From Etwa, Nicht and Nandao to a possible uniform account of neutral, biased and rhetorical questions

> Beibei Xu RuLing VII Presentation

Etwa, Nicht and Nandao

- In German, *etwa* literally means "approximately", and *nicht* means "not". They are adverbs.
- In Mandarin, *nandao* is a rhetorical question adverb, as I discussed in a previous work.
- Interestingly, these three morphemes share the syntactic distributions.

They cannot appear in declarative sentences

 Der Junge hat (*etwa/*nicht) den Kuchen gemocht. the boy has *etwa nicht* the cake liked "The boy liked the cake." (G&C 2010: 4)
 Lisi (*nandao) hui lai. Lisi *nandao* will come "Lisi will come."

They are incompatible with WH-Qs

- Wer hat (*etwa/*nicht) den Kuchen gemocht?
 who has etwa nicht the cake liked
 "Who liked the cake?" (ibid.: 5)
- Zhangsan weishenme (*nandao) qu xuexiao?
 Zhangsan why nandao go school
 "Why does Zhangsan go to school?"

They are compatible with polar questions (Y/N-Qs)

- Hat der Junge etwa/nicht den Kuchen gemocht?
 has the boy etwa nicht the cake liked
 etwa: "Did the boy like the cake by any chance?"
 nicht: "Is it not the case that the boy like the cake?"
 (ibid.: 4)
- Zhe nandao jiushi shichang jingji (me)?
 this nandao be market economy Q
 "Is this market economy?" (=This isn't market economy.)

In Y/N-Qs, they have similar distributions

 Hat (etwa/nicht) Max (etwa/nicht) die Prüfung mit 50% has etwa nicht Max etwa nicht the exam with 50% der Punkte bestanden?

the-gen points passed

etwa: "Did Max pass the exam with 50% of the points by any chance?"

nicht: "Is it not the case that Max passed the exam with 50% of the points?"

(Nandao) Zhangsan (nandao) bu xihuan Lisi me?
 nandao Zhangsan *nandao* not like Lisi Q
 "Doesn't Zhangsan like Lisi?" (=Zhangsan likes Lisi.)

Continued

- G&S (2010) summerizes that *etwa/nicht* surface in the higher part of the discourse, i.e. precede the object or event subject (5-6). If they occur within VP, e.g. between object and verb, they will become their truth-conditional homophones, i.e. "approximately"/"not".
- In Mandarin, *nandao* has no truth-conditional homophones, hence ungrammaticality will be incurred.
- Zhangsan bu (*nandao) xihuan (*nandao) Lisi me?
 Zhangsan not *nandao* like *nandao* Lisi Q
 "Doesn't Zhangsan love Lisi?"

Semantically different

- As I argued in my previous work, *nandao* will always turnss a Y/N-Q into a rhetorical one.
- But etwa/nicht are different, they cannot make the Y/N-Qs into rhetorical questions.
- G&S (2010) argues that the discourse marker *nicht* can only be used if there is some positive evidence for the proposition being asked, while *etwa*, on the other hand, can only be used if there is some negative evidence for the proposition being asked.

My previous work on *nandao*

 In my previous work on *nandao*, *nandao* is analysed as a WH-word which takes a question of a single propositio and turns it into a set with the proposition of the opposite polarity.

 $[[nandao]] = \lambda Q_{\langle s, \langle t, t \rangle \rangle} \lambda h_{\langle s, t \rangle} \exists r_t(r = 0 \land h = \lambda w'(Q(w')(r)))$



Analysis A: Extending the previous analysis to *etwa/nicht*

- In this part of analysis, unlike G&S which treats etwa/nicht as IP adjuncts, I propose that they behave like nandao and occupy SpecCP positions.
- If we regard positive/negative evidence as the Speaker's believes prior to asking the questions, then we can summarize the use of *etwa/nicht* as follows:
- Nicht can only be used if the speaker's belief of the likelihood of the proposition being asked (e.g. p) to be true is above 50% chance. Etwa can only be used if the speaker's belief of the likelihood of p to be true is below 50% chance.

Han (2002)'s pragmatics of Informativeness

- O If a speaker believes that it is very likely that *p* holds in *c*, the most informative proposition in *c* is ¬*p*... When a speaker is formulating a question to find out whether *p* or ¬*p*, s/he formulates the question in the form of the proposition that would be the most informative if it turned out to be true. (215)
- The degree of belief and the degree of informativeness are complement to each other:
- Let *B* be the degree of belief and *I* the degree of informativeness: *B*=100%-*I*.

The use of etwa/nicht in German

	Speaker's belief	Syntactic form	Informativeness
<i>B</i> >50%	Вр	nicht p?	$I \neg p = (1 - B) \neg p$
<i>B</i> <50%	Вр	etwa p?	$I \neg p = (1 - B) \neg p$

Semantics of etwa/nicht

- Following my previous work, I will also regard *etwa* and *nicht* as WH-words in this analysis and occupy the SpecCP.
- $[[etwa]] = \lambda Q_{\langle s, \langle t, t \rangle \rangle} \exists B \lambda h_{\langle s, t \rangle} (\exists r_t(r=1 \land h=B(\lambda w'(Q(w')(r)))))$ or $(\exists r_t'(r'=0 \land h=(1-B)(\lambda w'(Q(w')(r'))))) (B < 50\%)$
- $[[nicht]] = \lambda Q_{\langle s, \langle t, t \rangle \rangle} \exists B \lambda h_{\langle s, t \rangle} (\exists r_t (r=1 \land h=B(\lambda w'(Q(w')(r)))))$ or $(\exists r_t'(r'=0 \land h=(1-B)(\lambda w'(Q(w')(r'))))) (B>50\%)$

Syntax of etwa/nicht





A compositional analysis

• C': $\lambda q \lambda p[p=q]p'(w) = \lambda p[p=p'(w)]$ • CP: $\lambda Q \exists B \lambda h(\exists r(r=1 \land h=B(\lambda w'(Q(w')(r)))))$ or $(\exists r'(r'=0 \land h=(1-B)(\lambda w'(Q(w')(r')))))\lambda w \lambda p[p=p'(w)]$ $= \exists B \lambda h(\exists r(r=1 \land h=B(\lambda w'(r=p'(w')))))$ or $(\exists r'(r'=0 \land h=(1-B)(\lambda w'(r=p'(w')))))$ $= \exists B \lambda h(h=B(\lambda w'(p'(w')=1))))$ or $h=(1-B)(\lambda w'(p'(w')=0))))$ $= \exists B \{B(\lambda w'(p'(w')=1)), (1-B)(\lambda w'(p'(w')=0))\})$ or $\{Bp', (1-B) \neg p'\}$ (B < 50% for etwa; B > 50% for nicht)

B as a degree operator of type <t, t>

Bp=∃w'∈W(p(w')=1 ∧ |⊎w'|/|W|=B) (Note: W is the domain of possible worlds, i.e. all possible worlds; ⊎ is to make a superset including all possible w')

Analysis B: *Etwa/nicht* as quantifier of *B* operator into Y/Noperator (e.g. *whether*)

- This analysis assumes that *etwa/nicht* is not located in SpecCP, but some higher node, e.g. in some ForceP, which I will call *B*P (=Belief Phrase). I will follow Hamblin (1973) and Guerzoni (2003) to assume a Y/N-operator for Y/N-Qs, which I call *whether* in this presentation.
- In order for *BP* to quantifier into *whether*, I will modify the semantics of *whether*:
- $[[whether]] = \lambda Q_{\langle s, \langle t, t \rangle \rangle} \lambda B \lambda h_{\langle s, t \rangle} (\exists r_t(r=1 \land h=B(\lambda w'(Q(w')(r)))) \text{ or } (\exists r_t'(r'=0 \land h=(1-B)(\lambda w'(Q(w')(r')))))$

New semantics for *etwa/nicht*

• [[etwa]]=λR∃B(RB) (B<50%)
• [[nicht]]=λR∃B(RB) (B>50%)

New syntax for etwa/nicht





A compositional analysis

• C': $\lambda q \lambda p[p=q]p'(w) = \lambda p[p=p'(w)]$ • CP: $\lambda Q \lambda B \lambda h (\exists r(r=1 \land h=B(\lambda w'(Q(w')(r)))))$ or $(\exists r'(r'=0 \land h=(1-B)(\lambda w'(Q(w')(r'))))\lambda w\lambda p[p=p'(w)]$ $=\lambda B\lambda h(\exists r(r=1 \land h=B(\lambda w'(r=p'(w')))))$ or $(\exists r'(r'=0 \land h=(1-B)(\lambda w'(r=p'(w')))))$ $=\lambda B\lambda h(h=B(\lambda w'(p'(w')=1))) \text{ or } h=(1-B)(\lambda w'(p'(w')=0))))$ $= \lambda B\{B(\lambda w'(p'(w')=1)), (1-B)(\lambda w'(p'(w')=0))\}$ BP: $\lambda R \exists B(RB) \lambda B\{B(\lambda w'(p'(w')=1)), (1-B)(\lambda w'(p'(w')=0))\}$ $= \exists B(\lambda B\{B(\lambda w'(p'(w')=1)), (1-B)(\lambda w'(p'(w')=0))\}B)$ $= \exists B\{B(\lambda w'(p'(w')=1)), (1-B)(\lambda w'(p'(w')=0))\}$ or {*Bp*', (1-*B*)¬*p*'} (*B*<50% for *etwa*; *B*>50% for *nicht*)

Extending to *nandao*-Qs and neutral questions

- For *nandao*, its *B* value is 0%.
- $[[nandao]] = \lambda R \exists B(RB) (B=0\%)$
- [[*nandao*-RQ]]={0%*p*, 100%¬*p*}
- I will assume a null *B* operator for unbiased Y/N-Qs.
- [[Neutral]]= $\lambda R \exists B(RB) (B=50\%)$
- [Neutral Y/N-Q]]= $\{50\% p, 50\% \neg p\}$.
- For other biased Y/N-Qs, although they don't have overt morphemes like *etwa/nicht*, I assume with Caponigro (2011) that some phonological process (e.g. stress) is a realization of *B* operator.

A possible extension to WH-RQs and biased WH-Qs

- The treatment to WH-RQs is similar to Rohde (2006) that the *B* operator will lean towards the single member in the answerhood: either be an entity, or a plural entities, or a null member.
- The shift of *B* operator value could be reflected in the following biased WH-Qs.
- Who will possibly care about you?

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Thank you!

• Special thanks to Veneeta Dayal, Ivano Caponigro, and the participants in Semantics III 2011 class.