

## Negative Polarity Items [NPIs]

Words that “like to live in the shade of negation”:

*Any, ever, give a damn, a bit, at all, yet, ...*

1. Nina won't ever bite you

2. Nobody has any money

3. \*Nina will ever bite you

4. \*Jeff has any money

Can occur in non-declaratives

5. Does Nina ever bite?

**How to characterize “the shade of negation”?**

**5. Every dog that has ever bitten a cat is admired by all other dogs.**

**6. Every student who has any money will spend it on beer.**

**7. \*Some dog that has ever bitten a cat is admired by all other dogs.**

**8. \*Some student who has any money will spend it on beer.**

**What do the types of sentences which allow (“license”) NPIs have in common?**

**What is it about NPIs that make them require a licenser of that sort?**

**Consider examples of the form: [DET N Modifier] Pred**

**The stuff inside the [ ]'s is the (generalized) quantifier. We will need to separately check whether an NPI can exist inside the quantifier and outside the quantifier.**

**9. OK with NPI inside quantifier:**

- a. Every dog that has ever bitten a cat is admired by all other dogs**
- b. No dog that has ever bitten a cat is admired by all other dogs**

**10. Bad with NPI inside quantifier:**

- a. \*Some dog that is ever bitten a cat is admired by all other dogs**
- b. \*Three dogs that have ever bitten a cat are admired by all other dogs**

**11. OK with NPI inside Pred**

- a. No dog has ever bitten a cat**

**12. Bad with NPI inside Pred**

- a. \*Every dog has ever bitten a cat**
- b. \*Some dog has ever bitten a cat**
- c. \*Three dogs have ever bitten a cat**

So, NPI is acceptable inside quantifier with *every* and *no*, and outside the quantifier (in Pred) with *no*.

An NPI is unacceptable outside the quantifier with *every*, and with *some* and *three* no matter what.

How can we account for this??

## Hyponym/Hypernym

Property, sub-property, super-property

*Dog* is a sub-property of *Animal* (since the set of dogs is a subset of the set of animals)  
So, *Animal* is a super-property of *Dog*

*Husky* is a sub-property of *Dog*, and *Dog* is a super-property of *Animal*

[*Husky* is a hyponym of *Dog*, which is a hyponym of *Animal*; *Animal* is a hypernym of *Dog*, which is a hypernym of *Husky*]

**Simple, non-negative, non-quantified sentences allow inferences from properties to super-properties:**

*I have a dog entails I have an animal*

**Negation reverses this inference:**

*I don't have a dog entails I don't have a husky*

**(note: the inferences do not work the other way!)**

**The fact that *not* creates entailments from properties to sub-properties is described by saying that:**

*Not* is downward entailing with regard to its argument (the predicate)

**Simple non-negative sentences are upward entailing with regard to the predicate**

## **How this all fits with generalized quantifiers:**

**[Det Property-1] Property-2**

**13. Every dog barks [start here]**

**14. Every husky barks [so, DE with respect to Property-1]**

**15. Every animal barks [so, not UE with respect to Property-1]**

**16. Every dog barks loudly [so, not DE with respect to Property-2]**

**17. Every dog makes noise [so, UE with respect to Property-2]**

Consider this chart:

	<b>Property-1</b>		<b>Property-2</b>	
	<b>DE</b>	<b>UE</b>	<b>DE</b>	<b>UE</b>
<i>Every</i>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>No</i>	<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>No</b>
<i>Some</i>	<b>No</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
<i>Three</i>	<b>No</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>

↖ *(at least three)*

Since Negation is DE and licenses NPIs, we might propose that

**Downward-entailingness is what allows a word to be a NPI licensor**

**Why should that be so???**

**Why should a word care about an obscure logical property like DE?**

**NPIs again:**

*Ever, any, at all, the slightest difference, yet, a bit, a red cent (i.e., ‘any money’), give a damn*

**Common here is that they all describe a very small, practically insignificant quantity of something.**

**A word that describes an insignificant quantity of something won’t exist very happily in an upward-entailing context, because it will barely make a difference to the sentence’s meaning.**

**Thus, if it were meaningful, *\*Some student ever drinks* would mean the same as *Some student drinks* (plus “an insignificant bit”). So *ever* wouldn’t mean anything.**

## Conservativity:

A determiner phrase Q is conservative if and only if, for every N and X:

$$X \in Q(N) \Leftrightarrow (N \cap X) \in Q(N)$$

1. Many dogs barked *iff* Many dogs are dogs that barked
2. Every dog pants *iff* Every dog is a dog that pants
3. No students drinks to excess *iff* No student is a student that drinks to excess
4. Fewer than 10 but at least 3 students in Ling 406 will get an A *iff* Fewer than 10 but at least 3 students in Ling 406 are students in Ling 406 who will get an A

(All Boolean combinations of conservative Det's are also conservative)

**CLAIM:** All natural language Det's are conservative

<<Check out the discussion of *only* on pp. 524-5 of our text>>