Promega

Spectrum Compact CE System

Sanger Sequencing and Fragment/STR Analysis

- benchtop 4-capillary electrophoresis instrument for 4-, 5- and 6-dye chemistries and up to 32 samples in a single run
- compatible with a broad range of commercial chemistries for DNA sequencing, forensic STR profiling, MLPA, MSI and many more
- flexible raw data analysis
- prefilled, plug-and-play consumables for maximal flexibility and efficiency
- controlled by the integrated touchscreen or by Remote Access Software
- on-site instrument and software installation, operational and application trainings

www.promega.com/spectrum-compact-system

Spectrum
COMPACT
CE SYSTEM

Received: 19 April 2021 | Accepted: 19 July 2021

DOI: 10.1111/1556-4029.14840

JOURNAL OF FORENSIC SCIENCES

LETTER TO THE EDITOR

Gill et al Response to Authors' Response

See Original Dror et al Article *here*
See JFS Editor-in-Chief Preface *here*
See Gill et al Commentary on *here*
See Authors' Response to Gill et al Commentary on *here*
See Authors' Response to Gill et al Response *here*

Editor,

The authors now acknowledge that "over 30%" of the "forensic pathologist" cohort were not forensic pathologists. Unfortunately, it is still not clear whether the authors were aware when they submitted the manuscript that the survey was sent to nonforensic pathologists. The authors now state, "We are happy to take this opportunity to clarify that not all of the 133 participants were necessarily American Board of Pathology Board certified forensic pathologists." The fact that this clarification of a crucial study component is even needed raises concerns about compromise of the peer review process because it is also possible that *none* "of the 133 participants were necessarily American Board of Pathology Board certified forensic pathologists" (see below).

A scientific study on the opinions of forensic pathologists must have the entire study cohort be forensic pathologists. If one were to do a study of expert opinions by psychiatrists, would it be valid to include graduate students, psychiatry residents, and psychologists, and then state that just the opinions of psychiatrists were surveyed? The "Nevada" part of the study involved a review of death certificates that may have been completed by a mixture of medical examiners, coroners, and forensic pathologists (Nevada has coroner and medical examiner jurisdictions). Unless each death certificate were examined individually, the authors would not know who completed it. Because the authors did not know if forensic pathologists actually certified all of these deaths, language about using terms interchangeably was, appropriately, included in the paper. The text describing the second part of the study (involving the survey), however, leaves no doubt that this section was meant to refer to forensic pathologists.

The authors state in their letter, "To be clear, our study is not about forensic pathologists per se, but about forensic pathology *decisions*…" However, the text of the paper is exquisitely clear and directly contradicts that statement. The central question in the abstract of the paper asks: "Does cognitive bias affect forensic pathologists' decision-making?" How can one answer that question unless one asks forensic pathologists? The term "forensic pathologists" was used 30 times in the paper, including the following seven statements that are misleading, and that the authors now concede are actually false:

"We also conducted an experiment with 133 forensic pathologists."

"Corroborating this explanation, the experimental data with the 133 forensic pathologists exhibited biased decisions…"

"Two data sets revealing cognitive bias in forensic pathologists' decisions about manner of death"

"Both data sets show extraneous information, for example, race, cognitively biasing forensic pathologists."

"…we also conducted an experiment in which we presented 133 forensic pathologists…"

"…the data revealed that forensic pathologists…"

"…we conducted an experiment with a sample of qualified forensic pathologists, who examined…"

Regarding the authors' assertion that we argued that "experience, certification, and/or expertise reduces or eliminates bias," we never claimed that they did. However, if any study is to examine the expert opinions of a particular type of expert, the study cohort must only include experts in that field.

We disagree with the authors' statement that "the sample pool not being solely forensic pathologists actually makes our study more representative of the reality of those who decide manner of death in real cases." Not all anatomic pathology boarded NAME members perform medicolegal death investigation as part of their job duties. Some are neuropathologists or doctors in training who would not be solely responsible for making such a determination. It is incorrect to assume that these doctors would be making these determinations in "reality." The authors attempt to use the age of the respondents as a marker of experience or expertise; this is, ironically, age bias.

The authors acknowledged that "over 30%" of survey *recipients* were not board certified forensic pathologists, based on "the relative proportion of nonboarded forensic pathologists from the mailing list" that made up the original cohort of 713 survey recipients. The authors' solution to address this problem by eliminating 30% of the responses from the data analysis is misguided. First, the authors are assuming that if 30% of the survey *recipients* were not forensic pathologists that it would follow that 30% of survey *respondents* were also not forensic pathologists and that is obviously not a valid assumption. No one knows what percentages of survey *respondents* were and were not forensic pathologists. Second, even if their estimate were correct, simply removing 30% of the entire dataset would only reduce the overall sample size; it would not address the original criticism that the survey responders represented a mixed population of forensic pathologists and nonforensic pathologists. The only way to address this would be to remove all of the responses submitted by respondents who are not forensic pathologists. However, this is

impossible due to the anonymous nature of the survey; it cannot be known which subset of the responses to remove from the dataset because the survey did not ask if the respondents were forensic pathologists. Furthermore, based on the authors acknowledged "over 30%" proportion, 214 of the 713 recipients of the survey were not forensic pathologists—a number far greater than the total number of 133 people who responded to the survey. Finally, only 32 respondents selected homicide in either of the case scenarios. It is a very reasonable possibility that no forensic pathologist chose homicide in *any* of the cases. However, we will never know, since the survey did not ask the respondents if they were forensic pathologists.

The authors correctly state that our first letter ignored the death certificate data from over 1,000 real cases, where manner of death determination was significantly different for White vs. Black children. Indeed, we originally chose not to address that portion of the study, since we are in complete agreement with the authors when they conceded in their paper, "we must be careful in drawing conclusions about bias from these archival data, especially given that the ground truth of how these children actually died is unknown. For example, it is possible that Black children die from homicide more often than White children." We agree that this is a reasonable explanation for the death certificate data, and therefore, we also agree with the authors that we must be very careful in drawing conclusions from these data. However, if this is what the authors believe, then why did they state that it "complemented and corroborated" the survey data and then imply that the results *were* in fact due to cognitive bias in spite of that obvious concern?

The authors claim that we have selectively criticized their paper regarding their survey population and that there are other published papers that have used the "NAME mailing list" to obtain anonymized responses. We are not aware of any particular studies that have portrayed their respondent population as being made of "forensic pathologists" when that was not the case. It is also incorrect to state that their paper used the "NAME mailing list," given that the survey was sent to a list of NAME members generated by accessing private member contact information, without knowledge or permission of the organization or of the individuals they contacted.

The authors also allege that NAME "…refuses to collect data on potential problems (e.g., by denying access to researchers who want to collect data on bias)…." NAME does *not* deny access to its membership for research purposes. On the contrary, NAME even has a committee to facilitate these projects. NAME regularly assists investigators in data collection by way of its Data Committee, one of whose main purposes is to promote such academic studies. For example, last year the Data Committee assisted with a survey of the use of autopsy in death certification, among others. NAME even has a policy for the Data Committee to review submitted surveys for duplication, surveys not directed towards NAME members' expertise, and for appropriate Institutional Review Board approval. The Data Committee also will help the authors disseminate the survey to the appropriate targeted subset of the membership, depending on the intended audience. This well-established policy and process might have recognized and helped the authors address the serious methodological flaws in their survey (for example, not asking the responders if they were forensic pathologists), but the authors did not consult NAME's Data Committee.

It is important to point out that we do not object to the discussion of or research on cognitive bias and we acknowledge the potential for cognitive bias in the practice of forensic pathology and in all scientific disciplines (including the cognitive sciences). NAME addresses a host of quality assurance programs, including peer review, within the NAME accreditation process to improve case objectivity and completeness. We believe that conversations about cognitive bias are appropriate and important conversations to have, and that the topic should be thoughtfully addressed by appropriately designed and scientifically valid studies. What we object to is publishing a scientifically flawed study whose conclusions are invalidated by its inattentive methodology (survey portion) and unsupportable speculation (death certificate portion).

James R. Gill MD
Kathryn Pinneri MD
John Scott Denton MD
Sally S. Aiken MD

National Association of Medical Examiners, Savannah, MO, USA
Email: jgill@ocme.org

ORCID
James R. Gill https://orcid.org/0000-0001-6900-8025