

Intermediate Logic

Homework #21

(Due: 3/12/2013)

Read pages 72-76 in the *Intermediate Logic* text and complete the exercise.

Use the shorter truth table to determine the validity of the constructive dilemma:

$(p \supset q) \bullet (r \supset s) \quad p \vee r \quad \therefore q \vee s$ What syllogism does this resemble?

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Describe the three methods of confronting a false dilemma:

Exercise 17 (pages 75-76)

Symbolize the dilemma: *If I study for the test (S) then I'll miss my favorite show (M). But if I don't study then I'll fail the test (F). I will either study or not study, so I'll either miss my favorite show or I'll fail the test.* Then symbolize the counter-dilemma below it: *If you study for the test then you will surely pass, and if you don't study then you'll get to watch your favorite show. Either you will study or not, so you will either pass the test or you will get to see your favorite show!* Use shorter truth tables to demonstrate the validity of each argument.

1. The dilemma: _____

2. The counter-dilemma: _____

Explain how you could deal with the following dilemmas, stating which of the three methods you use:

3. If angels are material, then they cannot all simultaneously fit on the head of a pin. If angels are immaterial, then they can neither dance nor be in contact with the top of a pin. Angels are either material or immaterial. Either way, all the angels that exist cannot simultaneously dance on the head of a pin.

4. If you sin apart from the law, then you will perish apart from the law, but if you sin under the law then will be judged by the law. You either sin apart from the law or you sin under the law. Therefore you will either perish apart from the law or you will be judged by the law.

5. If Congressman Jones lied about the sale of arms then he should be not re-elected. Neither should he be re-elected if he honestly couldn't remember something so important. He either lied or he couldn't remember, so he should not be re-elected.

6. If taxes increase then the public will complain, but if the deficit increases then the public will complain. Either taxes or the deficit will increase. Thus the public is bound to complain.

7. Modern prophets either prophesy falsely or truly. If they prophesy falsely, they should be rejected, but if truly, their prophecies must be accepted as equal to Scripture. So their words should either be rejected or accepted as equal to Scripture.

8. If God were perfectly good then He would be willing to prevent evil, and if God were infinitely powerful then He would be able to prevent evil. But God is either unwilling or unable to prevent evil. Therefore He is either not perfectly good or He is not infinitely powerful.

Cranium Calisthenics

The Lady or the Tiger?^{*} - For this trial, the same rules apply that we have had before: If Room I has a lady in it, it is true, but if a tiger is in it, it is false. In Room II, the opposite is true. If it contains a lady, it is false. If it contains a tiger, it is true. Any combination of ladies and/or tigers is possible.

The Sixth Trial: The king was particularly fond of this puzzle, and the next one, too. Here are the signs.



I
IT MAKES NO
DIFFERENCE
WHICH ROOM
YOU CHOOSE

II
THERE IS A LADY
IN THE OTHER
ROOM



What should the prisoner do, and why?

^{*} *The Lady or the Tiger? And Other Logic Puzzles*, by Raymond Smullyan. Random House, Inc. 1982.