E112 Perceptions of Task Relevance in Forensic Science: A Survey of Forensic Analysts

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Learning Overview: The goal of this presentation is to educate attendees about predominant beliefs among forensic analysts regarding the relevance of information types when conducting forensic analyses and to demonstrate how such beliefs are integral to managing contextual bias.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by reviewing the literature on contextual effects in forensic analyses and providing results of the first empirical attempt to discover what forensic analysts from wide-ranging disciplines believe to be task-relevant to their scientific analyses. This presentation will also discuss how results can shape future research, policy, and professional practice.

Forensic analysts are often exposed to wide-ranging contextual information (e.g., suspect criminal history) regarding cases as they complete analyses. At the same time, research across forensic science disciplines has shown that irrelevant contextual information can bias analyses, even though analysts are generally unaware that such information is influencing their decisions.[1-3] Based on this body of research, the National Commission on Forensic Science reported that "forensic science service providers should rely solely on *task-relevant* information when performing forensic analyses."[4]

Scholars, government agencies, and national authorities increasingly caution courts about the effects of contextual bias on experts and have called for laboratories to implement context management procedures.[5] However, no research has examined what types of information forensic analysts consider to be task-relevant and task-irrelevant. This distinction is necessary to help implement recommended procedures that limit exposure to task-irrelevant information.

The present study surveyed forensic analysts regarding their opinions of what types of information commonly contained in evidence submission forms are "essential" versus "irrelevant" to the analysis of forensic evidence. Understanding what information forensic analysts consider to be essential versus irrelevant, and whether there is consensus among examiners, may play an important role in informing efforts to minimize contextual bias.

In total, 183 practicing forensic analysts from wide-ranging disciplines completed a three-part survey at the outset of five training programs in the United States. In brief, the survey presented analysts with a list detailing 16 different types of information regarding case details (e.g., offense type, description of evidence), suspect details (e.g., suspect name, suspect criminal history), and victim details (e.g., victim race, victim name), most of which are commonly found on evidence submission forms.[6] Participants then described the importance of each type of information when performing their specific duties as a forensic analyst (i.e., "analyzing evidence in your discipline") by indicating whether they believed such information was "Essential," "Irrelevant," or "Not essential, but you would review this if available."

This presentation will provide detailed charts and statistics summarizing analysts' perceptions according to their primary discipline. In certain disciplines, there was a lack of consensus regarding the relevance of some pieces of information. For example, analysts within forensic chemistry were equally divided (i.e., ≈33% endorsed each relevance category) regarding the relevance of knowing offense type when conducting analyses. Across all disciplines, some patterns emerged regarding the types of information that analysts most frequently agreed upon. Analysts were more likely to agree on the task relevance of information relating to a suspect or victim than they were to agree on the relevance of case information (e.g., method of evidence collection). Further, analysts were most likely to agree that information, particularly information regarding a suspect or victim, was *irrelevant* to their analyses rather than *essential*. Analysts within crime scene investigation appeared unique from other disciplines as such analysts were much more likely to describe wide-ranging types of information as *essential*.

Taken together, the current findings reveal a lack of consensus regarding the relevance of some types of information (e.g., offense type) to forensic analyses and a majority opinion that other types of information are irrelevant (e.g., victim ethnicity). Given human vulnerability to contextual bias, it is critical to determine which information is essential to forensic analyses and to limit exposure to extraneous information. The present study consequently reveals a need for further work to understand what information is thought to be task-relevant versus task-irrelevant. Such information is critical to informing future methods (e.g., context management procedures) to limit bias.

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4. National Commission on Forensic Science. *Ensuring That Forensic Analysis Is Based Upon Task-Relevant Information*. (2015). Retrieved from: https://www.justice.gov/ncfs/file/818196/download
5. President's Council of Advisors on Science and Technology. *Report to the President: Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods.* (2016). Washington, DC: Executive Office of the President of the United States.
6. Gardner, B.O., Sharon Kelley, Daniel Murrie, and Kellyn Blaisdell. Do evidence Submission Forms Expose Latent Print Analysts to Task-Irrelevant Information? *Proceedings of the American Academy of Forensic Sciences*, 70th Annual Scientific Meeting, Seattle, WA. 2018.