

# **Response to Faigman et al.**

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We are grateful to the authors for taking an interest in the position statement and to the editor for giving us an opportunity to respond. We must emphasise that it has not been practical to consult with all of the many signatories of the position statement so the following represents only the views of the five of us. Overall, we sense that there is no great difference between us and the authors of the letter; nevertheless we agree with the need for a healthy and constructive debate about these issues which are of great importance for the future of forensic science.

First, we accept the point that evaluation and interpretation are not the same thing and apologise for any imprecision that we may have fostered. Evaluation, we accept, has the implication of moving towards a quantitative outcome whereas, for us, interpretation has broader and more philosophical implications. From here we will talk about interpretation in the broad sense, rather than evaluation in the narrower sense.

The issues that we will respond to are:

1. The question of whether there is a multiplicity of logical approaches
2. The difficulties of forming defence propositions
3. The verbal scale
4. Probabilities and experience
5. Candour, comprehensibility and disclosure.

We should point out that these are all issues that have been elaborated to some degree or another in our paper that followed the position statement [1], so we apologise for any repetition.

Issue 1: are there other logical approaches?

First, we should say that we do not see the approach that we espouse as being simply the “LR method” that the correspondents cite. We see it as a paradigm, rooted in the notion of subjective probability and a structure rooted in Bayes’ theorem. This is often referred to as the “Bayesian approach” and the likelihood ratio (LR) is only one element of the paradigm. It is logical and it is coherent. Furthermore, it is the only logical and coherent approach to forensic science interpretation. There are no others.

Issue 2: defence propositions

We fully realise that defence are under no burden to offer a proposition as counter to a given prosecution proposition. But that misses the point that in the absence of two competing propositions it is meaningless to attempt to assign a weight of evidence. If the court does not provide the scientist with a defence proposition then he/she can only advise that his/her observations have undefined probative value.

Issue 3: The verbal scale

We regret that in point 5 of the position statement we did not emphasise that we were addressing only those cases where a quantitative assessment of weight was not feasible. If a numerical value can be assigned to the LR then it is that value that should be presented to the court and there is no need for a qualitative statement. The notion of the use of “support” in this context is well established in statistical literature. We do not suggest that the qualifiers (weak, moderate, strong etc) are set in stone and agree that there is much scope for research in pursuit of comprehensibility and consistency across disciplines, organisations and cultures. Nevertheless, it seems inevitable to us that any set of verbal phrases for conveying weight of evidence must be related to ranges of values of the LR.

#### Issue 4: Probabilities and experience

The notion that probability is conditional and personal is fundamental to an understanding of reasoning in the face of uncertainty. An expert's probability depends inevitably on knowledge and experience. We made that clear in the position statement and in the paper. Of course we agree that a court should not accept an expert's opinion without first being satisfied of his/her background. We have never suggested otherwise.

#### Issue 5: Candour and comprehensibility

We sense that there is little between us and the authors of the letter. The scientist has to strive to convey his/her opinion as comprehensibly and effectively as possible. Yet everything that is relevant to that opinion is disclosable: this is irrespective of our personal views – it is a matter of law.

- [1] C.E.H. Berger, J. Buckleton, C. Champod, I.W. Evett, and G. Jackson, Evidence Evaluation: A Response to the Court of Appeal Judgment in *R v T*, *Science & Justice*. 51 (2011) 43–49.