

# Negated Polarity Questions as Speech Act Denegations

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# Negated Polarity Questions (NPQs)

Negated Polarity Questions in English (Ladd 1981, Chicago Linguistic Society):

- ▶ Polarity question based on negated proposition (PQN):

- ▷ *Isn't there a vegetarian restaurant around here (either)?*
- ▷ *Is there no vegetarian restaurant around here?*

Speaker wants confirmation that there is **no** vegetarian restaurant around here.

- ▶ Negated polarity question (NPQ):

- ▷ *Isn't there a vegetarian restaurant around here (too)?*

Speaker wants confirmation that there **is** a vegetarian restaurant around here.

Contrast in other languages, evidence for high position of negation in NPQs:

- ▶ German (cf. Repp 2009):

- ▷ PQN: *Gibt es hier auch nicht ein / kein vegetarisches Restaurant?*

EXIST EXPL here also not a / no vegetarian restaurant

- ▷ NPQ: *Gibt es hier nicht auch ein vegetarisches Restaurant?*

EXIST EXPL here not also a vegetarian restaurant

- ▶ Korean (Romero & Han 2004):

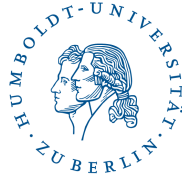
- ▷ PQN: *Suni-ka coffee-lul an masi-ess-ni?*

Suni-NOM coffee-ACC NEG drink-PAST-QUEST?

- ▷ NPQ: *Suni-ka coffee-lul masi-ess.ci anh-ni?*

Suni-NOM coffee-ACC drink-PAST NEG-Q

# Outline of Talk

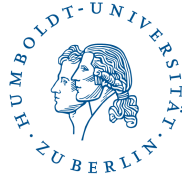


Ladd (1981):

- ▶ In NPQ's negation is “somewhat outside the proposition under question”, which “raises some major difficulties for logical representation.”

Proposal:

- ▶ Negation in NPQs is interpreted on the level of speech acts, as **denegation**.
- ▶ Denegation is known from explicit performative speech acts:
  - ▷ S1 to S2: *I don't promise to come.*  
**S1 refrains from promise to come.**
- ▶ Denegation in NPQs:
  - ▷ S1 to S2: *Isn't there a vegetarian restaurant around here (too)?*  
**S1 tests whether S2 refrains from asserting that there is a vegetarian restaurant around here.**



# Underlying Conception of Speech Acts

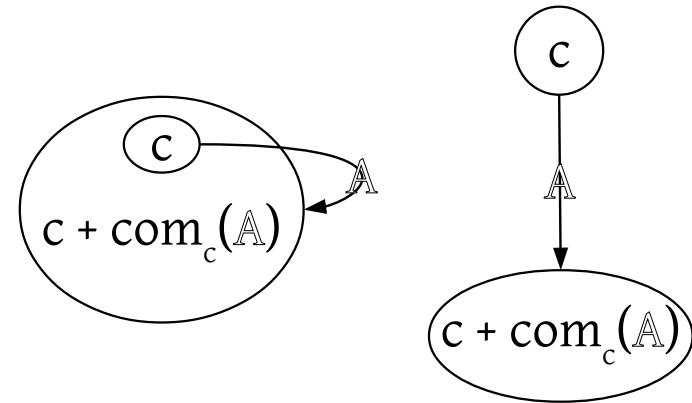
- ▶ Stenius (1967):  
Speech acts represented by illocutionary operator applied to a semantic object (“sentence radical”), e.g. a proposition, e.g.  $ASSERT_{s_1, s_2}(\varphi)$ : S1 asserts proposition  $\varphi$  to S2.
- ▶ Hamblin (1971), Stalnaker (1978), Alston (2000):  
Speech acts change commitments of interlocutors, e.g.  $ASSERT_{s_1, s_2}(\varphi)$ : S1 is liable for the truth of  $\varphi$ , has to provide evidence when asked.
- ▶ Szabolcsi (1982):  
Speech acts as operators that change the world by creating new commitments, semantic type:  $I \rightarrow I$ , functions from possible worlds to possible worlds; application of a speech act  $A$  to a world of utterance  $i$  changes it to  $A(i)$ .
- ▶ Concrete speech acts:  
If a speech act type  $A$  is executed at an index  $i$ , this creates an event, a speech act token, just like any change of the world.
- ▶ Hamblin (1971), Merin (1994), Cohen & Krifka (2011):  
speech act as transitions between a network of commitment states.

# A Representation Format for Dialogue: Commitment States and Commitment Spaces



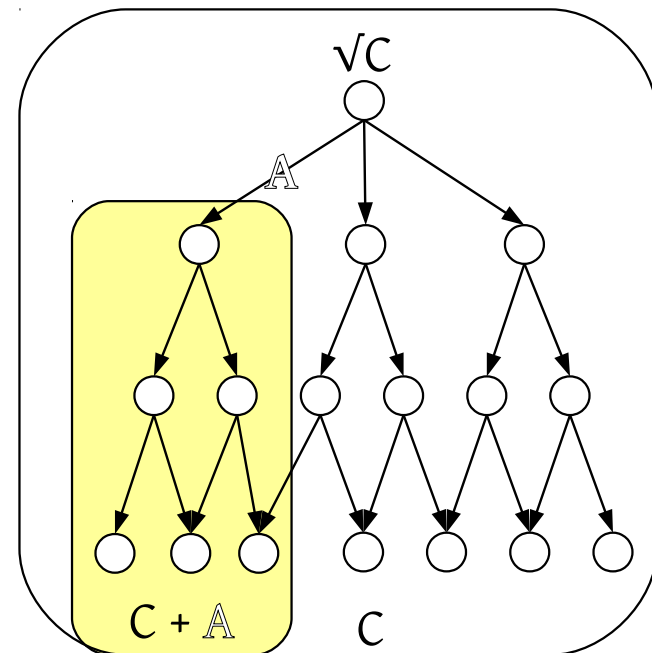
## Commitment states $c$ :

- ▶ Set of commitments accumulated so far, represented in some formal language.
- ▶ Update of  $c$  with speech act  $A_{S1,S2}$ , where  $S1$ : speaker,  $S2$ : Addressee:  
 $c + A_{S1,S2} = c \cup \text{com}_c(A_{S1,S2})$ ,  
 where  $\text{com}_c(A_{S1,S2})$  the set of commitments expressed by  $A_{S1,S2}$  when uttered at  $c$ .
- ▶ Conversational implicature:  $c \cap \text{com}_c(A_{S1,S2}) = \emptyset$ , newly expressed commitments are new.

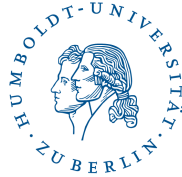


## Commitment spaces $C$ :

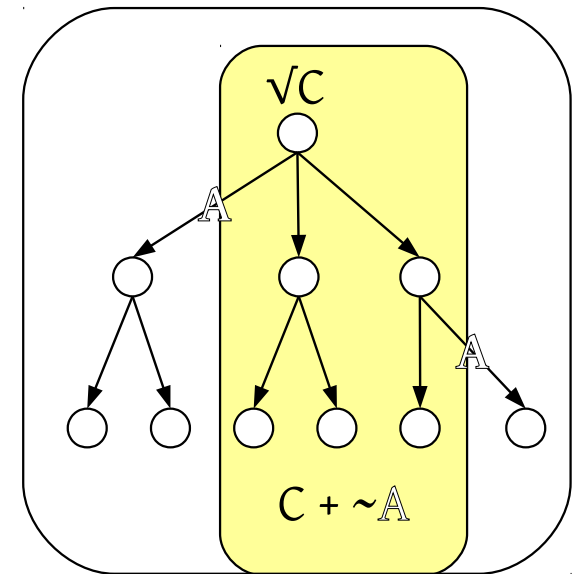
- ▶ Representing possible future developments of commitment states.
- ▶ a set of commitment states, with a minimal state  $\sqrt{C}$ , =  $\cap C$ , the **root**.
- ▶ Update of a commitment space by (regular) speech act  $A$ :
  - ▷  $C + A = \{c \in C \mid [\sqrt{C} + A] \subseteq c\}$



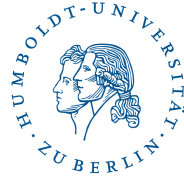
# A Representation Format for Dialogue: Why Commitment spaces? Denegation.



- ▶ Denegation (Searle 1969):
  - ▷ *I promise that I don't come.* (promise of negated proposition)
  - ▷ *I don't promise to come.* (denegation of a promise)
  - ▷ Hare 1970: Speaker refrains from performing the promise.
- ▶ Interpreting denegation (cf. Cohen & Krifka 2011):  
 $C + \sim A = C - \{c \mid \exists c' [[c' + A] \subseteq c]\}$
- ▶ Properties of denegation:
  - ▷ does not change the root,
  - ▷ restricts future developments – “meta speech act”



# A Representation Format for Dialogue: Commitment Space Developments (CSDs)



- ▶ Development of commitment spaces in conversation:

$$\Gamma = \langle C_0, C_1, \dots, C_n \rangle.$$

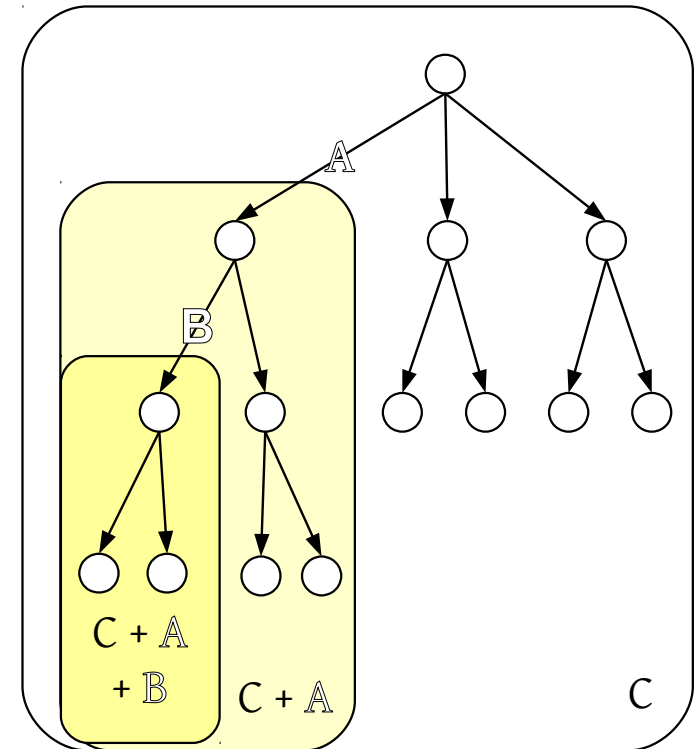
- ▶ Update of a CSD:

$$\langle \dots, C \rangle + A = \langle \dots, C, C + A \rangle$$

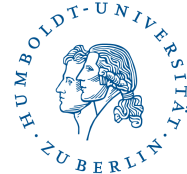
- ▶ Consecutive update:

$$\langle \dots, C \rangle + A + B = \langle \dots, C, C + A, C + A + B \rangle$$

- ▶ CSDs are needed because some discourse operations “look back”.
- ▶ Here: Acceptance / Rejection of discourse moves.
- ▶ Other applications e.g. modelling of questions under discussion (Roberts 1996, Büring 2004)



# Speech-Act Effects of Assertion and the Notion of Common Ground



Assertion of proposition  $\varphi$  by  $S_1$  to  $S_2$  expresses **two** commitments:

- ▶  $S_1$  declares public responsibility for the truth of  $\varphi$ :  $+ [S_1: \varphi]$
- ▶  $S_1$  wants  $\varphi$  to be part of the common ground:  $+ [\varphi]$

Commitment states as Common Grounds:

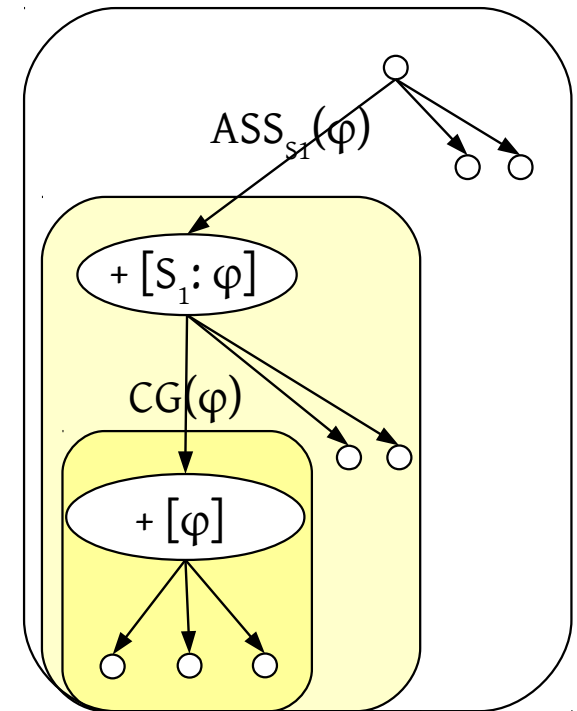
- ▶ All commitments in  $c$  are public common ground.
- ▶ In addition,  $c$  contains propositions introduced by assertions.

The double commitment of assertions:

- ▶  $\langle \dots, C \rangle + ASS_{S_1}(\varphi) + CG(\varphi)$   
 $= \langle \dots, C, C + ASS_{S_1}(\varphi), C + ASS_{S_1} + CG(\varphi) \rangle$   
 $= \langle \dots, C, C + [S_1: \varphi], C + [S_1: \varphi] + [\varphi] \rangle$

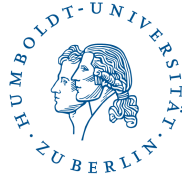
Expression of these two commitments:

- ▶ **ASS**: Syntactic, ForceP:  $[_{\text{ForceP}} \textit{there} [_{\text{Force}'} \textit{ASS-is} [_{\text{TP}} \_ \_ \textit{a vegetarian restaurant around here}]]]$
- ▶ **CG**: Prosodic, accent:  $H^*$   
 where  $c + [\varphi]$  implicates that  $[\varphi] \notin c$ , i.e.  $[\varphi]$  is new in  $c$ ;  
 signalling of known propositions by  $L^*$ , cf. Truckenbrodt (t.a.).





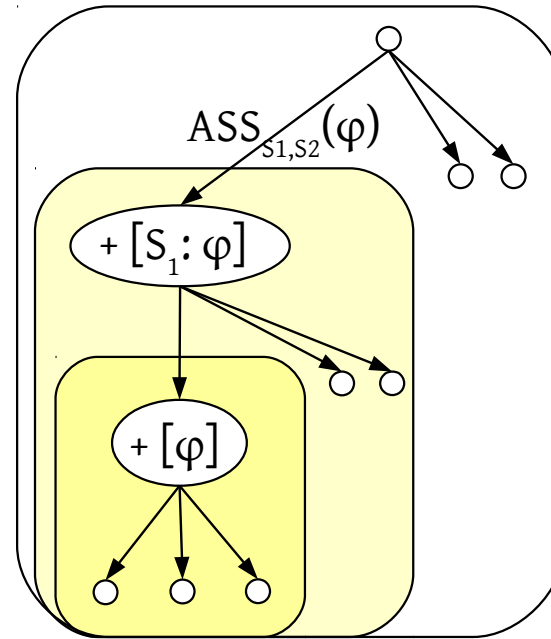
# Accepting and Rejecting Assertions



+  $[\varphi]$  leads to commitment by addressee, to accept  $\varphi$  as part of Common Ground, hence requires addressee to accept or reject it.

► Acceptance:

- ▷  $S_2$ : *Okay.*
- ▷  $\langle \dots, C', C \rangle + \text{ACCEPT}_{S_2} = \langle \dots, C', C \rangle$ , in case  $C$  differs from  $C'$  by a commitment for  $S_2$ .

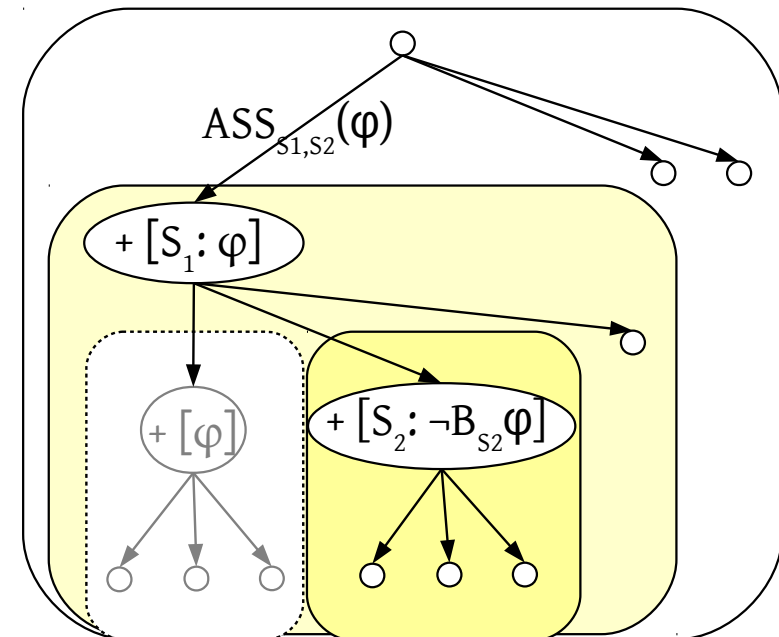


+  $\text{ACCEPT}_{S_2, S_1} = (\text{identical})$

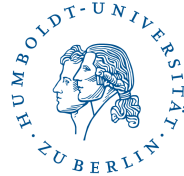
► Rejection:

- ▷  $S_2$ : *I don't believe that.*
- ▷ Assertion that requires prior rejection, otherwise contradiction with  $[\varphi]$ :  
 $\langle \dots, C', C \rangle + \text{REJECT}_{S_2} = \langle \dots, C', C, [C' - C] \rangle$   
 in case  $C$  differs commitment for  $S_2$ .
- ▷ Interpretation after rejection:  
 Assertion that  $S_2$  does not believe  $\varphi$ :  
 $\langle \dots, C', C, [C' - C] \rangle + \text{ASS}_{S_2}(\neg [B_{S_2} \varphi])$

+  $\text{REJECT}_{S_2} =$



# Confirming and Denying Assertions: Yes and No



## Assumptions:

- ▶ TP introduces a **propositional discourse referent** (DR):  
 $[_{\text{ForceP}} \textit{there} [_{\text{Force}'} \textit{ASS-is} [_{\text{TP}} \_ \_ \textit{a vegetarian restaurant around here}]]]$   
introduces DR  $\varphi = \textit{'there is a vegetarian restaurant here'}$ ,  
changes  $\langle \dots, C \rangle$  to  $\langle \dots, C, C + [S_1: \varphi], C + [S_1: \varphi] + [\varphi] \rangle$
- ▶ *yes* picks up DR  $\varphi$  and asserts it:  $+ [S_2: \varphi]$ : **confirmation** by  $S_2$ .  
 $\langle \dots, C, C + [S_1: \varphi], C + [S_1: \varphi] + [\varphi], \underline{C + [S_1: \varphi] + [\varphi] + [S_2: \varphi]} \rangle$
- ▶ *no* asserts negation of DR:  $+ [S_2: \neg\varphi]$ : **denial** by  $S_2$ , this requires previous REJECT:  
 $\langle \dots, C, C + [S_1: \varphi], C + [S_1: \varphi] + [\varphi], \underline{\underline{C + [S_1: \varphi]}}, \underline{C + [S_1: \varphi] + [S_2: \neg\varphi]} \rangle$

## With negated TP:

- ▶ Introduction of **two** DRs, one for each constituent denoting a proposition:  
 $[_{\text{ForceP}} \textit{there} [_{\text{Force}'} \textit{ASS-is} [_{\text{NegP}} \textit{n't} [_{\text{TP}} \_ \_ \textit{any vegetarian restaurant around here}]]]]]$   
NegP-DR:  $\psi = \textit{'there is no vegetarian restaurant around here'}$
- ▶ *Two plus two isn't five.* {Everyone knows that (NegP). / That would be a contradiction. (TP)}
- ▶ *yes* and *no* can pick up either  $\varphi$  or  $\psi$ , the results undergo bidirectional optimization:  
S1: *There isn't any vegetarian restaurant around here.*  
(a) *No, (there isn't).*  $+ [S_2: \neg\varphi]$   
(b) *Yes, there is.*  $+ [S_2: \varphi]$ , needs **REJECT**  
(c) *#No, there is.*  $+ [S_2: \neg\psi]$ , dispreferred w.r.t. (b) due to double negation.  
(d) *%Yes, there isn't.*  $+ [S_2: \psi]$ , slightly dispreferred, as (b) is optimal, due to (c).



# Ordinary Polarity Questions (PQs):

Sentence radical of questions in general: Set of propositions (cf. Hamblin 1973)

- ▶ Syntactic structure:  $[_{CP} \textit{whether} [_{TP} \textit{there is a vegetarian restaurant around here}]]$
- ▶ Semantic interpretation:  $\Phi = \{\varphi, \neg\varphi\}$

Question radical as complement of question-embedding verbs, like *know*:

- ▶ *Mary knows [whether there is a vegetarian restaurant around here]*  
 $\forall p \in \Phi [p(i_0) \rightarrow \textit{know}(i_0)(p)(\textit{Mary})]$

Question speech acts:

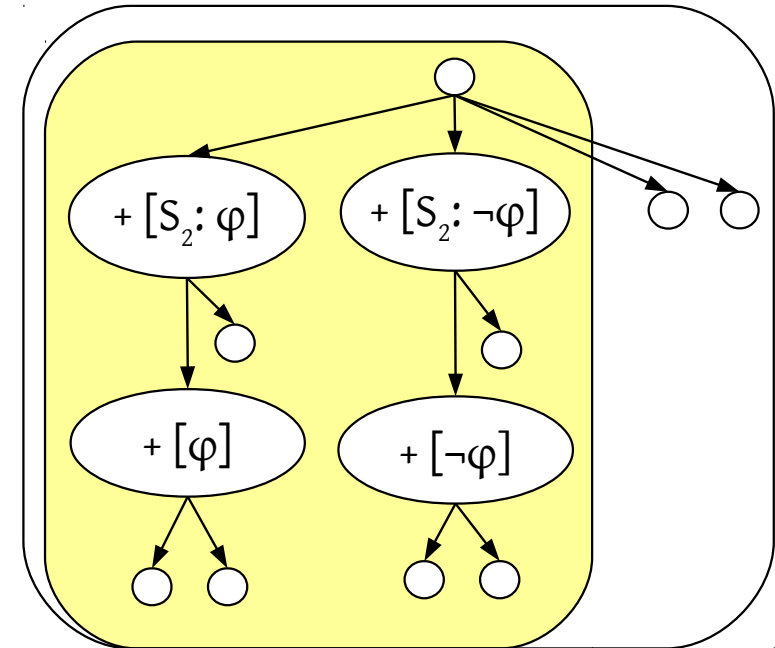
- ▶  $[_{\textit{ForceP}} [_{\textit{Force0}} \textit{QU-is} [_{CP} [_{TP} \textit{there} \_ \textit{a veg. rest. here}]]]]]$
- ▶ S1 asks for assertion of a congruent answer by S2:  
 $\langle \dots, C \rangle + \textit{QU}_{S1,S2}(\{\varphi, \neg\varphi\})$   
 $= \langle \dots, C, \{\sqrt{C}\} \cup \{c \in C \mid \exists p \in \{\varphi, \neg\varphi\} [\sqrt{C} + [S2: p]] \subseteq c\} \rangle$   
 $= \langle \dots, C, \{\sqrt{C}\} \cup \{c \in C \mid [\sqrt{C} + [S2: \varphi]] \subseteq c \vee [\sqrt{C} + [S2: \neg\varphi]] \subseteq c\} \rangle$

▶ Questions as meta speech acts:

- ▷ The root does not change,
- ▷ Legal future developments are restricted to assertions by the other speaker.

▶ Questions as common ground managing operators (Krifka 2008):

indicate the directions to which the common ground should develop.



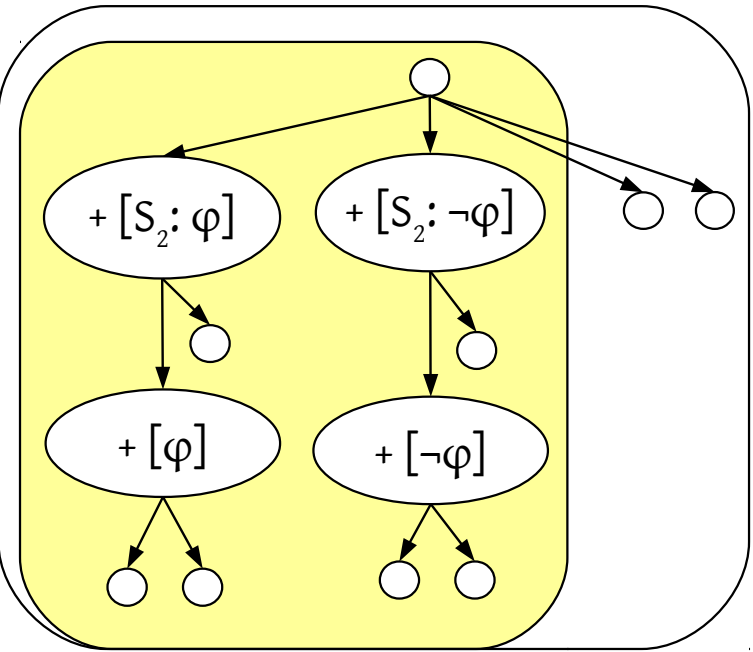
# Answering PQs with Yes und No



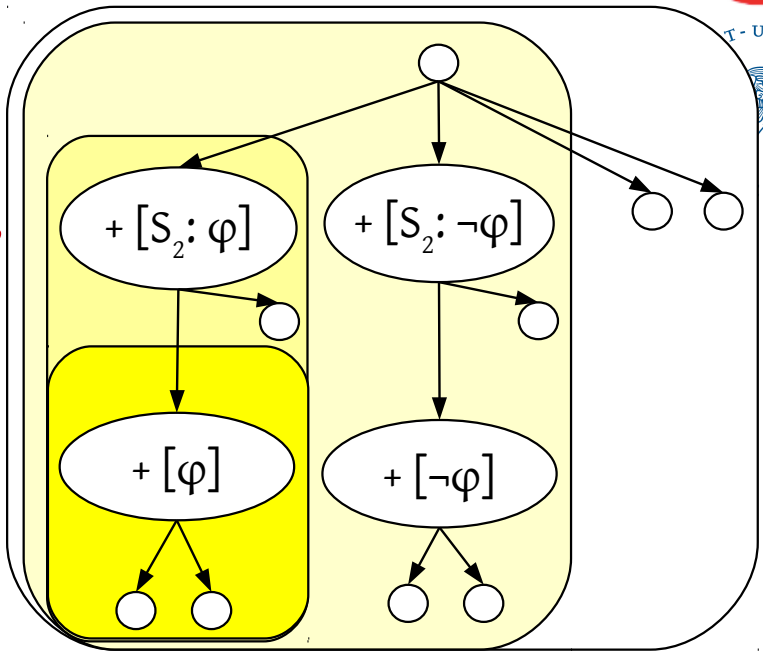
Sentence radical of polarity question  
introduces propositional discourse referent:

$[_{\text{ForceP}} \text{QU-is} [_{\text{CP}} [_{\text{TP}} \text{there} \_ \text{a veg. restaurant around here}]]]$

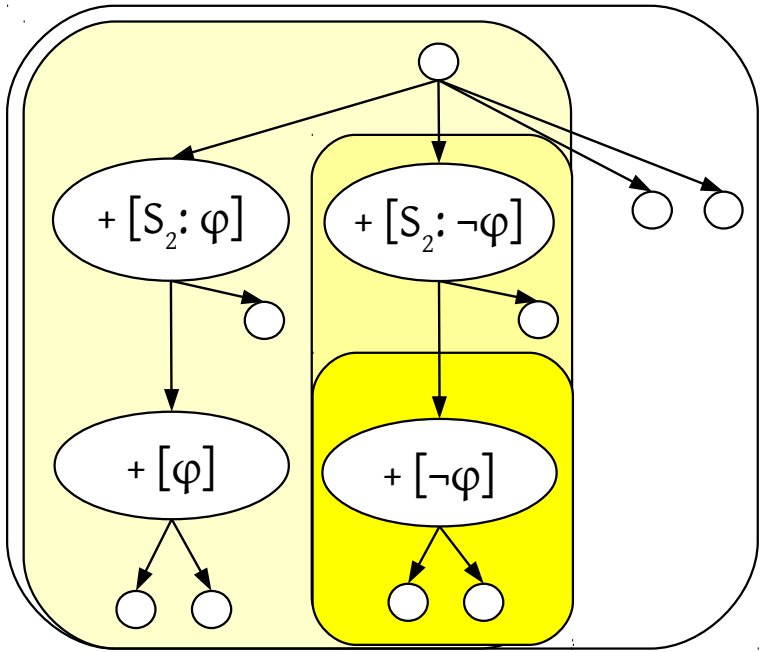
TP introduces DR:  $\varphi = \text{'there is a veg. rest. around here'}$



S2: Yes.  
 $+ \text{CG-ASS}_{S_2, S_1}(\varphi) =$



S2: No.  
 $+ \text{CG-ASS}_{S_2, S_1}(\neg\varphi) =$

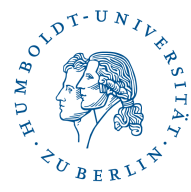


Answer S2: *I don't know (it):*

S2 asserts proposition  $\neg$  'S2 knows whether  $\{\varphi, \neg\varphi\}$ '

requires previous **REJECT**,

*it* / ellipsis refers to DR introduced by CP:  $\Phi = \{\varphi, \neg\varphi\}$



# Declarative Questions

Declarative Question (Gunlogson 2002):

- ▶ S1: *There is a vegetarian restaurant here?*

Speech act **requests**:

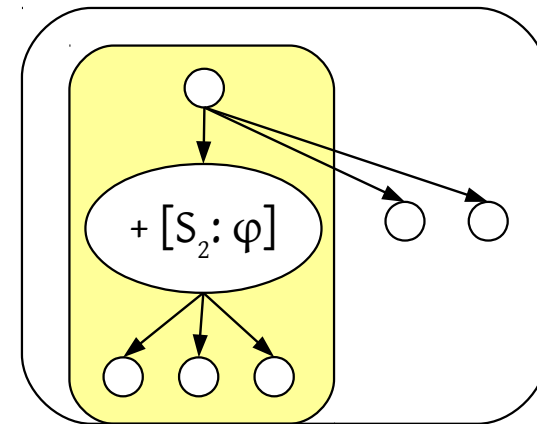
- ▶ S1 requests assertion by S2:  $\langle \dots, C \rangle + \text{REQU}_{S1,S2}(\text{ASS}(\varphi))$
- ▶ Interpretation of Requests:  $\langle \dots, C \rangle + \text{REQU}_{S1,S2}(A) = \langle \dots, C, \{\forall C\} \cup C + A_{S2,S1} \rangle$

Expression of REQU by prosody:

- ▶ H- H%: Authority shift to the addressee, cf. Merin & Bartels 1997.
- ▶ L\*: Lack of commitment of S1 that  $\varphi$  become part of common ground

Analysis of example:

- ▶  $\langle \dots, C \rangle + \text{REQU}_{S1,S2}(\text{ASS}(\varphi))$   
 $= \langle \dots, C, \{\forall C\} \cup C + \text{ASS}_{S2,S1}(\varphi) \rangle$   
 $= \langle \dots, C, \{\forall C\} \cup C + [S2: \varphi] \rangle$

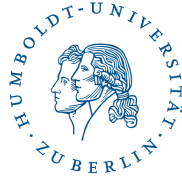


Possible reactions:

- ▶ *Yes.* / REJECT + *No.* / REJECT + *I don't know.*

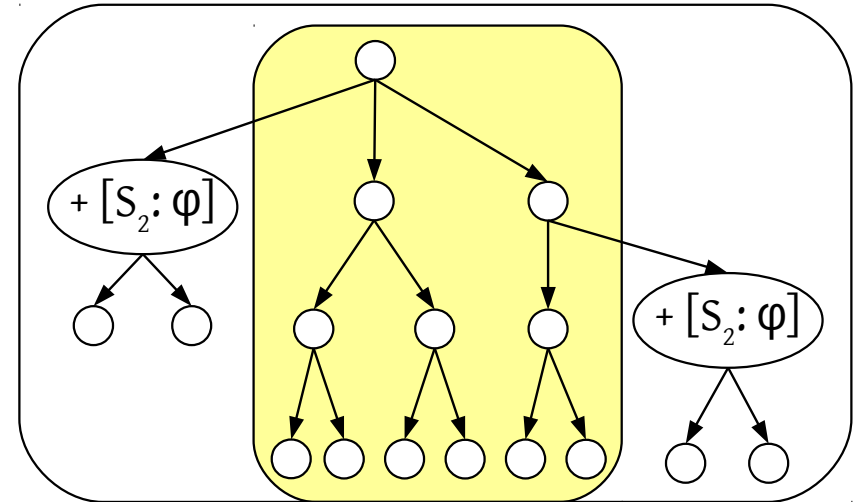
Bias of declarative questions:

- ▶ Offering one continuation  $[S2: \varphi]$  instead of two as with PQs:  $[S2: \varphi], [S2: \neg\varphi]$ :  
 Conversational implicature that  $[S2: \varphi]$  is more likely than  $[S2: \neg\varphi]$
- ▶ But: **Incredulity contour** (L\* L-H%), Pierrehumbert & Hirschberg 1990):  
 Conventional implicature that this is a **challenge** to S2,  
 S1 has reasons to believe that S2 will not be able to perform.



# Negated Polarity Questions – finally!

- ▶ NPQs are Requests to denegate Assertions.
- ▶ REQU can be realized as a syntactic operator, triggering question syntax.
- ▶  $[_{\text{ForceP}} \text{REQU-is } [_{\text{NegP}} \text{ n't } [_{\text{ForceP}} \text{ there } [_{\text{ASS}} \text{ } [_{\text{TP}} \text{ a vegetarian restaurant around here } ]]]]]]]]$
- ▶  $\langle \dots, C \rangle + \text{REQU}_{S_1, S_2} (\sim \text{ASS}(\varphi))$   
 $= \langle \dots, C, \{\forall C\} \cup [C + \sim \text{ASS}_{S_2, S_1}(\varphi)] \rangle$   
 $= \langle \dots, C, \{\forall C\} \cup [C - \{c \mid \exists c' [c' + [S_2: \varphi] \subseteq c] \}] \rangle$
- ▶ Paraphrase:  
 ‘Rule out the assertion that there is a vegetarian restaurant around here.’
- ▶ Possible reactions:  
*No (there isn't) / REJECT + Yes there is / REJECT + I don't know. / REJECT + Perhaps there is.*



Reason for assuming REQU as syntactic operator:

- ▶ Negation must have scope over Assertion, cf. high position of negation in German.
- ▶ Auxiliary movement for questions has to be triggered by some operator, here REQU.

No denegation reading of negation in declarative questions:

- ▶ *There isn't a vegetarian restaurant around here (either / \*too)?*
- ▶ Reason: Negation cannot be interpreted above assertion operator,  
 $[_{\text{NegP}} \text{ there } [\text{isn't } [_{\text{ForceP}} \text{ } [_{\text{ASS}} \text{ } [_{\text{TP}} \text{ a veg. restaurant } ]]]]]]]]$ : not well-formed,  
 as there are no outer speech-act operator taken the NEG phrase.

# Biased Polarity Questions



Bias in polarity questions, especially with incredulity contour:

▶ S1: *Is there a vegetarian restaurant around here?!*

▶ Syntactic analysis: REQUEST triggers question syntax:

$[_{\text{ForceP}} \text{REQU-is } [_{\text{ForceP}} \text{there ASS } [_{\text{TP}} \_ \_ \text{a vegetarian restaurant around here}]]]$

▶ Interpretation like a declarative question:

$\langle \dots, C \rangle + \text{REQU}_{S1,S2}(\text{ASS}(\varphi))$

$= \langle \dots, C \rangle + \text{ASS}_{S2,S1}(\varphi)$

$= \langle \dots, C, \{\sqrt{C}\} \cup C + [S2: \varphi] \rangle$

▶ Answers: *Yes.* / REJECT + *No.* / REJECT + *I don't know.*

▶ Blocking effects:

▷ With “?” contour L\* H- H%:

REQUEST reading blocked by regular polarity question,

$[_{\text{ForceP}} \text{QU-is } [_{\text{CP}} \_ \_ \text{there } \_ \_ \text{a vegetarian restaurant around here}]]]$

▷ No blocking with incredulity “?!” contour L\* L- H%:

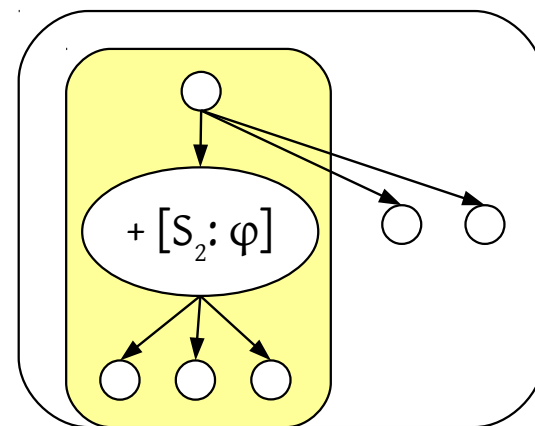
Regular polarity interpretation implausible with incredulity contour  
(except for reading ‘How dare you to ask this question!’),

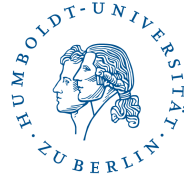
▷ No blocking in questions with negated proposition (PQN):

*Is there no vegetarian restaurant around here?*

*Isn't there a vegetarian restaurant around here either?*

No effect of negation in regular PQs, as  $\{\varphi, \neg\varphi\} = \{\neg\varphi, \neg\neg\varphi\}$ , hence dispreferred 15 / 20





# Explanation of Bias

Following the contexts discussed in Büring & Gunlogson (2002):

▶ **Positive bias** – NPQ inappropriate:

- ▷ S2: *There are all kinds of restaurants here, you can choose!*  
S1: # *Isn't there a vegetarian restaurant around here?*
- ▷ No reason for S1 to check whether S2 excludes the assertion of  $\varphi$ , as S2's assertion seems to entail  $\varphi$ .

▶ **Neutral bias** – NPQ appropriate:

- ▷ S1: *Remember, we've been to Mooswood's, and we liked it.*  
*Isn't there a vegetarian restaurant around here (too)?*
- ▷ S1 checks whether an option of interest has to be excluded; NPQ may be preferable over PQ *Is there a veg. restaurant around here too?* because this suggests more specifically an interest in vegetarian restaurants by providing just two options, assertion of  $\varphi$  and assertion of  $\neg\varphi$ .

▶ **Negative bias** – NPQ appropriate:

- ▷ S2: *We can't go out here, because John doesn't eat meat.*  
S1: *Isn't there a vegetarian restaurant here?*
- ▷ S1 double-checks whether  $\varphi$  indeed has to be excluded; preferred over simple polarity question, as this treats options  $\varphi$ ,  $\neg\varphi$  equally; especially good with incredulity contour, indicating disbelief of S1





# NPQs with Propositional Negation

Answering pattern of PNQs:

- ▶ S1: *Is there no vegetarian restaurant around here?*

[<sub>ForceP</sub> QU-is [<sub>NegP</sub> there [ NEG [<sub>TP</sub> – no/a vegetarian restaurant around here]]]]

cf. Brasoveanu, Farkas & Roelofsen 2012 for analysis of negation.

introduces DR for the two propositions, for TP:  $\varphi$ , for NegP:  $\psi$ , =  $\neg\varphi$

- ▶ Answering options same as to assertion: *There is no veg. restaurant around here.*

(a) *No, (there isn't).* + [<sub>S<sub>2</sub></sub>:  $\neg\varphi$ ]

(b) *Yes, there is.* + [<sub>S<sub>2</sub></sub>:  $\varphi$ ]

(c) *#No, there is.* + [<sub>S<sub>2</sub></sub>:  $\neg\psi$ ], dispreferred w.r.t. (b) due to double negation.

(d) *%Yes, there isn't.* + [<sub>S<sub>2</sub></sub>:  $\psi$ ], slightly dispreferred, as (b) is optimal, due to (c).

Answers to NPQs:

- ▶ S1: *Isn't there a vegetarian restaurant around here?*

[<sub>ForceP</sub> is REQU [<sub>NegP</sub> n't [<sub>ForceP</sub> there [ASS – [<sub>TP</sub> – a vegetarian restaurant around here]]]]]]

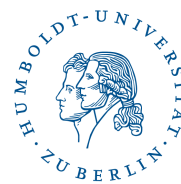
only one proposition: TP, introduces DR  $\varphi$  only.

- ▶ Answering pattern:

▷ *No (there isn't).* + [<sub>S<sub>2</sub></sub>:  $\neg\varphi$ ]

▷ *Yes, there is.* + [<sub>S<sub>2</sub></sub>:  $\varphi$ ], requires **REJECT**

▷ *\*Yes, there isn't.* not available, as no DR for  $\psi$ .



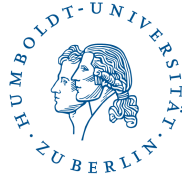
# Comparison with other treatments of NPQs:

van Rooy & Šafařová (2003)

- ▶ NPQs are PQNs, based on negated proposition.
- ▶ Question based on  $\neg\varphi$  is preferred if speaker considers  $\varphi$  likely, as the answer  $\neg\varphi$  is of greater pragmatic utility.
- ▶ Problems:
  - ▷ No explanation of syntactically high position of negation in NPQs
  - ▷ No explanation of distinct answer pattern of NPQs and PQNs.

Reese (2007), Asher & Reese (2007):

- ▶ Outer negation expresses combined speech act ASSERT · QUESTION.  
Cf. question tag questions: *It is raining, isn't it?*
- ▶ Problems:
  - ▷ No explanation of syntactically high position of negation in NPQs.
  - ▷ No worked-out theory of speech act combinations.



# Comparison with other treatments of NPQs:

Romero & Han (2004), Romero (2006):

- ▶ Negation interacts with epistemic operator VERUM, denoting high degree with which proposition should be added to Common Ground.
- ▶ NPQ: *Isn't there a vegetarian restaurant here?*    {FOR-SURE( $\varphi$ ),  $\neg$ FOR-SURE( $\varphi$ )}
- ▶ PQN: *Is there no vegetarian restaurant here?*    {FOR-SURE( $\neg\varphi$ ),  $\neg$ FOR-SURE( $\neg\varphi$ )}
- ▶ PQ: *Is there a vegetarian restaurant here?*    { $\varphi$ ,  $\neg\varphi$ }
- ▶ This can explain the bias of NPQs and PQNs, but...
- ▶ Problems:
  - ▷ The difference between (a) and (b) is unexpected.  
*They say that there is a vegetarian restaurant here, but I don't quite believe that.*  
(a) *Is it certain/for sure that there is a vegetarian restaurant?*  
(b) *#Isn't there a vegetarian restaurant?*
  - ▷ Hedging answers to NPQs are unexpected: *Yes, I think so. / Probably.*
  - ▷ Answer *yes* to NPQ does not have greater strength than answer *yes* to PQ.

Repp (2012):

- ▶ Outer negation expresses FALSUM, degree of adding to Common Ground = zero
- ▶ Problem:  
Answer *yes* to NPQ would express a weak commitment:  $\neg$ FALSUM( $\varphi$ )

## Isn't this the right explanation?

$[_{\text{ForceP}} \text{REQU-is} [_{\text{NegP}} n't [_{\text{ForceP}} \text{this} [ \text{ASS} \_ [_{\text{TP}} \_ \_ \text{the right explanation}]]]]]]]$

$\langle \dots, C \rangle + \text{REQU}_{\text{MK,SALT22}} (\sim \text{ASS}(\text{'this is the right explanation'}))$

=

$\langle \dots, C \rangle + \sim \text{ASS}_{\text{SALT22}}(\text{'this is the right explanation'})$

=

$\langle \dots, C, \{\sqrt{C}\} \cup [C - \{c \mid \exists c'[c' + [\text{SALT22: 'this is the right explanation'}] \subseteq c\}] \rangle$

MK asks SALT22 to exclude the assertion  
that this is the right explanation.

Link to paper (“Negated polarity questions as denegation of assertions”):

<http://amor.cms.hu-berlin.de/~h2816i3x/Publications/>