

# Contrastive Topic A Reductionist Approach

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Multiple Pair Questions  
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## Answers to Multiple Questions

Prototypical cases of contrastive topic:

(1) German: hat accent

Q: Welcher Junge hat mit welchem  
which boy has with which  
Mädchen getanzt?  
girl danced

A: Hans<sub>T</sub> mit Maria<sub>F</sub> und Tom<sub>T</sub> mit Britta<sub>F</sub>.  
Hans with Maria and Tom with Britta

(2) Hungarian (Gyuris, p.c.): SOV-word order and hat accent

Q: Mely fiú mely lány-t látta?  
which boy which girl-ACC saw

A: János Mari-t látta, Gyuri Beá-t látta.  
Janos Mari saw, Gyuri Bea saw

see also: Haida (2003); Gyuris (2002, 2004, 2005)

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## Uncertainty/Unresolvedness

Ward and Hirschberg (1985); Büring (1997):

- (3) Q: Which boy danced with which girl?  
A: Hans<sub>T</sub> mit Maria<sub>F</sub>  
John with Mary
- (4) residual question: Which girl did Tom dance with?
- (5) *Uncertainty*: Contrastive topic  $\phi(X_T, Y_F)$  requires that there be alternative expressions  $X', Y'$  such that the truth value of  $\phi(X', Y')$  is undetermined.

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## Scope Disambiguation

Contrastive topic accent can disambiguate scope; e.g. (6) to “not  $\gg$  all”:

(6) German (Jacobs, 1984, 1997):

Alle<sub>T</sub> Politiker sind nicht<sub>F</sub> korrupt.  
All politicians are not corrupt

‘Not all politicians are corrupt.’  
\*‘No politicians are corrupt.’

(7) Hungarian (Molnár and Rosengren, 1997, 232)

Minden<sub>T</sub> Grass-regény nem<sub>F</sub> javasolható  
all Grass-novels not recommend-can

‘Not all novels by Grass are recommendable.’  
\*‘All novels by Grass are not recommendable.’

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## Explanation

Explanation (following Büring 1997): “not  $\gg$  all” scope satisfies uncertainty:

- (8) a.  $[\text{not}]_F$  ( $[\text{all}]_T$  politicians are corrupt)
- b. alternative: some politicians are corrupt.
- c. residual question: Are some politicians corrupt?

“all  $\gg$  not” scope cannot satisfy uncertainty:

- (9) a.  $[\text{all}]_T$  politicians ( $[\text{not}]_F$  are corrupt)
- b. some alternatives:
  - some politicians corrupt. [false]
  - many politicians are not corrupt. [true]

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## Problem: The Last Answer

In a pair-list answer, all pairs bear contrastive topic accent:

- (10) Q: Which boy danced with which girl?  
A: Hans<sub>T</sub> mit Maria<sub>F</sub> und Tom<sub>T</sub> mit Britta<sub>F</sub>.  
Hans with Maria and Tom with Britta

Krifka (1999); Umbach (2001): The last answer doesn't satisfy uncertainty.

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## Partiality Relative to a Question

Each conjunct of a pair-list answer must provide a partial answer (Krifka 1999, cf. Büring (2003)).

- (11) Q: Which boy danced with which girl?  
A: [Hans<sub>T</sub> danced with Maria<sub>F</sub>]/Q and [Tom<sub>T</sub> danced with Britta<sub>F</sub>]/Q
- (12) *Partiality*:  $[\phi(X_T, Y_F)]/Q$  requires that there be alternatives  $X' \neq X, Y' \neq Y$  such that  $\phi(X', Y')$  is a (partial) answer to Q.

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## Problem 1: Questions

Hungarian requires contrastive topics in pair-list questions (cf. Gyuris 2005).

- (13) Q: Mely fiú mely lányt látta?  
which boy which girl saw  
A: János Mari-t látta, Gyuri Beá-t  
Janos Mari-ACC saw, Gyuri Bea-ACC  
látta.  
saw

Licensing by reference to a question would need to be circular.

A single pair question:

- (14) Q: Mely fiú látta mely lányt?  
which boy saw which girl  
A: János látta Mari-t.  
Janos saw Mari-ACC

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## Question intonation in German

German seems to distinguish single and multiple pair questions intonationally (rise on 'welcher' in (15)):

- (15) Nun liste bitte mal auf: Welcher Junge hat mit welchem Mädchen getanzt?  
*'Now, please make a list: Which boy was dancing with which girl?'*
- (16) Bloss ein Paar hat getanzt: Welcher Junge hat mit welchem Mädchen getanzt?  
*'Just one couple danced: Which boy was dancing with which girl?'*

(I do not know of any phonological/phonetic work on German questions.)

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## Problem 2: Cancellation of the List Presupposition

The second conjunct of the answer in (17) does not permit contrastive topic intonation.

(17) Q: Welcher Junge hat mit welchem  
Which boy has with which  
Mädchen getanzt?  
girl danced?

A: Tatsächlich hat bloss Hans getanzt und  
Actually has only John danced and  
er hat mit Maria getanzt.  
he has with Maria danced

[he<sub>T</sub> Maria<sub>F</sub> danced]/Q would be satisfied, though.

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### Problem 3: Plural Questions

In Hungarian, multiple plural questions do not license contrastive topic word-order.

- (18) Mely fiúk látták mely lányokat?  
which boys saw which girls
- (19) a. János látta Mari-t, Gyuri látta  
Janos saw Mari-ACC, Gyuri saw  
Beá-t, ...  
Bea-ACC,  
b. ??János Mari-t látta, Gyuri Beá-t  
Janos Mari-ACC saw, Gyuri Bea-ACC  
látta, ...  
saw,

But, [János<sub>T</sub> Mari<sub>F</sub> saw]/Q should be satisfied.

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## The Proposal

I propose a purely presuppositional analysis of contrastive topic (cf. Geurts and van der Sandt 2004; Sauerland 2005 for focus):

(20)  $\phi(X_T, Y_F)$  presupposes that  $\exists x: \phi(x, \llbracket Y \rrbracket)$  and  $\exists y: \phi(\llbracket X \rrbracket, y)$

I show below that this presupposition follows from the lexical entries of T and F.

Example of the presupposition:

(21) János<sub>T</sub> Mari<sub>F</sub> saw  
presupposition: Someone saw Mari and János saw someone.

When is the presupposition satisfied?

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## Presupposition of Multiple Questions

Candidates for presupposition of a multiple question:

- (22) Which girl saw which boy?
- Completeness: For every girl there is exactly one boy she saw. (Dayal, 1996; Haida, 2003)
  - Surjectivity: For every girl there is exactly one boy she saw and for every boy there is at least one girl that saw him.
  - Bijectivity: For every girl there is exactly one boy she saw and for every boy there is exactly one girl that saw him. (Higginbotham and May, 1980)

Surjectivity or Bjectivity would satisfy the contrastive topic presupposition.

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## Surjectivity?

Bijectivity seems too strong, but surjectivity can be defended.

- (23) a. Which student got which grade? (M. Krifka p.c.)
- b. Which student [in my class] got which grade [of the ones I gave out]

Possible evidendence for surjectivity:

- (24) a. #Which of Florida, Iowa, and Ohio voted for which of Bush, Kerry, and Nader?
- b. I wonder which sweet is in which bag?

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## Contrastive Topics as Single Pairs I

The answer to a single pair question cannot bear contrastive topic intonation:

(25) Hungarian (Gyuris, p.c.)

Q: Mely fiú látta mely lányt?  
which boy saw which girl

A: #János Mari-t látta.  
Janos Mari-ACC saw

Explanation: The contrastive topic plus the uniqueness presupposition would render the assertion trivial:

- (26) a. *Contrastive Topic Presupposition:*  
 $\exists x: \phi(x, \text{Mari})$  and  $\exists y: \phi(\text{János}, y)$
- b. *Unique Pair Presupposition:*  
 $\exists_1(x, y): \phi(x, y)$
- c. *Logical Consequence of a and b:*  
 $\phi(\text{János}, \text{Mari})$

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## Contrastive Topics as Single Pairs II

(27) *Contrastive Topic + Unique Pair*  $\Rightarrow$  Assertion  
Trivial

I assume that an assertion must not be entirely presupposed.

(28) *Contrastive Topic*  $\Rightarrow$   $\neg$ *Unique Pair*

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## Presuppositions vs. Questions

When an antecedent question is present, but the presupposition is cancelled, contrastive topic is bad:

(29) Q: Welcher Junge hat mit welchem  
Which boy has with which  
Mädchen getanzt?  
girl danced?

A: Tatsächlich hat bloss Hans getanzt und  
Actually has only John danced and  
er hat mit Maria getanzt.  
he has with Maria danced

The contrastive topic presupposition cannot be satisfied.

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## Presuppositions vs. Questions II

In plural questions, a question is present, but the presupposition not supported. Again, contrastive topic is bad.

- (30) Mely fiúk látták mely lányokat?  
which boys saw which girls
- (31) a. János látta Mari-t, Gyuri látta  
Janos saw Mari-ACC, Gyuri saw  
Beá-t, ...  
Bea-ACC,
- b. ?? János Mari-t látta, Gyuri Beá-t  
Janos Mari-ACC saw, Gyuri Bea-ACC  
látta, ...  
saw,

The plural pair question does not establish the presupposition of contrastive topic.

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## Contrastive Topics in Questions

Contrastive topics occur in Hungarian multiple questions:

(32) Q: [Mely fiú]<sub>T</sub> [mely lány]<sub>F</sub> látta?  
          which boy which girl saw

The presupposition of (33) cannot be:  $\exists x$ : saw( $x$ , which girl) and  $\exists y$ : saw(which girl,  $y$ ) because presuppositions cannot be questions.

Further LF-movement:

(33) Q: which boy  $\lambda_x$  which girl  $\lambda_y$  [ $x$ ]<sub>T</sub> [ $y$ ]<sub>F</sub> saw

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## Presupposition Projection in Questions

Presuppositions in questions are accommodated into the interrogative.

- (34) a. Which girl sold her cello?  
b. Which girl that had a cello sold it?
- (35) a. Which linguist stopped smoking recently?  
b. Which linguist that was smoking stopped recently?

The question presupposes that a true answer exists, and in particular, that some girl had a cello, and some linguist was smoking.

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## Account of Questions

Contrastive topic in (36) amounts to the presupposition in (37) (above the fraction line is presupposition):

(36) which boy  $\lambda_x$  which girl  $\lambda_y$   $[x]_T [y]_F$  saw

(37) wh  $\lambda_x$  wh  $\lambda_y$   $\frac{\exists x': x' \text{ saw } y \ \& \ \exists y': x \text{ saw } y'}{x \text{ saw } y}$

Accommodation yields:

(38) Which boy that saw someone saw which girl that was seen by someone.

This result is OK in view of surjectivity.

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## Lexical Entries for T and F

Geurts and van der Sandt (2004); Sauerland (2005):  
Focus introduces existential presupposition.  
Claim today: Topic introduces an independent  
existential presupposition:

$$(39) \quad \llbracket T \rrbracket = \llbracket F \rrbracket = \lambda_x \lambda_P \frac{\exists x': P(x')}{P(x)}$$

(See Sauerland (2005) for an account of multiple foci.)

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## Derivation of the Contrastive Topic Presupposition

Predicting the presupposition of *János saw Mari* with  
contrastive topic:

(40) János-T  $\lambda_x$  Mari-F  $\lambda_y$  *x saw y*

(41)  $\left[ \lambda_P \frac{\exists x P(x)}{P(\text{János})} \right] \left( \lambda_x \left[ \lambda_P \frac{\exists x P(x)}{P(\text{Mari})} \right] \lambda_y \text{ *x saw y* } \right)$

(42)  $\left[ \lambda_P \frac{\exists x P(x)}{P(\text{János})} \right] \left( \lambda_x \frac{\exists y \text{ *x saw y*}}{x \text{ saw Mari}} \right)$

(43)  $\frac{\exists x \text{ *x saw Mari* } \& \exists y \text{ *János saw y*}}{\text{János saw Mari}}$

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## Conclusion

How structured are mental representations in discourse?

- ▶ Stalnaker (1978): Context = Set of possible worlds
- ▶ Intonation: add structured arrays of anaphors referring to questions and subquestions (Rooth, 1992; Roberts, 1996)
- ▶ Purely presuppositional account: Reference only to context
- ▶ Geurts and van der Sandt (2004); Sauerland (2005): purely presuppositional account of focus possible
- ▶ today: purely presuppositional account of contrastive topic superior to existing accounts

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- ▶ Büring, Daniel. 1997.  
*The meaning of topic and focus: The 59th street bridge accent.*  
 London: Routledge.
- ▶ Büring, Daniel. 2003.  
 On D-trees, beans, and B-accent.  
*Linguistics and Philosophy* 26:511–545.
- ▶ Dayal, Veneeta. 1996.  
*Locality in wh quantification.*  
 Dordrecht, Netherlands: Kluwer.
- ▶ Geurts, Bart, and Rob van der Sandt. 2004.  
 Interpreting focus.  
*Theoretical Linguistics* 30:1–44.
- ▶ Gyuris, Beáta. 2002.  
 The semantics of contrastive topics in hungarian.  
 Doctoral Dissertation, Eötvös Loránd University,  
 Budapest, Hungary.

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- ▶ Gyuris, Beáta. 2004.  
Ingredients of a semantic theory of contrastive topics.  
*In Proceedings of the Conference “sub8 – Sinn und Bedeutung”*, ed. Cécile Meier and Matthias Weisgerber, 123–136. Konstanz, Germany: FB Sprachwissenschaft, Universität Konstanz.  
URL <http://www.ub.uni-konstanz.de/kops/volltexte/2004/1383/>.
- ▶ Gyuris, Beáta. 2005.  
*The semantics of contrastive topics in hungarian*.  
Budapest, Hungary: Akadémiai Kiadó.
- ▶ Haida, Andreas. 2003.  
A focus semantics for interrogatives.  
*In Proceedings of the Fourteenth Amsterdam Colloquium*, ed. Paul Dekker and Robert van Rooy, 135–140. Amsterdam, Netherlands: Amsterdam University.

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- ▶ Higginbotham, James, and Robert May. 1980.  
Questions, quantifiers, and crossing.  
*The Linguistic Review* 1:41–80.
- ▶ Jacobs, Joachim. 1984.  
Funktionale Satzperspektive und  
Illokutionssemantik.  
*Linguistische Berichte* 91:25–58.
- ▶ Jacobs, Joachim. 1997.  
I-Topikalisierung.  
*Linguistische Berichte* 168:91–133.
- ▶ Krifka, Manfred. 1999.  
Additive particles under stress.  
In *Proceedings of SALT 8*, ed. Devon Strolovitch  
and Aaron Lawson, 111–128. Ithaca, N.Y.: CLC  
Publications, Cornell University.  
URL [http:  
//amor.rz.hu-berlin.de/~h2816i3x/ADDPART.pdf](http://amor.rz.hu-berlin.de/~h2816i3x/ADDPART.pdf).

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- ▶ Molnár, Valéria, and Inger Rosengren. 1997.  
Zu Jacobs' explikation der i-topikalisierung.  
*Linguistische Berichte* 169:211–247.
- ▶ Roberts, Craige. 1996.  
Information structure in discourse: Towards an  
integrated formal theory of pragmatics.  
In *Papers in Semantics*, ed. Jae-Hak Yoon and  
Andreas Kathol, xx–xx. Columbus, Ohio: Ohio State  
University.  
(1998 amended version,  
[www.semanticsarchive.net](http://www.semanticsarchive.net)).
- ▶ Rooth, Mats. 1992.  
A theory of focus interpretation.  
*Natural Language Semantics* 1:75–116.
- ▶ Sauerland, Uli. 2005.  
Don't interpret focus! why a presuppositional  
account of focus fails, and how a presuppositional  
account of givenness works.

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In *Proceedings of Sinn und Bedeutung 9*, ed. Corieen Bery, Janneke Huitink, and Emar Maier, 370–384. Nijmegen, Netherlands: University of Nijmegen.

- ▶ Stalnaker, Robert. 1978.  
Assertion.  
In *Syntax and Semantics 9: Pragmatics*, ed. P. Cole, 315–332. New York: Academic Press.
- ▶ Umbach, Carla. 2001.  
Contrast and contrastive topic.  
In *Information Structure, Discourse Structure and Discourse Semantics: Workshop Proceedings*, ed. Ivana Kruijff-Korbyová and Mark Steedman, 175–188. Helsinki, Finland: ESLLI 2001.  
URL <http://www.coli.uni-saarland.de/~korbay/esslli01-wsh/Proceedings/proc-for-cdrom.pdf>.
- ▶ Ward, Gregory, and Julia Hirschberg. 1985.

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Implicating uncertainty: The pragmatics of fall-rise intonation.  
*Language* 61:747–776.

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