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LETTER TO THE EDITOR

Commentary on: Dror I, Melinek J, Arden JL, Kukucka J, Hawkins S, Carter J, et al. Cognitive bias in forensic pathology decisions. *J Forensic Sci.* doi: 10.1111/1556-4029.14697. Epub 2021 Feb 20

See Original Dror et al. Article [here](#)

See JFS Editor-in-Chief Preface [here](#)

See Authors' Response to Tse et al Commentary on [here](#)

Editor,

We read the recently published article titled "Cognitive bias in forensic pathology decisions" with scientific concern [1]. The article initially presented a review of death certificate data focusing on two manners of death ("accident" and "homicide") in children under 6 (0–5 years) between different racial backgrounds ("black" and "white"). Analysis showed a statistically significant difference ($p = 0.045$), namely a bias toward "black" having "homicide" as a manner of death. The authors pointed out that "we must be careful in drawing conclusion"; however, they provide no further data or analysis. Basic descriptive statistics on age and sex distribution and causes of death (accessible on death certificates and expected in retrospective study in forensic pathology) were omitted. Without this information, the authors cannot rule out these confounding factors contributing to determining the manner of death, especially in children. As an illustration, if one group had a disproportion high proportion of perinatal death from birthing accident and the other group had a high proportion of infants with unexplained blunt force head injury, it would be hard to argue that cognitive bias played a role in determining the manner of death. Being omitted, the results would be misinterpreted, despite the brief cautionary statement. Thus, the result of this study is misleading and fails to demonstrate racial background as an *independent* predictor in ascribing the manner of death and unable to support cognitive bias is at play with certainty at a scientific level.

The second part of this paper concerned a survey aiming to complement the death certificate data. Assumptions were made that caretaker and race (in a predefined combination) were considered medically irrelevant information, and the manner of death response would not be natural or suicide. Whether these assumptions are valid or not are debatable, but could have been explored in the survey. An error of omission is identified in their statistical analysis. The analysis omitted the largest "undetermined" group and focused on a subgroup. In using the data presented, if the null hypothesis

TABLE 1 Distribution in determining a manner of death from the survey results provided by Dror et al. [1]

Groups	Manner of death	
	Undetermined	Determined
White	40	28 (19 accident, 9 homicide)
Black	38	27 (4 accident, 23 homicide)

was: There is no difference in respondent's ability to determine the manner of death between "black" and "white" scenarios (i.e., determined vs. undetermined), no statistical significant differences are demonstrated, and the null hypothesis has to be accepted (Table 1, chi-square = 0.0028, $p = 0.97$). It then follows that the medically irrelevant contextual information *did not* affect the ability to determine the manner of death. This result is in contrast to what the authors have chosen to analyze, where only the *post hoc subgroup analysis* (when the respondent was able to determine a manner of death) was able to show the statistical difference (bias toward "black" having "homicide").

We commend the authors in raising the issue of cognitive bias in forensic pathology, but the studies presented failed to demonstrate in a scientifically sound manner that cognitive bias was at play. Based on the results of both studies, the only scientifically proven conclusion is that a *non-majority subgroup* of respondent exhibited racial/caregiver bias under *experimental/survey* conditions in *post hoc* analysis. This does not detract from the idea that "...professional scientists *can* be biased in their decisions...", an inherently indisputable statement, but invalidates the assertion that forensic pathologists' decisions were *dramatically* influenced by such (medical irrelevant) information (in determining the manner of death).

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1. Dror I, Melinek J, Arden JL, Kukucka J, Hawkins S, Carter J, et al. Cognitive bias in forensic pathology decisions. *J Forensic Sci.* 2021. <https://doi.org/10.1111/1556-4029.14697>. Epub 2021 Feb 20.