

Obligatory Control in Persian: Implications for the Syntax–Semantics Interface*

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1 Introduction

- This paper presents a new analysis of Persian obligatory control (POC), as in (1) and (2).

(1) sepide mitune (ke) šena bekone
Sepideh DUR.be able.3SG (that) swimming SUBJUN.do.3SG
'Sepideh is able to swim.'

(2) sepide sara-ro majbur kærd (ke) šena bekone
Sepideh Sarah-OM force do.PAST.3SG (that) swimming SUBJUN.do.3SG
'Sepideh forced Sarah to swim.'

- The analysis is cast in terms of the constraint-based framework of Lexical-Functional Grammar (Kaplan and Bresnan 1982, Bresnan 2001) and the associated resource-logical theory of semantic composition and the syntax–semantics interface, Glue Semantics (Dalrymple 1999, 2001).
- The key insight of the analysis is that the complement in Persian obligatory control is a standard finite clausal complement, which allows a 'surface-true' treatment of the syntax of the control complement.
- At the syntax–semantics interface there is a mismatch between the finite controlled complement, which would normally denote a proposition, and the type-driven requirement of the control verb to compose with a property (Chierchia 1984b).
- This tension is resolved in the syntax–semantics mapping, building on previous work by Asudeh (2005) on finite control in Serbian/Croatian, as described in a paper by Zec (1987) that lays out the main issues of concern here.
- The analysis essentially treats the controlled pronoun as a kind of local resumptive pronoun which is removed from semantic composition by a licenser contributed by the control verb (Asudeh 2005, 2012).

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2 Main Claims

- There is a mismatch between the syntax of finite controlled complements — as in Serbian/Croatian (Zec 1987) and Persian (Hashemipour 1989, Darzi 1996, 2008, Ghomeshi 2001, Karimi 2008) — and the compositional requirements of (at least some) control predicates (Chierchia 1984b).
- This mismatch is resolved at the syntax–semantics interface.
- The resolution explains both certain syntactic aspects of POC and certain semantic aspects, in particular:
 1. The ability of POC to occur with an overt emphatic control target
 2. The optional introduction of controlled complements in POC by the complementizer *ke*
 3. The ability of POC, despite its finite syntax, to support sloppy readings
 4. The ability of POC, despite its finite syntax, to support a certain kind of entailment pattern

3 Overview

1. *Introduction*
2. *Main Claims*
3. *Overview*
4. Previous Analyses
5. Problems of Obligatory Controlled Finite Complements
6. Informal Analysis
7. Formal Analysis
8. Conclusion

4 Previous Analyses of Persian Control

- Previous authors have focused on the identity of the embedded clause in control constructions and have different views on the syntactic category of *ke* (see, e.g., Hashemipour 1989, Ghomeshi 2001, Darzi 2008, Karimi 2008).
- We build on insights from Ghomeshi (2001), Darzi (2008), and Karimi (2008).
- Ghomeshi (2001) proposes that the syntactic category of control complements in Persian is smaller than a CP. Following Wurmbrand (2001) and assuming that restructuring is sensitive to clause boundaries, she uses direct object (3) and wh-phrase (4) scrambling to show that Persian core control verbs take a vP complement, since restructuring produces negligible contrast in meaning in POC.

(3) bižæn [ketabo]_{SCR} mitune (ke) [t_{SCR} bexune].
 Bijan book-OM (that) DUR.be.able.3SG SUBJUN.read.3SG
 ‘Bijan [can/is able to] read the book.’

(4) bižæn (či) mitune (ke) [(či) bexune]?
 Bijan (what) DUR.be.able.3SG (that) [(what) SUBJUN.read.3SG
 ‘What can Bijan read?’

- She further argues that the fact that tense clash is not permitted in control constructions signifies that POC complements have anaphoric tense. She uses this evidence to support her vP proposal.

(5) * bižæn diruz mitunest (ke) [færda bere].
 Bijan yesterday DUR.be.able.PAST.3SG (that) [tomorrow SUBJUN.go.3SG]
 ‘Bijan could yesterday go tomorrow.’

- With respect to the status of *ke*, Ghomeshi assumes that this element has more than one function (being obligatory in certain constructions e.g. relative clauses and complex NPs and optional in structures like POC). She claims that *ke* in POC is an enclitic to the lexical item preceding the vP.
- Darzi (2008) and Karimi (2008) provide counterarguments to Ghomeshi’s analysis and argue that the embedded constituent in POC is a CP and that *ke* is a complementizer.
- Darzi (2008) crucially argues that since the semantic differences in restructuring and scrambling are merely preferences, they do not count as sufficient evidence to support Ghomeshi’s proposal. He claims that the scrambled DP in the non-control example (4) likewise does not yield a contrastive reading unless it bears contrastive stress.

(3′) # bižæn [ketabo]_{SCR} goft (ke) [t_{SCR} bexune]
 Bijan book-OM say.PAST.3SG (that) [SUBJUN.read.3SG]
 ‘Bijan said he’d read the book.’

- The following non-control examples demonstrate comparable points for (4) and (5) above.

(4′) bižæn (či) fekr mikoni (ke) [(či) bexune]?
 Bijan (what) thought DUR.do.3SG (that) [(what) SUBJUN.read.3SG
 ‘What do you think Bijan will read?’

(5′) bižæn diruz fekr mikard (ke) [færda bere].
 Bijan yesterday though DUR.do.PAST.3SG (that) [tomorrow SUBJUN.go.3SG]
 ‘Bijan was thinking yesterday that he’d go tomorrow.’

- The proposed wh-phrase scopal difference in non-control constructions that is induced by scrambling the wh-phrase into the matrix clause is also questionable to him. He assumes a matrix interrogative in the non-control construction in (6) regardless of whether the wh-phrase is in the matrix or the embedded constituent.

- (6) a. bižæn fekr mikoni (ke) [či bexune]?
 Bijan thought DUR.do.2SG (that) what SUBJUN.read.3SG
 ‘What do you think Bijan will read?’
- b. bižæn [či]_{SCR} fekr mikoni (ke) [t_{SCR} bexune]?
 Bijan what thought DUR.do.2SG (that) SUBJUN.read.3SG
 ‘What do you think Bijan will read?’

- In addition, following Wurmbrand (2001), Darzi takes the presence of negation on the embedded clause (7) and lack of a matrix negative interpretation to show that the embedded constituent is minimally a TP. Assuming that NegP is above TP in Persian (following Taleghani 2006), he proposes that POC verbs select for CPs.

- (7) Mæn mitunæm [(ke) næræm xune].
 I DUR.be.able.1SG (that) not-go.1SG home
 a. ‘I am able not to go home.’
 *b. ‘I am not able to go home.’

- Darzi (2008) also shows that not all non-control constructions allow tense clash (8); in addition, there are control constructions where the matrix and embedded clauses have independent tense (as in (9), from Taleghani 2006).

- (8) * U diruz tæhæmmol nemikærd ke mæn to-ra færda dær
 she/he yesterday bear not.DUR.do.PAST.3SG that I you-OM tomorrow in
 moqabel-e digæran setayeš bekonæm.
 front-EZ others praise SUBJUN.do.1SG
 ‘She/hee didn’t bear it yesterday that I praise you in front of others tomorrow.’
- (9) Sara diruz tæsmim gereft (ke) færda bere.
 Sarah yesterday decision take.PAST.3SG (that) tomorrow SUBJUN.go.3SG
 ‘Sara decided yesterday to go tomorrow.’

- Darzi (2008) claims that *ke* is not a clitic in POC based on the distribution of temporal adverbs (10) and parentheticals (11), and cliticization in Persian (12).

- (10) U mitune ke hæmiše to-ra dær moqabel-e digæran særzæneš bekone.
 she/he DUR.be.able.3SG that always you-OM in front-EZ others blame SUBJUN.do.3SG
 ‘She/he is able to always blame you in front of others.’
- (11) U mitune be goman-e mæn ke to-ra dær moqabel-e digæran
 she/he DUR.be.able.3SG to opinion-EZ I that you-OM in front-EZ others
 særzæneš bekone.
 blame SUBJUN.do.3SG
 ‘In my opinion, she/he can blame you in front of others.’
- (12) gofti ke æz ‘You said that from ...’
 say.PAST.2SG that from
 → gofti kæz
 * goft-ik æz

- Darzi concludes that *ke* is a complementizer heading the CP in POC constructions.
- *In our analysis of POC, we propose that the best analysis of POC is that the POC complement is a finite clause headed by the complementizer ke.*

5 Problems of Obligatorily Controlled Finite Complements

- There are two main theories of the syntax and semantics of infinitival controlled complements:
 1. The controlled complement is a VP or IP. The control target is syntactically represented and saturates the property corresponding to the controlled VP. The controlled complement therefore denotes a proposition (Rosenbaum 1967, Klein and Sag 1985, Higginbotham 1989, 1992, Sag and Pollard 1991, Pollard and Sag 1994).
 2. The controlled complement is a VP. The control target is not syntactically represented and therefore does not saturate the property corresponding to the controlled VP. The controlled complement therefore denotes a property. (Montague 1974, Chierchia 1984a,b, 1985, Dowty 1985).
- Two common arguments for the property theory of control are the following (Chierchia 1984b):

1. Sloppy Identity

- (13) Ezio is trying to become a chairman, and Mimi is trying it too.
 \Rightarrow Mimi is trying to become a chairman
 $\not\Rightarrow$ Mimi is trying to bring about that Ezio becomes a chairman

2. Control Entailments

- (14)
$$\frac{\text{Nando tries anything Ezio tries.} \quad \forall \alpha [try'(\alpha)(e) \rightarrow try'(\alpha)(n)]}{\text{Ezio tries to jog at sunrise.} \quad try'(jog \text{ at sunrise}')(e)} \quad \frac{}{Nando \text{ tries to jog at sunrise.} \quad try'(jog \text{ at sunrise}')(n)}$$

- However, the property theory normally assumes that there is no syntactic representation of the control target, because a transparent mapping from syntax to semantics would then yield a propositional denotation for the controlled complement, which does not support the facts in (13) and (14).
- Finite controlled complements, as in Persian (1) and (2) above or Serbian/Croatian (15) below (Zec 1987: 142), are problematic for the property theory.

- (15) Jovan je pokušao da dodje.
 Jovan Aux tried Comp come(Pres)
 ‘Jovan tried to come.’

- Finite controlled complements are syntactically saturated — they seem to have a subject in syntax — but nevertheless show the patterns in (13) and (14) for sloppy identity and control entailments. (Zec 1987) shows this for Serbian/Croatian, and we demonstrate it here for Persian:

- (16) sara jadeš ræft ke be sepide zæng bezæne, va æmir
 Sarah memory-3SG.CL go.PAST.3SG that to Sepideh call hit.PAST.3SG and Amir
 hæm in-o jadeš ræft
 too this-OM memory-3SG.CL go.PAST.3SG

‘Sarah forgot to call Sepideh, and Amir forgot it, too.’

⇒ *Amir forgot to call Sepideh*; ≠ *Amir forgot for Sarah to call Sepideh*

- (17) sara hæ r chizi-ro ke æmir jad-eš mire, jad-eš
 Sarah anything-OM that Amir memory-3SG.CL go.PRES.3SG memory-3SG.CL
 mire
 go.PRES.3SG
 ‘Sarah forgets anything that Amir forgets.’

æmir jadeš mire ke be danešgah bere
 Amir memory-3SG.CL go.PRES.3SG that to school SUBJUN.go.PRES.3SG
 ‘Amir forgets to go to school.’

sara jadeš mire ke be danešgah bere
 Sarah memory-3SG.CL go.PRES.3SG that to school SUBJUN.go.PRES.3SG
 ‘Sarah forgets to go to school.’

- We seek to reconcile the syntax of finite controlled complements in Persian with the property semantics as follows:
 1. The finite controlled complement has a subject at the appropriate level of syntactic representation, f-structure in the case of LFG.
 2. The arguments for the property theory are taken as arguments about types in composition, not about final denotations.
 3. Flexible composition in Glue Semantics allows the control verb to require composition with a property while allowing the final denotation to be either a property or proposition (Asudeh 2005).
 4. We assume that the final denotation of the finite controlled complement is a proposition.
 5. The effect is that there is a transparent relationship between syntactic representation and semantic denotation in the case of finite control, but the syntax–semantics mapping is complex.
 - The obligatorily controlled pronominal target is treated as a kind of local resumptive pronoun.
 - This pronoun must be removed in composition in order for successful composition to occur.
- *In sum, the problem of finite control, as in Serbian/Croatian and Persian, is resolved at the syntax–semantics interface. The essential problem of finite control is treated as a problem of a mismatch between syntactic category and type-logical compositional requirements. This mismatch is resolved through a flexible theory of semantic composition.*

6 Informal Analysis

- **Syntax**

- The controlled complement is a CP headed by *ke*, which is in C^0 (when it is present).
- The controlled verb always takes a pronominal subject at f-structure. This is the standard analysis of null pronoun subjects in the theory.
- The control relation is established by obligatory anaphoric binding of the control target by the controller. This is also a standard possibility in the theory (Andrews 1982, Zec 1987, Dalrymple 2001, Asudeh 2005).
- The control target is realized overtly only if it is an emphatic pronoun.

- **Semantics**

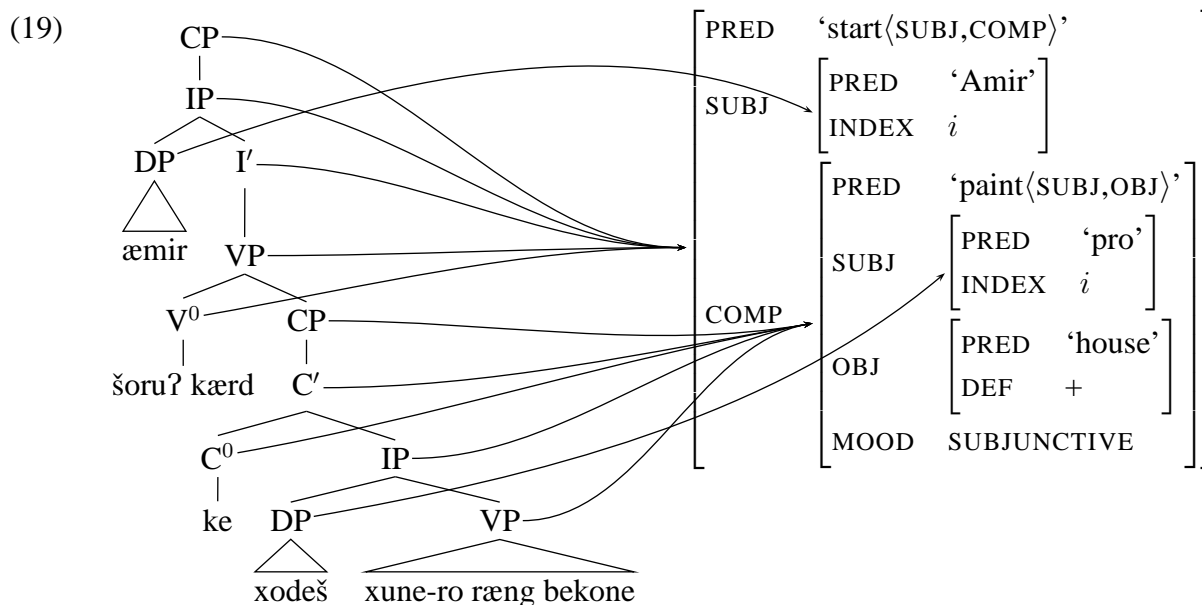
- Assuming that the null pronoun is a standard pronoun semantically, it would saturate the property corresponding to the controlled VP, such that the controlled complement would denote a proposition.
- However, the Chierchia tests indicate that the control verb needs to compose with a property, not with a proposition.

- **Syntax–Semantics Interface**

- We therefore assume an additional operator which removes the controlled pronoun from composition. This operator is called a *manager resource* (Asudeh 2005). Persian control is therefore treated as a kind of local resumption, similar to copy raising (Asudeh 2002, 2004, 2012, Asudeh and Toivonen 2012).

7 Formal Analysis

- (18) æmir šoru? kærd (ke) xodeš xune-ro ræng bekone
 Amir start do.PAST.3SG that himself house-OM SUBJUN.paint do.3SG
 ‘Amir started to paint the house himself.’



- (20) *ræng bekone*: V
 (↑ PRED) = ‘paint’
 (↑ TENSE) = PAST
 (↑ MOOD) = SUBJUNCTIVE

paint' : object \rightarrow subject \rightarrow proposition

$$\left(\begin{array}{l} (\uparrow \text{SUBJ PRED}) = \text{'pro'} \\ \lambda z.z \times z : \text{antecedent} \rightarrow (\text{antecedent} \otimes \text{pronoun}) \end{array} \right)$$

- (21) *šoru? kærd*: V
 (↑ PRED) = ‘start’
 (↑ COMP MOOD) =_c SUBJUNCTIVE
 (↑ SUBJ)_σ = ((↑ COMP SUBJ)_σ ANTECEDENT)

$\lambda y \lambda P.start(y, P(y))$: subject \rightarrow complement \rightarrow proposition

$\lambda P \lambda x.x$: *pronounMeaning* \rightarrow *identityFunctionOnAntecedent*

(22)	controlled pro	licenser of controlled pro	control verb	controlled complement
controller	$\lambda z.z \times z$	$\lambda P \lambda x.x$	$\lambda P \lambda y.start(y, P(y))$	$\lambda x.paint(x, house)$
<i>amir</i>		$\lambda x.x$		
	<i>amir</i>		$\lambda y.start(y, paint(y, house))$	
	$start(amir, paint(amir, house))$			

8 Conclusion

- We have provided a formal, constraint-based analysis of Persian obligatory control that:
 1. Derives correct predictions about a heretofore somewhat neglected set of data
 2. Provides a surface-true account of the syntax of POC
 3. Provides an explicit account of the syntax–semantics interface for POC
 4. Ties in to previous findings on obligatory control of finite complements (Zec 1987) that seems to have been neglected in the literature on POC
- The key insight of the analysis is that the complement in Persian obligatory control is a standard finite clausal complement.
- At the syntax–semantics interface there is a mismatch between the syntax and compositional requirements of the control verb.
- This tension is resolved in the syntax–semantics mapping, through flexible type-logical semantic composition in Glue Semantics.
- The analysis treats the controlled pronoun as a kind of local resumptive pronoun which is removed from semantic composition by a licenser contributed by the control verb.

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