Writing an argument

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Monotonicity: Every The quantifier *every* is left downward monotone. Given the sentence *Every human uses Twitter*, write an argument that *every* is left downward monotone. Make sure that your argument includes a relevant version of the sentence and explicit states how the two sentences show that *every* is left downward monotone. (2 points, max 250 characters)

Examples are not arguments

You earned one point for providing a relevant example, but only if it was provided as part of an argument.

- `Every woman uses Twitter.`

Arguments are written in English sentences

An argument is a series of (English) sentences. The arrow $\rightarrow$ is not part of English.

- `Every human uses Twitter. -> Every child uses Twitter`

- `Every girl usus Twitter.  Girl instead of human.`

- `Every human uses Twitter. Every man uses Twitter. From general to specific.`

- `Every human (X) uses Twitter (Y)" entails "Every girl (X') uses Twitter (Y)". ->`
  `left downward monotone`

Apply the correct definition

In making an argument, it is useful to review the definition of what you are arguing for. In this case, the textbook specifies on page 76: "In general, a determiner δ is left downward monotone if δ X Y entails δ X' Y for all X' that are subsets of X".

This definition tells you that you need to consider a variant of the given sentence *Every human uses Twitter* such that the element on the left is a subset of humans and that you need to consider whether *Every human uses Twitter* entails the variant you created.

- Every human uses Twitter, therefore some humans use Twitter. The entailemnt is
  correct and some humans is a subset of every human, therefore it is left downward
  monotone.

- Every man uses Twitter. Human is a superset of man. By using man instead of human,
  the sentence is still true.

- Every man uses twitter is a subset of every human uses twitter, so every is left
  downward monotone.

  Edited to add after the screencast: This is also a model answer, if the author had in mind
  the definition of entailment used in chapter 1.2.2: "If sentence A entails sentence B, then every
  possible world in the proposition expressed by A is in the proposition expressed by B: the former
  proposition is a subset of the latter" (p.34).

- If every human uses twitter is true, then every girl uses twitter is also true.
  The set of humans is a subset of the set of twitter users. And since all girls are
  humans, the set of girls is a subset of the set of humans.

- If Every human uses Twitter is true, then Peter uses Twitter is also true. There-
  fore, Peter (X') is a subset of humans (X). Twitter is Y: Since every XY entails ev-
  ery X'Y for every X' that is a subset of X, we can say that every is a Left Downward
  Monotone.

Use the definition to formulate your argument

Formulating the argument requires practice, which is why we are including these questions on the
weekly quizzes. Our advice is to use the definition to formulate the argument – why reinvent the
wheel...

The definition on page 76 reads: "In general, a determiner δ is left downward monotone if δ X Y
entails δ X' Y for all X' that are subsets of X". Since you were asked to make the argument using
the sentence *Every human uses Twitter*, you need to replace the bit of the definition that is general
("δ X Y entails δ X' Y for all X' that are subsets of X") with the sentence we gave you and the
sentence you created, to be able to conclude that *every* is left downward monotone.

These types of answers generally received a point for providing a relevant example, even if the
argument had flaws.

- If Every human uses Twitter is true, than Every girl uses Twitter is also true. It
  is left downward because it has to do with the element on the left. In this case
  Every human is marked with an X and every girl is marked with an X'.

- If every human uses Twitter it is the case that every woman uses Twitter. A is the
  set of humans and B is the set of people who use Twitter. If A' (set of woman) is a
  subset of A, A' is also a subset of B, which is correct in this example.

- IfThe sentence every human uses twitter is true, it is also true that, for example
  every teenager and every elderly uses twitter. This means, that the statement every
  human is a superset that unifies all subsets of human beings.

So close...

Your answers lost a point for going over the specified character limit or making a false claim.

- Over character count; proof-reading is important
  1a. Every human uses Twitter.
  1b. Every modern human uses Twitter.
  The meaning of the sentence in (1a) entails the meaning of the sentence in (1b):
  any sit. in which every human uses twitter, is a situation in which (1b) is true.
  Thus, the scope "every" is left downward monotone.

- Follow through with the argument
  If we consinder the sentence Every teenager uses Twitter we can see that Every human
  uses Twitter entails Every teenager uses Twitter. Teenager is in this case a subset
  of human.

- Don't say things that are false
  X = all humans
  X' = men
  Y = Twitter
  If every human uses Twitter is true, than it also entails the true statement that
  every men uses Twitter. This downward entailment is left because it has to do with
  the left variable (X' is a subset of X).

Model answers

- A. Every human uses Twitter.
  B. Every green eyed human uses Twitter.
  A entails B, so the sentence is left downward monotone.

  Edited to add after the screencast: It would have been a model answer if the last sentence
  had read "A entails B, so *every* is left downward monotone".

- Replacing the set of humans by one of its subsets, e.g. the set of old men, results
  in the statement "Every old man uses Twitter." As this is an entailment of the
  original statement "Every human uses Twitter", "every" is left downward monotone.