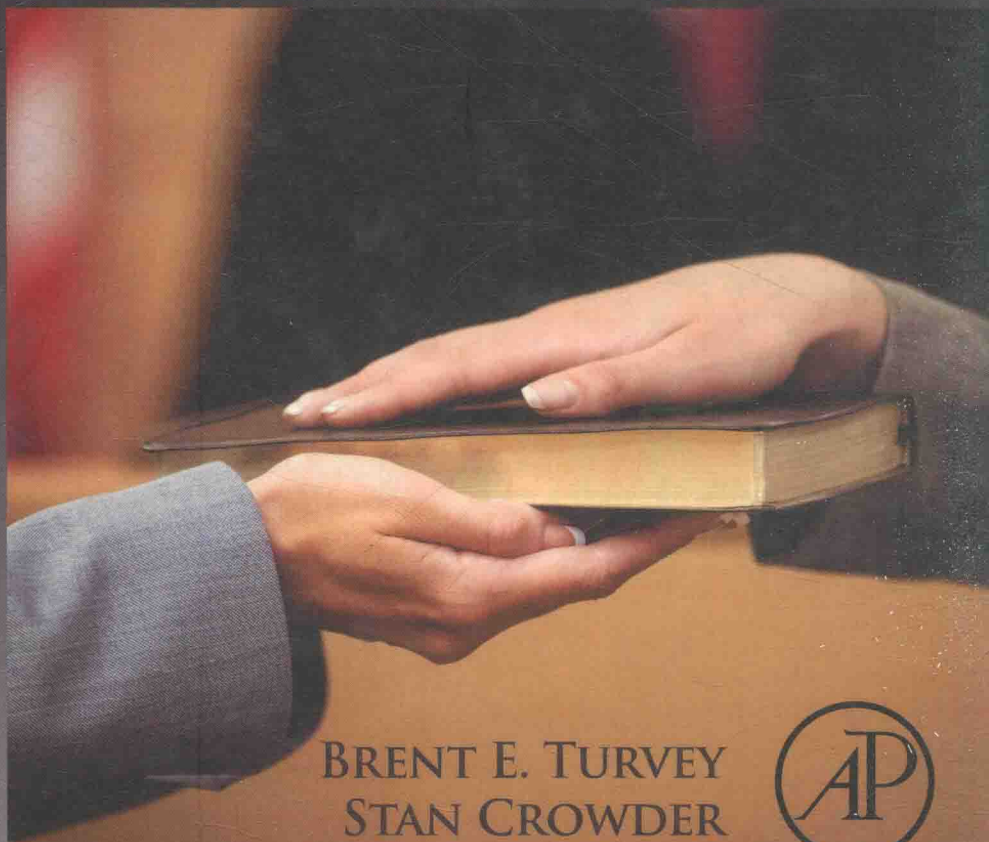




FORENSIC INVESTIGATIONS

AN INTRODUCTION



BRENT E. TURVEY
STAN CROWDER



Forensic Investigations

An Introduction

Brent E. Turvey

*Forensic Solutions, LLC, Sitka, Alaska, United States;
Director, The Forensic Criminology Institute
(USA & Mexico)*

Stan Crowder

Kennesaw State University, Georgia, GA, United States



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Designer: Matthew Limbert

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List of Contributors

W. Jerry Chisum

California Department of Justice (ret.), Elk Grove, CA, United States

Paul J. Ciolino

Paul J. Ciolino and Associates, Inc., Chicago, IL, United States

Stan Crowder

Kennesaw State University, Georgia, GA, United States

Jodi Freeman

Forensic Solutions, LLC, Sitka, Alaska, United States; University of Western Ontario, London, ON, Canada

Charla Jamerson

Forensic Nurse, Fayetteville, AR, United States

Aurelio Coronado Mares

Forensic Psychologist, Cienca Aplicada, Aguascalientes, Mexico

Michael McGrath

Forensic Psychiatrist, Unity Healthy Systems, Rochester, NY, United States

Ronald J. Miller

Behavioral Forensics, Washington State, United States

Brent E. Turvey

Forensic Criminology Institute, Sitka, Alaska, United States and Aguascalientes, Mexico

Preface

Brent E. Turvey and Stan Crowder

If the law has made you a witness, remain a man of science. You have no victim to avenge, no guilty or innocent person to convict or save — you must bear testimony within the limits of science.

Dr. P.C.H. Brouardel, 19th-Century French Medicolegalist
(quoted in Helpern, 1979, p. 66).

We have been friends and colleagues for almost 20 years. We have taught classes and seminars together; we have worked cases together; and this is our third textbook collaboration. It will not be our last.

Our personal and professional backgrounds could not be more different. One of us is a civilian forensic scientist; the other is a former military investigator. But we both teach and we both believe in the importance of leadership. We believe that our students are an investment for the future of the investigative and forensic community, as the best mechanism for change. Everything else we do is just cleanup: case-work and analysis are written up after a crime has happened; lessons and protocols are written after mistakes have been made and after the damage has been done; and sometimes expert testimony is needed to explain it. We do these things, and they are made meaningful through their use in crafting lessons.

In teaching students, whether it is through textbooks, in the classroom, or by professional example, there is the opportunity to be proactive. There is the opportunity to tell them the future—and give them the tools to change it. That is why writing is so important to us. It lays down the mistakes of the past to render a roadmap for some of what will happen in the future.

The reason behind this current teaching volume, titled *Forensic Investigation*, is deceptively simple. It has to do with the changes in the law enforcement and forensic science communities. In short, the character of law enforcement has changed dramatically since the 1990s and the certainty of forensic science conclusions have been challenged and reigned in. Unfortunately, the courts, the public, and the ranks of criminal justice educators have failed to acknowledge these changes in a meaningful fashion. That is, if they are aware of them at all.¹

¹Suffice it to say that both professionals and regular citizens across the board are reading or comprehending less. Or they are hyperfocused on their own immediate environments without concern or appreciation for how global or national events effect them. Either way, they are less informed and less literate. This is a subject for another book entirely; one that need not be written because those it concerns would not likely read it or anything else.

A brief explanation is necessary, as any dedicated law enforcement professional will rise to defend the character in their particular agency and many state employed forensic personnel will immediately do the same.

A SHIFT IN LAW ENFORCEMENT CHARACTER

Through our casework and related experiences over the past two decades, we have witnessed and documented a decline in the character of those in law enforcement. This is owing to *negligent hiring* practices (e.g., the hiring of those with criminal records, little formal education, or a history of misconduct with other agencies and/or clear mental health issues); *negligent supervision* (e.g., refusal investigate complaints against officers; refusal to regiment drug testing; or just absentee management; see Crowder & Turvey, 2013); and *negligent retention* (e.g., refusal to suspend or terminate officers for continuous excessive use of force; sleeping with confidential informants and prostitutes; and other criminal violations, including evidence theft, drug trafficking, and illegal drug use; see Crowder & Turvey, 2015). We have also observed an influx of a former military into law enforcement, too often with untreated and even unidentified mental health issues. This to say nothing of the *Officer Shuffle*, and the problem of Gypsy Officers, which forces honest police to work alongside (and protect) criminals in uniform, or those that have been otherwise discredited (Gottschalk, 2011; Middleton-Hope, 2003; Shockley-Eckles, 2011; see also Chapter 12). And there is even a move within some police agencies to deprofessionalize and return to hiring those without a basic college education—ensuring substandard levels of legal, administrative, and ethical literacy. It is, without exaggeration, the unraveling of everything that was set in motion by August Vollmer more than a century ago to make law enforcement a trusted and respected occupation.

This context has created a reality in which law enforcement officers and investigators are documenting less, and doing less evidence-related inquiry, all for fear of what a complete and scientifically transparent forensic investigation might reveal. That reality is reflected in the findings of a 2016 audit of the frequently embattled Houston Police Department. Specifically, with respect to their Crime Scene Unit, the audit “found several deficiencies. Missteps included a lack of written documentation and overreliance on photographs; stopping short of fully investigating scenes because a homicide detective felt the crime scene unit had done ‘enough’; and writing that something ‘makes sense’ because it matched the account of an officer who fired his gun” (Flynn, 2016). These tendencies, which become the norm for many police agencies nationwide, are not the hallmarks of competent, comprehensive, or scientific investigations. More importantly, they cannot provide a foundation for honest police work.

A SHIFT IN FORENSIC SCIENCE INTERPRETATIONS

The limits of evidence interpretation have always been understood by actual scientists (see generally Chisum & Turvey, 2005, 2011). In fact, that is how to identify a scientist. They are the first to admit and explain any limitations with their findings. It will be a part of their reports and conclusions.

However, the confidence of forensic science interpretations can fluctuate greatly when delivered by law enforcement—employed examiners. When a finding tends to help the prosecution, it is reported with great certainty—and even more so in later expert testimony. When a finding tends to erode or eradicate prosecution theories, it is too often minimized, if not ignored then made obscure (Kozinski, 2015; Turvey, 2013).

Recognition and acceptance of this reality was the reasoning behind a major finding of the National Academy of Sciences (NAS) Report on Forensic (Edwards & Gotsonis, 2009): that law enforcement and forensic science must be separated to preserve the objectivity, and trustworthiness, of the scientific endeavor. In other words, that law enforcement influence has had the tendency, and therefore the ongoing potential, to corrupt objective scientific findings. Whether or not this has been intentional is irrelevant. It has been going on for a long time, and it needs to stop.

Recommendations in the NAS Report, and revelations about false forensic testimony from FBI examiners over the past 30 years, led the Department of Justice to partner with the National Institute on Standards and Technology (NIST) to create a National Commission on Forensic Science. They in turn conducted a “Forensic Science Discipline Review,” and recently published draft language regarding the majority of forensic science disciplines, with respect to the acceptable limits of findings, reporting, and related expert testimony (see DOJ, 2016). For example, with respect to latent prints, the following draft language has been suggested by the scientific community (Latent Print Discipline, 2016):

Statements Approved for Use in Latent Print Examination Testimony and/or Laboratory Reports

Identification

1. *The examiner may state or imply that an identification is the determination that two friction ridge prints originated from the same source because there is sufficient quality and quantity of corresponding information such that the examiner would not expect to see that same arrangement of features repeated in another source. While an identification to the absolute exclusion of all others is not supported by research, studies have shown that as more reliable features are found in agreement, it becomes less likely to find that same arrangement of features in a print from another source.*

Inconclusive

2. *An examiner may state or imply that an inconclusive result is the determination that there is insufficient quality and quantity of corresponding information such that the examiner is unable to identify or exclude the source of the print.*

Exclusion

3. *An examiner may state or imply that an exclusion is the determination that two friction ridge prints did not originate from the same source because there is sufficient quality and quantity of information in disagreement.*

*Statements Not Approved For Use in Latent Print Examination Testimony
and/or Laboratory Reports*

Exclusion of All Other Sources

1. *An examiner may not state or imply that two friction ridge prints originated from the same source to the absolute exclusion of all other sources.*

Absolute or Numerical Certainty

2. *An examiner may not state or imply a level of certainty in his/her conclusion that is absolute or numerically calculated.*

Zero Error Rate

3. *An examiner may not state or imply that the method used in performing a friction ridge print comparison has a zero error rate or is infallible.*

In other words, latent print examiners may no longer state that a fingerprint match is a conclusive or absolute match, necessarily originating from a single or specific individual. They may say that a positive identification suggests a likely source, but not to the exclusion of all others. This is because there are no scientific research to support such a claim, and the error rates of examiners and their fingerprint examination methods must be taken into account.²

Similar language has been drafted for other forensic sciences as part of the Commission's "Forensic Science Discipline Review." They generally include requirements for clarity about the nature of tests and examinations performed; the limitations of those tests; and the clear acknowledgment that inconclusive results must be reported as findings—not buried as irrelevant (see DOJ, 2016).

That is to say, just about everything that the FBI and police-employed forensic scientists have been testifying to over the past century is fraught with overconfidence and error. And the scientific community has, at long last, stepped in to say "enough." Enough with the exaggerations; enough with the lack of transparency; and enough with the pretending that supporting research exists when it actually does not. In other words, enough with the lack of science in forensic science.

OUR GOALS

With the publication of this volume, we hope to give students a chance. As future professionals, we hope to give them a chance to recognize any limitations in the

²There is no way to overemphasize the significance of this single revelation to the forensic science community. Long the gold standard for forensic identifications, the problems with fingerprint comparisons are many and the public failures have been undeniable. There is, furthermore, supporting documentation and references for setting limits on interpretations with respect to each of the major forensic disciplines available at <https://www.justice.gov/dag/forensic-science>.

investigative and forensic geography within their corners of the justice system as they encounter them. And we hope to give them a chance to deal with them on some level. This volume can serve as a platform, or a framework, for scientific decision-making in that regard.

Professionals, whether they are new to forensic investigation or not, will find this volume of tremendous value as a map to the limitations, and questions, they will be confronted within forensic contexts. These limitations, and the issues they raise, are not going away. They are going to come up in response to reports, depositions, and expert testimony—past, present, and future. As attorneys become more attenuated, so will their efforts and cross-examination. The professional forensic operative must be prepared for this eventuality, and willful blindness is no longer an option.

Ultimately our goals are intended to serve the justice system through truth seeking. We believe that this is best accomplished through fact-based scientific investigations and testimony. This requires recognition and acceptance of the aforementioned issues and some careful study of them. It does not matter what readers want or choose to believe; in the forensic realm, what matters is the evidence and whether it supports those beliefs.

We proceed with these goals in mind.

REFERENCES

- Chisum, W. J., & Turvey, B. (2005). *Crime Reconstruction* (1st ed.). San Diego: Elsevier Science.
- Chisum, W. J., & Turvey, B. (2011). *Crime reconstruction* (2nd ed.). San Diego: Elsevier Science.
- Crowder, W. S., & Turvey, B. (2013). *Ethical justice*. San Diego: Elsevier Science.
- Crowder, W. S., & Turvey, B. (2015). *Anabolic steroid abuse in public safety personnel: A forensic manual*. San Diego: Elsevier Science.
- DOJ. (2016). "Forensic science" United States Dept. of Justice. <https://www.justice.gov/dag/forensic-science>.
- Edwards, H., & Gotsonis, C. (2009). *Strengthening forensic science in the United States: A path forward*. Washington, DC: National Academies Press.
- Flynn, M. (2016). *HPD wants its crime scene unit back. Crime lab's civilian leadership says no*. Houston Press. <http://www.houstonpress.com/news/hpd-wants-its-crime-scene-unit-back-crime-labs-civilian-leadership-says-no-8682790>.
- Gottschalk, P. (2011). Management challenges in law enforcement: the case of police misconduct and crime. *International Journal of Law and Management*, 53(3), 169–181.
- Helpern, M. (1979). *Autopsy*. New York: Signet.
- Kozinski, A. (2015). "Criminal Law 2.0" Georgetown law review. *Annual Review of Criminal Procedure*, 44, iii–xlv.
- Latent Print Discipline. (2016). *Department of Justice: Proposed uniform language for testimony and reports for the forensic latent print discipline*. United States Dept. of Justice. <https://www.justice.gov/dag/forensic-science>.

- Middleton-Hope, J. (2003). Misconduct among previously experienced officers: issues in the recruitment and hiring of gypsy cops. *Saint Louis University Public Law Review*, 22, 173–183.
- Shockley-Eckles, M. (August 2011). Police culture and the perpetuation of the officer shuffle: the paradox of life behind ‘the blue wall’. *Humanity & Society*, 35, 290–309.
- Turvey, B. (2013). *Forensic fraud*. San Diego: Elsevier Science.

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