



Reasoning and Formal Modelling for Forensic Science
2010/2011; 2nd Semester
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Werkcollege Exercises # 1

Please start thinking about these exercises before the next *werkcollege* on Tuesday, 8 February, 11am, room A1.04. Especially **Exercise 3** might be easier to solve if you spend some time reading more material on the Gricean maxims, including examples of violations of the Gricean maxims.

The exercises will be discussed in class with active student participation: you will get some extra time to think about them, and then present the solutions in front of the class.

Werkcollege exercises are similar in style to the homework exercises and will give you an indication how to solve these. Questions in the written exam will also be similar to these exercises.

Exercise 1.

How many truth-functional binary connectives are there?

Exercise 2.

Consider the unary connective **L** “it is the law that”, i.e., if p is “shops are closed on Sundays”, then Lp is “it is the law that shops are closed on Sundays”. Is **L** truth-functional? Give an argument why or why not.

Exercise 3.

The following conversation (an old joke about mathematicians) is an example of a violation of the Gricean maxims of pragmatics:

Two men are sitting in the basket of a balloon. For hours, they have been drifting through a thick layer of clouds, and they have lost orientation completely. Suddenly, the clouds part, and the two men see the top of a mountain with a man standing on it.

“Hey! Can you tell us where we are?!”

The man doesn’t reply. The minutes pass as the balloon drifts past the mountain. When the balloon is about to be swallowed again by the clouds, the man on the mountain shouts: “You’re in a balloon!”

“That must have been a mathematician.”

“Why?”

“He thought long and thoroughly about what to say. What he eventually said was irrefutably correct. And it was of no use whatsoever...”

Analyse in terms of the Gricean maxims what went wrong in this interchange. What was the pragmatically intended semantics of the utterances?

Exercise 4.

Analyse the possible semantics of the natural language expression “either ... or ...” (e.g., if p is “Anne is a man” and q is “Anne is a woman”, then “either p or q ” is “Anne is either a man or a woman”). Which truth-functional semantics can you give this expression (e.g., inclusive or / exclusive or). Is it uniquely determined or can you give examples of communication situations where pragmatics determine different semantics for “either ... or ...”?