Two Forms of Comparatives

and the implications on predicate structure of Mandarin

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Main Claims

1. Data: Two possible forms Comparatives (AdjP)
2. Goal: Unified account for two forms $\rightarrow$ Parismonious explanation for semantic similarity
3. Problem: One variant in the alternation has syntactic-semantic constraints. Why?
4. Hypothesis: The Deg^0 in Mandarin selects its complement predicates based on their boundedness.
5. Experimental Study:
   - Judgment task reveals speakers' acceptability of the combination of word order and predicate type
   - Speakers' interpretation reveals their understanding of the predicates
6. Implications:
   - how semantics might shape syntax

AP alternation and boundedness

(1) 桌子比椅子高(一点) *bi*-comparative

(2) 桌子高椅子*(一点) Transitive comparative

- Measure phrase (e.g. 一点、很多、五公分) is optional in *bi*-comparative
- Transitive comparative requires the MP
- Without MP, 比 must be used, why?

Previous studies do not assume a unified structure for various reasons, this study explores a possible solution and some implications.

Boundedness in Comparatives II

Scalar structure of Adjectives

(Kennedy & McNally, 2005; Winter, 2004)

	closed-scale	open-scale
English	'100% full'	*'100% big'
Mandarin	*bai-fen-zhi-bai man*	**bai-fen-zhi-bai da*

(3) 杯子大瓶子一点

(4) ?杯子满瓶子一点

For closed-scale adjectives, TrComp seems less acceptable.
→ Experimental study Lam (2015)

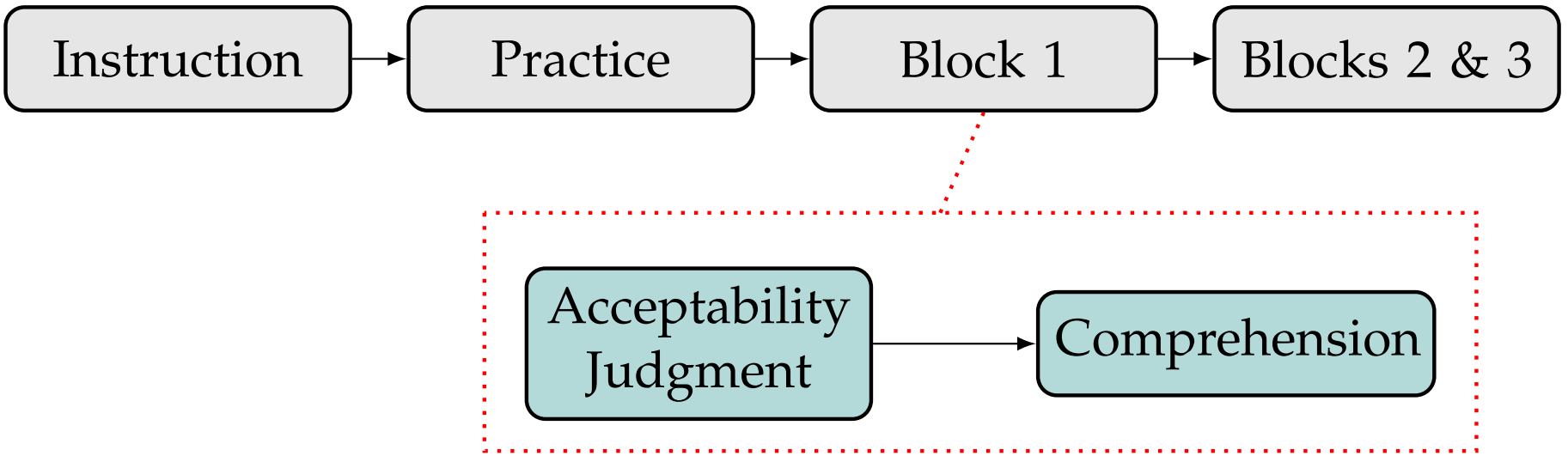
Hypothesis

Boundedness constraint for Transitive Comparatives

The Deg^0 in transitive comparatives selects only bounded predicates.

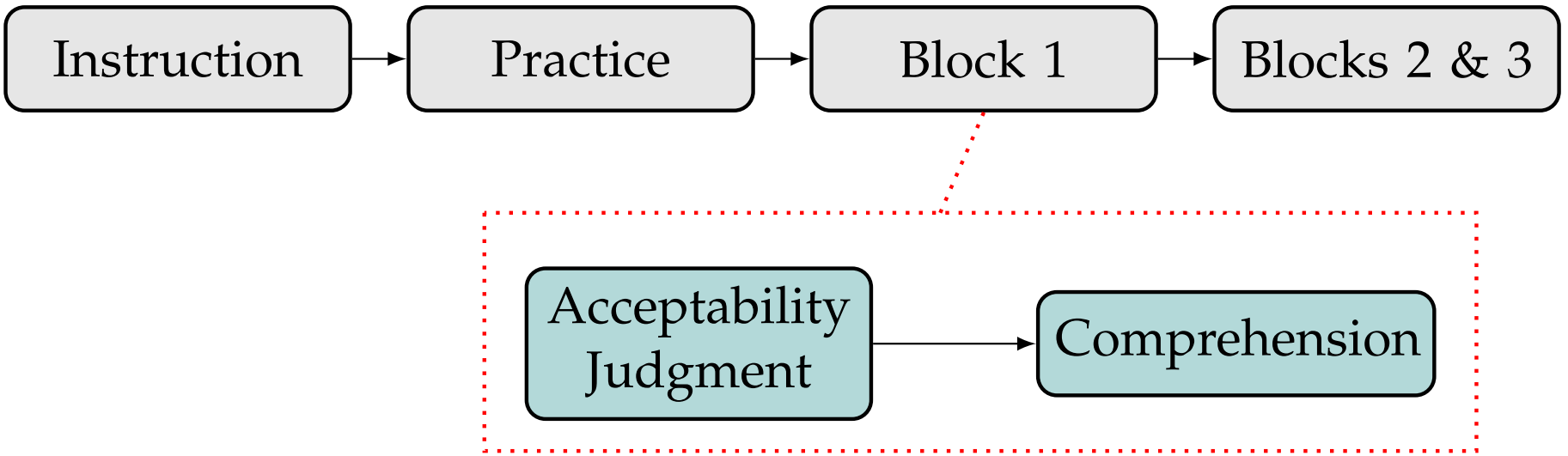
Comparatives / AP	
transitive comparative	$\rightarrow$ requires bounded predicates
bi-comparative	$\rightarrow$ no restriction

Experimental Design



- 2-part design: acceptability + comprehension
- acceptability → what combinations are acceptable
- comprehension → boundedness of predicates

Experimental Design



- 2-part design: acceptability + comprehension
- acceptability → what combinations are acceptable
- comprehension → boundedness of predicates

For each item:

1. Rate the sentence
2. Choose a picture
3. Jump to the next item

Factorial Design

2 x 2 x 2 = 8 conditions 4 lexicalization per condition ($4 \times 8 = 32$ sentences)

- Sentence type (+/- require bounded predicates)
- Lexically bounded? (open vs closed scale)
- Externally bounded? (+/- Measure phrase)

For AP:

- TrComp vs. *bi*-comparative
- scale structure (e.g. 'tall'/'big' vs. 'new'/'full')
- $\pm$ measure phrase *yi dian* 'a little'

Sentence	Scale	Measure Phrase
TrComp	close	+MP
TrComp	close	-MP
TrComp	open	+MP
TrComp	open	-MP
bi	close	+MP
bi	close	-MP
bi	open	+MP
bi	open	-MP

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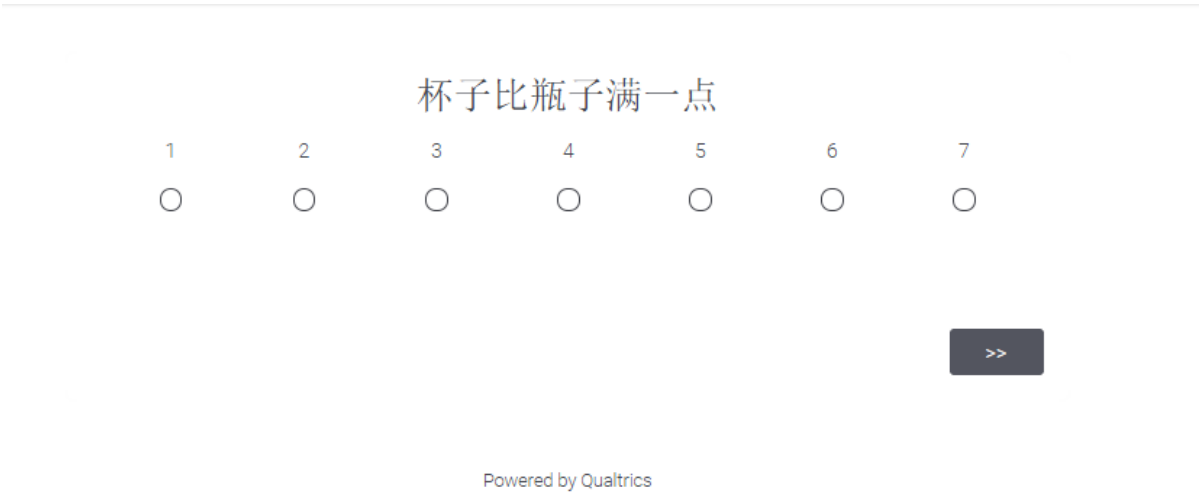
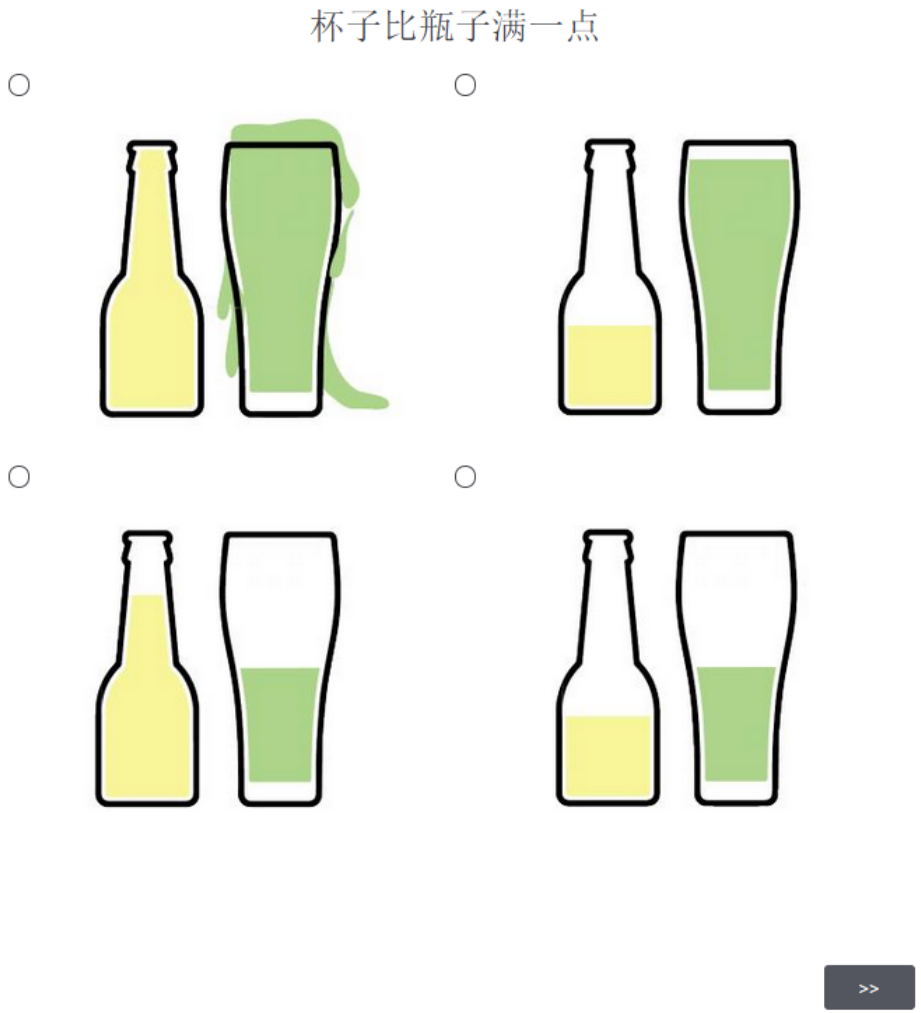
Acceptability Judgment Task

- Likert 7-point scale (1: least acceptable; 7: most acceptable).
- Audio stimuli: native speaker of Mandarin, (played 1×)
- Visual stimuli: simplified Chinese characters (untimed)
- Mouse-click to indicate judgments (qualtrics)



Comprehension Task

- Goal: elicit interpretation
- picture stimuli
- sets of four pics
- untimed for all items



Predictions

1. *bi*-comparative is unselective
2. TrComp selects bounded predicates

1. *bi*-comparative is unselective

bi-comparatives

	Sentence	Scalar Struture	Measure Phrase
✓5	*bi*	closed	+MP
✓6	*bi*	closed	-MP
✓7	*bi*	open	+MP
✓8	*bi*	open	-MP

(5) ✓杯子比瓶子满一点

(6) ✓杯子比瓶子大一点

2. TrComp requires MP

+MP > -MP (#1 > #2; #3 > #4)

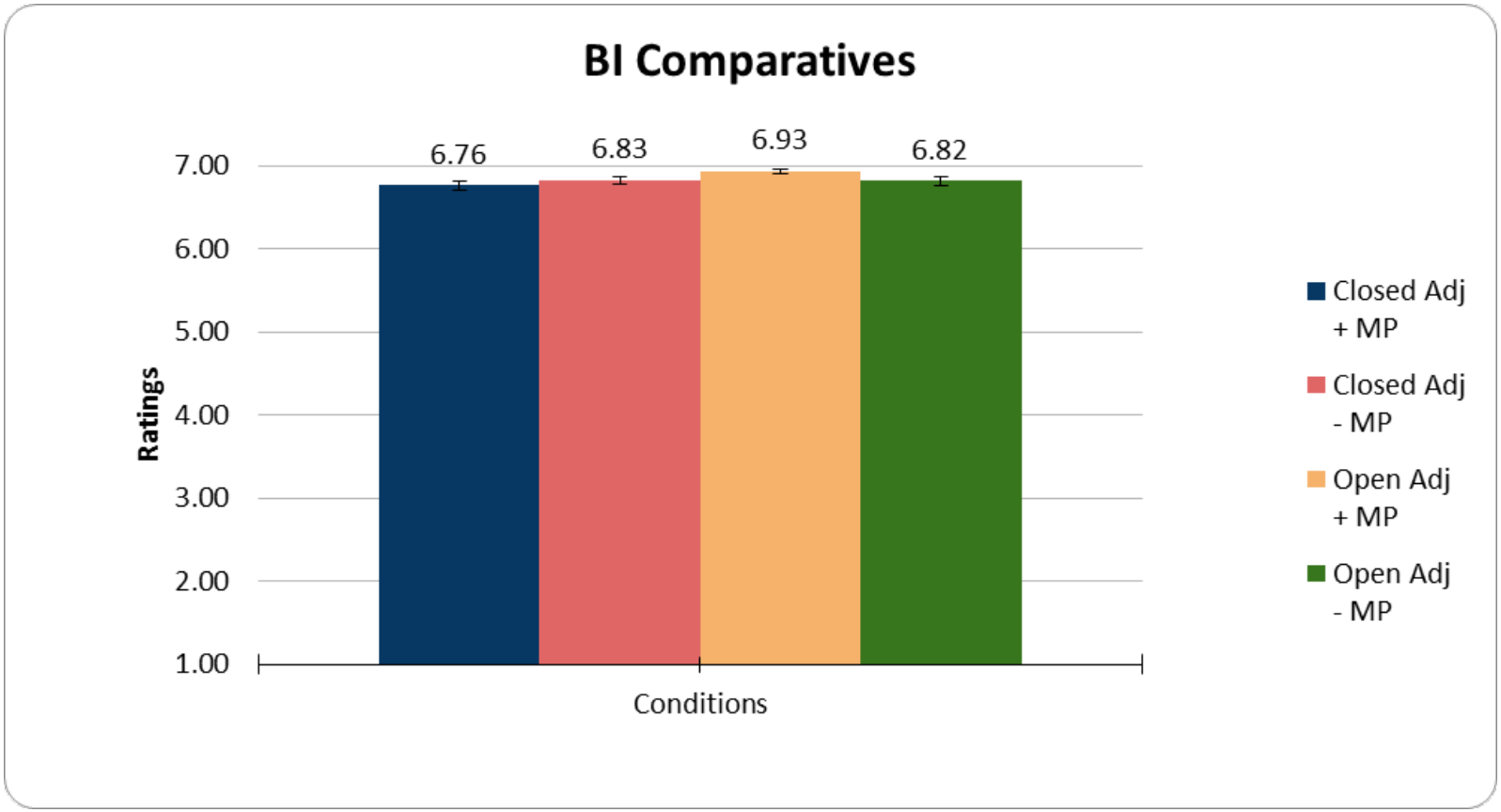
	Sentence	Scalar Struture	Measure Phrase
1	TrComp	closed	+MP
*2	TrComp	closed	-MP
3	TrComp	open	+MP
*4	TrComp	open	-MP

(7) 杯子大瓶子*(一点)

(8) 杯子满瓶子*(一点)

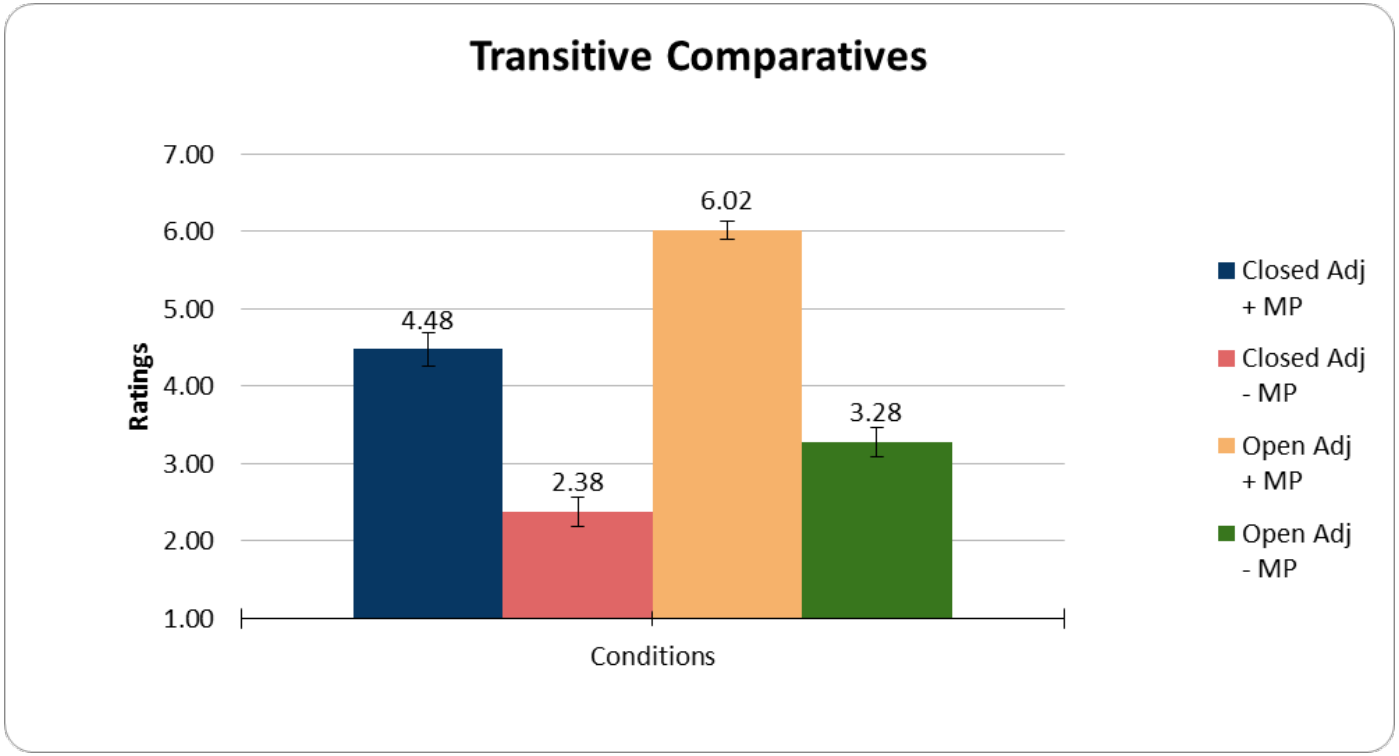
Results: Prediction 1 confirmed

N=23 (13 female); all speakers originally from Mainland China



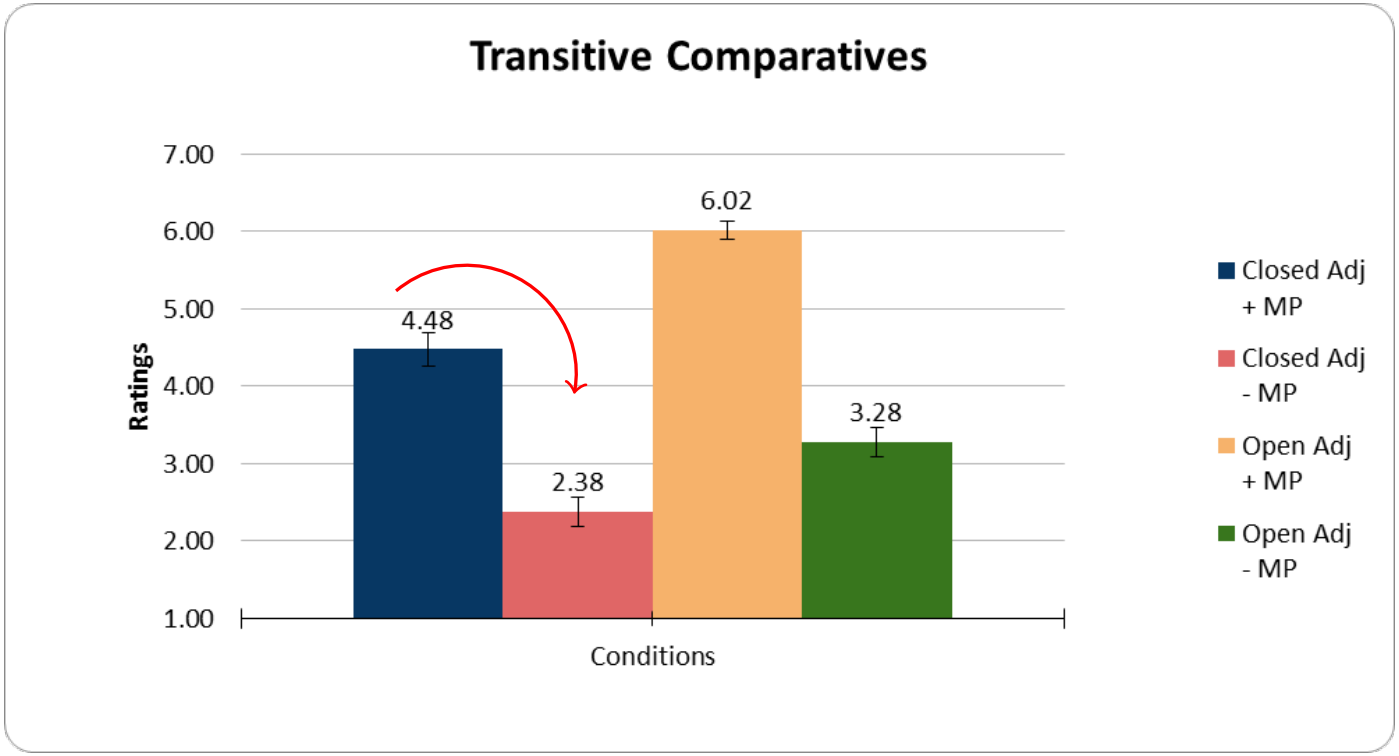
- *bi* is unselective, i.e. all 4 configuration works

Results: Prediction 2 confirmed



+ measure phrase > - measure phrase

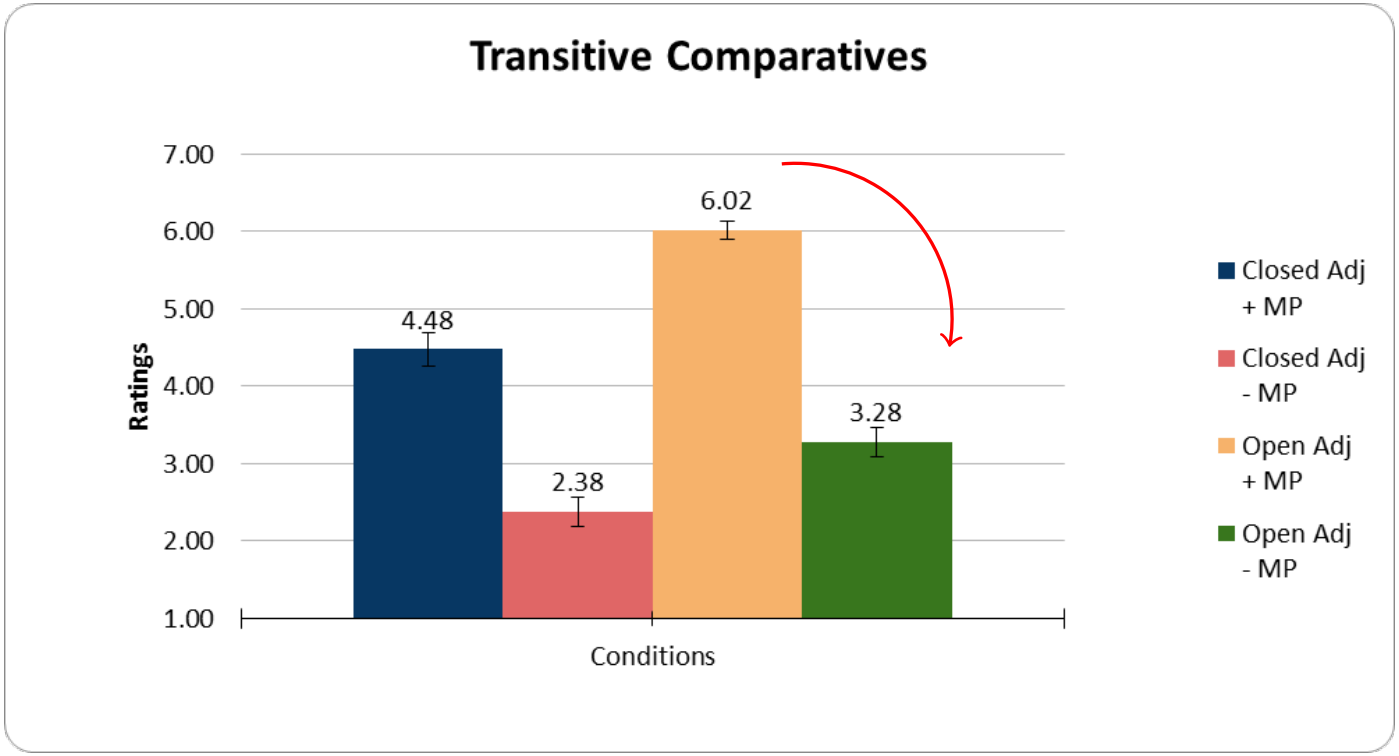
Results: Prediction 2 confirmed



+ measure phrase > - measure phrase

- Closed-scale *man* 'full': +MP > -MP

Results: Prediction 2 confirmed



+ measure phrase > - measure phrase

- Closed-scale *man* 'full': +MP > -MP
- Open scale *da* 'big': +MP > -MP

Comprehension Task: Comparatives

bi	Literal 'a little'; absolute Adj	Literal 'a little'; relative Adj	Dummy 'a little'
Closed; +MP	43.48%	29.35%	27.17%
Closed; -MP	23.91%	35.87%	40.22%
Open; +MP	10.87%	6.52%	81.52%
Open; -MP	10.87%	55.43%	33.70%

(9) 杯子比瓶子满(一点)

(10) 杯子比瓶子大(一点) *different pictures were used for 'big'*

Lit. 'a little'; absolute Adj

Dummy 'a little'

Lit. 'a little'; relative Adj

Distractor

Comprehension Task: Comparatives

TrComp	Literal ‘a little’; absolute Adj	Literal ‘a little’; relative Adj	Dummy ‘a little’
Closed; +MP	39.13%	25.00%	35.87%
Closed; -MP	30.43%	29.35%	20.65%
Open; +MP	18.48%	4.35%	76.09%
Open; -MP	10.87%	43.48%	28.26%

(11) 杯子满瓶子一点

(12) 杯子大瓶子(一点)

Lit. ‘a little’; absolute Adj

Dummy ‘a little’

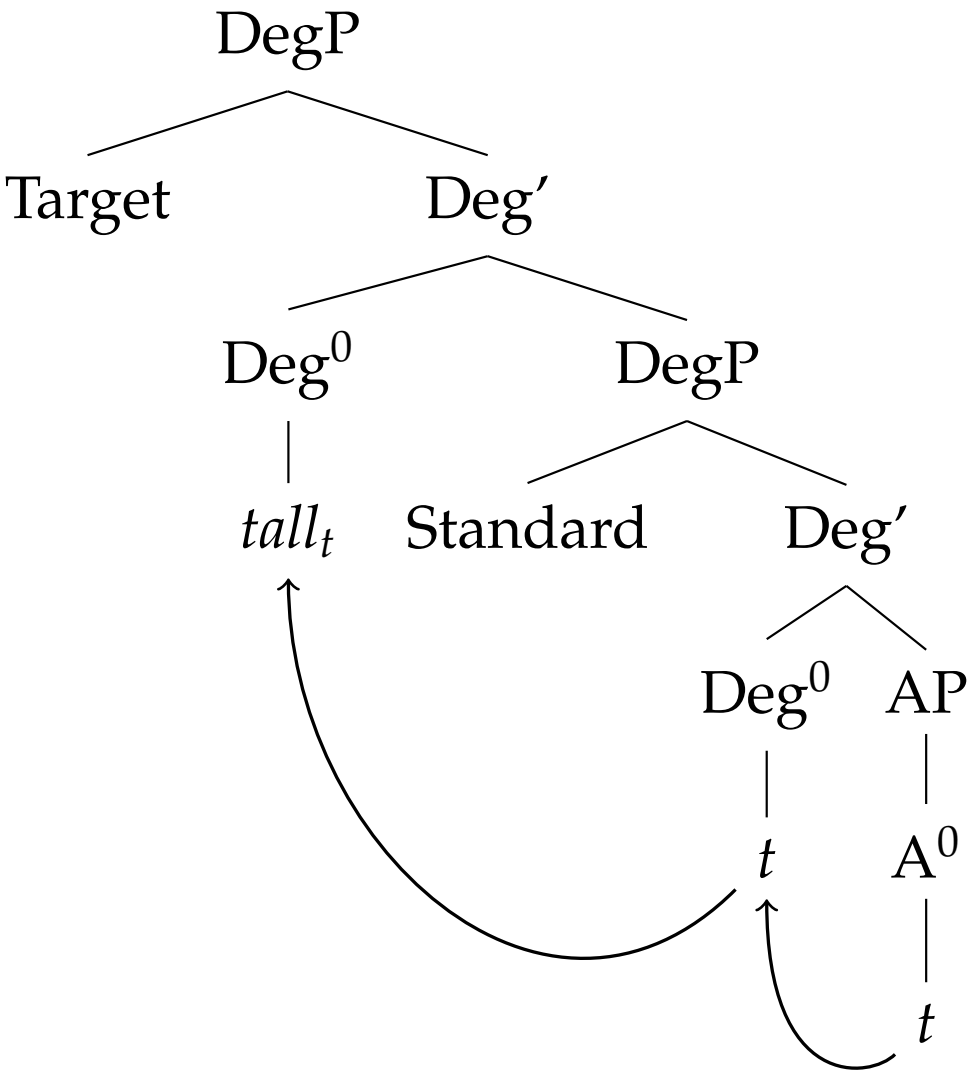
Lit. ‘a little’; relative Adj

Distractor

Summary of comprehension results

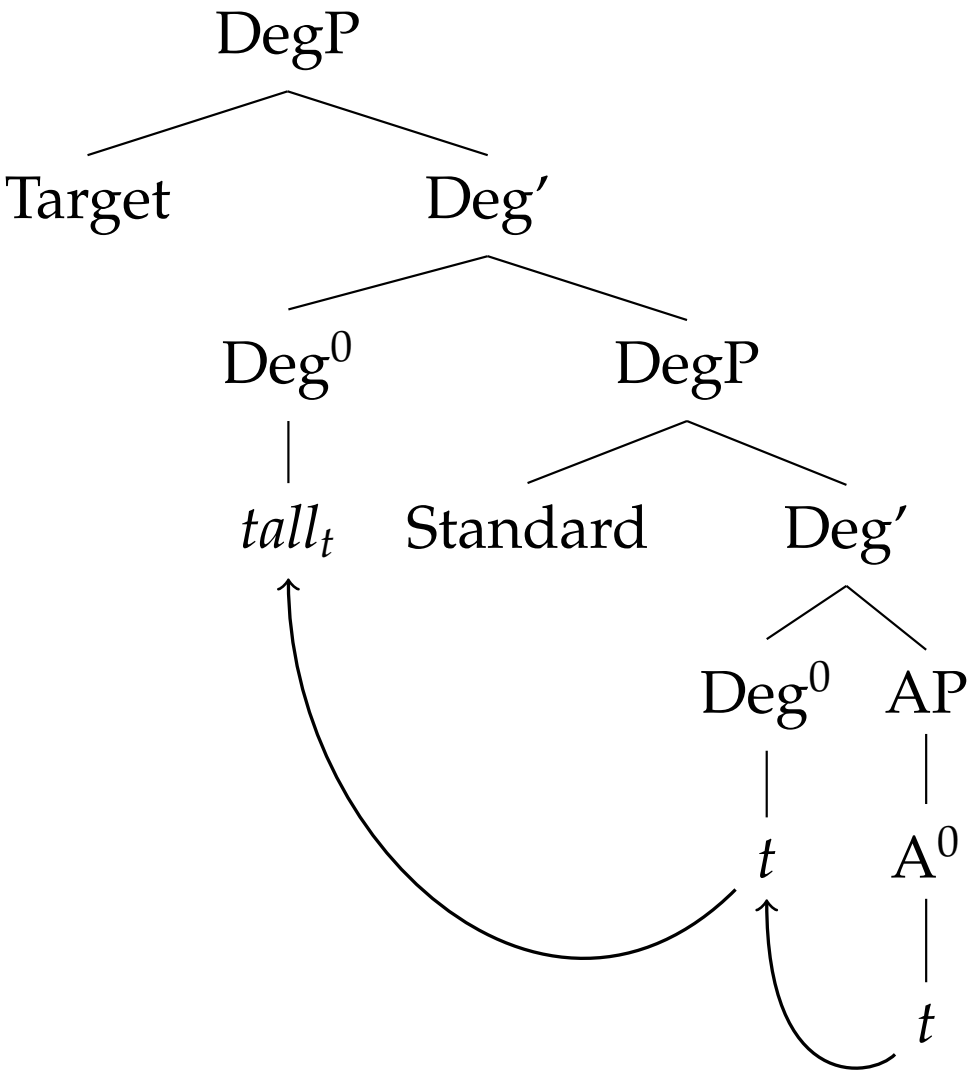
- Same interpretation pattern across TrComp and *bi*
  - $\pm$ boundedness markers affects interpretations
  - sentence type (*bi* vs. TrComp) does not have an effect

Proposal: Split DegP of comparatives



Two DegP's capturing:

Proposal: Split DegP of comparatives



Two DegP's capturing:

- *bi* and raised-A^0 (TrComp) precede Standard
- Both DegP's can be filled

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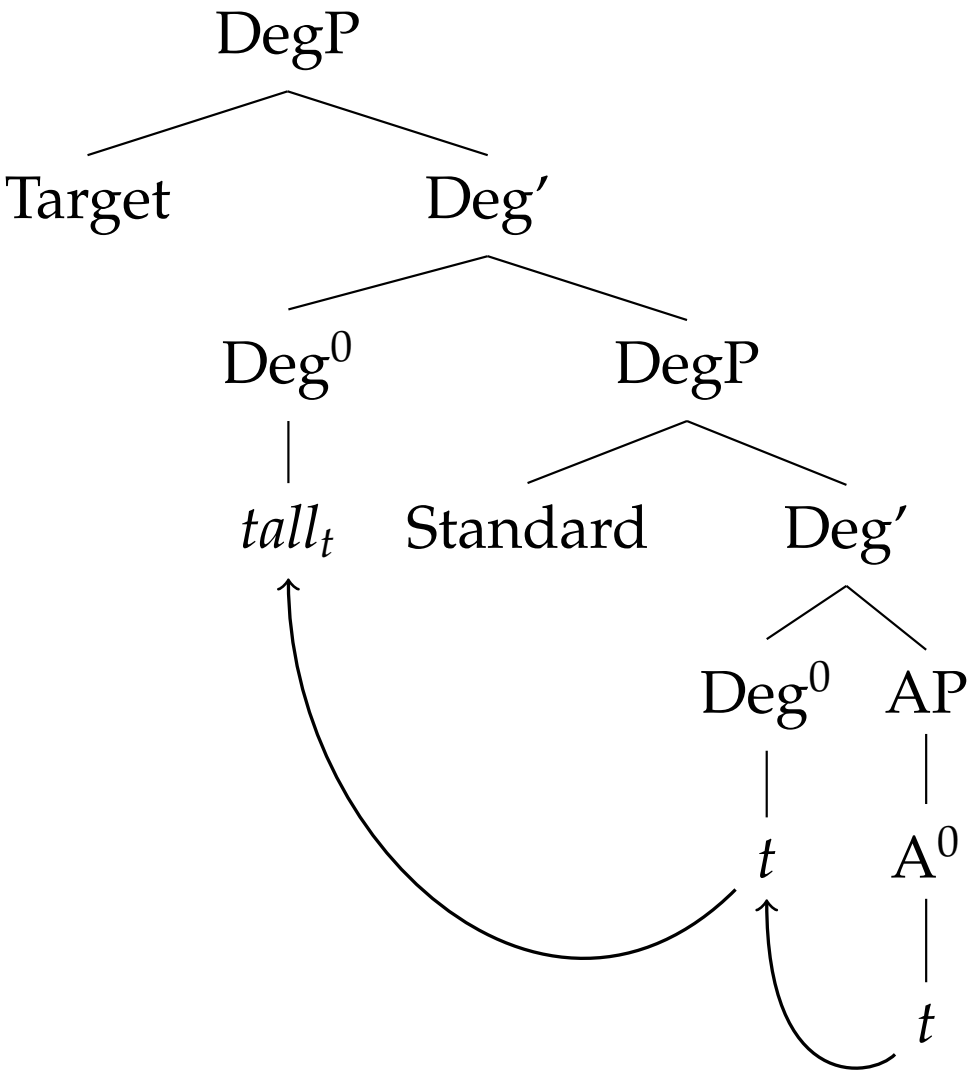
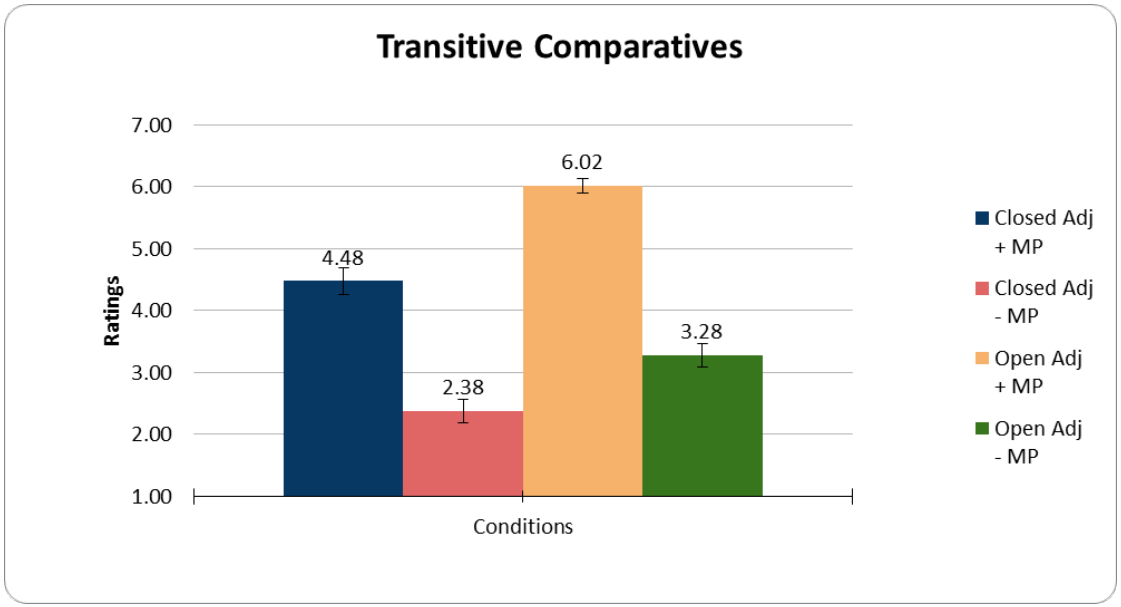


Two DegP's capturing:

- *bi* and raised-A^0 (TrComp) precede Standard
- Both DegP's can be filled
- Implication on non-movement of closed scale Adj

TrComp resists closed scale adjectives



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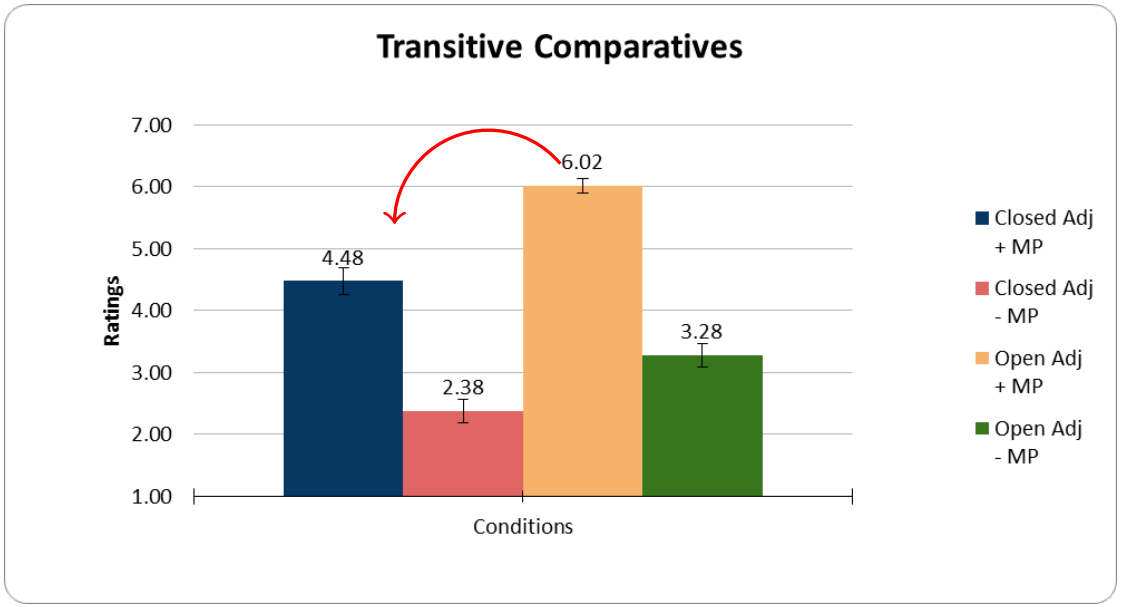
Closed-scale 満 < Open scale 大

Open scale adjectives are preferred across ±MP

TrComp resists closed scale adjectives



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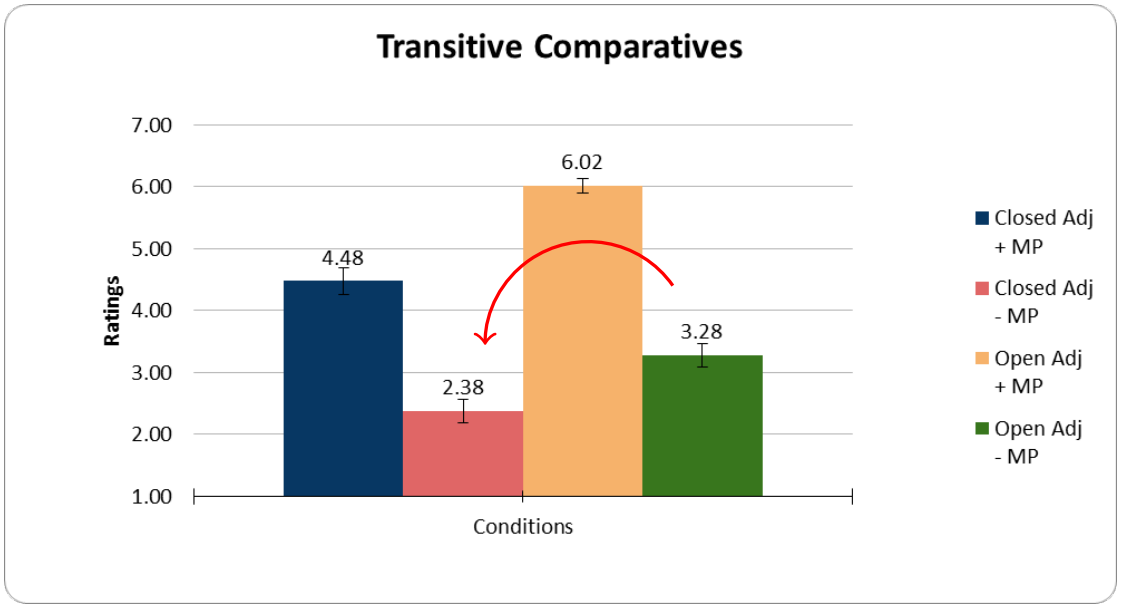
Closed-scale 满 < Open scale 大

- With MP: Closed < Open

Open scale adjectives are preferred across ±MP

TrComp resists closed scale adjectives



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Closed-scale 満 < Open scale 大

- With MP: Closed < Open
- Without MP: Closed < Open

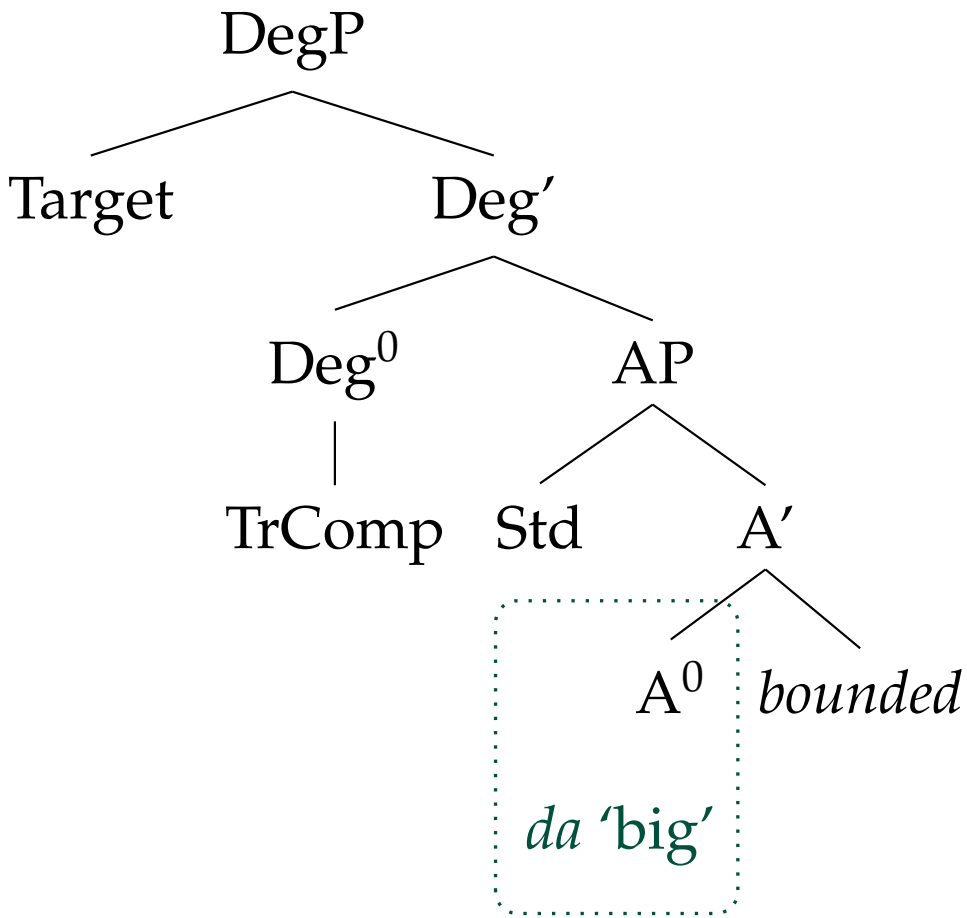
Open scale adjectives are preferred across ±MP

Why TrComp resists closed scale adjectives

If boundedness not inside A^0:
→ phrasal closed scale Adj
→ no movement
→ no TrComp

Predictions:

- *TrComp+open scale Adj* can undergo head movement

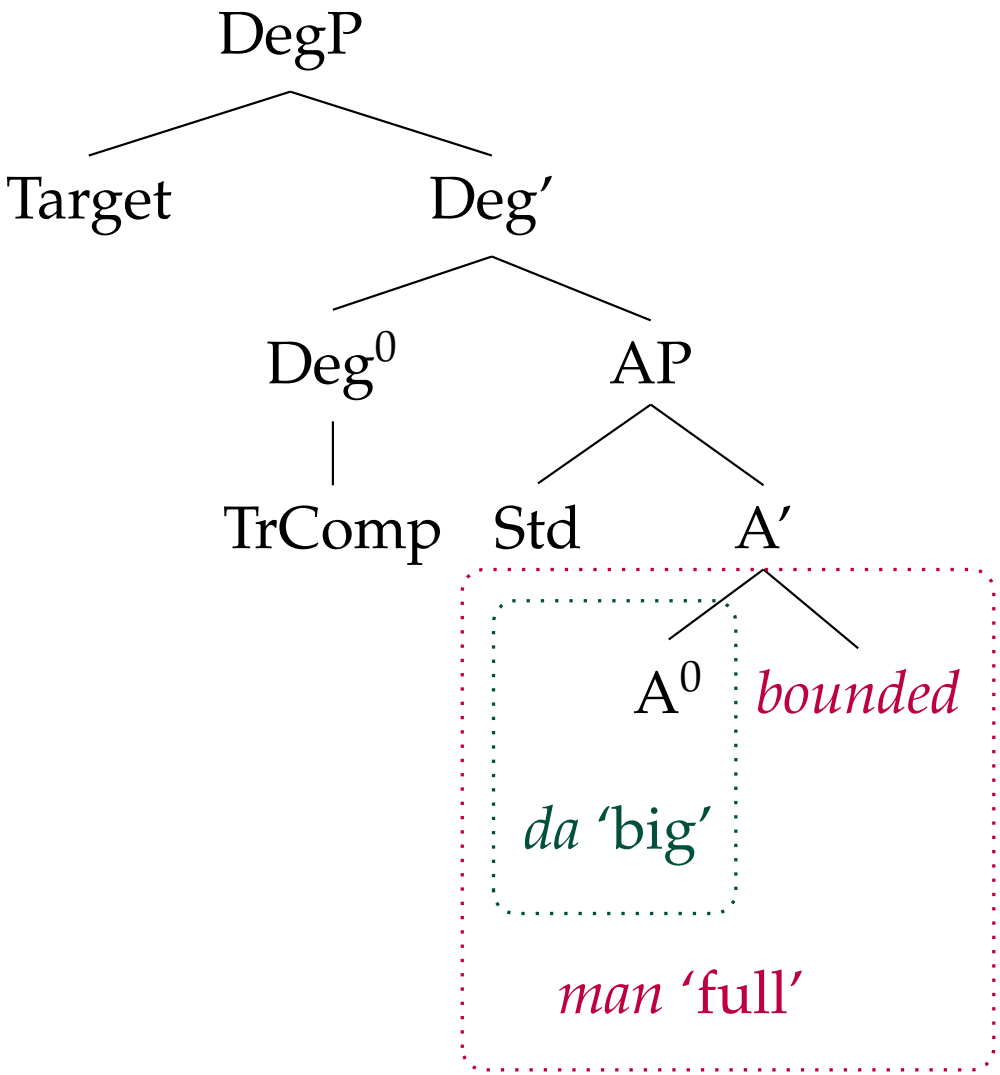


Why TrComp resists closed scale adjectives

If boundedness not inside A^0:
→ phrasal closed scale Adj
→ no movement
→ no TrComp

Predictions:

- *TrComp*+*open scale Adj* can undergo head movement
- *TrComp*+*closed scale Adj* is predicted to be less acceptable



Corollary 1: Overt lower Deg^0 *chu* 出

bi

(13) ta-de-fenshu bi pingjun-fen gao (chu) hen duo
his.score BI average.score high EXCEED very much
'His score is much higher than the average.'

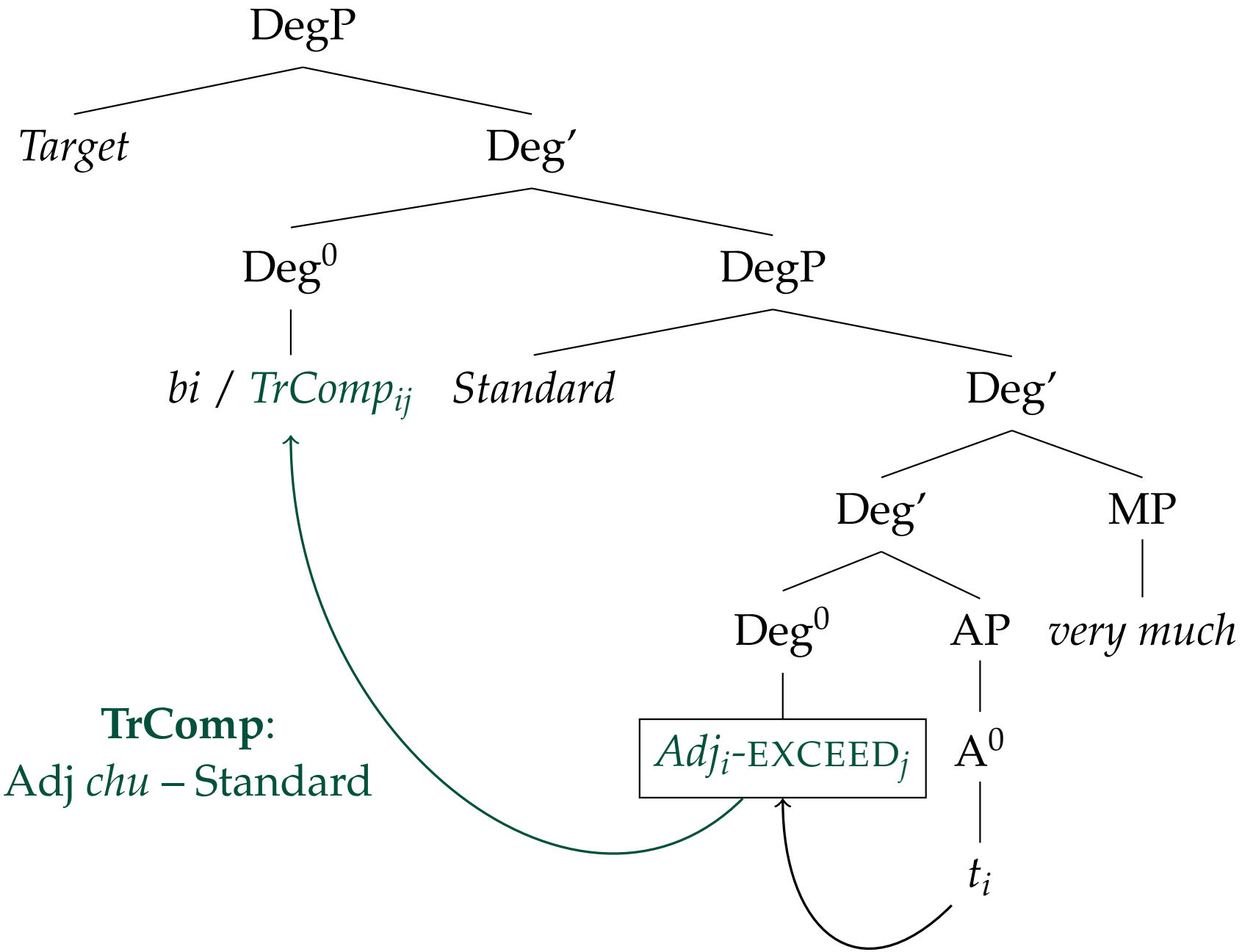
(14) beizi bi pingzi (*chu) man (*chu) hen duo
cup BI bottle EXCEED full EXCEED very much
Intended: 'The cup is much fuller than the bottle.'

TrComp

(15) ta-de-fenshu gao (chu) pingjun-fen (*chu) hen duo
his.score high EXCEED average.score EXCEED very much
'His score is much higher than the average.'

examples modified from Lin (2009)

Corollary 1: Overt lower Deg^0 *chu* 出



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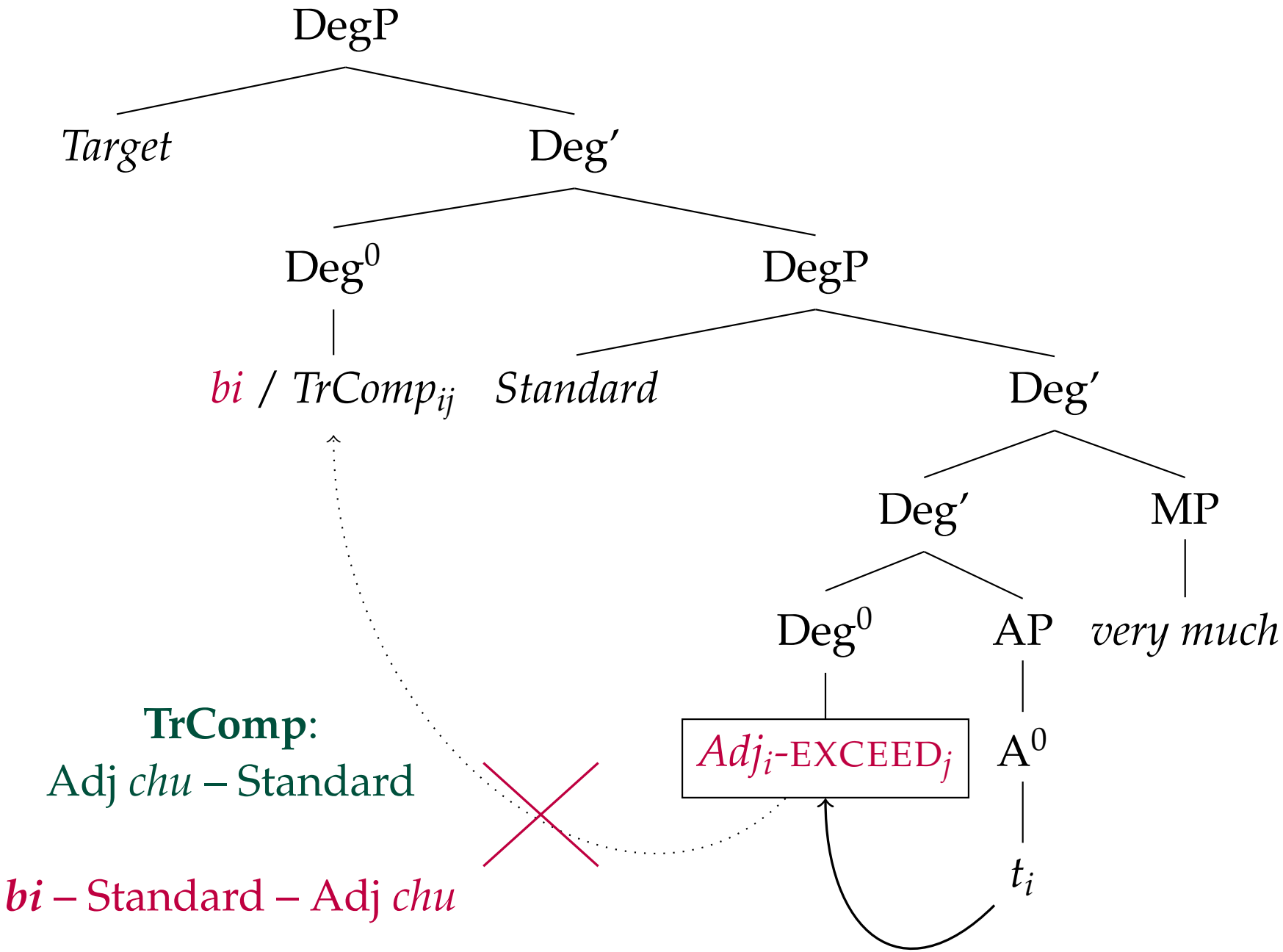
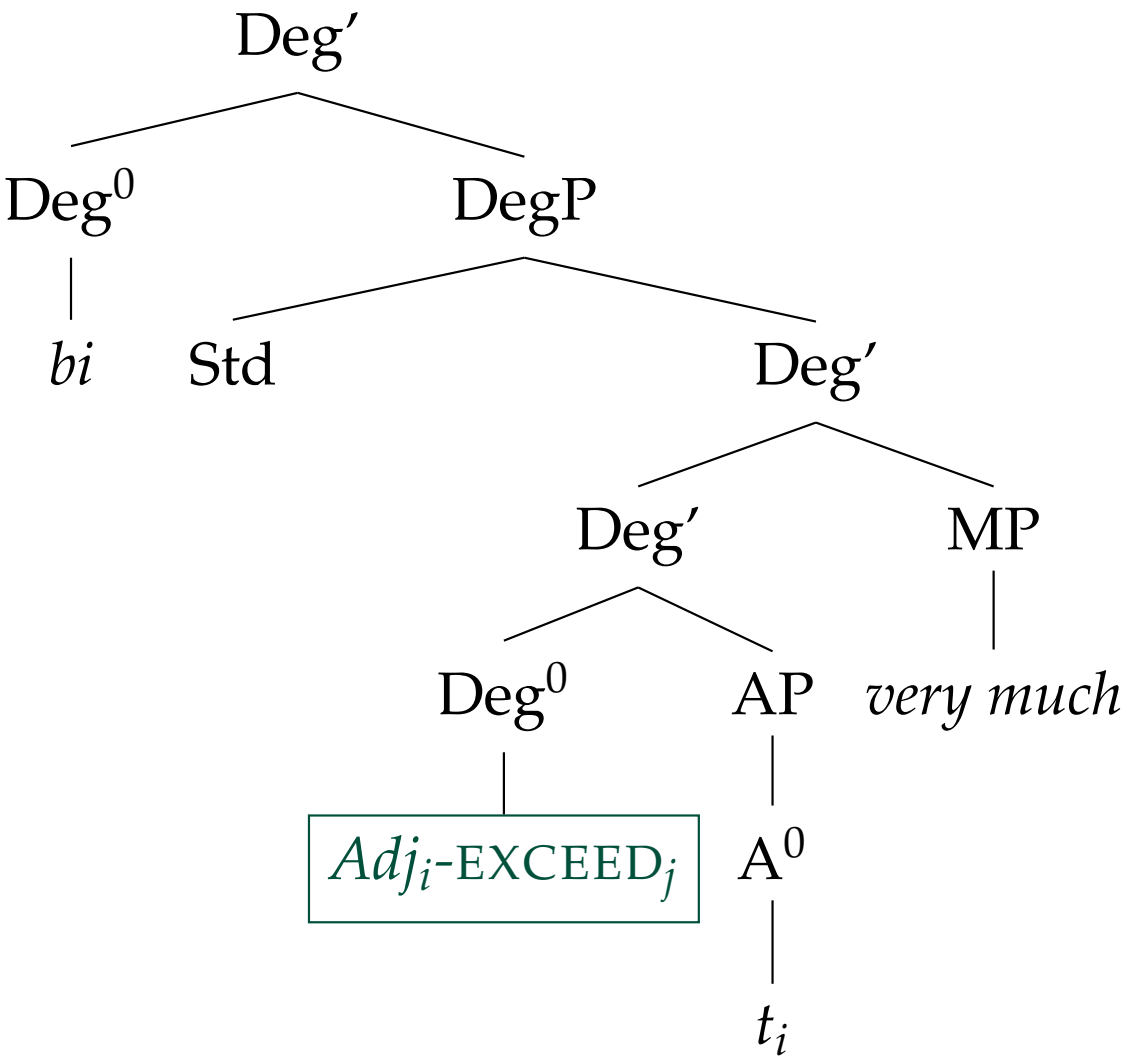


Corollary 1: Overt lower Deg^0 *chu* 出



- 'high' must precede affixal EXCEED
- 'full' is not allowed → no head raising (cf. (14) *杯子比瓶子满出很多)

Corollary 2: Overt lower Deg^0 *geng* 更

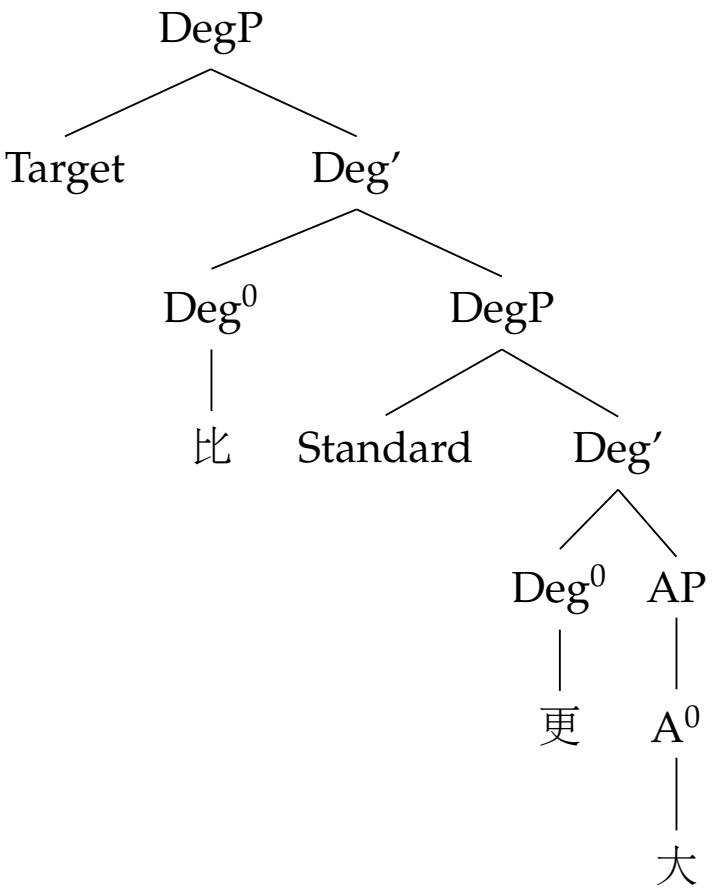
- Invariant word order: "Target 比 Standard 更Adj"

  (16) ✓杯子比瓶子更大

- 更 never occurs with TrComp

  (i) *杯子 更大 瓶子 Ø
  (ii) *杯子 更 瓶子 大
  (iii) *杯子 Ø 瓶子 更大
  (iv) *杯子 大 瓶子 更

Corollary 2: Overt lower Deg^0 *geng* 更



更 = lowerDeg^0

- no movement from Adj^0
- 更 never occurs in TrComp
- 更 never precedes Standard

e.g. 杯子比瓶子更大

= (16)

Implication - How semantics shapes syntax

1. Presence of boundedness markers affect acceptability
   - Syntax alone does not explain the selection
   - Semantic boundedness $\rightarrow$ syntactic structure

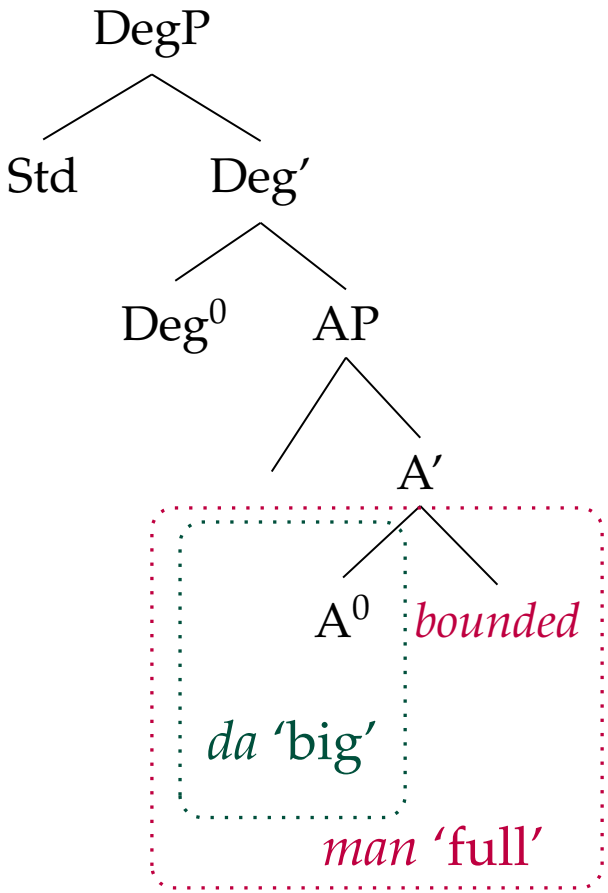
Implication - How semantics shapes syntax

2. Semantic components affect lexicalization and syntax

   - Scalar structure distinction
     Open scale *da* 'big' vs. Closed scale *man* 'full'

Lexicalization and 'Nanosyntax'

- 1 ~~morpheme~~ semantic component per node
- 1 morpheme for multiple nodes (Ramchand, 2008; Starke, 2009)
- Semantic contraints interacting with syntactic operations via lexicalization



Summary

1. Data: Two alternations in VP and Comparatives (AP)
2. Problem: A variant in each pair has syntactic-semantic constraints. Why?
3. Hypothesis: The Deg^0 in Mandarin selects its complement predicates based on their boundedness.
4. Experimental Study:
   - Judgment task reveals speakers' acceptability of the combination of word order and predicate type
   - Speakers' interpretation reveals their understanding of the predicates
5. Implications:
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Thank you!
Comments and questions are welcome.

References I

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