Book Review

False Conviction: Innocence, Guilt & Science

Reviewed by Hugh McDonald

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Journalist Jim Dwyer and the New York Hall of Science set lofty goals with the iBook, *False Conviction: Innocence, Guilt & Science.* Initially, they aim to survey a broad range of scientific disciplines involved in our legal system's approach to crime and provide a clear and concise overview of the latest findings in each domain. Ultimately, they hope to build a case for critical reforms in how police, courts, and juries gather and analyze evidence, identify and question suspects, and draw conclusions about guilt or innocence. They succeed on both counts, producing a compelling learning journey that feels less like a standard reading experience and more like a museum exhibition with breadth, depth, and currency—a "nimble exhibition" in iBook form.

Efficiently and accurately investigating and prosecuting crimes requires the expertise of scientists in many fields, including biology, psychology, medicine, genetics, and physics. Produced in conjunction with the Innocence Project (which uses DNA testing and criminal justice system reform to clear people who have been falsely convicted) and Touchpress (a London-based app developer and publisher), *False Conviction* arranges what could have been a bewildering array of studies and disciplines into a coherent structure. Chapters focus on how DNA and other biological evidence is gathered and analyzed; on how police interrogations can lead to inaccurate or false confessions; on the surprising unreliability of eyewitness identification; on advances in understanding the reliability of more traditional types of evidence, such as hair, fingerprints, teeth marks, and ballistics; and on how our fallible memories and vulnerability to cognitive biases may lead to miscarriages of justice. The evolution of these sciences and the way they are used in police stations and courtrooms is traced skillfully, and within psychology (this reviewer's field), appropriate research is accurately described. Overall, nonscientists will find the book's discussions of these complex scientific questions clear and accessible, and scientists will find them deep and detailed enough to maintain interest and spark further inquiry.

But Dwyer and the New York Hall of Science knew that these scientific questions are entwined with real, often tragic human stories, and they do not shy away from telling those tales. Each section centers on one or more crimes illustrating the use (or misuse) of key scientific questions. Crimes, police investigations and interrogations, confessions, trials, and exonerations are described sensitively, with enough information to allow the reader to grasp the critical interplay between the elements of a case and the broader scientific questions bearing on them. The back-and-forth structure works well: moving between the stark and sad facts of an act of violence and the technical intricacies of the lab keeps the text alive, and is done skillfully so that the reader doesn't continually lose the thread.

This iBook makes good use of its interactive features, something that cannot be said of all such publications. Rather than simply using interactives to create variety for variety's sake, *False Conviction* harnesses them to present ideas that might be lost in basic prose, including animations allowing the reader to explore DNA, view crime scenes, investigate fingerprint evidence, and pore over courtroom transcripts, photos and staged

crime scenarios for testing memory, and compelling videos of actual interrogations and confessions. This variety engages multiple senses and learning styles and keeps the experience fresh without feeling gimmicky. And although I was warned that some of these features might not work on devices other than the iPad, I suffered only two minor MacBook freezes and was ultimately able to fully experience all of the interactives.

False Conviction concludes by drawing together its threads of scientific advancement, investigatory procedure, legal process, and sobering history into a compelling case for reform from crime scene to police station to courtroom. Videotaping interrogations and confessions can help police and juries spot inconsistencies and coercive techniques. Replacing traditional photo lineups with sequential presentations and ensuring that investigators do not know whether actual suspects are present in photo arrays can lessen the likelihood of false identifications. More broadly, making sure that police, attorneys, and judges have access to the most current scientific information regarding the efficacy and scientific basis for their procedures is critical to avoiding flawed prosecutions.

The case for reform particularly emphasizes the need for broader awareness of basic cognitive processes. As lay perceivers and legal professionals, we rely too much on fragile, plastic memory, which decades of research have shown can be distorted by suggestions,

prior expectations, and other kinds of information. We're distressingly vulnerable to persuasion and coercion. Most critically, we tend to draw conclusions quickly, stick with them relentlessly despite data that should prompt reconsideration, and seek and value information that confirms them more strongly than other evidence. *False Conviction* presents compelling and informative views of the interplay between science and human tragedy; it also shines a powerful and much-needed light on cognitive biases and fallibilities we all share.

In the end, in addition to providing a broad and coherent overview of the relevant science, *False Conviction* makes its case for reform—for bringing police and legal procedures into line with what science has revealed about how we draw conclusions, perceive and remember events, and use biological and chemical telltales to solve crimes—and does so strongly and engagingly. And because it does so in a thoughtfully and professionally produced iBook (easily downloadable for less than $10), these compelling stories of tragedy, science, and the search for truth are available to a much broader audience than if they were the subject of a classic bricks-and-mortar exhibition. iBooks clearly represent a fresh and exciting venue for public science education. With *False Conviction*, the New York Hall of Science provides evidence that museums can move beyond their own walls to create compelling investigations of complex issues at the intersection of science and society. ☀