

Newton Institute Proposal: Probability and Statistics in Forensic Science

References

- [1] (2007). *R. v. George*, EWCA Crim 2722
- [2] (2010). *R v T*. EWCA Crim 243
- [3] Law Commission 'Expert Evidence in Criminal Trials'
- [4] HC Science and Technology Committee's 'Forensic Science on Trial';
- [5] Home Office Chief Scientific Advisor's 'R & D in Forensic Science: A Review'
- [6] <http://www.bailii.org/ew/cases/EWCA/Crim/2010/2439.pdf>
- [7] Aitken, C. G. G. and F. Taroni (2004). *Statistics and the evaluation of evidence for forensic scientists* (2nd Edition), John Wiley & Sons, Ltd.
- [8] Aitken, C. and many other signatories (2011). "Expressing evaluative opinions: A position statement." *Science and Justice* 51(1): 1-2.
- [9] Balding, D. J. (2005). *Weight-of-Evidence for Forensic DNA Profiles*, Wiley.
- [10] Berger, C. E. H., J. Buckleton, C. Champod, I. Evett and G. Jackson (2011). "Evidence evaluation: A response to the court of appeal judgement in *R v T*." *Science and Justice* 51: 43-49.
- [11] Biederman, A, Garbolino, P, Taroni, F, "The subjectivist interpretation of probability and the problem of individualisation in forensic science" *Science & Justice*, 53(2) 192-200
- [12] Broeders, T. (2009). *Decision-Making in the Forensic Arena*. In "Legal Evidence and Proof: Statistics, Stories and Logic". (Eds H. Kaptein, H. Prakken and B. Verheij, Ashgate) 71-92.
- [13] Buckleton, J., C. M. Triggs and S. J. Walsh (2005). *Forensic DNA Evidence Interpretation*, CRC Press.
- [14] Cowell, R. G., S. L. Lauritzen and J. Mortera (2008). "Probabilistic modelling for DNA mixture analysis." *Forensic Science International: Genetics Supplement Series* 1(1): 640-642.
- [15] Curran, J. N. (2005). "An introduction to Bayesian credible intervals for sampling error in DNA profiles." *Law, Probability and Risk* 4: 115-126.
- [16] Dawid, A. P. and I. W. Evett (1997). "Using a graphical model to assist the evaluation of complicated patterns of evidence." *Journal of Forensic Sciences* 42: 226-231.
- [17] Dawid, A.P., (2004) Which likelihood ratio (Comment on 'Why the effect of prior odds should accompany the likelihood ratio when reporting DNA evidence), *Law, Probability and Risk* 3(1):65-71.
- [18] Evett, I. W. and B. S. Weir (1998). *Interpreting DNA evidence : statistical genetics for forensic scientists*, Sinauer Associates.
- [19] Evett, I. W., L. A. Foreman, G. Jackson and J. A. Lambert (2000). "DNA profiling: a discussion of issues relating to the reporting of very small match probabilities." *Criminal Law Review* (May) 341-355.
- [20] Fenton N., and Neil, M. *Risk Assessment and Decision Analysis with Bayesian Networks*, CRC Press, 2012.
- [21] Fenton NE, Neil M, Lagnado D, *A General Structure for Legal Arguments About Evidence Using Bayesian Networks*. *Cognitive Science*, 2012.
- [22] Fenton, N. and M. Neil (2010). "Comparing risks of alternative medical diagnosis using Bayesian arguments." *Journal of Biomedical Informatics* 43: 485-495.
- [23] Fenton, N. E. (2011). "Science and law: Improve statistics in court." *Nature* 479: 36-37.
- [24] Fenton, N. E. and M. Neil (2011). "Avoiding Legal Fallacies in Practice Using Bayesian Networks." *Australian Journal of Legal Philosophy* 36: 114-150.
- [25] Fenton, N. E., M. Neil, and D. Lagnado "Modelling mutually exclusive causes in Bayesian networks", April 2011.
http://www.eecs.qmul.ac.uk/~norman/papers/mutual_IEEE_format_version.pdf
- [26] Fenton, N. E., D. Berger, D. Lagnado, M. Neil and A. Hsu, (2013). "When 'neutral' evidence still has probative value (with implications from the Barry George Case)", to appear *Science & Justice*, preprint:
http://www.eecs.qmul.ac.uk/~norman/papers/probative_value.pdf

- [27] Gill, R. (2013) Forensic Statistics: Ready for consumption?
 [28] <http://www.math.leidenuniv.nl/~gill/forensic.statistics.pdf>
- [29] Kadane, J. B. and D. A. Schum (1996). A Probabilistic Analysis of the Sacco and Vanzetti Evidence, John Wiley & Sons.
- [30] Kaye, D. H. (2009). "Identification, Individualization, Uniqueness." Law, Probability & Risk 8(2): 85-94.
- [31] Meester, R. and Sjerps, M. (2004). Why the effect of prior odds should accompany the likelihood ratio when reporting DNA evidence, Law, Probability and Risk 3 (1): 51-62.
- [32] Morrison, G. M. (2012). "The likelihood ratio framework and forensic evidence in court: a response to RvT." International Journal of Evidence and Proof 16(1).
- [33] Neil M, Marquez, D, Taylor, M, "Inference in hybrid Bayesian networks using dynamic discretization", J Statistics and Computing, 17 (3) September 2007, p 219 - 233
- [34] Puch-Solis, R., P. Roberts, S. Pope and C. Aitken (2012). PRACTITIONER GUIDE NO 2: Assessing the Probative Value of DNA Evidence, Guidance for Judges, Lawyers, Forensic Scientists and Expert Witnesses, Royal Statistical Society
<http://www.rss.org.uk/uploadedfiles/userfiles/files/Practitioner-Guide-2-WEB.pdf>
- [35] Schneps, L and Colmez, C, "Math on Trial: How Numbers Get Used and Abused in the Courtroom", Basic Books, NY, 2013
- [36] Sjerps, M. and R. Meesters (2009). "Selection effects and database screening in forensic science." Forensic Science International 192 (1-3): 56-61.
- [37] Sjerps, M. and C. Berger (2012). "How clear is transparent? Reporting expert reasoning in legal cases." Law, Probability and Risk 11 (4): 317-329.
- [38] Redmayne, M., P. Roberts, C. Aitken and G. Jackson (2011). "Forensic Science Evidence in Question." Criminal Law Review (5): 347-356.
- [39] Robertson, B. and T. Vignaux (1995). Interpreting Evidence: Evaluating Forensic Science in the Courtroom, John Wiley and Son Ltd.
- [40] Robertson, B., G. A. Vignaux and C. E. H. Berger (2011). "Extending the confusion about Bayes." The Modern Law Review 74(3): 444-455.
- [41] Saks, M. J. and J. J. Koehler (2007). "The Individualization Fallacy in Forensic Science Evidence." http://works.bepress.com/michael_saks/1
- [42] Smith, P. Anderson, Conditional independence and chain event graphs, Artificial Intelligence 172 (2008) 42–68
- [43] Taroni, F., C. Aitken, P. Garbolino and A. Biedermann (2006). Bayesian Networks and Probabilistic Inference in Forensic Science, John Wiley & Sons.
- [44] Thompson, W. C., F. Taroni and C. G. G. Aitken (2003). "How the probability of a false positive affects the value of DNA evidence." Journal of Forensic Sciences 48(1): 47-54.
- [45] Vlek, C., Prakken, H., Renooij, S., & Bart Verheij. (2013). Modeling Crime Scenarios in a Bayesian Network. In ICAIL 2013, June 10 - 14 2013. Rome, Italy: ACM 978-1-4503-2080-1/13/06.
- [46] Fenton, N. E., Neil, M., & Hsu, A. (2013). Calculating and understanding the value of any type of match evidence when there are potential testing errors. Artificial Intelligence and Law, to appear.
- [47] Aitken, C., Roberts, P., & Jackson, G. (2010). Practitioner Guide No 1: Fundamentals of Probability and Statistical Evidence in Criminal Proceedings, Royal Statistical Society's Working Group on Statistics and the Law. Retrieved from
<http://www.rss.org.uk/uploadedfiles/userfiles/files/Aitken-Roberts-Jackson-Practitioner-Guide-1-WEB.pdf>
- [48] Puch-Solis, R., Roberts, P., Pope, S., & Aitken, C. (2012). PRACTITIONER GUIDE NO 2: Assessing the Probative Value of DNA Evidence, Guidance for Judges, Lawyers, Forensic Scientists and Expert Witnesses. Royal Statistical Society. Retrieved from
<http://www.rss.org.uk/uploadedfiles/userfiles/files/Practitioner-Guide-2-WEB.pdf>
- [49] Roberts, P., Aitken, C., Taroni, F., & Biedermann, A. (2013). PRACTITIONER GUIDE NO 3: The Logic of Forensic Proof: Inferential Reasoning in Criminal Evidence and Forensic Science. Royal Statistical Society

- [50] Jackson, G., Aitken, C., & Roberts, P. (2013). PRACTITIONER GUIDE NO 4: Case Assessment and Interpretation of Expert Evidence.
- [51] Roewer et al. (2000)
- [52] Brenner (2010)
- [53] Andersen et al. (2013)
- [54] Cereda and Gill (2014)
- [55] Anevski, Gill and Zohren ([arXiv.org/math.ST:1312.1200](https://arxiv.org/math.ST/1312.1200))