

Lecture #4

24.979 Topics in Semantics

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Today:

- Strawson entailment, *surprise, only*
- Singular (and plural) definite descriptions

Future lectures:

- More on plural definite descriptions
- So-called free choice occurrences of *any*
- Explanatory approaches and comparison

Strawson entailment

Famous counterexamples to the Condition

- (1) **The Condition** (environments-based, preliminary)
A DP headed by *any* is acceptable (if and) only if it is dominated by a constituent that is ER with respect to it.
- (2) a. Only Mary read any book.
b. *Also/Even Mary read any book.
- (3) a. Only Mary read any book.
b. ~~⇒~~ ~~⇐~~ Only Mary read a 1,000 year-old book.
- (4) a. It is surprising that Mary read any book.
b. *It is unsurprising that Mary read any book.
- (5) a. It is surprising that Mary read any book.
b. ~~⇒~~ ~~⇐~~ It is surprising that Mary read a 1,000 year-old book.

(Ladusaw 1979)

Famous counterexamples to the Condition

- (6) a. Mary didn't know that anyone was in the room.
b. *Mary knew that anyone was in the room.
- (7) a. Mary didn't know that anyone was in the room.
b. ~~⇒~~ ~~⇐~~ Mary didn't know that any student was in the room.
- (8) a. I'm not glad that anyone has this affliction.
b. %I'm glad that anyone has this affliction.
- (9) a. I'm not glad that anyone has this affliction.
b. ~~⇒~~ ~~⇐~~ I'm not glad that any student has this affliction.

A weaker notion of entailment (von Fintel 1999)

- (10) \llbracket only Mary $\rrbracket(P)$ is defined only if $P(\text{Mary})/\exists x(P(x))$.
- (11) a. Only Mary read any book.
b. **Mary/Someone read a 1,000 year-old book.**
c. \Rightarrow Only Mary read a 1,000 year-old book.
- (12) \llbracket also Mary $\rrbracket(P)$ is defined only if $\exists x(x \neq \text{Mary} \wedge P(x))$.
- (13) a. Also Mary read a/*any book.
b. **Someone other than Mary read a 1,000 year-old book.**
c. \nRightarrow Also Mary read a 1,000 year-old book.
- (14) \llbracket surprising/unsurprising $\rrbracket(p)$ is defined only if p is true.
- (15) a. It is surprising that Mary read any book.
b. **Mary read a 1,000 year-old book.**
c. \Rightarrow It is surprising that Mary read a 1,000 year-old book.
- (16) a. It is unsurprising that Mary read any book.
b. **Mary read a 1,000 year-old book.**
c. \nRightarrow It is unsurprising that Mary read a 1,000 year-old book.

Strawson entailment and the Condition

(17) **Strawson Entailment** (\Rightarrow_s)

- a. For any p, q of type t : $p \Rightarrow_s q$ iff $p = 0$ or $q = 1$.
- b. For any f, g of type $(\sigma\tau)$, $f \Rightarrow_s g$ iff for every x of type σ such that $g(x)$ is defined, $f(x) \Rightarrow_s g(x)$.

(18) **Strawson Entailment-Reversal** (substitution-based)

A constituent C is SER with respect to a subconstituent Q iff for every Q' such that $\llbracket Q' \rrbracket \Rightarrow_s \llbracket Q \rrbracket$, $\llbracket C \rrbracket \Rightarrow_s \llbracket C[Q/Q'] \rrbracket$. (A constituent $C[Q/Q']$ is identical to C except that all occurrences of Q are replaced by Q' .)

(19) **The Condition** (still preliminary)

A DP headed by *any* is acceptable (if and) only if it is dominated by a constituent that is SER with respect to it.

(We may study Homer 2010 for some troubling counterexamples to this characterization when we get to the topic of intervention later in the semester.)

More on 'surprising'

No Strawson entailment after all?

(20) It is surprising (to me) that John bought a car, but it is not surprising (to me) that he bought a Honda.

(21) Contradiction:

- a. $\forall w \in \max_{exp(me, @)}(dox^*(me, @)) : \neg(\text{John bought a car in } w)$
- b. $\exists w \in \max_{exp(me, @)}(dox^*(me, @)) : \text{John bought a Honda in } w.$

von Fintel's proposal: the context shifts (also, sensitivity to focus)

- (22)
- a. First occurrence of *surprise*: $dox^*(me, @) \not\subseteq \text{John bought a car.}$
 - b. Second occurrence of *surprise*: $dox^*(me, @) \subseteq \text{John bought a car.}$

Argument for context shift? (perhaps also *qua*, see von Fintel 1999)

- (23) $\langle \# \rangle$ It is surprising that John bought a Honda, though it is unsurprising that he bought a Honda and a Toyota.

More on 'only'

Presupposition and assertion: multiple candidates (see also Ippolito 2007)

(24) $\llbracket \text{only} \rrbracket(\text{John})(P_{s(et)})(w)$ is defined only if

- a. $P(w)(\text{John})$. (*Horn, Rooth, i.a.*)
- b. $\exists x(P(w)(x))$. (*Horn*)

(25) If defined, $\llbracket \text{only} \rrbracket(\text{John})(P_{s(et)})(w) = 1$ iff

- a. $(P(w)(\text{John}) \wedge \forall y(P(w)(y) \rightarrow \lambda w'.P(w')(\text{John}) \Rightarrow \lambda w'.P(w')(y)))$.
- b. $(\exists x(P(w)(x)) \wedge \forall y(P(w)(y) \rightarrow \lambda w'.P(w')(\text{John}) \Rightarrow \lambda w'.P(w')(y)))$.

Illustration with a conjoined DP associate (McCawley 1993, Horn 1996, etc.)

(26) Only John and Bill arrived.

- (27)
- a. $\lambda w. \llbracket \text{arrive} \rrbracket(w)(\text{John+Bill})$
 - b. $\lambda w. \exists x(\llbracket \text{arrive} \rrbracket(w)(x))$

- (28)
- a. $\lambda w. (\text{-----} \wedge \forall y(\llbracket \text{arrive} \rrbracket(w)(y) \rightarrow \lambda w'.\llbracket \text{arrive} \rrbracket(w')(\text{John+Bill}) \Rightarrow \lambda w'.\llbracket \text{arrive} \rrbracket(w')(y)))$

Mixing and matching? Combination (24-b) + (25-a) is out

(24) $\llbracket \text{only} \rrbracket(\text{John})(P_{s(et)})(w)$ is defined only if

b. $\exists x(P(w)(x))$. (*Horn*)

(25) If defined, $\llbracket \text{only} \rrbracket(\text{John})(P_{s(et)})(w) = 1$ iff

a. $P(w)(\text{John}) \wedge \forall y(P(w)(y) \rightarrow \lambda w.P(w)(\text{John}) \Rightarrow \lambda w.P(w)(y))$.

(29) a. Only John and Bill read a book.

b. Someone read a long book.

c. \nRightarrow Only John and Bill read a long book.

Maximal informativity

$$(30) \quad \max_i^{F\&H} (P_{(\alpha(st))})(x_\alpha)(w) = 1 \text{ iff } P(x)(w) \wedge \\ \forall x' (P(x')(w) \rightarrow P(x) \Rightarrow P(x'))$$

(Recall that in our previous class with degree properties: $P=D_{(d(st))}$, $x=d_d$.)

Restating the semantics of *only* ((24-a)+(25-a) with the first conjunct)

$$(31) \quad \llbracket \text{only} \rrbracket (\text{John})(P_{(e(st))})(w) \text{ is defined only if } P(\text{John})(w).$$

$$(32) \quad \text{If defined, } \llbracket \text{only} \rrbracket (\text{John})(P)(w) = \max_i^{F\&H} (P)(\text{John})(w).$$

Singular definite descriptions

A puzzle about singular definite descriptions

Unacceptability of (some occurrences of) *any* in singular definite descriptions:

- (33) a. *John talked to [the girl who read any book].
b. *Mary read [the book about any press secretary].

As Lahiri, Cable, Gajewski, etc., note, this is unexpected on the Condition:

- (34) Illustration:
a. John talked to the girl who read a(ny) book.
b. **There is a unique boy who read a long book.**
c. \Rightarrow John talked to the boy who read a long book.

A puzzle about singular definite descriptions

(35) *John did not talk to [the girl who read any book].

(36) a. John did not talk to the girl who read a(ny) book.

b. **There is a unique girl who read a long book.**

c. \Rightarrow John did not talk to the girl who read a long book.

Lahiri's observation:

(37) a. John did (not) talk to the boy who read a(ny) long book.

b. **There is a unique boy who read a book.**

c. \Rightarrow John did (not) talk to the boy who read a(ny) book.

(38) **Strawson Entailment-Preservation**

A constituent C is SEP with respect to a subconstituent Q iff for every Q' such that $\llbracket Q' \rrbracket \Rightarrow_s \llbracket Q \rrbracket$, $\llbracket C[Q/Q'] \rrbracket \Rightarrow_s \llbracket C \rrbracket$. (A constituent $C[Q/Q']$ is identical to C except that all occurrences of Q are replaced by Q' .)

(39) **The Condition** (still preliminary)

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

Some apparent counterexamples, Pt. 1 (movement)

There are some apparent counterexamples (very systematically constrained):

- (40) a. Mary didn't read [the book about any press secretary].
b. John didn't read [the book that any professor assigned].
- (41) *John didn't read [the book that was written by any professor].

Crucially, these sentences convey the following meanings (+ a uniqueness presupposition, say, that about each press secretary there is a unique book):

- (42) a. $\neg\exists x(\text{press_sec}(x) \wedge \text{Mary read } \iota(\text{book about } x))$
b. $\neg\exists x(\text{professor}(x) \wedge \text{John read } \iota(\text{book that } x \text{ assigned}))$

Candidate LFs: extraction out of islands

- (43) a. [neg [any press secretary] λx [Mary read [the book about x]]]
b. [neg [any professor] λx [John read [the book that x assigned]]]

See Sharvit 1999 for a potential alternative analysis, and Crnič & Buccola, in prep, for issues with it and some other candidate analyses.

Some apparent counterexamples, Pt. 2 (accommodation)

Hoeksema and Rothschild bring up the following types of (generic) examples:

(44) The mayor with any sense will control the school board.

(45) The student who at any time attempted the proof knows how hard it is.

These examples may be assigned the following type of truth-conditions, in which the presupposition of the singular definite description is accommodated:

(46) $\lambda w. \forall s(s \text{ is relevant and accessible from } w \wedge \text{there is a unique } \underline{\text{reasonable}} \text{ mayor in } s \rightarrow \text{they control the school board in } s)$

(47) $\lambda w. \forall s(s \text{ is relevant and accessible from } w \wedge \text{there is a unique } \underline{\text{very}} \text{ reasonable mayor in } s \rightarrow \text{they control the school board in } s)$

A possible LF yielding such truth-conditions are in (48). Importantly, the Condition is still violated (though we may at the first glance judge the argument above as valid), and the above examples are thus not merely apparently problematic.

(48) a. $\text{GEN}_{UC} [\sim C [B [\text{the mayor with any sense} [\text{control the board}]_F]]]$
b. $\llbracket B \rrbracket(p)(w) = 1 \text{ if } p(w), = 0 \text{ otherwise}$

Some apparent counterexamples, Pt. 2 (accommodation)

In what other environments can we find similar types of singular definites?

(49) <>Every student who talked to the girl who read any book smiled.

(50) <>If the girl who read any book arrived, the party will be a success.

Should accommodation be able to rescue the negated examples from above?

(51) a. *John didn't talked to the girl who read any book.

b. [neg [B [John talk to the girl [λx [any book λy [x read y]]]]]]

(52) a. There is no unique girl who read a book \vee John did not talked to the unique girl who read a book. \nrightarrow

b. There is no unique girl who read a long book \vee John did not talked to the unique girl who read a long book.

Intermediate conclusion: Accommodation cannot obviously eliminate SEPness while preserving SERness, though in some contexts it appears to do so. We return to this puzzle when we discuss an explanatory approach to *any*.

Plural definite descriptions

Plural definite descriptions: predictions about distributive main predicates

- (53) a. The students who had read anything about polarity passed.
b. The students who have any books on NPIs are selling them.
(Beaver 2004, Guerzoni & Sharvit 2007, respectively)
- (54) a. The workers who attended any DSA rallies were fired.
b. $\langle \rangle$ The books that any apostate wrote were burned.

Recall our assumption about distributive predicates:

$$(55) \quad \llbracket \text{be fired} \rrbracket(x) = 1 \text{ iff } \forall y: y \sqsubset_{at} x \rightarrow \llbracket \text{be fired} \rrbracket(y)$$

Prediction: the above sentences are SER (but not SEP) with respect to *any*-DPs

- (56) a. The workers who attended any DSA rallies were fired.
b. **Some workers attended DSA rallies in Newton.**
c. \Rightarrow The workers who attended any DSA rallies in Newton were fired.

Plural definite descriptions: claims about collective main predicates

Gajewski & Hsieh's intuitions:

As far as we can tell, [the sentences below] are not significantly better or significantly worse than the cases of licensing that involve distributive predicates. These data seem to support a theory of licensing in definites that does not depend on the predicate the definite is an argument of.

- (57) The boxes that have **ever** held sprockets outweigh the truck.
- (58) a. The students with any sense dispersed after the rally.
b. The students who had any grievances assembled in the hall.
- (59) a. The students with any knowledge of French are numerous.
b. The students that have **ever** failed my class are many in number.

And some other predicates not explicitly discussed by Gajewski & Hsieh:

- (60) a. <>The soldiers with any siege experience surrounded the fort.
b. <>The athletes who came to any practices formed a good team.
c. <>The potatoes picked on any European farm weighed 400 tons.

Plural definite descriptions: some strategies

Naive prediction:

- (61) a. The students with any knowledge of French are numerous.
b. **Some students have considerable knowledge of French.**
c. \nRightarrow The students with consid. knowledge of French are numerous.

To the extent the above data turn out to be real, several options are available:

- DP-internal approaches:
 - Gajewski & Hsieh: Revise the notion of entailment so that it subsumes the part-of relation defined on the domain of individuals.
 - Decomposition of definite descriptions: Perhaps there is more to the structure of definite DPs than usually assumed (though see, e.g., Beaver & Coppock 2015, Bumford 2018), in particular, they may contain an SER environment.
- Distributivity-based approach (as entertained by Gajewski & Hsieh): Perhaps one obtains SERness via a (potentially vacuous) Distributivity operator.
- (Semi-)blindness in the evaluation of SERness.

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