The ambiguity of English at least

Nakanishi and Rullmann (2009) (N&R):

In English, the superlative modifier at least can be ambiguous between epistemic reading (EPI) and concessive reading (CON).

1. Epistemic reading (EPI)
   
   Mary wrote at least [three] novels.

2. Concessive reading (CON)
   
   Although Mary didn’t write four novels, she at least wrote [three] novels.

• N&R considers (1) and (2) as a case of lexical ambiguity. English at least happens to have two (independent) lexical entries.

Puzzles

Puzzle 1: In Chinese, more than one item shows the ambiguity.

(3) Lexical Scale (e.g., gold medal > silver medal > bronze medal)

Lisi zuishao/ zhishao / qima na-le yi-mian-[yi]-pai.

Lisi at least ZHISHAO QIMA take-ASP one-CL-silver-medal

Lisi at least got a silver medal.

b. Context (EPI): I don’t know what medal Lisi has won. But I think...

    c. Context (CON): Although Lisi didn’t win a gold medal...

Puzzle 2: Both meanings are focus-sensitive and compatible with various scales.

(4) Numerical Scale (e.g., 4 > 3 > 2)

Lisi zuishao/ zhishao / qima xie-le [san]-ben-xiaoshuo.

Lisi at least ZHISHAO QIMA write-ASP three-CL-novel

Lisi at least wrote three novels.

(5) Plurality Scale (e.g., asecb > aeb > a)

Lisi zuishao/ zhishao / qima yaqing-le [Adam he Bill].

Lisi at least ZHISHAO QIMA invite-ASP Adam and Bill

Lisi at least invited Adam and Bill.

(6) Pragmatic Scale (e.g., cherries > apples > bananas)

Lisi zuishao/ zhishao / qima mai-le [pingguo].

Lisi at least ZHISHAO QIMA buy-ASP apple

Lisi at least bought apples.

Puzzle 3: Both meanings reveal two scalar effects.

(7) Scenario: Adam, Bill and Lisi are playing dice. Whoever gets a bigger number wins. A dice has six numbers on it: Six is the upper bound and one the lower bound on the possible results. Lisi threw the dice but Adam missed the result. During Adam’s turn, he asked about what the result was.

• The Bottom-of-the-Scale Effect (BSE): The associate cannot be the element at the bottom of the scale.

  (8) Lisi zuishao/ zhishao / qima shai-le [yi].

  Lisi at least ZHISHAO QIMA dice-ASP one

  ‘Lisi at least got one.’

• The Top-of-the-Scale Effect (TSE): The associate cannot be the element at the top of the scale.

  (9) Lisi zuishao/ zhishao / qima shai-le [liu].

  Lisi at least ZHISHAO QIMA dice-ASP six

  ‘Lisi at least got six.’

A uniform semantic representation

The semantic core of zuishao/zhishao ‘at least’ and qima ‘at minimum’

\[
\{\text{zuishao} \} = \{ C_{\text{EPI}}, \lambda p, \lambda q. \lambda w. \exists q. (\text{q} \in C) \land (p \land q(w)) \}
\]

there is a proposition q in C which is stronger or equally strong as the prejacent p such that q is true in w

Proposal

1. EPI and CON are pragmatic variants. CON arises when the speaker knows the relevant higher alternatives are false (Biezma 2013).

2. In Chinese, the three scalar items (zuishao, zhishao and qima) share one semantic core, leading them to the EPI–CON ambiguity.

3. TSE results from semantic triviality, while BSE from discourse un informativity. This is correctly predicted by the semantic core (10).

Deriving TSE

• The case of semantic triviality

The LF of (9) = Zhishao (C) \{\text{Lisi got [six]}\} \sim C

\[
\{ (q \in C) \land (p \land q(w)) \} = \{ 6 \}
\]

The semantic core (10) requires the existence of some contextually relevant higher alternatives; if not fulfilled, the semantic contribution of the scalar particles becomes trivial: the only existing alternative that is as strong as the prejacent is the prejacent itself.

In the scenario (7), the utterance (9) is infelicitous because it leads to semantic triviality: no relevant higher alternatives exist in the first place because the associate (the number six) is the upper bound.

Deriving BSE

• The case of discourse un informativity

The LF of (8) = Zhishao (C) \{\text{Lisi got [one]}\} \sim C

\[
\{ (q \in C) \land (p \land q(w)) \} = \{ 1, 2, 3, 4, 5, 6 \}
\]

In the same scenario (7), the utterance (8) is infelicitous because it is contextually un informative: it is known that only six results are possible and the number one is the lower bound.

Crucially, the utterance (8) becomes felicitous once it is understood in a way that the speaker is joking or being sarcastic about Lisi: ‘The speaker is being intentionally uncooperative and flaunting the maxim of quantity (Grice 1975, 1989).’

Implications

• The EPI–CON ambiguity is systematic and NOT a lexical coincidence. This explains why such ambiguity is cross-linguistically pervasive (e.g., Czech aspoň, Dutch ten minste, Greek tukliachiston, Hebrew le-faxor, Italian almeno, Japanese sukuraku-tomo, Spanish al menos, and Turkish en azindan).

• Chinese may not be the only language with more than one lexical item showing the EPI–CON ambiguity.

Extensions: Anchoring Syntax to Semantics and Pragmatics

• N&R: CON is impossible when English at least occurs in the prenominal position. My observation: The same restriction holds for Chinese as well.

Take English for example:

\[
\begin{align*}
(11) \text{a. At least} & \text{ John won a [silver] medal.} & \text{CON/ #EPI} \\
\text{b. John at least} & \text{ won a [silver] medal.} & \text{#EPI/ CON} \\
\text{c. John won at least a [silver] medal.} & \text{#CON/ #EPI}
\end{align*}
\]

• My idea: CON requires the quantificational domain (of the relevant alternatives) to be (minimally) propositional (sets of situations/ worlds).

\[
\begin{align*}
(12) \text{The LF of (11c):} & \text{ John won over at least (C) \{ [a, a [silver], med.] \sim C \}} \\
\text{a. At least,} & \text{ close the door, please.} & \text{b. At least, (please) let me explain.}
\end{align*}
\]

• The restriction on the distribution of EPI is shared with English even and only: #Only/ #Even John won a [silver] medal.

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Selected References