BOOK REVIEW

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Review of: *Statistical DNA Forensics: Theory, Methods, and Computation*

Just as the forensic use of DNA profiles is now well established, so too is the body of statistical methodology for assigning numerical strengths to DNA evidence. The authors have contributed to this methodology over the past several years, and they have compiled the results of themselves and others into a book that will be very useful to forensic scientists. They cover basic statistical and population-genetic concepts and give considerable detail on scenarios involving relatives, including situations of disputed parentage, missing persons, and mixtures. They illustrate all methods with profiles taken from the literature and they also refer to software they have developed and made available.

It is a measure of how far the field has progressed over the past 20 years that the authors can begin their treatment with a formulation of likelihood ratios that compare the probabilities of evidence under alternative hypotheses. They do, however, mention older "exclusion probabilities" so that readers have those results available. The authors avoid overt criticisms, preferring to make statements such as "This is regarded as a limitation of the exclusion probability approach by some authors" although they follow that by "In this book, we employ the likelihood ratio approach which is commonly used in the interpretation of DNA mixtures." The authors' reluctance to argue too strongly against "some authors" is overcome only at the end of the book when they point to the false fallacy that would weaken the strength of a match found by a database search instead of making the distinction between likelihood ratios and posterior probabilities. The authors' careful discussion is somewhat offset by the difficulty of introducing Bayesian arguments in court.

There is a wealth of material in this short book but it is presented well and results are separated from algebraic derivations. It will be a valuable resource in forensic laboratories.

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