The Semantics of Differential Object Marking in Persian

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The LSA 2015 Annual Meeting

Differential Object Marking (DOM)

- In DOM languages, case marking of the object is restricted to a subset of object NPs.
- This restriction is based on semantic-pragmatic binary distinctions:
    - definite vs. indefinite
    - specific vs. non-specific
    - animate vs. inanimate
    - topic vs. focus.
- Research questions:
    - What is the semantics of the object marker in Persian?

THREE CONSTRUCTIONS

I INDEFINITE
II DEFINITE
III CASE-MARKED INDEFINITE

Indefinites in Persian

- Persian indefinites are overtly marked with the indefinite determiner ***ye***:

(1)	[$_S$ ***ye***	bache]	[$_O$ ***ye***	golābi]	[$_V$ xord-ø]
	INDEF	child	INDEF	pear	eat-3.SG

"A child ate a pear."

INDEFINITES IN PERSIAN

- Persian indefinites are overtly marked with the indefinite determiner ***ye***:

(1) [$_S$ ***ye*** bache] [$_O$ ***ye*** golābi] [$_V$ xord-ø]
INDEF child INDEF pear eat-3.SG
"A child ate a pear."

- Notice that there is no object marker on the direct object.

DEFINITES IN PERSIAN

- There is no overt definite determiner in Persian.

(2) [$_S$ bache] [$_O$ golābi] $\boxed{\text{ro}}$ [$_V$ xord-ø]
child pear OM eat-3.SG
"The child ate the pear."

- Notice that *bache* (child) appears as a bare nominal but it is interpreted as a definite.
- Looks like the object marker $\boxed{\text{rā}}$ marks definiteness in the object position; end of story. But …

CASE-MARKED INDEFINITES

- The object marker can appear with the indefinite determiner ***ye*** on objects:

(3) $[_S$ bache] $[_O$ *ye* golābi] $\boxed{\text{ro}}$ $[_V$ xord-ø]
child INDEF pear OM eat-3.SG

≈ "The child ate one of the pears" (Partitive R)
"The child ate a certain pear." (Epistemic R)
"As for a pear, the child ate it." (Topical R)

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- The object marker can appear with the indefinite determiner *ye* on objects:

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≈ "The child ate one of the pears" (Partitive R)
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- It doesn't seem like $\boxed{\text{rā}}$ marks definiteness. What does it do then?

PERSIAN DOM: PREVIOUS ANALYSES

- There are (at least) five main proposals for what *rā* marks in Persian:
  1. Definiteness (Mahootian, 1997)
  2. Specificity (Karimi, 1990, 2003)
  3. Topicality (Dabir-Moghaddam, 1992, 2005)
  4. Definiteness and Topicality (Dalrymple and Nikolaeva, 2011)
  5. Identifiability of Discourse Referents (Shokouhi and Kipka, 2003)

Persian DOM: a new proposal

- I propose that $\boxed{\textit{rā}}$ triggers an existential presupposition on the object NP.

PERSIAN DOM: A NEW PROPOSAL

- I propose that $\boxed{r\bar{a}}$ triggers an existential presupposition on the object NP.
  - $r\bar{a} \rightsquigarrow \lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]$

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- This presuppositional NP can then be type-shifted with IOTA to derive a definite.

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- This presuppositional NP can then be type-shifted with IOTA to derive a definite.
- The existential presupposition is compatible with indefinites and gives rise to additional implications depending on the context.

DEFINITES

- Definite descriptions such as “the king of France” in English are associated with two presuppositions:
  1. Existence: there is an entity which satisfies the description.
  2. Uniqueness: if there is an entity that satisfies the description it is not more than one.

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- Coppock and Beaver (2012) argue that in English, these two presuppositions are triggered via two different mechanisms:
  1. English *the* triggers a uniqueness presupposition.
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- Coppock and Beaver (2012) argue that in English, these two presuppositions are triggered via two different mechanisms:
  1. English *the* triggers a uniqueness presupposition.
  2. The existential presupposition is provided via type-shifting with IOTA.
- I suggest that in Persian, existence is lexically triggered but uniqueness is provided by IOTA.

Five guiding questions

i. What are the EXISTENCE and UNIQUENESS implications of indefinites, definites, and case-marked indefinites?

ii. Which implications are the result of strong constraints on the context?

iii. Which implications are projective?

iv. Are they filtered? (a la Karttunen (1973))

v. How do they behave when they occur in the complement clause of a belief predicate?

FIVE GUIDING QUESTIONS

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IMPLICATIONS OF OBJECT INDEFINITES

(4) *ye*-NP$_{(E)}$:

man *ye*	[$_{NP}$ golābi]	xord-am	
I	INDEF	pear	eat-1.SG

"I ate a pear."

- There was a pear (EXISTENCE).

IMPLICATIONS OF OBJECT DEFINITES

(5) NP-$\boxed{\text{rā}}_{(E+U)}$:

man [$_{NP}$ golābi] $\boxed{\text{ro}}$ xord-am
I pear OM eat-1.SG

"I ate the pear."

- There was a pear (EXISTENCE).
- There was only one pear (UNIQUENESS).

IMPLICATIONS OF CASE-MARKED INDEFINITES

(6) *ye*-NP-$\boxed{\text{rā}}_{(E)}$:

man *ye* [$_{NP}$ golābi] $\boxed{\text{ro}}$ xord-am
I INDEF pear OM eat-1.SG

≈ "I ate a (certain) pear."
"I ate one of the pears"
etc.

- There was a pear (EXISTENCE).

FIVE GUIDING QUESTIONS

i. What are the EXISTENCE and UNIQUENESS implications of indefinites, definites, and case-marked indefinites?

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SETTING UP THE CONTEXT

- I went grocery shopping with my dad in the morning. We bought exactly one pear.
- Before going out, I told my brother that if I buy any, I will only buy one pear.
- When we came home I told my sister that I bought pear. She doesn't know how many though.
- My mom was working on a paper in her room all this time and doesn't know anything about my shopping adventure.

	Uniqueness-positive	*Uniqueness-neutral*
Existence-positive	**Dad**	**Sister**
Existence-neutral	**Brother**	**Mom**

CONTEXTUAL FELICITY: INDEFINITES

- After eating my pear, I can felicitously say (7) to all my family members[1]:

(7) man *ye* golābi xord-am
I INDEF pear eat-1.SG
"I ate a pear."

Declarative	*ye*-NP$_{(E)}$	NP-$\boxed{\text{rā}}_{(E+U)}$	*ye*-NP-$\boxed{\text{rā}}_{(E)}$
E^+U^+	✓		
E^+U^n	✓		
E^nU^+	✓		
E^nU^n	✓		

[1] Judgements based on consultation with 6 other native speakers

CONTEXTUAL FELICITY: DEFINITES

- However, I can felicitously say (8) only to my father (E^+U^+):

(8) man golābi $\boxed{\text{ro}}$ xord-am
I pear OM eat-1.SG
"I ate the pear."

Declarative	*ye*-NP$_{(E)}$	NP-$\boxed{\text{rā}}$$_{(E+U)}$	*ye*-NP-$\boxed{\text{rā}}$$_{(E)}$
E^+U^+	✓	✓	
E^+U^n	✓	#	
E^nU^+	✓	#	
E^nU^n	✓	#	

CONTEXTUAL FELICITY: CASE-MARKED INDEFINITES

(9) man *ye* golābi $\boxed{\text{ro}}$ xord-am
I INDEF pear OM eat-1.SG
≈ "I ate a (certain) pear."
"I ate one of the pears."
etc.

Declarative	*ye*-NP$_{(E)}$	NP-$\boxed{\text{rā}}_{(E+U)}$	*ye*-NP-$\boxed{\text{rā}}_{(E)}$
E^+U^+	✓	✓	✓
E^+U^n	✓	#	✓
E^nU^+	✓	#	#
E^nU^n	✓	#	#

SUMMARY

Declarative	*ye*-NP$_{(E)}$	NP-$\boxed{\text{rā}}_{(E+U)}$	*ye*-NP-$\boxed{\text{rā}}_{(E)}$
E^+U^+	✓	✓	✓
E^+U^n	✓	#	✓
E^nU^+	✓	#	#
E^nU^n	✓	#	#

- *ye*-NP-$\boxed{\text{rā}}$ requires EXISTENCE in the context.
- NP-$\boxed{\text{rā}}$ requires both EXISTENCE and UNIQUENESS.
- What these two constructions have in common:
  - In form: $\boxed{\text{rā}}$
  - In meaning: EXISTENCE of the object NP established in the context.

i. What are the EXISTENCE and UNIQUENESS implications of these three constructions?
ii. Which implications put strong constraints on the context and the common ground?
iii. Which implications are projective?
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PROJECTION

- In order to see which implications are projective, I use the family-of-sentences diagnostic.

  (Chierchia and McConnell-Ginet, 1990)
- The family of sentences variants of an atomic sentence S, which is defined as a set of sentences consisting of:
  1. S.
  2. a negative variant of S.
  3. an interrogative variant of S.
  4. an epistemic modal variant of S.
  5. and a conditional with S as its antecedent.
- An implication of sentence S is projective if it is implied by all its variants in the family-of-sentences set.

  (Tonhauser et al., 2013)

The Family of Sentences Test

- **Interrogatives:** Suppose that when I go to the fridge to eat my pear later, I find out that it's not there. I go to my family members to interrogate them!

(10)
a. to *ye* golābi xord-i?
you INDEF pear eat-2.SG
"Did you eat a pear?"

b. to golābi $\boxed{\text{ro}}$ xord-i?
you pear OM eat-2.SG
"Did you eat the pear?"

c. to *ye* golābi $\boxed{\text{ro}}$ xord-i?
you INDEF pear OM eat-2.SG
≈ "Did you eat a (certain) pear?"
"Did you eat one of the pears?"
etc.

THE FAMILY OF SENTENCES TEST

Interrogative	*ye*-NP$_{(E)}$	NP-$\boxed{\text{rā}}_{(E+U)}$	*ye*-NP-$\boxed{\text{rā}}_{(E)}$
$E^{+}U^{+}$	No	Yes	Yes
$E^{+}U^{n}$	No	#	Yes
$E^{n}U^{+}$	No	#	#
$E^{n}U^{n}$	No	#	#

THE FAMILY OF SENTENCES TEST

Interrogative	*ye*-NP$_{(E)}$	NP-$\boxed{\text{rā}}_{(E+U)}$	*ye*-NP-$\boxed{\text{rā}}_{(E)}$
E^+U^+	No	Yes	Yes
E^+U^n	No	#	Yes
E^nU^+	No	#	#
E^nU^n	No	#	#

- Modals and Conditionals: We get the same pattern when these constructions are embedded under the possibility modal *shāyad* and in the antecedent of conditionals with *age*.

THE FAMILY OF SENTENCES TEST

Interrogative	*ye*-NP$_{(E)}$	NP-$\boxed{\text{rā}}_{(E+U)}$	*ye*-NP-$\boxed{\text{rā}}_{(E)}$
E^+U^+	No	Yes	Yes
E^+U^n	No	#	Yes
E^nU^+	No	#	#
E^nU^n	No	#	#

- Modals and Conditionals: We get the same pattern when these constructions are embedded under the possibility modal *shāyad* and in the antecedent of conditionals with *age*.
- Negation: Same story but more complicated (and interesting) due to the scope relations of negation and the indefinite NPs. We can discuss this in the question period.

CONCLUSIONS

	ye-NP$_{(E)}$	NP-$\boxed{\text{rā}}_{(E+U)}$	*ye*-NP-$\boxed{\text{rā}}_{(E)}$
E^+U^+	No	Yes	Yes
E^+U^n	No	#	Yes
E^nU^+	No	#	#
E^nU^n	No	#	#

- There are two types of existence implications:
  1. At-issue (*ye*) 2. Projective (*rā*)
- The uniqueness implication is projective.

	AT-ISSUE E	PROJECTIVE E	PROJECTIVE U
ye-NP	✓		
ye-NP-$\boxed{\text{rā}}$	✓	✓	
NP-$\boxed{\text{rā}}$		✓	✓

TOWARDS A COMPOSITIONAL ACCOUNT

(11) a. man golābi $\boxed{\text{ro}}$ xord-am
I pear OM eat-1.SG
$\textsc{eat}(\iota x[\textsc{pear}(x)])(\textsc{sp})$

b. man *ye* golābi $\boxed{\text{ro}}$ xord-am
I INDEF pear OM eat-1.SG
$\partial[|\textsc{pear}| \geq 1] \wedge \exists x[\textsc{pear}(x) \wedge \textsc{eat}(x)(\textsc{sp})]$

ADDING THE EXISTENCE PRESUPPOSITION

PEAR $_{et}$ $\quad$ $\lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]_{\langle et,et\rangle}$

golābi $\quad$ *ro*

ADDING THE EXISTENCE PRESUPPOSITION

- $\lambda x[\partial[|\text{PEAR}| \geq 1] \wedge \text{PEAR}(x)]$ $_{et}$
  - PEAR $_{et}$
    - *golābi*
  - $\lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]$ $_{\langle et,et \rangle}$
    - *ro*

DERIVING A DEFINITE

$$\underset{e}{\iota x[\text{PEAR}(x)]}$$

IOTA

$$\underset{et}{\lambda x[\partial[|\text{PEAR}| \geq 1] \wedge \text{PEAR}(x)]}$$

$$\underset{et}{\text{PEAR}} \qquad \underset{\langle et,et \rangle}{\lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]}$$

golābi *ro*

- Apply IOTA if there is no indefinite determiner.

DERIVING A DEFINITE

$$\underset{e}{\iota x[\textsc{pear}(x)]}$$

$$\Big| \; \textsc{iota}$$

$$\underset{et}{\lambda x[\partial[|\textsc{pear}| \geq 1] \wedge \textsc{pear}(x)]}$$

$$\underset{et}{\textsc{pear}} \qquad \underset{\langle et,et\rangle}{\lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]}$$

golābi   *ro*

- Apply IOTA if there is no indefinite determiner.

DERIVING A DEFINITE

$\iota x[\text{PEAR}(x)]$
e

IOTA

$\lambda x[\partial[|\text{PEAR}| \geq 1] \wedge \text{PEAR}(x)]$
et

$\lambda x[\text{PEAR}(x)]$
et

golābi

$\lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]$
$\langle et,et \rangle$

ro

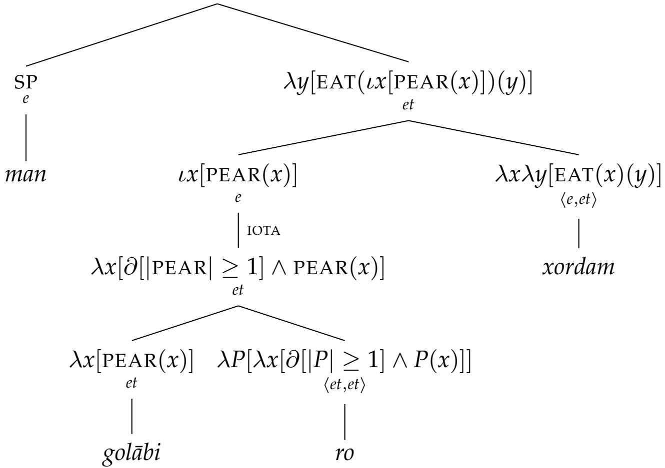
$\lambda x \lambda y[\text{EAT}(x)(y)]$
$\langle e,et \rangle$

xordam

DERIVING A DEFINITE

- $\lambda y[\text{EAT}(\iota x[\text{PEAR}(x)])(y)]$ — *et*
  - $\iota x[\text{PEAR}(x)]$ — *e*
    - IOTA
      - $\lambda x[\partial[|\text{PEAR}| \geq 1] \wedge \text{PEAR}(x)]$ — *et*
        - $\lambda x[\text{PEAR}(x)]$ — *et*
          - *golābi*
        - $\lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]$ — $\langle et,et\rangle$
          - *ro*
  - $\lambda x \lambda y[\text{EAT}(x)(y)]$ — $\langle e,et\rangle$
    - *xordam*

I. Deriving a definite



DERIVING A DEFINITE

- $\text{EAT}(\iota x[\text{PEAR}(x)])(\text{SP})$, t
  - SP, e
    - *man*
  - $\lambda y[\text{EAT}(\iota x[\text{PEAR}(x)])(y)]$, et
    - $\iota x[\text{PEAR}(x)]$, e
      - IOTA
        - $\lambda x[\partial[|\text{PEAR}| \geq 1] \wedge \text{PEAR}(x)]$, et
          - $\lambda x[\text{PEAR}(x)]$, et
            - *golābi*
          - $\lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]$, $\langle et,et \rangle$
            - *ro*
    - $\lambda x \lambda y[\text{EAT}(x)(y)]$, $\langle e,et \rangle$
      - *xordam*

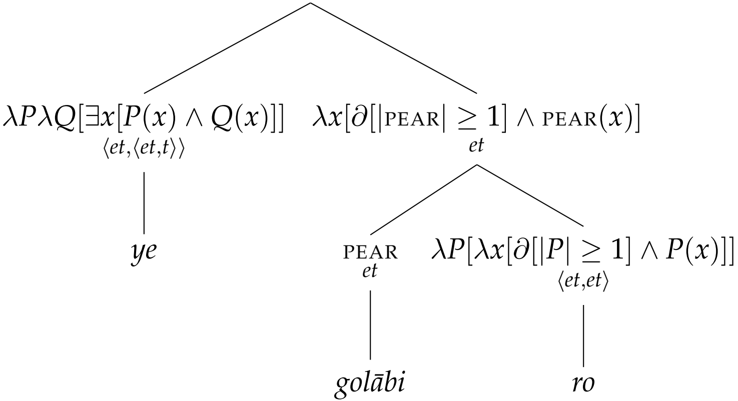
ADDING THE EXISTENCE PRESUPPOSITION

$$\underset{et}{\lambda x[\partial[|\textsc{pear}| \geq 1] \wedge \textsc{pear}(x)]}$$

$$\underset{et}{\textsc{pear}} \qquad \underset{\langle et,et\rangle}{\lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]}$$

golābi   *ro*

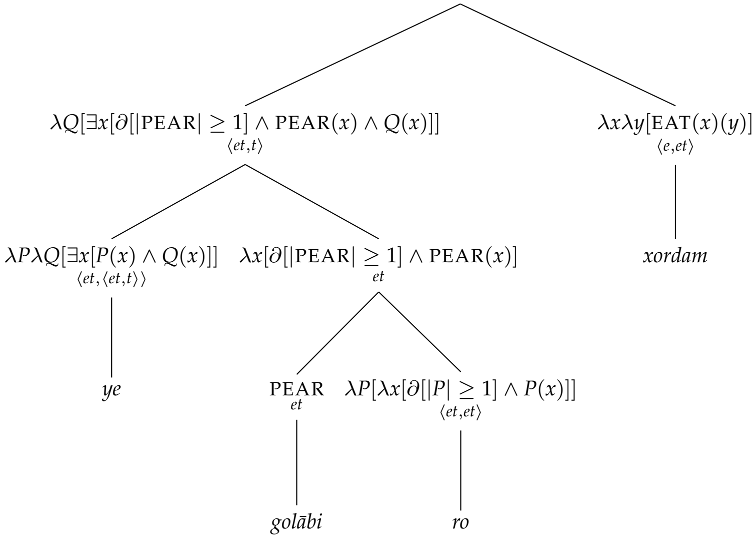
DERIVING A CASE-MARKED INDEFINITE



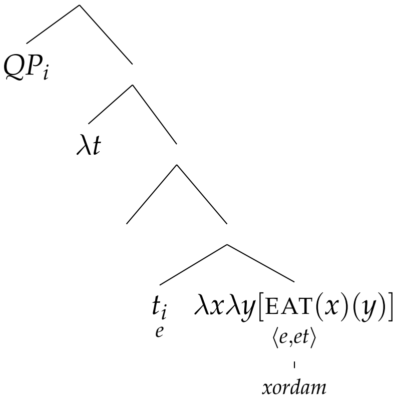
DERIVING A CASE-MARKED INDEFINITE

- $\lambda Q[\exists x[\partial[|\textsc{pear}| \geq 1] \wedge \textsc{pear}(x) \wedge Q(x)]]$ $\langle et,t \rangle$
  - $\lambda P \lambda Q[\exists x[P(x) \wedge Q(x)]]$ $\langle et, \langle et,t \rangle \rangle$
    - *ye*
  - $\lambda x[\partial[|\textsc{pear}| \geq 1] \wedge \textsc{pear}(x)]$ et
    - $\textsc{pear}$ et
      - *golābi*
    - $\lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]$ $\langle et,et \rangle$
      - *ro*

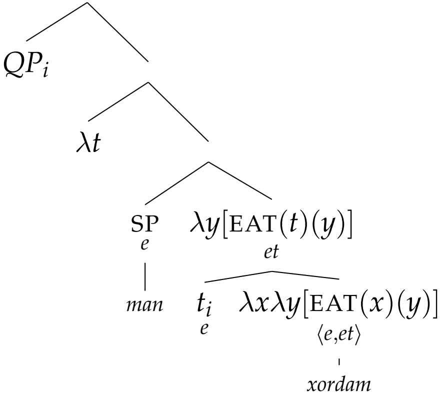
DERIVING A CASE-MARKED INDEFINITE



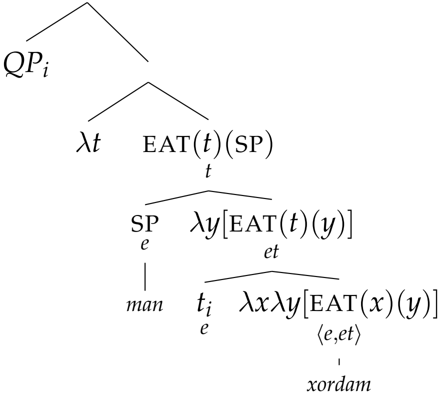
DERIVING A CASE-MARKED INDEFINITE



DERIVING A CASE-MARKED INDEFINITE



Deriving a case-marked indefinite



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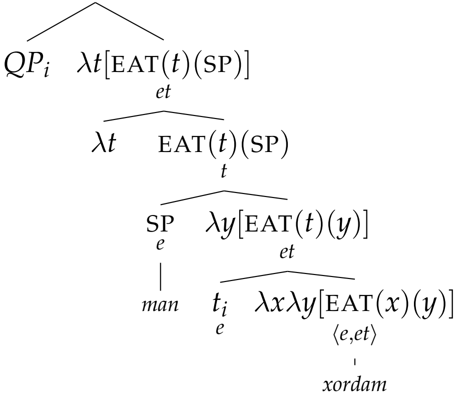

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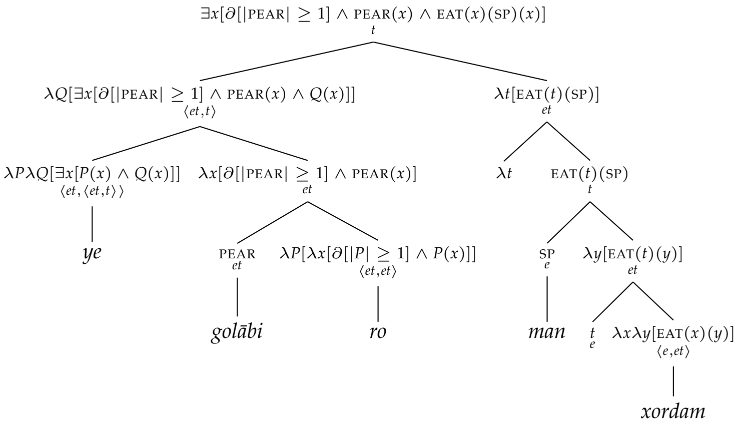

FIVE GUIDING QUESTIONS

i. What are the EXISTENCE and UNIQUENESS implications of indefinites, definites, and case-marked indefinites?

ii. Which implications are the result of strong constraints on the context?

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FILTERING

- The existence implication of case marked constructions in conditional consequents does not project if the antecedent entails it:

(12) Context: My brother can say:

age	ye	golābi	hast-ø,	golābi	ro	be-de	man
if	INDEF	pear	exist-3.SG,	pear	OM	IMP-give	1.SG

"If there is a pear, give me the pear!"

- (12) does not imply that there is a pear.

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SCOPE WITH BELIEF PREDICATES

- The existence and uniqueness implications of case-marked objects seem to take obligatory scope under the belief predicate:

SCOPE WITH BELIEF PREDICATES

- The existence and uniqueness implications of case-marked objects seem to take obligatory scope under the belief predicate:
- In the context where my mom did not know anything about my pear shopping, I cannot say to my dad:

(13) a. # māmān fek mi-kon-e ke man golābi $\boxed{\text{ro}}$ na-xord-am
mom think PRES-do-3.SG that 1.SG pear OM NEG-eat-1.SG
"Mom thinks that I didn't eat the pear."

SUMMARY

- I argued that the object marker $\boxed{r\bar{a}}$ triggers an existential presupposition on the object NP.
  - $r\bar{a} \rightsquigarrow \lambda P[\lambda x[\partial[|P| \geq 1] \wedge P(x)]]$
- The definite construction is derived through type-shifting the marked NP with IOTA.
- The existential presupposition triggered by the object marker is compatible with indefinites and gives rise to additional implications depending on the context.

Thank You

I would also like to thank:
Cleo Condoravdi
James N. Collins
Paul Kiparsky
Chris Potts
for their generous support and help with this project.

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