

Reference Transfer and Reflexive Interpretation in Representational Noun Phrases

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Introduction

- This is part of a larger project investigating the interpretation and structure of “Representational” noun phrases (RNPs)
- NPs headed by a “representational” noun
 - *picture, film, photograph, novel, etc.*
- May also contain a possessor phrase and PP, both of which are optional;
 - *Harry's picture of Joe*
 - *a picture of Joe, Harry's picture, etc.*

Introduction

- In this talk we'll focus on RNPs with reflexives lacking possessor phrases
- Reflexives in RNPs have received a lot of attention in the literature
 - Ebenezer saw a picture of himself in the paper.

Introduction

- Reflexives in RNPs are able to take antecedents beyond their minimal clause
 - *John said that [_S there was [a picture of himself] in the post office]*
 - (a) *John was going to get even with Mary.*
 - (b) *That picture of himself in the paper would really annoy her, as would the other stunts he had planned. (Pollard & Sag, 1992)*

Two proposals for RNP reflexives

- Exempt anaphor/“logophor” approach
 - Binding Theory is defined to constrain reflexives with local co-arguments (Pollard & Sag, 1992; Reinhart & Reuland, 1993)
 - Ebenezer saw himself
 - ‘see’ ARG-ST < Ebenezer_i, himself_i >
 - Ebenezer saw a picture of himself
 - ‘picture’ ARG-ST < himself >
 - “Exempt” anaphor is not constrained by BT
 - Instead sensitive to pragmatic/discourse constraints

- PRO-in-NP approach
 - Chomsky, 1986; Davies & Dubinsky, 2003
 - See Kaiser et al earlier this afternoon

Two proposals for RNP reflexives

- Both approaches attribute the behavior of RNP reflexives to syntactic structural factors.
- But there are other possibilities.
 - RNP reflexives refer to representations of their antecedents
 - We will be exploring this aspect as a cause for their unusual behavior later.

Ellipsis and RNP “Exempt Anaphors”

- Exempt anaphor approach treats representational NP reflexives as free from Binding Theory and constrained to pick up reference from the discourse—like pronouns
- RNP reflexives are like pronouns
 - Can be interpreted “coreferentially” or as “bound variables”
 - True reflexives are always bound variables
 - But see below & Kehler 2000

Ellipsis and RNP “Exempt Anaphors”

- Ellipsis has been used to reveal differences between bound variable and coreferential interpretations.
- “true” reflexive:
 - *John hates himself, and so does Fred.*
- Clause with elided VP is interpreted as
 - ‘Fred hates himself’ (bound variable),
 - Not ‘Fred hates John’ (coreferential)
 - Elided reflexive interpreted as a bound variable only.
- RNP reflexive:
 - *John has a picture of himself, and so does Fred.*
- Clause with elided VP is interpreted as
 - ‘Fred has a picture of himself’ (bound variable) or
 - ‘Fred has a picture of John’ (coreferential).

RNP vs OBJ experiment

- 23 participants (University of Rochester undergraduates)
- Seated in front of a computer monitor
- Listened to prerecorded sentences
- Verified if displayed scene matched the sentences heard by pushing a yes or no button
- Three verbs used: *point, tap, touch*
- Ellipsis, Unelided controls, Fillers, counterbalancing, etc...

Ellipsis OBJ condition



Bound Variable



Coreferential

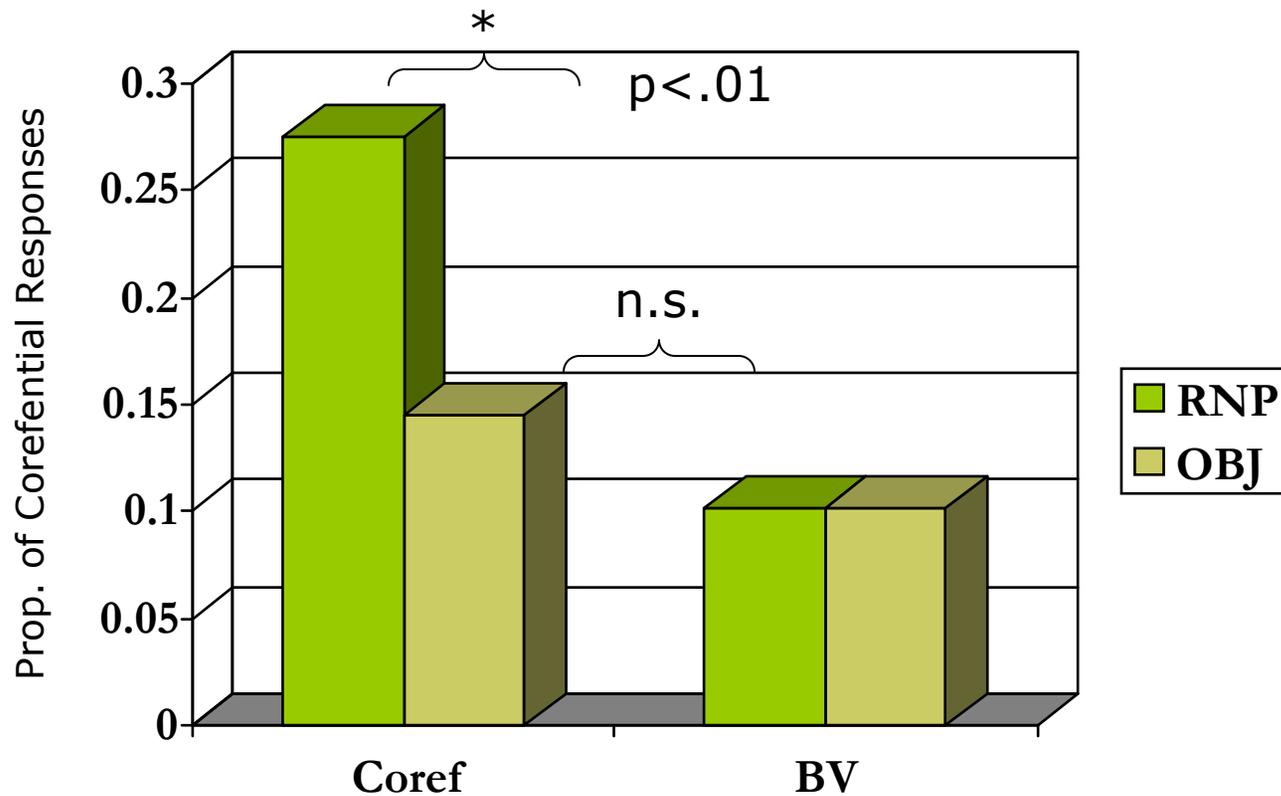
- *Jose is pointing at himself, and Mike is too.*
- Predictions
 - If reflexive must be bound variable, participants should reject coreferential interpretation required by Coreferential scene

Ellipsis RNP condition



- *Jose is pointing at a picture of himself, and Mike is too*
- Predictions
 - If RNP reflexive can receive coreferential interpretation, participants should accept coreferential interpretation with Coreferential scene, and maybe even reject bound variable scene

Ellipsis results: proportion of coreferential interpretations



RNP can receive coreferential interpretation
OBJ receives bound variable interpretation

Summary

- Results of RNP vs OBJ Ellipsis
 - Object reflexives receive bound variable interpretation
 - RNP reflexives receive both bound variable and coreferential interpretations
- This seems like support for the syntactic accounts.
- There is a confound
 - Conditions varied on both syntactic structure and visual scene
- The unusual behavior may be influenced by the representational meaning of RNP's.

Statue interpretations

- Reference Transfer (Nunberg 1979)
 - The ham sandwich on table three needs more coffee
- Jackendoff (1992)
 - Transfer of reference to representation
 - Can refer to statue of Ringo Starr as “Ringo Starr”
 - True referent can bind statue reflexive
 - Ringo Starr saw himself at the museum.
 - Statue referent cannot bind true reflexive
 - Ringo Starr fell on himself. (not: The statue of RS fell onto the true RS.)

Statue interpretations

- Lidz (2001)
 - Statue reflexives (“near reflexives”) can receive coreferential interpretations
- Ringo saw himself at the museum.
- Ringo saw himself at the museum and Paul did, too.
 - Ringo saw the statue of Ringo and Paul saw the statue of Ringo too.
- Exp 1 shows coreferential readings not usually possible with reflexive as OBJ NP.

Stative reflexives and RNP reflexives

□ Stative reflexives

- Can receive coreferential interpretations
- Are phrases that refer to representations of their antecedents.
- Have OBJ form (=are “true” direct objects)

□ RNP reflexives

- Can receive coreferential interpretations
- Are phrases that refer to representations of their antecedents.
- Have RNP form (=are in representational NPs)

Unified approach?

□ Question

- Could statue reflexives and RNP reflexives be the same thing?
- Could the fact that they both refer to representations of their antecedents be the reason that they both receive coreferential interpretations?

□ Implications

- If so, this would have enormous implications for the treatment of RNP reflexives:
 - Their behavior would not depend on the structure of the RNP itself

Reference Transfer vs OBJ experiment

- In the previous experiment the linguistic and visual stimuli were correlated.
 - OBJ scene went with OBJ sentence
 - RNP scene went with RNP sentence
- We wanted to tease apart the effects of the linguistic and visual stimuli
- Same scenes as exp 1 (OBJ and RNP)
- Only OBJ sentences
 - OBJ scene with OBJ sentence = True Reflexive condition
 - RNP scene with OBJ sentence = Reference Transfer condition

Reference Transfer vs OBJ experiment

- 37 participants (University of Rochester undergraduates)
- Seated in front of a computer monitor
- Listened to prerecorded sentences
- Verified if displayed scene matched the sentences heard by pushing a yes or no button
- Three verbs used: *point, tap, touch*
- Ellipsis, Unelided controls, Fillers, counterbalancing, etc...

Ellipsis True Reflexive condition



Bound Variable



Coreferential

- *Jose is pointing at himself, and Mike is too.*
- Predictions
 - If normal reflexives must be bound variable, participants should reject coreferential interpretation required by Coreferential scene

Ellipsis Reference Transfer condition



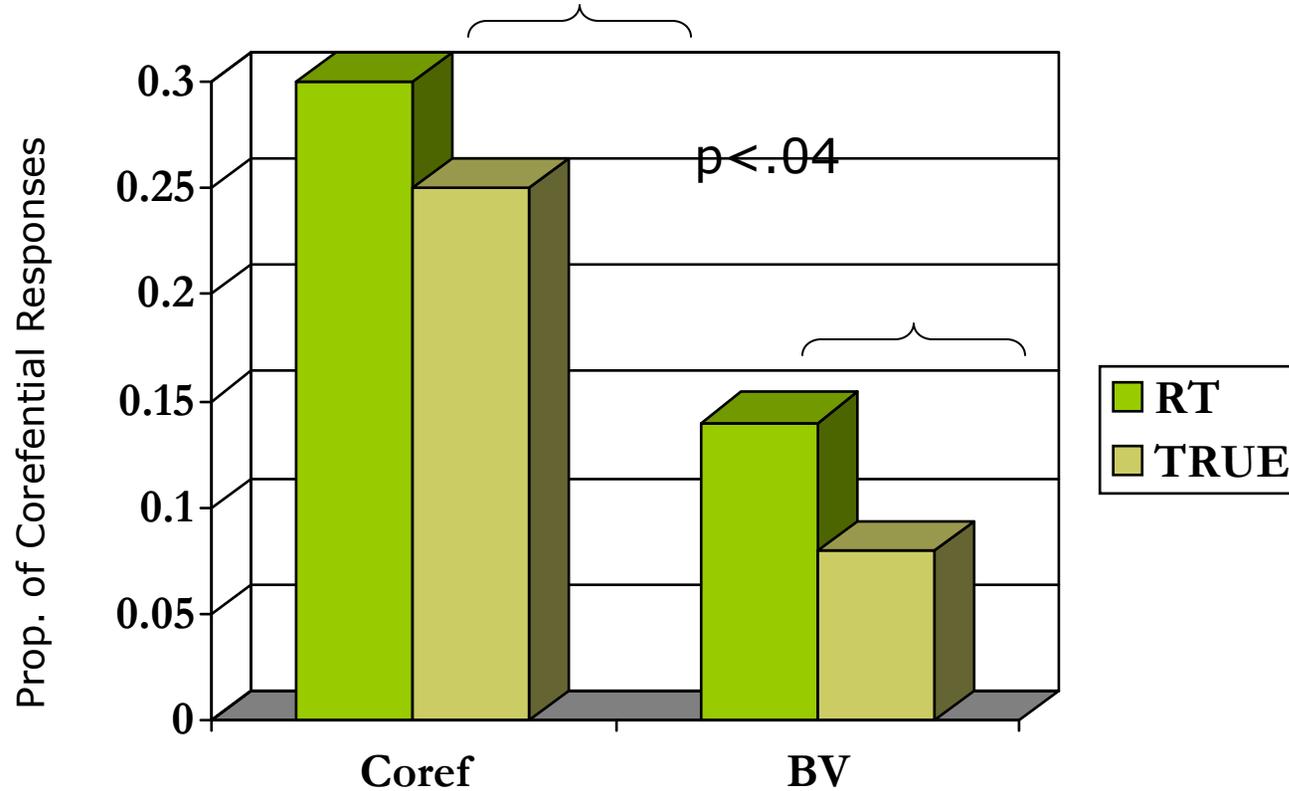
Bound Variable



Coreferential

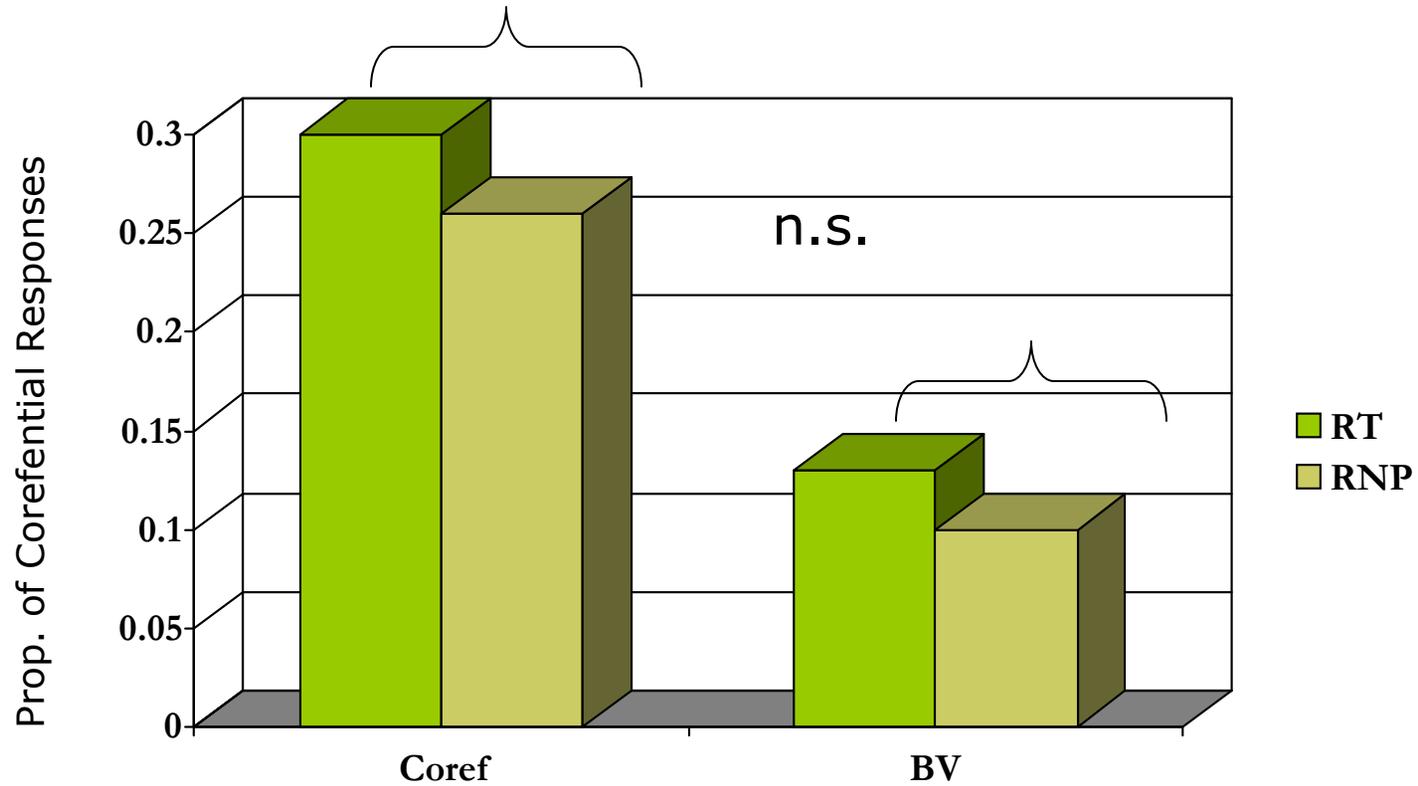
- *Jose is pointing at himself, and Mike is too*
- Predictions
 - If reflexive referring to a representation can receive coreferential interpretation, participants should accept coreferential interpretation with Coreferential scene

Ellipsis results: proportion of coreferential interpretations



Overall, RT reflexive received more coreferential interpretations, regardless of scene

Experiments Compared



RT and RNP behave the same

Summary

- RNP vs. OBJ (syntax + scene vary)
 - RNP reflexives can receive more coreferential interpretations than OBJ reflexive
- RT vs. True (scene alone varies)
 - Statue reflexives can receive more coreferential interpretations than true reflexive
- Provides preliminary evidence that syntactic structure alone is not “causing” special behavior of RNP reflexives.
- Reflexives referring to pictures are special even when not supported by RNP structure
- Suggests neither syntactic approach is complete

Experiments with Eye-Movements

- Exp 1 and 2 examine final interpretation
 - Picture verification
- Exp 3 and 4 examine underlying process
 - Eye-tracking

RNP vs OBJ with eye-movements experiment



Jose is pointing at (a picture of) himself.

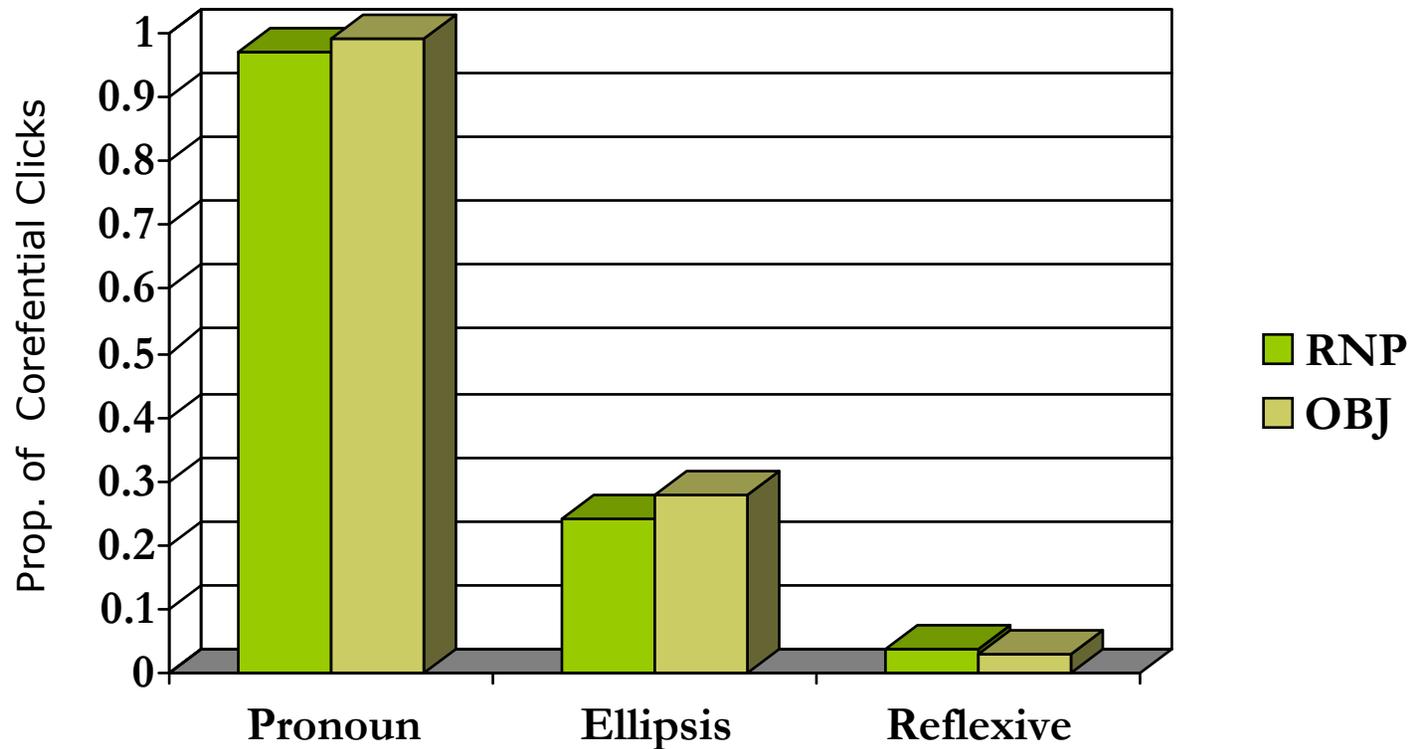
Ref cond: Now Mike will point at (a picture of) himself too.

Pron cond: Now Mike will point at (a picture of) him too.

Ellipsis cond: Now Mike will too.

- ❑ Trained to click where the second person will point
- ❑ Clicks could show same pattern as exp 1, and predict more coreferential looks for RNP.

RNP vs OBJ with eye-movements: Click Results



N=16

Surprisingly, no effect of NP type in clicks
Eye-movement data parallel

Possible Explanation

- Discourse Coherence, Ellipsis, and the application of Syntactic Constraints (Kehler 2000, Frazier & Clifton 2006)
- Resemblance (Parallel Structures)
 - syntactic constraints applied.
 - Mike is pointing at a picture of himself, and Jose is too.
 - (exp 1 and 2)
- Cause & Effect/ Temporal Contiguity (Non-Parallel)
 - syntactic constraints not as important
 - Mike is pointing at a picture of himself. *Now Jose will* too.
 - (exp 3)

Possible Explanation

- Normally, no coref's for OBJ reflexives are because of syntactic constraints
- If constraints are not applied then there can be a rise in coref responses for OBJ reflexives

Reference Transfer vs True with eye-movements experiment



Jose is pointing at himself.

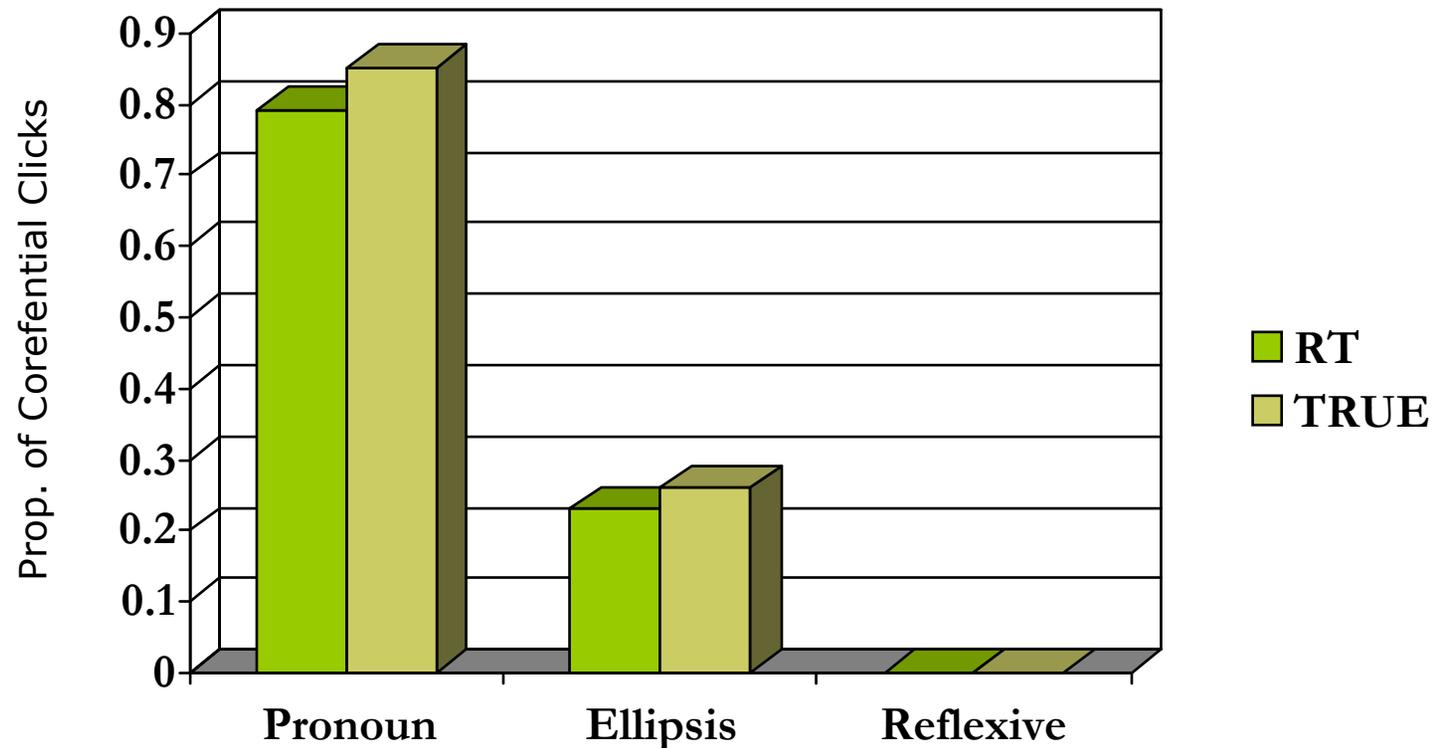
Ref cond: Now Mike will point at himself too.

Pron cond: Now Mike will point at him too.

Ellipsis cond: Now Mike will too.

- Trained to Click where the second person will point
- Clicks could show same pattern as exp 2, and predict more coreferential looks for RT.
 - Or discourse/parallelism effects

RT vs True with eye-movements: Click Results



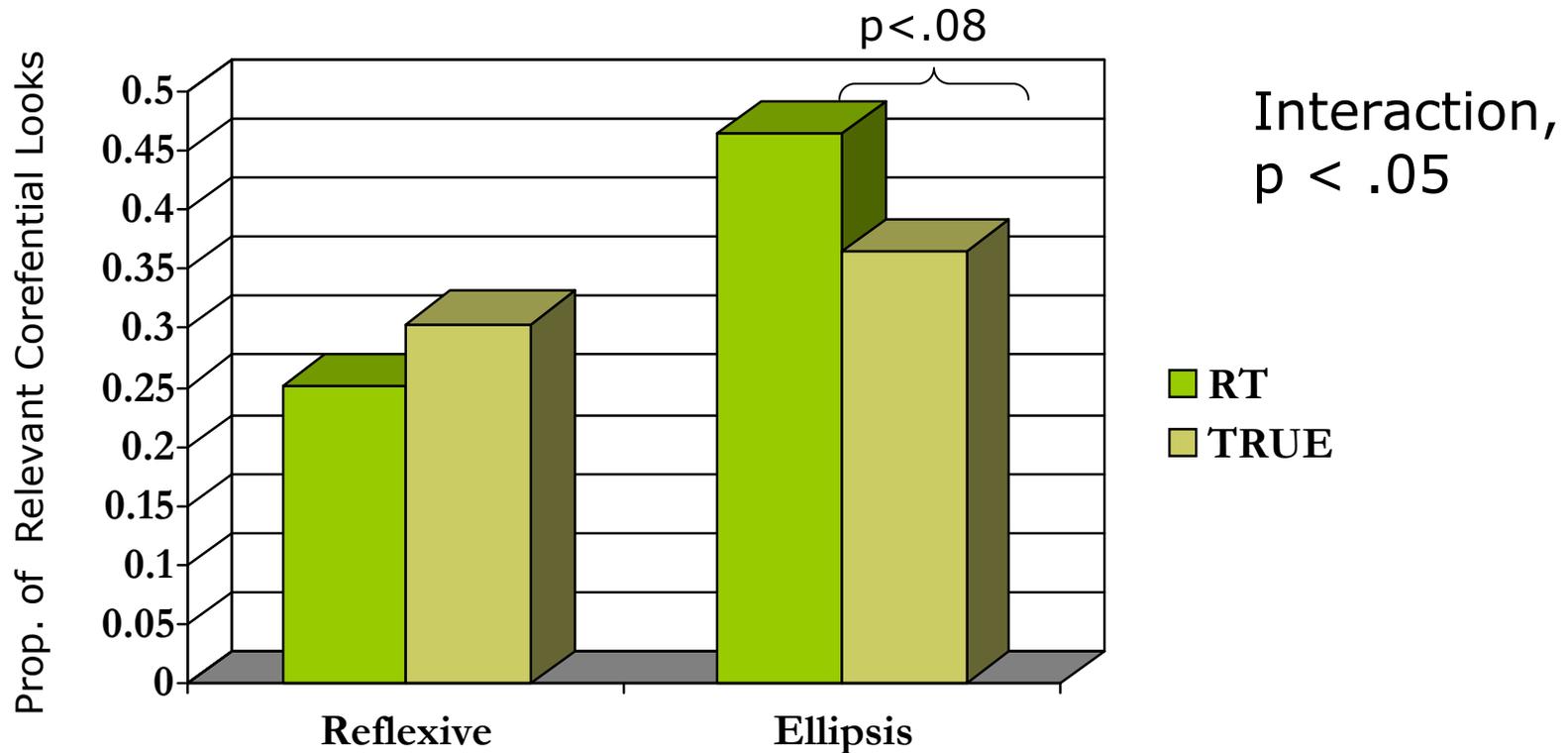
N = 14

RT is readily accepted.

No RT vs. True difference

Eye-movements are informative

RT vs True Eye-Movement Results



Ellipsis increases coreferential looks more for RT than True

Summary of Exp 3 and 4

- Clicks reveal no effect of NP or scene type
 - Possibly due to discourse coherence/parallelism
- Eye movements reveal effect of scene in Exp4
 - This can not be an effect of NP syntax

Conclusions

- Work in progress
- Parallel discourse contexts, RNP reflexives behave as RT reflexives.
 - Each different from true reflexives
- Referent, not syntax, makes RNP reflexives unusual.
- Less than parallel discourse contexts, only RT shows any difference from true reflexives

Future Directions

- We will manipulate discourse context.
 - Parallel vs. Cause and Effect vs. Temporal Contiguity
 - In scene verification and eye-movement tasks
- Investigate Conceptual Processes of Reference Transfer

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Discourse Coherence

□ Cause & Effect

- Bill was about to be impeached. He called his lawyer.
- Bill defended himself against the accusation because the lawyer couldn't

□ Resemblance

- Bill likes to play golf. Al enjoys surfing the net.
- ?Bill defended himself, and his lawyer did too.