Crime Scene Modeling & Diagnosis
## Model-based reasoning to help distinguish homicides from suicides

Description:

◆ The variety of possible crime scenarios is almost infinite and therefore difficult to store in a decision support system.

◆ This system automatically constructs representations of crime scenarios.

   - By storing component events of scenarios.

   - And providing an algorithm to compose these components into scenarios.

◆ It then refines scenario likelihoods through constraint propagation.

◆ A prototype application has been developed.

CRIME SCENE – DO NOT CROSS

STATE POLICE

CRIME SCENE – DO NOT CROSS

Technical approach:

◆ Model based reasoning provides robustness in domains where not everything is black & white.

   - By using domain knowledge to guide creation and combination of models.

   - instead of requiring problem-specific reasoning.

◆ Backward reasoning generates new or combined scenarios.

◆ Forward reasoning identifies evidence that would distinguish scenarios.

◆ *Success through good selection of a reasoning technique.*
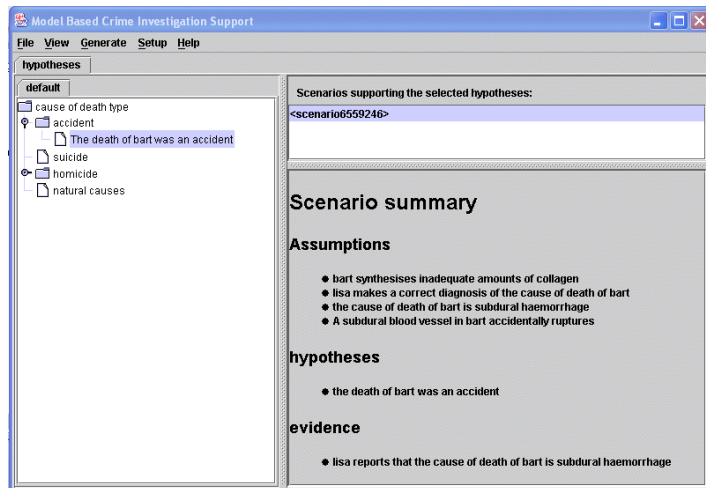
Benefits:

◆ Can provide information such as

   - Which scenarios may have produced the available evidence?

   - What evidence can be expected if a certain scenario were true?

   - Which sources of evidence may help differentiate between two or more alternative scenarios?

Example of a scenario

Causal hypergraph

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