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

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Project Rationale & Goals

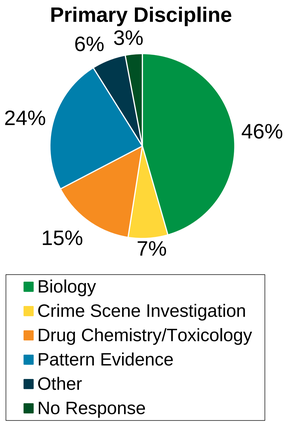
- Forensic scientists are often exposed to wide-ranging contextual information (e.g., suspect criminal history, victim race) regarding cases as they complete analyses.
- At the same time, research across forensic science disciplines has shown that irrelevant contextual information can bias analyses, even though analysts are generally unaware that such information is influencing their decisions (e.g., Dror & Charlton, 2006; Dror & Cole, 2010; Kukucka & Kassin, 2014).
- Based on this body of research, the National Commission on Forensic Science (2015) reported that "forensic science service providers should rely solely on *task-relevant* information when performing forensic analyses."
- 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 (e.g., President's Council of Advisors on Science and Technology, 2016).
- However, no research has examined what types of information forensic analysts consider 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 essential versus irrelevant, and whether there is consensus among examiners, may play an important role in informing efforts to minimize contextual bias.

Materials & Methods

- We administered a survey to 183 forensic analysts at trainings in CO and CA.
- The survey presented trainees with a list detailing different types of information, including information commonly solicited on evidence submission forms (Gardner, Kelley, Murrie, & Blaisdell, 2018)
- Analysts indicated whether they consider each piece of information "essential," not essential but something they "would review if available," or "irrelevant" to their task of analyzing evidence as a forensic scientist in their primary discipline.

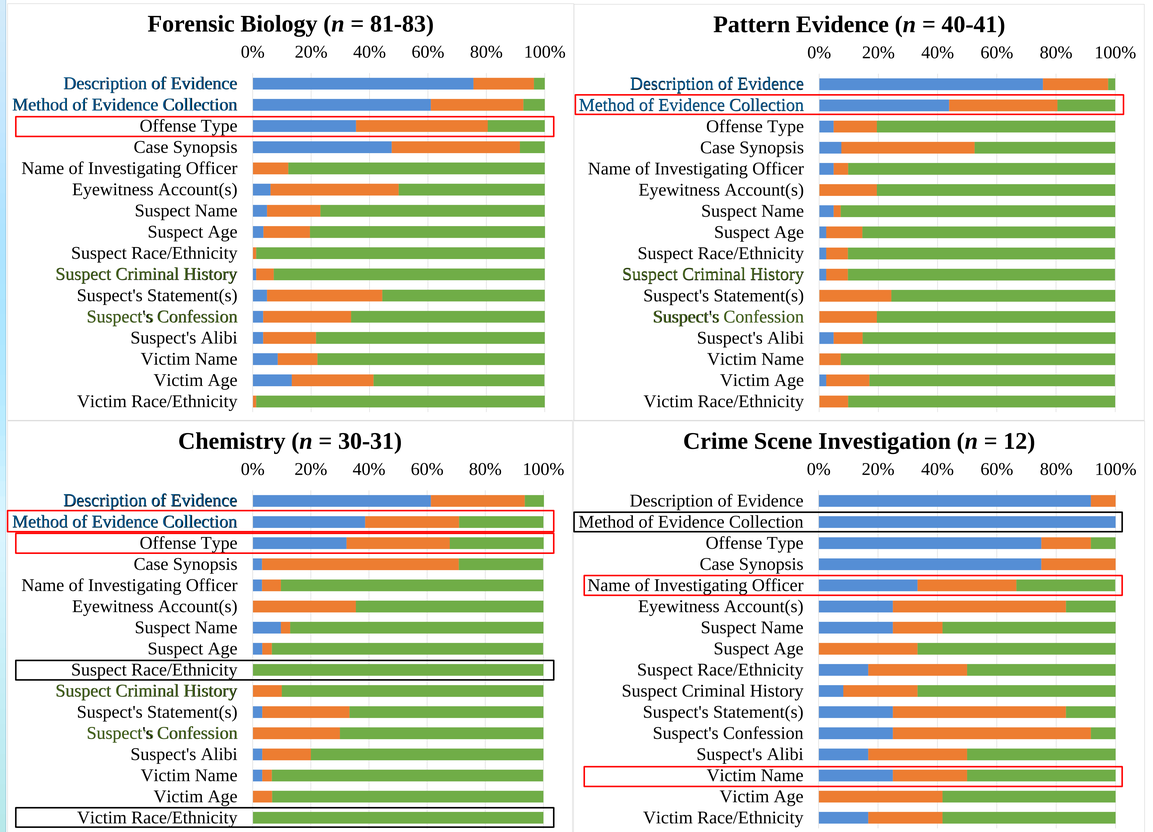
Gender	Percent	Ethnicity	Percent
Male	31%	Asian	24%
Female	65%	African American	2%
No Response	4%	Caucasian	53%
Level of Education		Latino	10%
2-year college or less	2%	Multiracial	3%
4-year college	42%	Prefer not to say	2%
Master's degree	47%	Other	1%
Doctoral degree	5%	No Response	5%
No Response	4%		

	Mean	SD	Min	Max
Age (years)	39.0	8.9	24	74
Experience (years in primary discipline)	9.9	7.4	0.5	34



Results & Discussion

Perceptions of Task Relevance by Primary Discipline



= *Absolute Consensus* (i.e., 100% agreement that information was essential/irrelevant)

= *Lack of Consensus* (i.e., ≥20% of respondents endorsed each category

Blue Title = Information type appears to meet NCFS criteria for task-relevance

Green Title = Information type identified by NCFS as task-irrelevant

Conclusions

- The current study reveals that analysts in most forensic science disciplines generally do not regard common information regarding the suspect or victim as essential to their analytic tasks.
- Although a majority of analysts (>50%) agreed on the task-relevance of most information types, there was little absolute consensus and, in certain disciplines, there was a significant lack of consensus regarding the relevance of some pieces of information.
- Moreover, many analysts were willing to review information that the NCFS has specifically identified as task-irrelevant.
- Future work should explore *why* examiners find various types of information essential or irrelevant in order to gain insight into why examiners in the same discipline disagree on the relevance of certain information.
- 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 reveals a need for further work to understand what information is task-relevant versus task-irrelevant, in order to inform context management procedures.

Definition of Task-Relevance

Any information necessary for drawing conclusions:
i) about the propositions in question,
ii) from the physical evidence that has been designated for examination, [and]
iii) through the correct application of an accepted analytic method by a competent analyst.

National Commission on Forensic Science (2015, pp. 2-3):

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