Negative Polarity
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Negative polarity items (NPIs)/Affective contexts

Ladusaw (1980)

NPIs: ever, any, anyone, anything, yet at all, lift a finger, spend a red cent, sleep a wink, so much as, a jot, an iota, a stitch of clothing, a stick of furniture, [Deg all that] ...

\[
\begin{align*}
\{ & \text{no one} \\
& \text{at most three people} \\
& \text{few students} \\
& \text{*someone} \\
& \text{*many students} \\
\} & \quad \text{who had ever read anything about} \\
\{ & \text{Bloomfield attended any of the lectures.} \\
\} & \quad \text{The man who had ever read anything about Bloomfield attended the lectures.}
\end{align*}
\]
Positive Polarity items (Israel 2004)

(1)  a. Hugo (was/*wasn’t) *considerably* impressed by her arguments.
b. Einstein (is/*isn’t) *some* mathematician.
c. He (is/*isn’t) a *regular* Einstein.
d. He (can/can’t) calculate an Eigenvector *in the blink of an eye.*
Some F L’s: F is in upward monotone context

Some father limps ⊨ some man limps.

\[ F \cap L \neq \emptyset \quad F \subset M \]
Some F L’s: not downward monotone

Some father limps $\not\subset$ some grandfather limps.

\[ F \cap L \neq \emptyset \quad G \subset F \]
No M L’s: M is in a downward monotone context

No man limps ⊢ No father limps.

\[ M \cap L = \emptyset \quad F \subset M \]
No M L’s: not upward monotone context

No father limps \( \not\forall \) No man limps.

\[ F \cap L = \emptyset \quad F \subset M \]
The meaning of some, *in the scope*

Some(X)(Y) iff the intersection of X and Y is not empty.

\[
\begin{align*}
\llbracket \text{some} \rrbracket &= \lambda X \lambda Y \exists x \ [X(x) \land Y(x)] \\
\llbracket \text{some man} \rrbracket &= \lambda Y \exists x \ [\llbracket \text{man} \rrbracket(x) \land Y(x)] \\
\llbracket \text{some man walks} \rrbracket &= \exists x \ [\llbracket \text{man} \rrbracket(x) \land \llbracket \text{walks} \rrbracket(x)]
\end{align*}
\]

\[
\llbracket \text{some} \rrbracket (\llbracket \text{man} \rrbracket)(\llbracket \text{walks} \rrbracket) = \llbracket \text{some man} \rrbracket (\llbracket \text{walks} \rrbracket) = \llbracket \text{some man walks} \rrbracket
\]

- *man* is interpreted in the scope of *\llbracket \text{some} \rrbracket*.
- *walks* is interpreted in the scope of *\llbracket \text{some man} \rrbracket*.
Understanding the function properties

The following axiom schema says \( f \) is **monotone increasing** on the first \( X \) argument:

\[
\forall X \forall Y \forall Z \left[ [X \subseteq Z] \rightarrow [f(X, Y) \rightarrow f(Z, Y)] \right]
\]

Let’s plug in some for \( f \) and some appropriate \( X, Y \) arguments for some

\[
\forall Z \left[ [[\text{father}] \subseteq Z] \rightarrow [\text{some}(\text{father}, \text{walks}) \rightarrow \text{some}(Z, \text{walks})] \right]
\]

In particular, since \( [[\text{father}] \subseteq [\text{man}]\) :

\[
\text{some}(\text{father}, \text{walks}) \rightarrow \text{some}(\text{man}, \text{walks})
\]
Questions

1. Give an example of an affective expression (Ladusaw’s theory).
2. Give an example of non-affective expression. (Ladusaw’s theory)
3. Explain how the expression *every* can be affective, while the expression *every man* is not. Even if you can’t work through the details of the formal analysis, what facts are relevant?
4. Criticize or support the following claim:

   The primary advance in Ladusaw’s analysis is that he gives a semantic definition of what an affective expression is. That definition in turn actually predicts diverse facts about NPIs.

5. Talk about the relation of L’s analysis to (10) [Fauconnier/Fodor]. In what way is L’s analysis an advance?
Issues with DE (Giannakidou 2011)

- *Each* and *both*: presuppositions, referentiality
- NPIs in questions
- Conditionals (not DE contexts, contra Ladusaw)
- Non-DE quantifiers that are licensors: *most*
Each, both

- \([\text{Each man laughed}] = [\text{Every man laughed}]\)
- \([\text{Both men laughed}] = [\text{Every man laughed and there were two men}]\)
- Each man laughed \(\Rightarrow\) Each tall man laughed.
- Both Sonny and Cher laughed \(\Rightarrow\) Sonny laughed.
- \# Each man who ever went to Memphis laughed.
- \# Both men who ever went to Memphis laughed.
- Every man who ever went to Memphis laughed.
- Presupposition properties? A pragmatic solution.
Questions

- Do you have **any** explanation for what just happened?
- Have you **ever** been to Memphis?
- Did he **even** lift a finger to help?
- An attempt to transfer the definition of DE to questions. For example, assume a question denotes a set of propositions (the true answers). Consider whether.

\[
[\text{Are you walking slowly?}] \subseteq [\text{Are you walking?}]
\]

Suppose you are walking but not slowly. Doesn’t work.
Conditional examples (Heim 1984)

- If you put **so much as** a pinch of salt in this soup, I will throw it out.
- If has **ever** told you a lie, he must go to confession.
- If you had left **any** later, you would have missed the plane.
- If John has stolen **the least amount of** money, Mary has probably noticed it.

*For Ladusaw, then, if* $q \Rightarrow p$, *it better be true that*

$$If \ p \ then \ r \Rightarrow If \ q \ then \ r$$
If you vacation in Malta, you will have a good time.

If you vacation in Malta and are attacked by terrorists, you will have a good time.

If (a) is true, that does not seem to guarantee (b).

Since

\[ \text{you vacation in Malta and are attacked by terrorists} \subseteq \text{you vacation in Malta} \]

that means conditionals are NOT DE (contra Ladusaw).
Conditionals are highly context-bound

The essentially pragmatic nature of conditionals

Conditionals are **always** evaluated versus a rich background context. For example, we have to hold *some assumptions* constant in evaluating any counterfactual:

(2) a. If Bizet and Verdi were compatriots, then Verdi would be French.
    b. If Bizet and Verdi were compatriots, then Bizet would be Italian.
Heim’s pragmatically limited DE-ness

- NPIs do not require a context which yields all DEs. They only require a context yielding all entailments on a **pragmatic scale**: relevant to the conditional. (Israel 2004):

**Informativeness scale**

- a reads N newspapers and a is informed to degree \( d \) \( \Rightarrow \) a reads more than N newspapers and a is informed to at least degree \( d \)

- The speaker **only** commits themselves to strengthenings that move you up that scale.

(3)  
- a. If you read any newspaper, you are well-informed.  
- b. If you read two newspapers, you are well informed.  
- c. If you read a newspaper and have a memory like a sieve, you are well informed.
Heim’s prediction

Pragmatically sound vs. pragmatically odd

Given the informativeness scale:

(4) a. If you read any newspaper at all, you are well-informed.
   b. If you read any newspaper at all, you remain quite ignorant.
Most of the boys who ate an apple got sick.
Most of the boys who ate a fruit got sick.
Entailment in neither direction. Neither upward nor downward entailing.

Most children with any sense steal candy.
Most people who would lift a finger to help Bill now are either very foolish or very well paid.
Few children with any sense play Frisbee on freeways.
Few people with the least bit of human feeling could doubt her sincerity.

But maybe Heim’s pragmatically constrained DE-ness can serve here as well.
Other pragmatically licensed cases: Minimizers

Linebarger (1980)

- Every restaurant that charges so much as a dime for iceberg lettuce ought to be closed down.
- Every restaurant that charges so much as a dime for iceberg lettuce actually has four stars in the handbook.

But every IS DE! Moreover:

(7) Every restaurant that I have ever gone to actually has four stars in the handbook.
Empirical issues (Giannakidou 2011)

- There are neg-licensed items in other languages (Greek, German, Dutch) that aren’t licensed in the full range of DE contexts. (Zwarts 1998)
- There is a scale of NPI-ness. The English examples we’ve been looking at are weak NPIs.
Weak vs strong polarity (Zwarts 1998)

<table>
<thead>
<tr>
<th>Weak</th>
<th>Strong</th>
</tr>
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</table>
| a.   | Niemand zal zulk een beproeving **hoeven** te doorstaan  
          *No one will such an ordeal **need** to go through*  
          No one need go through such an ordeal. |
| b.   | *Iedereen zal zulk een beproeving **hoeven** te doorstaan  
          *Everyone will such an ordeal **need** to go through*  
          *Everyone need go through such an ordeal.* |
| c.   | Hoogstens een kind zal zich **hoeven** te verantwoorden  
          *At most one child will himself **need** to justify*  
          At most one child need justify himself. |
| d.   | *Hoogstens zes **agenten** hebben **ook maar iets** bemerkt  
          *At most six cops have **anything** noticed*  
          *At most six cops noticed anything’* |
| e.   | Niemand heeft van de regenbui **ook maar iets** bemerkt  
          *No one has of the rain **anything** noticed*  
          No one noticed anything of the rain’ |
Propositional attitudes

A propositional operator $F$ is veridical iff $Fp$ entails or presupposes that $p$ is true in some individual’s model $M(x)$; $p$ is true in $M(x)$, if $M(x) \models p$.

(8)  

a. John would like to invite any student.
b. John asked us to invite any student.
c. John is willing to invite any student.
d. # John invited any student.
e. # John believes that we invited any student.
f. # John dreamt that we invited any student
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