Interpretation of evidence

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In the recent Birgitte Tengs case, the defendant was found to be guilty at a trial in October 2022. However, he was acquitted at appeal in September 2023. The prosecution relied heavily on DNA evidence that had been recovered from the victim’s tights. The judgement directed criticism at the police and the prosecution for confirmation bias. An outline of the case will be presented, along with the scientific evidence that was presented in court.

Over recent years, the universal introduction of new forensic DNA test multiplexes has greatly increased the sensitivity of the technique. Consequently, very small amounts of DNA (just a few cells) are routinely detected. The lessons of existing miscarriages of justice of e.g. Amanda Knox, does not reside in the actual ‘source’ identification of the DNA profile itself, rather the question of ‘activity’ level is pertinent i.e. 'how' and 'when' was the evidence deposited. These issues are central to the court's determination of the ultimate issue of guilt versus innocence. The scientist may be asked to draw inference beyond the identity of the DNA profile. Currently, there is considerable danger of misinterpretation attached to uninformed expert testimony. Conversely, if the scientist states that he/she cannot draw any meaningful conclusion, the risk is that the court may then attach too much weight to the DNA profile evidence at the source level. Alternatively, in the absence of relevant experimentation, the scientist may be tempted to draw conclusions based upon purely *subjective* inference. In summary, whereas detection sensitivity and methods used to improve the strength of evidence relating to *identity* of the crime stain donor are highly advanced, the central issue of the mode of transfer is currently at a relatively low level of understanding. Consequently, it is important for scientists to describe limitations of interpretation when giving evidence in court.