Open, transparent science helps promote justice

Science in general and forensic science in particular have not fared well lately. Individuals, managers, government officials, and systems have all faced setbacks. From flawed individuals, like Annie Dookhan, to spotty systems and political pressures, like the dissolving of science committees such as the US Department of Justice Office of Justice Programs' Science Advisory Board, and the continued use of what should be dismissed techniques, like bite mark analysis, have all contributed to a growing sense of gloom about science’s role in justice. The cherry on top of this sad sundae is DNA, once the supposed savior of forensics, now mired between long-standing (but not openly discussed) issues of mixture interpretation and its ethically problematic use in familial and open database searches. If all this were not depressing enough, the UK House of Lords Science and Technology Committee has been holding hearings on the state of forensic science in that country and, it is safe to say, the “state” is troubling.

But here is the rub: Forensic science is still central to modern criminal justice systems. It can support investigations, demonstrate associations between people, places, and things involved in criminal activity, and—importantly—exonerate the innocent. For many forensic methods, appropriately applied in the majority of cases, forensic science can do these things is not the issue, it is how can it do them. In the wording of Warren Berger’s influential work on creativity, 1 we ask “why” first to challenge a situation, then generate multiple hypotheses or ideas to answer the “what if” questions of creativity, and finally get down to the meat of the issue by asking “how.” In forensic science, either in individual research or writ large as a profession, we are stuck at the “what if” stage. We rarely make it to “how.” We have methods upon methods upon methods and, for many of them, we don't know how they work. Which means, honestly, we only barely know that they work. If we accept that the concept is synonymous with methods upon methods and, for many of them, we don’t know what if questions properly like a science ought.

A recent article by ProPublica questioning the validity of bloodstain pattern analysis highlighted this very point. One person pioneered the method, applied it in cases, taught it to others, then applied it and taught others, and so on. At the time, it was considered by the courts to seem science-y enough but it had not been independently tested. Decades later, when questions arose about the method's suitability, applicability, and validity, the very same questions persist despite millions of dollars in research into bloodstain pattern analysis. The field finally gets a chance to answer “how” questions and … doesn’t. One practitioner quoted in the article said that the millions of dollars in research had had no practical influence on the discipline or the method as applied; sadly, the researcher who conducted that research agreed. Responses like that lead this Editor back to a different series of “why” questions, some more polite than others.

Forensic services ought to, in the words of the US Federal Rule of Evidence 702, “help the trier of fact to understand the evidence or to determine a fact in issue” if “the testimony is based on sufficient facts or data; the testimony is the product of reliable principles and methods; and the expert has reliably applied the principles and methods to the facts of the case.” Science in legal cases of any kind is integral to a just society governed through rule of law; that includes forensic science. The use of science to inform legal decisions is unarguably a public good and should be accessible to anyone, not just the police and the prosecutors. Sunshine cures many ills and, thus, transparency is key to good science, rational governance, and equitable justice.

This new member of the Forensic Science International family, Synergy, is a Gold Open Access journal which welcomes significant, insightful, and innovative original research with the aim of advancing and supporting forensic science while exceeding its expectations for excellence. By being freely available to anyone, we seek to promote and support open discourse across diverse areas of interest, avocation, and geography. Papers are invited from all forensic sciences and influencing disciplines, including but not limited to the humanities, life sciences, social sciences, and the law. Cross-disciplinary collaboration promotes innovative approaches, encourages systems-level perspectives, and seeds the literature with insightful opportunities.

Because the good management of science can be as important as the science itself, the journal welcomes articles on issues related to forensic science policy and management. Management, human resources, economic studies, policy implications of new methods or theoretical inferences, you name it, it is fair game. The only thing that does not mean their job is to “get the bad guy.” Forensic science has been stuck at the “why” and “what if” questions too long, prohibited or influenced by its policing administration (double meaning intended), to really approach the “how” questions properly like a science ought.

1 Or, more fundamentally, the Shewhart-Deming cycle of Plan-Act-Do-Check.
2 Whatever that means.
technology, and any other work intended to improve the effectiveness, efficiency, quality, and operations of forensic science laboratories as well as to the education and training of forensic scientists. In addition, the journal welcomes manuscripts on the governmental and institutional policies that affect the practice and management of forensic science.

Our goal is to publish quality work quickly so that information and results that have the potential to affect the public or a criminal justice system can be distributed, discussed, and incorporated into future research or applications.

Forensic science is central to modern criminal justice systems. It supports investigations, demonstrates associations between people, places, and things involved in criminal activity, and exonerates the innocent. Forensic services are sciences integral to a just society governed through rule of law, it is unarguably a public good and should be accessible to anyone. Transparency is key to good science, rational governance, and equitable justice. We hold these statements as our mission and values with the vision of moving forensic science forward as a separate science, independently administered for the benefit of the criminal justice systems and the public who depend on valid science to improve society.

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