Issues of conservativity and *many*

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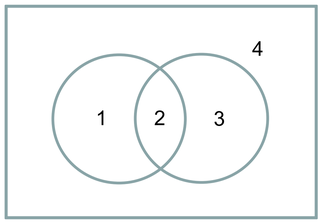
What is conservativity?

- A universal constraint on determiner meaning (such as many, few, no, etc) in human language. A determiner which is not conservative cannot be linguistically acquired.

- Countless non-conservative relations exist between sets (the proper-subset relation, for example) exist, making this discovery interesting and surprising.

- To demonstrate conservativity, take the following example:

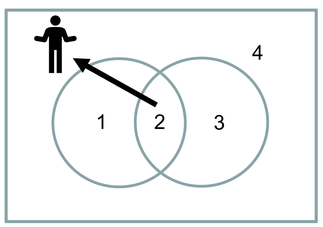
1) Are X of the boys dancing?



- To decide whether a determiner is conservative, its meaning must be clear from using only the noun phrase (1) and the intersection of the noun and verb phrases (2).

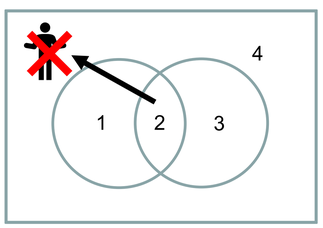
- The meaning cannot be dependent on information in 3 or 4 in the diagram.

1a) Are *some* of the boys dancing?



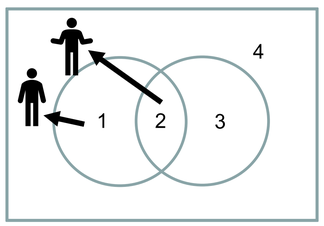
- **Required information**: there is at least one dancing boy (something must be present in 2). **Thus**, *some* is a conservative determiner.

1b) Are *none* of the boys dancing?



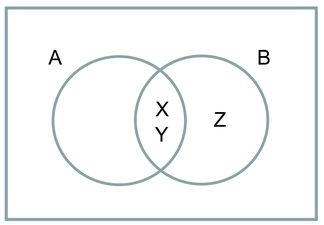
- **Required information**: there are no dancing boys (there is nothing present in 2). **Thus**, *none* is a conservative determiner.

1c) Are *half* of the boys dancing?



- **Required information**: number of dancing boys divided by total number of boys is equal to one half (the number of members in 2 divided by the sum of 1 and 2 is equal to one half). **Thus**, *half* is a conservative determiner.

2) A is a proper subset of B, where A = {X, Y} and B = {X, Y, Z}



- **Required information**: A is a subset of B, but A is not equal to B.

- This requires knowledge of both sets and their intersect, violating the conditions for conservativity.

- The proper subset is not conservative and does not have a corresponding determiner in human language.

What makes *many* special?

- *Many* is a much-studied determiner, here introduced with three examples showing its three different meanings:

(3) There were *many* children at our wedding.

"There was a large number of children at our wedding."

(4) *Many* people smoke in Montreal.

"A high percentage of people in Montreal are smokers."

(5) Many AMERICANS applied to this programme.

"A high percentage of applicants to the programme are American."

- In (3), this clearly refers to there being a number of children over a certain threshold at the wedding, hereafter referred to as the cardinal reading.

- (4) refers to a percentage of the population smoking over a certain threshold, hereafter referred to as the proportional reading.

- (5) is more complex; with focus on the word AMERICANS, the truth conditions are that a certain percentage of applicants to the programme were American.

- For example, when discussing the applicants to the McGill BA programme in 2017, to compare the number of American applicants to total applicants requires knowledge of the total number of applicants.

- This is the reverse of (4), so is called the reverse proportional reading. These complexities make *many* an ideal candidate for semantic analysis.

Challenge to conservativity

- *Many* is a determiner; and as all determiners are conservative, it should follow that *many* is conservative.

- Using the template from above (Are X of the boys dancing?), we see something interesting (numbers refer back to the diagram in 1):

6) Are *many* of the boys dancing?

"Compared to the total number of boys, is a significant percentage of them dancing? (Forward proportional)"

- **Required information**: the number of members of 2 divided by the sum of the members of 1 and 2 gives a significant fraction, above a certain threshold (for example, 25%). **Thus**, forward proportional *many* is conservative.

7) Are *many* of the BOYS dancing?

"Compared to the total number of dancers, is a significant percentage of them boys? (Reverse proportional)"

- **Required information**: the number of members of 2 divided by the sum of the members of 2 and 3 gives a significant fraction, above a certain threshold (for example, 25%). **Thus**, reverse proportional *many* appears not to be conservative.

- 6) and 7) give different readings with and without emphasis on BOYS.

- 6) is clearly conservative and 7) is not.

- Likewise, 5) and other reverse proportional readings are also non-conservative.

Anything is POS-sible

- A POS-operator has many uses in language, but the simplest to explain is that of POS and adjectives:

(8) This bacterium is small.

(9) This elephant is small.

- Obviously, (7) and (8) refer to a different kind of small.

- The bacterium is small compared to other bacteria, and the elephant is small compared to other elephants.

- This is analyzed as a positive POS-operator which provides this unspoken context:

(10) This bacterium is small [for a bacterium].

(11) This elephant is small [for an elephant].

How does this change things?

- *Many* can be decomposed into determiner stem many and the degree operator POS (Romero, 2018).

- Romero's analysis states that these two components have their own scope (the elements which they act upon), and therefore conservativity is preserved.

- Each part is acting on elements that can be described as conservative, and together they can create readings which appear non-conservative.

- The changing the scope of the POS operator changes the reading, which allows readings like that in (5) to be produced conservatively.

- Comparison classes get the right truth conditions without hypothesizing a non-conservative quantifier by using a cardinal meaning of *many*.

Reference

Romero, M. (2018). The Conservativity of Many: Split Scope and Most. Topoi, 37(3), 393-404.