Netherlands Forensic Institute
Ministry of Justice

Similarity based LR methods panel: answer to the three questions

Prof. dr. Marjan Sjerps

- Netherlands Forensic Institute
- University of Amsterdam

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3 questions

1. Is it acceptable to use the argument of the subjective nature of probabilities to justify *any* construction of the LR/BF?
2. Is it acceptable to "calibrate" LRs to reduce the rates of "errors"? What are the benefits/limitations of such practice?
3. Given that score-based models are controversial and feature-based models are nearly impossible to develop rigorously, what's next?

Is it acceptable to use the argument of the subjective nature of probabilities to justify any construction of the LR/BF?

No!

Is it acceptable to "calibrate" LRs to reduce the rates of "errors"? What are the benefits/limitations of such practice?

- If calibration is necessary, your density model is not optimal
- So we should try to avoid it
- If it is necessary, it is acceptable ("raw" LR's are considered as scores)
- Benefit: new system is calibrated

Given that score-based models are controversial and feature-based models are nearly impossible to develop rigorously, what's next?

- Difference between score and feature based methods is the definition of "the evidence" (scores vs features)
- Hence they simply answer a different question
- Score based methods are (in my opinion) not controversial…

Score based LR: subtle anchoring problem

- …BUT: there is a subtle difference between
  - H: trace and reference sample have the same source
  - H': trace and reference sample are both from source X
- They are equivalent iff we know that the source of the reference is X
- If we have a specific source X, hypothesis H' is relevant, and we need an X-specific database
- If dataset consists of scores from random pairs of (trace, reference)[not anchored] we may answer the wrong question
- Problem: we may not have X-specific dataset available

Score based LR: subtle anchoring problem

- Problem: we may not have X-specific dataset available
- For example a suspect does not have to cooperate, or he may be dead
- Pragmatic solution: How big is the problem?
- Test using experimental data how big differences are
  - Small: report same source LR
  - Limited: report same source LR plus

    -the LR is for average source and not tailored for X,

    -we can give a better number if we can have X-specific data
  - Large: report we need X-specific data