Lecture #8

24.979 Topics in Semantics

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Preview

Exhaustification and revised Condition

Existence presupposition

Constraining exclusion

Exhaustification and revised Condition

Existential modal sentences and any

(1) Mary is allowed to read any book.

Violation of the Condition

(2) **The Condition** (current version)
A DP headed by *any* is acceptable only if it is dominated by a constituent that is SER, but not SEP, with respect to it.

Initial goal: Universal inferences of existential modal sentences with *any*

(3) Every book is such that Mary is allowed to read it.

This approximate paraphrase with *every* is very suggestive about how to revise the Condition: sentence (3) is (S)ER wrt the elements in the restrictor of *every*.

Exhaustification: Towards universal inferences

(4) $[\![\text{exh}_R\ S]\!](w) = 1$ iff (Bar-Lev & Fox 2017)

(i) $[\![S]\!](w) \wedge$

(ii) $\forall S' \in \text{Excl}(S) \cap R$: $\neg[\![S']\!](w) \wedge$

(iii) $\forall S' \in \text{Incl}(S)$: $[\![S']\!](w)$

(5) $\text{Excl}(S) = \{S' \mid S'$ is in the intersection of all the maximal subsets X of ALT(S) that are such that the negation of all the alternatives in X is consistent with $S\}$

(6) $\text{Incl}(S) = \{S' \mid S'$ is in the intersection of all the maximal subsets of ALT(S) that are consistent with the negation of all the alternatives in $\text{Excl}(S)\}$

(Adding the first conjunct is perhaps not crucial for our purposes given the standard definition of consistency. We largely ignore complications & simplify.)

Free choice disjunction and existential quantification

Free choice disjunction

(7) a. John is allowed to read Anna or Bovary.
b. [exh$_R$ [$\Diamond$ [John read A or B]]]

(8) a. Excl([$\Diamond$ [A or B]]) = {[$\Diamond$ [A and B]], ($\Diamond$C, [$\Diamond$ [A and C]], ...)},
b. Incl([$\Diamond$ [A or B]]) = {[$\Diamond$ [A or B]], $\Diamond$A, $\Diamond$B}

(9) a. $\Diamond(A \vee B) \wedge \Diamond A \wedge \Diamond B$ ($\wedge \neg\Diamond(A \wedge B)$)

Disjunction and existential quantification

(10) a. John read Anna or Bovary.
b. John read a book.

(11) a. [John read A or B]
b. [a$_D$ book [λx [John read x]]]

(12) $\Diamond(A \vee B)$ *(if D is assigned {A, B} as its value)*

Exhaustification: Towards universal inferences

(13) a. John is allowed to read any book.

b. [exh$_R$ [$\Diamond$ [any$_D$ book [λx [John read x]]]]

(14) Excl([$\Diamond$ [any$_D$ book [λx [John read x]]]]) =

{[$\Diamond$ [any$_{D'}$ book [λx [John read x]]]],

[$\Diamond$ [every$_D$ book [λx [John read x]]]] | $[\![D']\!] \cap [\![D]\!] = \emptyset$}

(ignoring some alternatives)

(15) Incl([$\Diamond$ [any$_D$ book [λx [John read x]]]]) =

{[$\Diamond$ [any$_{D'}$ book [λx [John read x]]]] | $[\![D']\!] \subseteq [\![D]\!] \cap [\![book]\!]$, $[\![D']\!] \neq \emptyset$}

Assuming R is a superset of excludable alternatives (simplifying):

(16) $\Diamond$(John read a book in D) $\wedge$

$\forall$D': D'$\subseteq$D$\cap$book $\wedge$ D'$\neq\emptyset$ $\rightarrow$ $\Diamond$(John read a book in D') $\wedge$

$\neg\Diamond$(John read every book in D) $\wedge$ $\neg\Diamond$(John read a book not in D)

Towards the Modification of the Condition

Recall the intuitive pattern we accepted:

(17) a. John is allowed to read any book.
b. $\Rightarrow_s$ John is allowed to read any long book.

Revision inspired by this:

(18) **The Condition** (cf. Kadmon & Landman 1993)
A DP headed by *any* is acceptable only if its resource domain is dominated by a constituent that is SER, but not SEP, with respect to it.

Is this helpful? Not obviously, all else equal. Assume first no pruning, $D^+ \subseteq D$.

(19) $\Diamond$(John read a book in D) $\wedge$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq$D$\cap$book $\rightarrow$ $\Diamond$(John read a book in D') $\wedge$ $\neg\Diamond$(John read every book in D) $\wedge$ $\neg\Diamond$(John read a book not in D) ...

$\not\Rightarrow_s$ $\Diamond$(John read a book in D^+) $\wedge$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq D^+\cap$book $\rightarrow$ $\Diamond$(John read a book in D') $\wedge$ $\neg\Diamond$(John read every book in D^+) $\wedge$ $\neg\Diamond$(John read a book not in D^+) ...

What should we do?

Divide and conquer in 2 steps (keeping the Condition as fixed as possible)

1. First two conjuncts (guaranteeing inclusion)

(20) a. $\Diamond$(John read a book in D) $\wedge$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq$D$\cap$book $\rightarrow$ $\Diamond$(John read a book in D')

b. $\not\Rightarrow$ $\Diamond$(John read a book in D$^+$) $\wedge$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq$D$^+\cap$book $\rightarrow$ $\Diamond$(John read a book in D')

(21) a. $\Diamond$(John read a book in D) $\wedge$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq$D$\cap$book $\rightarrow$ $\Diamond$(John read a book in D')

b. There are books in D$^+$

c. $\Rightarrow$ $\Diamond$(John read a book in D$^+$) $\wedge$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq$D$^+\cap$book $\rightarrow$ $\Diamond$(John read a book in D')

2. Last two conjuncts (constraining exclusion)

Existence presupposition

Existence inference

1. Encode (conditional) existence requirement into the Condition

(22) **The Condition** (attempted revision)
A DP headed by *any* is acceptable only if it is dominated by a constituent C such that replacing the resource domain of *any* by a stronger expression – *that does not by itself make the domain of quantification of any empty* – leads to a Strawson weaker meaning of C.

(23) There aren't any unicorns.

2. Derive it by an (independently supported) mechanism in grammar

Strong DPs and existence presupposition

Strawson (following Aristotle) proposes that some quantifiers trigger a presupposition that its domain is non-empty (some controversy; Geurts 2008 for review)

(24) a. Every sister of mine is married.
b. Presupposition: I have sisters.

Presuppositional construals are claimed to be available for indefinites as well (esp., Milsark 1974), which in some languages have a special syntactic reflex (position of the indefinite, case marking, etc.; see, e.g., Diesing, Enç, i.a.)

(25) Presuppositional construal:
Some girls VP $\approx$ Some of the girls VP

Support for this? Implementation?

Presuppositional construals of indefinites

Presupposition projection test 1 (von Fintel 1998)

(26) Is the person who proved Riemann hypothesis attending the conference?

$\Rightarrow$ Someone proved Riemann hypothesis.

(27) Are there any/some major mistakes in this manuscript?

$\not\Rightarrow$ There are major mistakes in this manuscript.

(28) Are any/some major mistakes in this manuscript disqualifying?

$\Rightarrow$ There are major mistakes in this manuscript.

Presuppositional construals of indefinites

Presupposition projection test 2 (von Fintel 1998)

(29) I'm not sure whether someone other than John arrived already, but I am going home ... #if John arrived too.

(30) I'm not sure yet whether there any mistakes at all in this book manuscript, but we can definitely not publish it ...

... if there turn out to be some major mistakes in there.

... if some major mistakes are found.

... #if some mistakes are major.

And implementation? Diesing connects presuppositional construals with topicality, Büring capitalizes on independently-motivated mechanisms for interpretation of focus/topic. Other implementations have been pursued. We will largely remain agnostic about the particulars, but ...

An implementation

Possible inferences due to topic/focus marking (cf. Abusch 2010 on optionality):

(31) John$_T$ talked to Mary$_F$

⇒ John talked to someone.

⇒ Someone talked to Mary.

⇒ Someone talked to someone

A QUD-type analysis (freely after Büring, Wagner, etc.):

(32) a. John$_T$ talked to Mary$_F$.

b. ALT(John$_T$ talked to Mary$_F$) =
$\{[X \text{ talk to } Y] \mid X, Y \in \text{ALT(John), ALT(Mary)}\}$

(33) a. QUD: Who talked to whom? (⇒ Someone talked to someone)

b. $Q = \lambda p.\ \exists S \in \text{ALT(John}_T \text{ talked to Mary}_F\text{)}: p = [\![S]\!]$

c. Presupposition: $\lambda w.\ \exists p(\max_{inf}(Q)(p)(w))$

(34) $[\![[\sim Q]\ S]\!](w)$ is defined only if

(i) $[\![Q]\!] = \{[\![S']\!] \mid S' \in \text{ALT(S)}\}$, and

(ii) $\exists p(\max_{inf}([\![Q]\!])(p)(w))$.

An implementation

(35) $[\![[\sim \text{Q}]\ [\text{John}_T\ \text{talked to Mary}_F]]\!](\text{w})$ is defined only if ...

(i) $[\![\text{Q}]\!] = \lambda \text{p}.\ \exists \text{S} \in \text{ALT}(\text{John}_T\ \text{talked to Mary}_F)\text{: p} = [\![\text{S}]\!]$,

(ii) someone talked to someone in w.

Back to the examples under discussion (cf. Büring 1995). Possible parse:

(36) a. Some mistakes are major.

b. $[\sim \text{Q}]\ [[\text{some}]_T\ \text{mistakes}]\ [\text{are major}]_F$

(37) $[\![\ [\sim \text{Q}]\ [[\text{some}]_T\ \text{mistakes}]\ [\text{are major}]_F]\!]$ is defined only if

a. $[\![\text{Q}]\!] = \{[\![\text{S}]\!] \mid \text{S} \in \text{ALT}([[\text{some}]_T\ \text{mistakes}]\ [\text{are major}]_F)\}$, and

b. $\exists \text{p}(\max_{inf}([\![\text{Q}]\!])(\text{p})(\text{w}))$.

$\Rightarrow$ some mistakes have some property

$\Rightarrow$ there are some mistakes

A question calling for an answer: Why is this parse obligatory in this case?

Back to any – Step 1 (ensuring inclusion)

Possible Logical Form

(38) a. John is allowed to read any book.

b. [exh$_R$ [$\Diamond$ [[$\sim$ Q] [any$_{T,D}$ book] [λx [John read x]$_F$]]]

c. Simpler LF: [exh$_R$ [$\Diamond$ [any$^{str}_D$ book] [λx [John read x]]]]

Strawson Entailment-Reversal obtains in (38)

(39) For any D, D$^+$ such that D$^+ \Rightarrow$ D:

a. $\Big(\Diamond$(John read a book in D) $\wedge\Big)$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq$D$\cap$book $\rightarrow$ $\Diamond$(John read a book in D')

b. There are books in D$^+$.

c. $\Rightarrow \Big(\Diamond$(John read a book in D$^+$) $\wedge\Big)$ $\forall$D': D'$\neq\emptyset\wedge$D'$\subseteq$D$^+\cap$book$\rightarrow$ $\Diamond$(John read a book in D')

Predictions

1. Impossibility of phonological reduction

"absence of stress is a reliable indicator of the [weak] reading, but both readings may under certain conditions receive stress" (Milsark 1974)

2. Strong DPs are unacceptable in there-insertion contexts

(40) a. *There is every student in the garden.
b. *There are some of the students in the garden.

(41) a. *There may be any student in the garden.
b. There may be a student in any garden.

3. Presupposition projection (on free choice construal)

(42) Am I allowed to fix any major mistake in this manuscript?
$\Rightarrow$ There are major mistakes in this manuscript.

(43) #I am not sure whether there are any mistakes in this manuscript, but if I am allowed to fix any major mistake, it doesn't matter.

Constraining exclusion

Constraining exclusion

Recall the problem with exclusion

(44) a. John is allowed to read any book.
b. $[\text{exh}_R\ [\Diamond\ [\text{any}_D^{str}\ \text{book}]\ [\lambda x\ [\text{John read x}]]]]$

Lack of entailment once we take exclusion into account

(45) a. $\Diamond$(John read a book in D) $\wedge$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq$D$\cap$book $\rightarrow$ $\Diamond$(John read a book in D') $\wedge$ $\neg\Diamond$(John read every book in D) $\wedge$ $\neg\Diamond$(John read a book not in D) ...

b. There are books in D^+.

c. $\not\Rightarrow$ $\Diamond$(John read a book in D^+) $\wedge$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq D^+\cap$book $\rightarrow$ $\Diamond$(John read a book in D') $\wedge$ $\neg\Diamond$(John read every book in D^+) $\wedge$ $\neg\Diamond$(John read a book not in D^+) ...

Note that if we restrict R to only contain excludable alternatives of the sister of *exh* (or no formal alternatives), we obtain desired entailment (cf. Buccola & Haida 2018 on the notion of 'obligatory irrelevance')...

Constraining exclusion

(46) a. John is allowed to read any book.

b. [exh$_R$ [$\Diamond$ [any$_D^{str}$ book] [λx [John read x]]]]

Restriction on the domain of *exh*:

(47) $[\![R]\!] \cap ALT([\Diamond\ [any_D^{str}\ book]\ [\lambda x\ [John\ read\ x]]]) \subseteq Excl([\Diamond\ [any_D^{str}\ book]\ [\lambda x\ [John\ read\ x]]])$

(48) a. $\Diamond$(John read a book in D) $\wedge$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq$D$\cap$book $\rightarrow$ $\Diamond$(John read a book in D') $\Big(\wedge \neg\Diamond$(John read every book in D) $\wedge \neg\Diamond$(John read a book not in D)$\Big)$

b. There are books in D$^+$.

c. $\Rightarrow$ $\Diamond$(John read a book in D$^+$) $\wedge$ $\forall$D': D'$\neq\emptyset$ $\wedge$ D'$\subseteq$D$^+\cap$book $\rightarrow$ $\Diamond$(John read a book in D') $\Big(\wedge \neg\Diamond$(John read every book in D) $\wedge$ $\neg\Diamond$(John read a book not in D)$\Big)$

Summary

(49) **The Condition** (cf. Kadmon & Landman 1993)
A DP headed by *any* is acceptable only if its resource domain is dominated by a constituent that is SER, but not SEP, with respect to it.

Existential modal sentences may satisfy the Condition:

(50) a. John is allowed to read any book.
b. $[\text{exh}_R\ [_S \Diamond\ [\text{any}^{str}_D\ \text{book}]\ [\lambda x\ [\text{John read x}]]]]$

(51) Restriction of the domain of *exh*: $[\![R]\!] \subseteq \text{Excl(S)}$.

(52) $[\![\text{exh}_R\ S]\!](w) = 1$ iff
(i) $[\![S]\!](w) \wedge$
(ii) $\forall S' \in \text{Excl(S)} \cap [\![R]\!]: \neg[\![S']\!](w) \wedge$
(iii) $\forall S' \in \text{Incl(S)}: [\![S']\!](w)$

24.979 Topics in Semantics: Negative Polarity Items
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