Modality Assignment

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1 Intro

Thanks to Kate Kearns for many of these examples.

2 Basic

Write the truth definitions using possible worlds for these sentences. In each case identify the kind of modality and if there is more than one possibility, give truth definitions for both kinds.

We do the first sentence as an example:

Necessarily, bachelor is unmarried.

Necessarily, bachelor is unmarried is true iff $\forall w [a \text{ bachelor is unmarried is true in } w]$

- (1) a. Necessarily, a bachelor is unmarried.
 - b. A priest must be unmarried.
 - c. A Romanian could have invented the hypodermic needle.
 - d. If wishes were horses then beggars would ride.
 - e. It is sure to rain tonight.
 - f. Students' laptops may be brought to the dance.
 - g. Left-turning traffic must yield.
 - h. John may go.
 - i. John may not go.
 - j. It is permissible for John to go.
 - k. It is not permissible for John to go,
 - l. It is permissible for John not to go.
 - m. It is not permissible for John not to go.

3 Would

Does *would* have the same kind of meaning in the following? What are the meanings? Is one modal? Are both modal?

(2) a. If the weather had been better the picnic would have been a success.b. We knew Jack would arrive on time. [Hint: think about the most natural way of shifting the sentence into present tense: We know Jack will arrive on time.]

4 Necessary truth

Identify the ones that are necessary truths. If a sentence is not necessarily true, describe a possible world in which it is not true.

- (3) a. George Bush won the 2000 election.
 - b. All men are mammals.
 - c. A solid body occupies space.
 - d. A dog is four-legged.
 - e. A dog is a canine.
 - f. Orange is the color of oranges.

5 Meaning and possible worlds

In the homework assignment previously we identified the meaning of a sentence (or at least its sense, or intension) with the set of worlds in which it is true.

What can you say about the meanings of the following sentences, *assuming this theory*?

- (4) a. Either God exists or God does not exist,
 - b. Every rose is a rose.
 - c. The sum of two and two is four.