reflexive binding</td>
</tr>
</tbody>
</table>

2.3 Backward raising

Backward raising attested: Adyghe (Say 2004a, b)

Adyghe (Abkhazo-Adyghe)
- SOV basic word order, relatively free in root clauses
- head-final
- subject and object pro-drop
- ergative-absolutive case system
- absolutive agreement

(21) Non-raised construction

pro\textsubscript{expl} Ø-wəbla-γ
3SG.INAN(IMATE) 3SG.INAN-begin-PAST

\textbf{Agree}

[bombexe-m pro qewe-n-x-ew] bombs-ABS bombex-ERG explode.INF 3PL-begin-PAST

\textbf{Agree}

The bombs started exploding.

\textbf{b.} Backward raising: the higher copy is deleted but still triggers agreement

\textbf{Agree}

The bombs started exploding.

Cf. singular agreement pattern in the main clause of (21)

(22) a. Forward raising: the raised absolutive DP triggers agreement

\textbf{Agree}

The bombs started exploding.

\textbf{b.} Backward raising: the higher copy is deleted but still triggers agreement

\textbf{Agree}

The bombs started exploding.

Cf. singular agreement pattern in the main clause of (21)

(23) Analysis of (22b) as backward raising (Say 2004a, b, and p.c.)

<table>
<thead>
<tr>
<th>Analytical component</th>
<th>Evidence for the analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raising</td>
<td>absence of selectional restrictions/idiom chunks</td>
</tr>
<tr>
<td>Biclausal structure</td>
<td>negation, VP-ellipsis, event quantification</td>
</tr>
<tr>
<td>The subject of the complement verb (ERG) is in the lower clause</td>
<td>case assignment, binding</td>
</tr>
<tr>
<td>The subject of the matrix verb ('begin') is a co-indexed empty category</td>
<td>agreement, quantifier float</td>
</tr>
</tbody>
</table>

Backward configurations exist, thus providing empirical evidence for the reduction of control to movement and for the unification of raising and control
But: backward patterns are rare

“[E]ven if we accept the validity of the phenomenon, cases requiring an
analysis involving counter-equ [backward control] are quite rare.”
(Noonan 2004: 27)

Why are backward configurations rare?

3. Why are backward configurations rare?

3.1 Defining the difference between ‘forward’ and ‘backward’ languages

3.1.1 Case-marked subject of a non-finite clause

Why isn’t English like Tsez or Korean?

Case-marked subject of a non-finite clause is necessary

<table>
<thead>
<tr>
<th>Case-marked subject of a non-finite clause available</th>
<th>Case-marked subject of a non-finite clause unavailable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tsez, Adyghe, Korean, Japanese, , Portuguese, Hindi, Tongan, Icelandic, Finnish</td>
<td>English, etc.</td>
</tr>
</tbody>
</table>

Backward patterns are impossible in languages that lack case-marked subjects of non-finite clauses

3.1.2 The EPP

Why isn’t Icelandic like Tsez?

The EPP should be satisfied by ways other than NP movement

<table>
<thead>
<tr>
<th>EPP satisfied through verb movement/other means</th>
<th>EPP satisfied through NP movement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabic, Greek, Niuean, Maori, Irish, Russian,</td>
<td>English, Icelandic, Hindi, Tongan</td>
</tr>
</tbody>
</table>

Backward patterns are impossible in strong EPP languages

3.1.3 Surface word order

Why isn’t Maori like Tsez or Malagasy?

Surface word order should be equally accommodating of the deletion of
the higher and lower copy

(24) Forward subject control  Backward subject control  surface order
d. S V [SVO]  S V [SVO]  SVV0/VSV0  English

(simplified: extraposition and pro-drop not considered)

Backward patterns are impossible (unlikely?) if they create a surface word
order different from that found in the corresponding forward patterns

Structural properties necessary for the presence of backward patterns

<table>
<thead>
<tr>
<th>Property</th>
<th>Tsez, Malagasy</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>case-marked subject of a non-finite clause</td>
<td>✔</td>
<td>✗</td>
</tr>
<tr>
<td>EPP satisfied outside NP movement</td>
<td>✔</td>
<td>✗</td>
</tr>
<tr>
<td>“accommodating” word order</td>
<td>✔</td>
<td>✗</td>
</tr>
</tbody>
</table>

Sensitivity to surface order suggests that processing may play a role too. Is
there evidence for processing differences between forward and backward
patterns?

3.2 Processing differences between forward and backward configurations

Previous experimental studies: cataphoric relations take longer to process
than anaphoric relations (Gordon and Hendrick 1997, Kazanina and Phillips 2004)
Korean object control again

(25) a. Chelswu-nun Yenghi-lul [Yenghi-ka kakey-ey Chelswu-TOpIC Yenghi-ACC Yenghi-NOM store-to ka-tolok] seltukhaessta go-COMP persuaded "Chelswu persuaded Yenghi to go to the store.' (Forward control)

b. Chelswu-nun Yenghi-lul [Yenghi-ka kakey-ey ka-tolok] Chelswu-TOpIC Yenghi-ACC Yenghi-NOM store-to go-COMP persuaded  ‘Chelswu persuaded Yenghi to go to the store.’ (Backward control)

(26) Forward control bias
PREDICTION: Forward control (FC) should take less time to process than backward control (BC)
TESTING: self-paced reading time study, 40 sentences per condition, 23 subjects (Kwon and Polinsky, in preparation)

(27) Example test sentence:
‘The marketing department persuaded the leading actress to appear on a popular talk show to advertise the movie.’

<table>
<thead>
<tr>
<th>actress-ACC</th>
<th>[popular] talk_show-to</th>
<th>go-COMP</th>
<th>persuaded</th>
<th>FC</th>
</tr>
</thead>
<tbody>
<tr>
<td>[actress-NOM popular] talk_show-to</td>
<td>go-COMP</td>
<td>persuaded</td>
<td>BC</td>
<td></td>
</tr>
</tbody>
</table>

W7  W8  W9  W10  W11

Backward control: Slower reading times at W7 and W10:

Figure 1. Reading time results, forward vs backward control

∨ Backward control takes significantly longer to process than forward control (p < 0.0088).

3.3 Interim conclusions

The distribution of backward patterns is constrained by independently motivated structural properties (licensing of subjects in non-finite complements, EPP requirements) and by processing considerations

But: Backward patterns still exist.

“When the grammar permits both backward and forward [options] use the backward option only if you have a reason to do so.” (Reinhart 1976)

What forces the deletion of the higher copy?

4. Motivating backward patterns

Two main cases:
- alternation between the forward and backward option (Korean, Japanese, Adyghe, Kabardian)
- backward option only (for a particular predicate—Tsez, Bezhta, Tsaxur, Malagasy, possibly Jakaltec)

4.1 Forward/backward alternation

4.1.1 Commitment to the truth of the embedded proposition

Is the speaker committed to the truth of the proposition expressed by the embedded clause?

FORWARD CONTROL: yes
BACKWARD CONTROL: no
Evidence: interpretive contrasts in Korean

(28) Forward control
Chelswu-ka Yenghi-lul hakkyo-lul ttena-tolok
Chelswu-NOM Yenghi-ACC school-ACC leave-COMP
seltukhayssta. pro/Yenghi-nun hakkyo-lul
persuaded but pro/Yenghi-TOP school-ACC
tenaci anh-ass-ta
leave NEG-PAST-DECL
‘Chelswu persuaded Yenghi to quit school, but she/Yenghi did not quit school.’ (contradiction; the control verb is properly implicative)

(29) Backward control
Chelswu-ka Yenghi-ka hakkyo-lul ttena-tolok
Chelswu-NOM Yenghi-NOM school-ACC leave-COMP
seltukhayssta. Kulente pro/Yenghi-nun hakkyo-lul
persuaded but pro/Yenghi-TOP school-ACC
tenaci anh-ass-ta
leave NEG-PAST-DECL
‘Chelswu persuaded Yenghi to quit school, but she/Yenghi did not quit school/do so.’ (no contradiction)

Backward control: preferred with honorified controller, as the non-implicative interpretation reduces the pragmatic awkwardness of influencing a socially privileged participant

The forward/backward alternation is used to express the contrast that other languages express by different lexical verbs (persuade/urge; force/encourage, prevent/hinder)

Is this distinction observed for predicates beyond implicatives?

Is this interpretive contrast specific to Korean?

Cf. A’-movement: the choice of the copy to undergo deletion may be determined by language-specific constraints
(Bošković 2002 for Serbo-Croatian, Cole and Hermon 2000 for Malay)

4.1.2 Information structure

Can the controller correspond to sentence topic?

FORWARD CONTROL: yes (but it does not have to)
BACKWARD CONTROL: no

Evidence:
- embedded (backward) controller with an overt topic marker cannot be interpreted as regular topic; a contrastive interpretation is forced (Korean), (31)-(32) below;
- backward object control is strongly preferred with non-specific controllers, which cannot be topics (Korean);
- backward controller cannot take wide scope, which is typical of ‘lower’ projections (Korean; Japanese), (33) below

Korean: Differences in the interpretation of the topic-marked controller

(31) Forward control, two readings (topic; contrastive)
Chelswu-ka Yenghi-nun ecey [nayil Chelswu-NOM Yenghi-TOP yesterday [tomorrow hakkyo-ey ka-tolok] seltukhayssta school-to go-COMP persuaded ‘As for Yenghi, yesterday Chelswu persuaded her to go to school tomorrow.’
‘Yesterday Chelswu persuaded YENGH (=not someone else) to go to school tomorrow.’

(32) Backward control, one reading (contrastive only)
Chelswu-ka ecey [nayil Yenghi-nun Chelswu-NOM yesterday [tomorrow Yenghi-TOP hakkyo-ey ka-tolok] seltukhayssta school-to go-COMP persuaded ‘As for Yenghi, yesterday Chelswu persuaded her to go to school tomorrow.’ (impossible reading)
‘Yesterday Chelswu persuaded YENGH (=not someone else) to go to school tomorrow.’
Japanese (Fujii 2004): Backward control forces scope freezing, forward control is scope-ambiguous  

\[(33) \quad \text{keikan-ga} \quad [\text{san-nin-no} \ \text{dorobo-ga} \ \text{nigeyotosite}] \quad \text{policeman-NOM} \quad 3\text{-CLF-GEN} \quad \text{thief-NOM} \quad \text{about to escape} \quad \text{iru tokoro-o} \quad \text{taihosita} \quad \text{be TOKORO-ACC} \quad \text{arrested} \]

‘The policeman arrested three burglars as they were about to escape.’  
(narrow scope, \text{arrest} > 3 \text{burglars})  
('The policeman made arrests of three burglars as each was about to escape.'  
wide scope, 3 \text{burglars} > \text{arrest})

\[\text{The choice of copy for deletion is determined by non-syntactic factors}\]
\[\text{What is the full range of these factors?}\]

\[4.2 \quad \text{Backward pattern only}\]

\[(34) \quad \text{Stipulation:}\]

‘Backward’ predicates are lexically deficient, which forces the deletion of the higher copy

\[\text{No independent evidence for (34)}\]

\[\text{But: possible cross-linguistic support, based on similar behavior of several aspectual verbs in Tzotzil (Aissen 1994)}\]
\[\text{Are backward predicates all aspectual?}\]

\[5. \quad \text{Conclusions}\]

- \text{backward control and backward raising are possible within current theoretical assumptions}\n- \text{cross-linguistic variation in control and raising is richer than could be predicted on the basis of English and similar languages}\n- \text{the distribution of backward patterns is constrained by independently motivated structural properties and by processing considerations}\n- \text{the forward/backward alternation seems to be semantically motivated (preliminary evidence)}

\[6. \quad \text{Be careful what you wish for: Outstanding questions}\]

- \text{What is the full range of factors forcing the deletion of the higher element? Why are these factors what they are (commitment to the truth of the embedded proposition, anti-topic status of the controller)? How strongly do these factors vary across languages?}\n- \text{What lexical properties characterize backward control/raising predicates? Are these properties cross-linguistically constant?}\n- \text{Theory-internal challenges:}\n  - \text{what mechanisms are available to handle controllees in Case positions?}\n  - \text{what mechanisms are available to satisfy the EPP without NP movement?}\n  - \text{is partial A'-movement possible (à la partial A'-movement)?}\n  - \text{what is the status of copy control/raising within the new understanding of control as movement?}\n  - \text{what role could backward configurations play in distinguishing between a trace theory of movement and a copy theory of movement?}\n
\[\text{References}\]

Amsterdam: Benjamins (http://www.uiowa.edu/~linguist/faculty/davison/nonnom.PDF)
Passives under control

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