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LETTER TO THE EDITOR

Authors' Response to Oliver Commentary on

See Original Dror et al Article *here*
See JFS Editor-in-Chief Preface *here*
See Oliver Commentary on *here*

Editor,

Oliver's Letter focuses solely on our experimental data, which he criticizes on the grounds that they "do not reflect actual death certificate[s]." This comment—and indeed the entire Letter—ignores the fact that we also analyzed more than 1000 actual death certificates and found a racial disparity in manner of death determinations for children.

The Letter states that manner of death determinations are "for statistical purposes." That is true when the statistics are aggregated, but manner of death determinations in individual cases are also a basis to initiate criminal investigations that frequently result in charging people with crimes. Thus, manner of death determinations have grave consequences far beyond "statistical purposes."

In any decision-making, there is noise, but systematic noise is a very specific kind of noise (see the book "Noise: a flaw in human judgment" by the Nobel Prize winner Kahneman, et al., which explains this in detail and shows it specifically in forensic decisions [1]).

The Letter further states that "One cannot show bias without that estimate of ground truth." This is incorrect, for instance, when fingerprint examiners determine whether a pair of prints match, it is clear that bias is present even when the ground truth is unknown if they decide that the fingerprints match when they are told that the suspect confessed to the crime but decide that the same fingerprints do not match when they are told that someone else confessed to the crime [2]. As Kahneman et al. state "not knowing the true value is not unusual, and not an impediment to measuring noise" [1].

The Letter continues to state that our "personal bias is that biologically unrelated caretakers do not kill their wards at a greater rate than do grandmothers, or that it doesn't matter." As we explain in our paper [3] as well as in a Reply to another Letter (and we refer the readers to these for further details), we claim that statistics and how stereotypes drive the statistical data are not the main issue at hand. The critical issue is what information is appropriate to use when deciding a *specific* manner of death. We further show the *ecological fallacy* when such statistical data gleaned from large groups is misapplied to a specific case, as suggested in this Letter (an explanation of this fallacy and how it biases forensic pathology decisions is elaborated in a Reply to another Letter, and to avoid repetition, we refer the readers to the relevant Reply).

Surveys are important tools for research, and as any research tool, they do have limitations (as we acknowledge in our paper [3]). Yes, as the Letter states, "surveys such as this do not reflect actual death certificate[s]," (and this critique, of course, applies to other surveys, to all surveys). We agree with this point, and medical examiners spend many hours working through difficult cases in order to come to what they believe is the correct conclusion. However, that does not mean that surveys do not provide important insights and issues that need to be discussed and addressed. Furthermore, our article [3] includes a dataset that does "reflect actual death certificate[s]": We analyzed over 1000 death certificates and found a difference in manner of death between black and white children, a statistic which our paper makes clear can create an *a priori* base rate expectation bias.

There seems to be a misconception as if we manipulated two variables in our experiment—that is, the race of the child *and* the identity of the caregiver. That is incorrect, we manipulated only one single variable in the experimental dataset: non-medical irrelevant information. Imagine we did a study examining one variable: whether food intake impacts weight. We take a group of people and deprive them of chocolates and make them eat lots of vegetables. We find out that they lost weight, and our conclusion is that food intake impacts weight. Yes, we cannot ascertain whether it is the reduced consumption of chocolates or/and the extra vegetables that underpin the weight loss. Similarly in our study, we cannot ascertain whether the child's race or/and the nature of the caregiver underpin the bias in the manner of death decisions—and we are very clear about this [3]. But, nevertheless, it is one single variable we manipulated in the experimental study: non-medical irrelevant information.

We fully acknowledge that we have a different view on what is medically relevant and what should be used in manner of death decisions. This is well reflected in the Letter's statement of "medically relevant literature on caretaker relationship"—which we consider an oxymoron. But even if such information were considered relevant, it should not be the *only* basis for a manner of death determination (as it was for many participants in our experiment), as this is a clear example of the ecological fallacy (i.e., using aggregate statistics to make inferences about an individual case).

What is relevant? What is not relevant? What should be used, by whom, and when? These are important and legitimate questions that need to be debated and discussed. Our article calls for two things: First, to have a long-overdue, open, professional, and non-emotive discussion about these questions. Second, greater transparency in forensic pathology decisions. For example, it must—at minimum—be made known if a homicide determination was based solely on the fact that the mother's boyfriend was the caretaker, such that—all else being equal—the determination would have been an accident—rather than homicide—if the grandmother was the caretaker. We fully acknowledge that we have a different view on what is medically relevant and

what should be used in manner of death decisions—but in any case, greater transparency is needed about the factors that underpin manner of death determinations.

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