Idleness

PLIN0056 Semantics Research Seminar 2024–25

Lecture 8

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1 Strong and weak determiners

1.1 Strong determiners

Some determiners, which we call *strong*, have presuppositions that their domain is non-empty, *existence presupposition (EP)*.

- Typically universal quantifiers trigger EPs (but see §2 for complications).

(1) a. Did the editor spot **every** mistake in the paper?
b. Perhaps the editor spotted **every** mistake in the paper.
c. If the editor spots **every** mistake in the paper, she'll reject it.
⇒ *There is at least one mistake in the paper*

- Proportional quantifiers also trigger EPs.

(2) a. Did the editor spot **most** mistakes in the paper?
b. Perhaps the editor spotted **most** mistakes in the paper.
c. If the editor spots **most** mistakes in the paper, she'll reject it.
⇒ *There is at least one mistake in the paper*

- Some trigger stronger presuppositions.

(3) a. Did the editor spot **both** mistakes in the paper?
b. Did the editor spot **neither** mistakes in the paper?
c. Did the editor spot **either** mistake in the paper?
⇒ *There are exactly two mistakes in the paper*

- Definites also trigger EPs; stronger with singular NPs.

(4) a. Did the editor spot **the** mistakes in the paper?
b. Did the editor spot **the** mistake in the paper?

- Partitives involve definites, so the EP might be due to them.

(5) a. Did the editor spot **all (of) the** mistakes in the paper?
b. Did the editor spot **most (of) the** mistakes in the paper?
c. Did the editor spot **three (of) the** mistakes in the paper?

- There are existential quantifiers that have EPs, e.g. *sommige* 'some' in Dutch always has an EP (unlike *enkele* 'some'; De Jong & Verkuyl 1985, De Jong 1987, De Hoop 1995).

1.2 Weak quantifiers

Other quantifiers, which we call *weak*, do not reliably give rise to EPs.

(6) a. Did the editor spot **some** mistakes in the paper?
b. Did the editor spot **many** mistakes in the paper?
c. Did the editor spot **no** mistakes in the paper?
d. Did the editor spot **few** mistakes in the paper?
e. Did the editor spot **two** mistakes in the paper?
f. Did the editor spot **mistakes** in the paper?
$\not\Rightarrow$ *There is at least one mistake in the paper*

But these determiners can have EPs.

- In *there*-sentences, weak determiners do not have EPs, and do not support partitive readings (*weak readings*) but they do have EPs and receive partitive readings with individual-level predicates (*strong readings*).

(7) a. Are there some major mistakes in the paper?
b. Are some mistakes in the paper major?

(8) a. Are there few major mistakes in the paper?
b. Are few mistakes in the paper major?

- The strong readings of bare plurals are generic.

(9) a. Are there major mistakes in the paper?
b. Are mistakes in the paper major?

- Anderssen 2011 claims that *lauter* 'many' in German only has a weak use. Also, Milsark 1977 *sm* vs. *some*.

1.3 Terminological notes

Our terminology:

- *Strong determiners/quantifiers* always have EPs.
- *Weak determiners/quantifiers* do not always have EPs.

For the latter, we will also speak of:

- *Strong readings/uses*: with EPs, partitive

- *Weak readings/uses*: without EPs, non-partitive

NB: Our use of *strong* vs. *weak* is (confusingly) different from the standard terminology due to Milsark 1977, which is defined in terms of *there*-sentences (on non-listing readings) and other linguistic diagnostics, as we discussed in Weeks 1–5. Recall that strong quantifiers in our sense do appear in *there*-sentences.

(10) a. There was **every reason** to leave.
b. Students will be able to compute how many days during the week there was **each type of weather**. (McNally 2019)

(11) We finally discovered that there was **the lid to a Cool-Whip container** in the pie underneath the filling! (*Ibid.*)

(12) Ida wondered if there was **some of the marines' homebrewed engine juice** around. (*Ibid.*)

2 Universal quantifiers

Universal quantifiers typically have EPs (De Jong & Verkuyl 1985, Diesing 1992, Geurts 2007).

2.1 Anti-presuppositions

The presupposition of a universal quantifier often feels stronger.

(13) a. Did the editor spot every mistake in the paper?
b. Did the editor spot all the mistakes in the paper?
$\rightsquigarrow$ *There are <u>three or more</u> mistakes in the paper*

Consider the following analysis (we ignore plurality, so we won't distinguish *every* and *all*).

(14) a. $[\![\texttt{every}]\!]^w = \lambda P_{\langle e,t\rangle}\colon |\{\, x \mid P(x)=1 \,\}| \geqslant 3.\ \lambda Q_{\langle e,t\rangle}\colon \{\, x \mid P(x)=1 \,\} \subseteq \mathrm{dom}(Q).\ \{\, x \mid P(x)=1 \,\} \subseteq \{\, x \mid Q(x)=1 \,\} \quad = [\![\texttt{all}]\!]^w$
b. $[\![\texttt{both}]\!]^w = \lambda P_{\langle e,t\rangle}\colon |\{\, x \mid P(x)=1 \,\}| = 2.\ \lambda Q_{\langle e,t\rangle}\colon \{\, x \mid P(x)=1 \,\} \subseteq \mathrm{dom}(Q).\ \{\, x \mid P(x)=1 \,\} \subseteq \{\, x \mid Q(x)=1 \,\}$

This analysis wrongly predicts that these presuppositions should project similarly.

(15) a. None of my students sent me **every** essay they wrote this term.
$\not\Rightarrow$ *Each of my students wrote <u>three or more</u> essays this term*
b. None of my students sent me **both** essays they wrote this term.
$\Rightarrow$ *Each of my students wrote <u>exactly two</u> essays this term*

Likewise:

(16) a. If Matt has two or more papers on this topic, we need to read **all** of them.
b. #If Matt has one or two papers on this topic, we need to read **both** of them.

An anti-presuppositional analysis (Percus 2006, Chemla 2007, Singh 2011):

(17) a. $[\![\texttt{every}]\!]^w = \lambda P_{\langle e,t\rangle}\colon\ |\{\,x \mid P(x)=1\,\}| \geqslant 1.$
$\lambda Q_{\langle e,t\rangle}\colon\ \{\,x \mid P(x)=1\,\} \subseteq \mathrm{dom}(Q).$
$\{\,x \mid P(x)=1\,\} \subseteq \{\,x \mid Q(x)=1\,\} \qquad = [\![\texttt{all}]\!]^w$

b. $[\![\texttt{both}]\!]^w = \lambda P_{\langle e,t\rangle}\colon\ |\{\,x \mid P(x)=1\,\}| = 2.$
$\lambda Q_{\langle e,t\rangle}\colon\ \{\,x \mid P(x)=1\,\} \subseteq \mathrm{dom}(Q).$
$\{\,x \mid P(x)=1\,\} \subseteq \{\,x \mid Q(x)=1\,\}$

(18) **Maximize Presupposition! (MP)**
φ is infelicitous with respect to context set c if there is an alternative ψ to φ such that

a. for each $w \in c$, $\varphi \in \mathrm{dom}([\![\cdot]\!]^w)$ and $\psi \in \mathrm{dom}([\![\cdot]\!]^w)$;
b. $\{\,w \in c \mid [\![\varphi]\!]^w = 1\,\} = \{\,w \in c \mid [\![\psi]\!]^w = 1\,\}$; and
c. $\{\,w \mid \varphi \in \mathrm{dom}([\![\cdot]\!]^w)\,\} \subset \{\,w \mid \psi \in \mathrm{dom}([\![\cdot]\!]^w)\,\}$.

- Assuming that *both* is an alternative to *every/all*, MP forces the use of *both* whenever it is felicitous.

- MP accounts for the weak readings.

(19) a. None of my students sent me **every** essay they wrote this term.
b. None of my students sent me **both** essays they wrote this term.

(20) a. If Matt has two or more papers on this topic, we need to read **all** of them.
b. #If Matt has two or more papers on this topic, we need to read **both** of them.

- Correspondingly, the inference predicted for (21a) based on (21b) is weak, namely, '$c \nsubseteq \{\,w \mid$ (21b) $\in \mathrm{dom}([\![\cdot]\!]^w)\,\}$'.

(21) a. The editor spotted every mistake in this paper.
b. The editor spotted both mistakes in this paper.

Chemla 2008 proposes a way to strengthen the inference to '$c \cap \{\,w \mid$ (21b) $\in \mathrm{dom}([\![\cdot]\!]^w)\,\} = \varnothing$'.

Further notes:

- *Each* does not have such an anti-duality inference.

(22) a. You have five fingers in **each hand**.
b. #You have five fingers in **every hand**.

- *No(ne)* and *any* have anti-duality inferences, cf. *neither* and *either*.

(23) a. I've read **none** of the books about Chandler House.
b. I've read **neither** of the books about Chandler House.

(24) a. I haven't read **any** of the books about Chandler House.
b. I haven't read **either** of the books about Chandler House.

- *Which* in Japanese triggers an anti-duality inference.

(25) a. **dono** hon-o yonda no?
which book-ACC read Q
'Which book did you read?'

b. **docchino** hon-o yonda no?
which.of.the.two book-ACC read Q
'Which of the two books did you read?'

- French *tous* 'all' triggers an anti-duality inference (Chemla 2007), but *aucun* 'no' does not (similarly, German *kein*).

(26) Si vous avez l'impression d'appartenir à ces deux catégories à la
if you have the=impression of=belonging to these two categories at the
fois, ou au contraire de n'appartenir à **aucune**, pas d'inquiétude.
time, or on.the contrary of not=belonging to none, not to=worry
'If you feel that you belong to these two categories at the same time, or on the contrary, to **none**, don't worry.' (Slate.fr)

2.2 Universal quantifiers without EPs

Lappin & Reinhart 1988 present generic sentences with universal quantifiers to argue that not all instances have EPs.

(27) a. Every unicorn has one horn.
b. All unicorns have one horn.

Geurts 2007 points out, their claim is not very convincing, as one could analyze the EP to be modalized along the following lines: 'For any possible world w (in a certain domain), if unicorns exist in w, then every unicorn in w has one horn'.

But there are other cases without EPs.

(28) a. Did you help everyone who asked you for help?
$\not\Rightarrow$ *There were people who asked you for help*
b. Did you help both people who asked you for help?
$\Rightarrow$ *There were exactly two people who asked you for help*

(29) a. Each year, every applicant who already had a published paper got in. (Schlenker 2012: p. 422)
$\not\Rightarrow$ *Each year there were applicants who already had a published paper*
b. Each year, both applicants who already had a published paper got in.
$\Rightarrow$ *Each year there were exactly two applicants who already had a published paper*

How about *the*?

(30) a. Did you help the people who asked you for help?
(i) Each year, the applicants who already had a published paper got in.

Note that these cases suggest that the assertion is (31), not (32).

(31) $[\![\texttt{every}]\!]^w = \lambda P_{\langle e,t\rangle}\colon |\{x \mid P(x)=1\}| \geqslant 1.$
$\lambda Q_{\langle e,t\rangle}\colon \{x \mid P(x)=1\} \subseteq \mathrm{dom}(Q).$
$\{x \mid P(x)=1\} \subseteq \{x \mid Q(x)=1\}$

(32) $[\![\texttt{every}]\!]^w = \lambda P_{\langle e,t\rangle}\colon |\{x \mid P(x)=1\}| \geqslant 1.$
$\lambda Q_{\langle e,t\rangle}\colon \{x \mid P(x)=1\} \subseteq \mathrm{dom}(Q).$
$\varnothing \subset \{x \mid P(x)=1\} \subseteq \{x \mid Q(x)=1\}$

3 Idleness

Why do strong quantifiers have EPs? Why aren't there universal quantifiers without EPs, e.g.?

3.1 Previous proposals (last week)

- Verification strategy (Lappin & Reinhart 1988)
- Topichood (Reinhart 2004) (see also Büring 1996 for a related idea for weak/strong ambiguity)
- Scalar implicature (Abusch & Rooth 2004)

3.2 Rough idea

We follow the intuition that the existence presuppositions of strong quantifiers have to do *triviality avoidance* (cf. Barwise & Cooper 1981: §4.5, De Jong & Verkuyl 1985: p. 31).

- For *every* and *no*, if the restrictor is null, the sentence is guaranteed to be true, no matter what the scope is.

  (33) Every/no reindeer sneezed.
  a. $\{x \mid R(x)\} \subseteq \{x \mid S(x)\}$
  b. $\{x \mid R(x)\} \cap \{x \mid S(x)\} = \varnothing$

- For *most* (and *some*), if the restrictor is null, the sentence is guaranteed to be false, no matter what the scope is.

  (34) Most/some reindeers sneezed.
  a. $|\{x \mid R(x)\} \cap \{x \mid S(x)\}| > |\{x \mid R(x)\} - \{x \mid S(x)\}|$
  b. $\{x \mid R(x)\} \cap \{x \mid S(x)\} \neq \varnothing$

In such circumstances, the choice of the scope argument wouldn't matter = its semantic contribution would be **idle**.

Generally natural language seems to eschew expressions that contribute no meaning, e.g.

- Ban on vacuous quantification

(35) $\forall x[P(y)]$

- Ban on too many arguments (cf. 'Theta Criterion')

(36) *[A dog] saw [two cats] [three mice].

Working hypothesis:

(37) **Ban on idleness**: Every expression used must make a non-trivial contribution to the overall (truth-conditional) meaning.

Idea: EPs arise via idleness avoidance.

3.3 Idleness via omission

Cases like vacuous quantification and too many arguments suggest that omissible expressions must be omitted.

(38) A constituent α occurring in a constituent Γ is *idle in* Γ with respect to w, if $[\![\Gamma]\!]^w = [\![\Gamma']\!]^w$, where Γ' is derived from Γ by removing α.

But this notion of idleness is too limited in scope; it only renders grammatically optional constituents idle.
In a quantificational sentence of the form "D NP VP", nothing is omissible.

3.4 Idleness *salva veritate/falsitate*

(39) $\Gamma[\alpha/\beta] :=$ the constituent derived from Γ by replacing α with β

(40) A constituent α occurring in a constituent Γ is *idle in* Γ with respect to w if for each constituent β distinct from α such that $\Gamma[\alpha/\beta]$ is grammatical, $[\![\Gamma]\!]^w = [\![\Gamma[\alpha/\beta]]\!]^w$.

In order for this to work, the object language needs to be rich enough and contain enough β's to quantify over. Natural language is rich enough.[1]

(41) Every reindeer sneezed.
$\{\, x \mid R(x)\,\} \subseteq \{\, x \mid S(x)\,\}$

If the restrictor is empty in w, then for any VP, 'Every reindeer VP' is true with respect to w, so 'sneezed' is idle in (41) with respect to w.

3.5 Ban on idleness

(42) Uttering Γ is infelicitous with respect to context set c, if for any $w \in c$, Γ contains a constituent that is idle in Γ with respect to w.

This derives an EP for (41). (But as we will discuss below, it also derives the presupposition that not everything in the universe sneezed)

[1]The distinctness condition $\beta \neq \alpha$ is necessary to ensure that those α's that are not replaceable won't be idle. But we probably do not run into such cases in natural language anyway.

- To account for presupposition projection, (42) needs to be tweaked (e.g., by relativising to local contexts), but we will eventually trigger such idleness presupposition at the lexical level, so we will not consider presupposition projection here.

- the alternative formulation in (43) also makes sense, and might be conceptually more natural.

  (43) Uttering Γ is infelicitous with respect to context set c, if for every $w \in c$, Γ contains a constituent that is idle in Γ with respect to w.

  This will derive an anti-presupposition 'It's not the case that the restrictor is empty everywhere in c', rather than an EP 'The restrictor is non-empty everywhere in c', which is too weak.

3.6 No EPs for scope

One problem of the above idea is that it predicts a presupposition about the scope argument too.
In the case of *every*, the scope will be presupposed to be not the entire set of individuals, because in that case the restrictor will be idle.

(44) Every reindeer sneezed.
$\{ x \mid R(x) \} \subseteq \{ x \mid S(x) \}$

One might think that this presupposition is practically innocuous, because there is practically no predicate in natural language that can be true of everything in the universe.

- *Thing or person*? Does that include abstract 'things' like numbers and events?

- *Exist* is not a simple extensional predicate and does not apply to abstract individuals.

But the problem becomes more relevant with other determiners. E.g., under the strong reading (e.g., with an individual-level predicate), *no* has an EP for the restrictor, but not for the scope, despite its symmetric meaning.

(45) No research assistant is a semanticist.
$\{ x \mid R(x) \} \cap \{ x \mid S(x) \} = \varnothing$

(46) No semanticist is a research assistant.
$\{ x \mid S(x) \} \cap \{ x \mid R(x) \} = \varnothing$

3.7 Order sensitivity

3.7.1 Linear order

We can refer to linear order: The restrictor precedes the scope in the above examples, so we require that the restrictor cannot make the scope idle.
But the scope may precede the restrictor in many natural languages, and the facts about EPs do not change.

(47) a. Semantics attracted no research assistants.
b. No research assistants were interested in semantics.

3.7.2 *Compositional order*

We make use of **compositional order** instead. The idea is that the first argument (= the restrictor) cannot make the second argument (= the scope) idle.

(48) In [[Q R] S], Q has an idleness presupposition that R does not render S idle in this constituent.

This predicts that every generalized quantifier has an existence presupposition that the restrictor is non-empty, because with an empty restrictor $[\![\texttt{R}]\!]^w = \varnothing$, for any S:

- $[\![\texttt{every R S}]\!]^w = 1$
- $[\![\texttt{no R S}]\!]^w = 1$
- $[\![\texttt{most R S}]\!]^w = 0$
- $[\![\texttt{some R S}]\!]^w = 0$ etc. etc.

This explains strong uses for all quantifiers, but we still have to account for weak uses.

3.8 Further predictions

Ignoring presupposition projection:

(49) a. $[\![\texttt{three}]\!]^w$
$= \lambda P_{\langle e,t\rangle}.\lambda Q_{\langle e,t\rangle}.\,|\{\,x \mid P(x) = 1\,\} \cap \{\,x \mid Q(x) = 1\,\}| \geqslant 3$
b. $[\![\texttt{more than three}]\!]^w$
$= \lambda P_{\langle e,t\rangle}.\lambda Q_{\langle e,t\rangle}.\,|\{\,x \mid P(x) = 1\,\} \cap \{\,x \mid Q(x) = 1\,\}| > 3$
c. $[\![\texttt{fewer than three}]\!]^w$
$= \lambda P_{\langle e,t\rangle}.\lambda Q_{\langle e,t\rangle}.\,|\{\,x \mid P(x) = 1\,\} \cap \{\,x \mid Q(x) = 1\,\}| < 3$
d. $[\![\texttt{exactly three}]\!]^w$
$= \lambda P_{\langle e,t\rangle}.\lambda Q_{\langle e,t\rangle}.\,|\{\,x \mid P(x) = 1\,\} \cap \{\,x \mid Q(x) = 1\,\}| = 3$

With these lexical entries, we'll predict the following idleness presuppositions, respectively:

(50) a. The restrictor contains three or more individuals
(otherwise false, with all Q)
b. The restrictor contains more than three individuals
(otherwise false, with all Q)
c. The restrictor contains three or more individuals
(otherwise true, with all Q)
d. The restrictor contains three or more individuals
(otherwise false, with all Q)

These presuppositions are of course not there on weak readings, which don't even have EPs.

The question is whether strong readings trigger these presuppositions. We can test the predictions with individual-level predicates.

(51) a. If John has siblings, three of them are male.
b. If John has siblings, more than three of them are male.
c. If John has siblings, fewer than three of them are male.
d. If John has siblings, exactly three of them are male.

(52) If John has siblings, both of them are male.
$\Rightarrow$ *If John has siblings, he has exactly two.*

4 Idleness presuppositions more generally

Let us generalize the ban on idleness to n-ary functions:

(53) Let $[\![\alpha]\!]^w$ be a function of type $\langle \sigma_1, \cdots \langle \sigma_n, \tau \rangle \cdots \rangle$. Then $[\![\alpha]\!]^w$ has the following presuppositions:
a. its 1st argument is not idle;
b. its 1st argument doesn't make its mth argument idle for $2 \leqslant m \leqslant n$;
c. its 2nd argument doesn't make its mth argument idle for $3 \leqslant m \leqslant n$;
d. its $n-1$th argument doesn't make its nth argument idle.

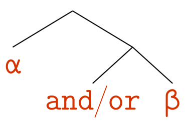
The first clause excludes functions like Sauerland's (2004) connective L:

(54) a. $[\![\mathtt{L}]\!]^w = \lambda x.\lambda y.\, y$
b. $[\![\mathtt{R}]\!]^w = \lambda x.\lambda y.\, x$

Generally, (53) doesn't allow vacuous arguments, and also triggers certain presuppositions like EPs.

4.1 Connectives

One problem of (54) is that it will predict that (sentential) connectives will have presuppositions about the first argument.
Let's assume the following syntax, where the first argument is the second 'junct'.

(55)


a. and will presuppose that β is true, lest α be idle.
b. or will presuppose that β is false, lest α be idle.

Obviously there are no such presuppositions.

(56) a. (It's not true that) Andrew lives in Amsterdam and Bob lives in Barcelona.
b. (It's not true that) Andrew lives in Amsterdam or Bob lives in Barcelona.

4.2 Strawson idleness

Idea: Connectives lack the predicted presuppositions, because with them, the first junct would be idle in the assertion.

- If α and β presupposes β to be true, then whenever this presupposition is true in w, $[\![\alpha \text{ and } \beta]\!]^w = [\![\alpha]\!]^w$.
- If α or β presupposes β to be false, then whenever this presupposition is true in w, $[\![\alpha \text{ or } \beta]\!]^w = [\![\alpha]\!]^w$.

In other words:

(57) Γ_1 and Γ_2 are *Strawson equivalent* iff
  a. whenever both their presuppositions are satisfied, their assertive contents are equivalent iff
  b. for each c, if for each $w \in c$, $\Gamma_1 \in \mathrm{dom}([\![\cdot]\!]^w)$ and $\Gamma_2 \in \mathrm{dom}([\![\cdot]\!]^w)$, then for each $w \in c$, $[\![\Gamma_1]\!]^w = [\![\Gamma_2]\!]^w$

(58) A constituent α occurring in a constituent Γ is *Strawson idle*, if for each constituent β distinct from α such that $\Gamma[\alpha/\beta]$ is well-formed, Γ and $\Gamma[\alpha/\beta]$ are Strawson equivalent.

(59) a. β will be Strawson idle in α and β, if β is presupposed to be true.
  b. β will be Strawson idle in α or β, if β is presupposed to be false.

Natural language seems to avoid Strawson idleness.
E.g., the following cases are not Strawson idle.

- NP in *the NP*
- the complement of a factive predicate
- the argument of *also*
- *also* itself (because if we quantify over other focus particles, e.g., *only*, the assertion will be affected)

We revise our rule so that idle presuppositions only arise if they don't result in Strawson idleness.

(60) Let $[\![\alpha]\!]^w$ be a function of type $\langle \sigma_1, \cdots \langle \sigma_n, \tau \rangle \cdots \rangle$. Then $[\![\alpha]\!]^w$ has the following presuppositions, **except for the ones that would render any argument Strawson idle**.
  a. Its 1st argument is not idle.
  b. Its 1st argument doesn't make its mth argument idle for $2 \leqslant m \leqslant n$.
  c. Its 2nd argument doesn't make its mth argument idle for $3 \leqslant m \leqslant n$.
  d. Its $n - 1$th argument doesn't make its nth argument idle.

5 Weak readings as conjunctive readings

According to the story so far, all quantificational determiners should carry EPs. What about weak readings?

Tentative analysis: Weak readings are due to the 'conjunctive' uses of these determiners. They lack EPs, for the same reason why conjunction does, i.e., to avoid Strawson idleness.

5.1 *Some*

Certain versions of dynamic semantics allow for a purely conjunctive analysis of indefinites.

- File Change Semantics (Heim 1982) has no existential quantifier (or operator that triggers random assignment).
- Context set c is a set of pairs consisting of a possible world w and a total assignment f.

(61) $c[\texttt{some}^{\texttt{x}}_{\texttt{wk}}\ \texttt{Rx Sx}] = c[\texttt{Rx} \wedge \texttt{Sx}] = c[\texttt{Rx}][\texttt{Sx}]$

$\texttt{some}^{\texttt{x}}_{\texttt{wk}}\ \texttt{Rx Sx}$ just says: $\texttt{x}$ is R and $\texttt{x}$ is S.

- Heim 1982 guarantees that $\texttt{x}$ here is a novel variable via a lexically encoded felicity condition ('Novelty Condition'). This is what makes the force (merely) existential. Fresh variables are those variables that range over all individuals, i.e., for every $o \in D$ and for each $(f, w) \in c$, there is f' such that $(f', w) \in c$ and $f'(x) = o$.
- More recent work (e.g., Heim 1991, Percus 2006, Heim 2011) suggests that this condition is derived via competition with *the* ('anti-presupposition'). If we follow this idea, we could get rid of the superscript $\texttt{x}$ on $\texttt{some}$. Then $\texttt{some}$ would be just a conjunctive connective.[2]

If $\texttt{some}$ is just a conjunction, an EP is blocked, so as to avoid Strawson idleness.
In order to implement this idea more formally, we need a few technical tricks.

(62) a. $\mathsf{W}(c) = \{\, w \mid \exists g[(w, g) = c] \,\}$
b. We assume that presuppositions are dynamic statements (unlike Heim 1982). We denote the presupposition a sentence φ by $P(\varphi)$.
c. $P(\varphi)$ is satisfied with respect to c iff $\mathsf{W}(c[P(\varphi)]) = \mathsf{W}(c)$.

Suppose hypothetically that $\texttt{some}_{\texttt{wk}}\ \texttt{Rx Sx}$ has an EP that $\texttt{Rx}$ is true:

$$P(\texttt{some}_{\texttt{wk}}\ \texttt{Rx Sx}) = \texttt{Rx}$$

- $\texttt{Rx}$ is satisfied with respect to c iff $\mathsf{W}(c[\texttt{Rx}]) = c$ iff there is at least one R-individual in each $w \in \mathsf{W}(c)$. (NB: this presupposition is existential).
- We assume that Strawson idleness is checked dynamically by first updating the context with the presuppositions:

[2] In fact, we could say that all DPs always introduce new variables, and the semantics of (familiar) definites (including pronouns) involve an identity statement that the variable they introduce is coreferential with some old variable. This way, we could remove many variables (though probably not all) from the syntax by using stacks (Van Eijck 2001, Nouwen 2003, 2007). But we won't formalize this idea today.

(63) A constituent α occurring in a constituent Γ is *dynamically Strawson idle* if for each constituent β distinct from α such that $\Gamma[\alpha/\beta]$ is well-formed, for any c such that $P(\Gamma)$ and $P(\Gamma[\alpha/\beta])$ are both satisfied respect to c,

$$\mathsf{W}(c[P(\Gamma)][P(\Gamma[\alpha/\beta])][\Gamma]) = \mathsf{W}(c[P(\Gamma)][P(\Gamma[\alpha/\beta])][\Gamma[\alpha/\beta]])$$

- The hypothetical EP would render $\mathtt{Rx}$ dynamically Strawson idle in $\mathtt{some_{wk}\ Rx\ Sx}$: For any c and any alternative restrictor $\mathtt{R'}$ such that $\mathsf{W}(c[\mathtt{Rx}]) = \mathsf{W}(c[\mathtt{R'x}]) = \mathsf{W}(c)$ (i.e., it is common ground that there is an R-individual and there is an R'-individual), we have:

  $$\mathsf{W}(c[\mathtt{Rx}][\mathtt{R'x}][\mathtt{some_{wk}\ Rx\ Sx}]) = \mathsf{W}(c[\mathtt{Rx}][\mathtt{R'x}][\mathtt{some_{wk}\ R'x\ Sx}])$$

  Both are the set of possible worlds in c where at least one individual satisfies all three predicates $\mathtt{R}$, $\mathtt{R'}$, and $\mathtt{S}$.

5.2 Strong *some*

But why does the strong version, which essentially has the same truth-conditional meaning, have an existence presupposition?

Speculative idea: Strong *some* is a "real" dynamic generalised quantifier.

Writing $\mathtt{\exists x}$ for random assignment:

(64) $c[\mathtt{some^{x}_{str}\ Rx\ Sx}] = c[\mathtt{\exists x}][\mathtt{Rx}][\mathtt{Sx}]$

Then we avoid making the restrictor Strawson idle.

- The existence presupposition would be the same as before: $P(\mathtt{some^{x}_{str}\ Rx\ Sx}) = \mathtt{Rx}$ and the presupposition is satisfied iff $\mathsf{W}(c[\mathtt{Rx}]) = \mathsf{W}(c)$.

- We avoid Strawson idleness, thanks to rebinding/downdating of $\mathtt{x}$ by $\mathtt{\exists x}$: Suppose c is such that $\mathsf{W}(c[\mathtt{Rx}]) = \mathsf{W}(c[\mathtt{R'x}]) = \mathsf{W}(c)$ (i.e. it is commonly known that there is an $(R \wedge R')$-individual. It might still be:

  $$\begin{gathered}\mathsf{W}(c[\mathtt{Rx}][\mathtt{R'x}][\mathtt{some^{x}_{str}\ Rx\ Sx}]) = \mathsf{W}(c[\mathtt{Rx}][\mathtt{R'x}][\mathtt{\exists x}][\mathtt{Rx}][\mathtt{Sx}]) \\ \neq \\ \mathsf{W}(c[\mathtt{Rx}][\mathtt{R'x}[\mathtt{some^{x}_{str}\ R'x\ Sx}]) = \mathsf{W}(c[\mathtt{Rx}][\mathtt{R'x}][\mathtt{\exists x}][\mathtt{R'x}][\mathtt{Sx}])\end{gathered}$$

  because it's possible that there is an $(R \wedge R')$-individual and an $(R \wedge S)$-individual but no $(R' \wedge S)$-individual, for example.

5.3 *No*

For *no* (and other downward entailing quantifiers), we need to separate the negation (at least in the semantics, and possibly also in the syntax).

(65) $c[\mathtt{no_{wk}\ Rx\ Sx}] = c[\mathtt{not(some_{wk}\ Rx\ Sx)}] = \{\, (w,g) \in c \mid \neg\exists(w,g') \in c[\mathtt{Rx}][\mathtt{Sx}] \,\}$

If this presupposes $\mathtt{Rx}$ to be true, $\mathtt{Rx}$ will be Strawson idle (for the same reason as in the case of *some*, except that the truth-value is flipped).

The strong version, again, would involve "real" existential quantification.

5.4 To do

- Other quantifiers (note that all non-upward monotonic quantifiers would have to be decomposed)
- General type-shifting rule (presumably from weak to strong)

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