Reasoning and Formal Modelling for Forensic Science
2010/2011; 2nd Semester
Prof. Dr. Benedikt Löwe

Homework Set # 3   *Deadline:* 8 March 2011

Homework can be handed in
   (1) in class at the beginning of the lecture (3pm) or
   (2) *via* e-mail to `N.P.M.Carl@uva.nl` until 3pm.
Late homework will not be accepted.

Exercise H (9 points).
"On 28 February 2011 at about 8.20 am, a 16 year-old student informed his schools discipline master that he had been robbed of his money by two unknown youths while he was on his way to school. According to him, the suspects had threatened to harm him and he gave them $50 out of fear. Through follow up investigations, officers managed to establish the identities of the suspects. On 28 February 2011 between 11.30 am and 12.00 pm, the two suspects were arrested. Some of the victims money was also recovered from the suspects' possession."

   (1) Describe a controlled situation for the above police report, using as individuals v (for the victim) and s (for the suspects), as property P (for "is in the possession of the money") and as relation R (for "robbed"). Argue for each of the values of the properties and relations ('Yes', 'No', '?') by giving a short reason (one to two sentences). Did you use a partially controlled situation or a controlled situation? Discuss your choice. (3 points)
   (2) Describe a second controlled situation using a new individual u (unknown person) in addition to the individuals, properties and relations above. Define reasonable rules and argue that "the suspects didn't rob the victim" is consistent with your rules. (3 points)
   (3) Compare your two controlled situations and give arguments in favour and/or against the use of each of them. What are the circumstances under which you would choose one over the other? (3 points)

Exercise I (8 points).
Read Section 1.3.1 of Counihan's dissertation and Section 7.1 of the book by Walton, Reed, and Macagno (pp. 221–230).
Compare Counihan's discussion of how the subjects reason to the notion of *defeasibility* by picking some of the examples in Counihan and comparing them to the discussion in Walton / Reed / Macagno (maximum one typed or two handwritten pages). Use proper citations and give your sources.

Exercise J (8 points).
Find two natural language stories that are examples of "Argument by Popular Opinion" and "Argument by Popular Practice" in English-language newspapers on the web (with proper citation; 2 points each). Discuss all critical questions with respect to the examples that you found; in particular, discuss which of the four cases (cf. slide "What do we learn from our critical questions? (1)") applies (1 point for each critical question).