

we interpret NPs as *generalized quantifiers* (GQs), that is as functions from properties to truth values (possible sentence interpretations). Using upper case bold for interpretations (in a situation s), the truth value of (1) is given by:

(2) (MOST STUDENTS)(WORK HARD)

That is, the truth value (T or F) which (1) is interpreted as in s is the one the function **MOST STUDENTS** maps the set **WORK HARD** to. (An equivalent formulation common in the literature: interpret *most students* as a set of properties and interpret (1) as **T** if the set **WORK HARD** is an element of that set).

Now the denotation of *most students* is built from those of *most* and *student*. And given a universe E , Ns like *student* (as well as *tall student*, *student who Mary likes*, etc.) are, like (tenseless) P_1 s, interpreted as properties over E (= subsets of E). So Dets like *most* can be represented as functions from P_E , the set of properties over E , into GQ_E , the set of generalized quantifiers over E (We usually suppress the subscript E when no confusion results).

We illustrate the interpretation of some Dets. Let E be given and held constant throughout the discussion. Consider **EVERY**, the denotation of *every*. We want to say that *Every student is a vegetarian* is (interpreted as) true, **T**, iff each object in the set **STUDENT** is also in the set **VEGETARIAN**. Generalizing,

(3) For all properties A, B **EVERY** $(A)(B) = \mathbf{T}$ iff $A \subseteq B$

What (3) does is define the function **EVERY**. Its domain is the collection P_E of subsets of E and its value at any A in P_E is the GQ **EVERY** (A) – namely, that function from properties to truth values which maps an arbitrary property B to **T** if and only if A is a subset of B . Here are some other simple cases which employ some widely used notation,

(4) a. **NO** $(A)(B) = \mathbf{T}$ iff $A \cap B = \emptyset$

Here \emptyset is the empty set and (4a) says that *No A's are B's* is true iff the set of things which are members of both A and B is empty.

b. **(FEWER THAN FIVE)** $(A)(B) = \mathbf{T}$ iff $|A \cap B| < 5$

c. **(ALL BUT TWO)** $(A)(B) = \mathbf{T}$ iff $|A - B| = 2$

Here $A - B$ is the set of things in A which are not in B , and in general for C a set, $|C|$ is the cardinality of C that is, the number of elements of C . So (4b) says that *All but two A's are B's* is true iff the number of things in A which are not in B is exactly 2.

d. **(THE TEN)** $(A)(B) = \mathbf{T}$ iff $|A| = 10$ and $A \subseteq B$

This says e.g. that *The ten children are asleep* is true iff the number of children in question is 10 and each one is asleep.

e. **NEITHER** $(A)(B) = \mathbf{T}$ iff $|A| = 2$ & $A \cap B = \emptyset$

f. **MOST** $(A)(B) = \mathbf{T}$ iff $|A \cap B| > |A - B|$

Here we have taken *most* in the sense of *more than half* □

To test that the definitions above have been properly understood the reader should try to fill in appropriately the blanks in (5).

(5) **(MORE THAN FOUR)** $(A)(B) = \mathbf{T}$ iff ____

BOTH $(A)(B) = \mathbf{T}$ iff ____

(EXACTLY TWO) $(A)(B) = \mathbf{T}$ iff ____

(JUST TWO OF THE TEN) $(A)(B) = \mathbf{T}$ iff ____

(LESS THAN HALF THE) $(A)(B) = \mathbf{T}$ iff ____

(BETWEEN FIVE AND TEN) $(A)(B) = \mathbf{T}$ iff ____

Finally, Keenan and Moss (1985) extend the class of Dets to include two place ones such as *more... than ...* which they treat as combining with two Ns to form NPs like *more students than teachers*. Such expressions have the basic distribution of NPs: they occur as subjects (6a), objects (6b), objects of