

accused of misconduct by lead industry representatives, but she ignored the published facts. Although Needleman was found not guilty of scientific misconduct in the legal sense, the investigative bodies (the University of Pittsburgh and the federal Office of Research Integrity) found Needleman's studies scientifically flawed.<sup>1,2</sup> Both investigative groups described Needleman's work as involving a "pattern of errors, omissions, contradictions, and incomplete information from the original publication to the present." The University of Pittsburgh found that Needleman had engaged in "deliberate misrepresentation" and "substandard science"; they referred to Needleman's dismissal of critics as lead industry representatives and to his attempts to intimidate his investigators, including the university board itself. The university's report stated that had Needleman accurately described his methodology and subject selection, he "would have risked rejection" of his article by the *New England Journal of Medicine*. In addition, the Office of Research Integrity cited misplotted graph points, which were found "difficult to explain as honest error," and uncorrected mistakes in Needleman's original *New England Journal of Medicine* manuscript pointed out by a coauthor.

How could Dr Silbergeld's claims of Needleman's victimization be endorsed by the *American Journal of Public Health*<sup>3</sup> without any reference to the original University of Pittsburgh and Office of Research Integrity investigative reports and only a reference to an article that predated these two reports in which Needleman compared himself with the Salem witches? The replies of his critics,<sup>4,5</sup> like the investigative reports, are not cited. Have these become "nondocuments"? Please cite them here and allow your readers to draw their own conclusions based on published evidence. □

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## Acknowledgment

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## 3. A Reply from Scarr and Ernhart

Silbergeld's report<sup>1</sup> of Needleman's difficulties ignored his university's hearing-board finding of "deliberate misrepresentation" and the concurrence of the Public Health Service's Office of Research Integrity. Silver, without naming us, maligned us in his editor's note.<sup>2</sup> We have been denied space for a complete response; the following are highlights.

*Silbergeld*: Attempts by the lead industry to discredit Needleman were dismissed "after careful analysis" by an Environmental Protection Agency (EPA) expert committee.

*Response*: When the EPA was evaluating the criteria for lead exposure, Ernhart questioned Needleman's work; he himself attacked her research. EPA appointed an expert committee,<sup>3</sup> which included Scarr, to evaluate both Needleman's<sup>4</sup> and Ernhart's<sup>5</sup> studies. Ernhart's response to the evaluation was considered satisfactory. The committee could not resolve inconsistencies in Needleman's work. Nevertheless, the EPA used Needleman's study in policy decisions.

*Silbergeld*: The National Institutes of Health (NIH) Office of Scientific Integrity "provided the industry a weapon with which to intimidate one of its most accomplished critics." The "weapon" was allegation of scientific misconduct.

*Response*: We were consulted by defendants in a 1990 EPA Superfund case. Needleman was retained for the same case by the Department of Justice for the EPA. The court ordered our access to Needleman's data. The situation was bizarre<sup>6</sup> and included Needleman's demand that we destroy our findings. We refused. Needleman solicited Justice Department help in seeking a court order that we destroy our notes and report; we responded in court and prevailed. The judge's opinion stated, "Finally there are public policy reasons regarding the suppression of information and knowledge, particularly knowledge of a scientific nature. The pursuit of scientific knowledge is, in theory, an open process. There

is something inherently distasteful and unseemly in secreting either the fruits or seeds of scientific endeavors."<sup>7</sup>

Acting as responsible scientists, we informed NIH's Office of Scientific Integrity of our conclusions regarding Needleman's data. The lead industry was not involved.

The following are our responses to Silbergeld's queries regarding the current state of misconduct investigations.

1. *What is the basis for a charge of scientific misconduct?*

*Silbergeld*: Our charges were mere suspicions that should have been dismissed.

*Response*: Inquiries into Needleman's work were conducted in sequence by (1) us; (2) the NIH Office of Scientific Integrity; (3) the Inquiry Panel and (4) the Hearing Board at the University of Pittsburgh; and (5) the Office of Research Integrity. Reports document deliberate misrepresentation and poor science. We are four steps removed from the case, yet Needleman and his supporters abuse us.

2. *Who should investigate misconduct?*

*Silbergeld*: Universities will not exonerate defendants for fear of charges of institutional bias.

*Response*: Many whistleblowers report that universities avoid investigation of claims. However, in Needleman's case the university's panels demonstrated serious effort to hear and investigate his explanations. Even so, he sued the university.

3. *How should investigations be conducted?*

*Silbergeld*: She applauds "the right to an open and public process and the right to legal counsel."

*Response*: We've discussed the shortcomings of procedures for investigating scientific misconduct<sup>6</sup>; we advocate greater attention to due process. In this case, the University of Pittsburgh lacked the authority to conduct a thorough investigation, with whistleblower protection, that would withstand legal challenge. Efforts by the Office of Research Integrity were also undermined by inadequate procedures. The need for enlightened policy is critical. Silbergeld credits Needleman with openness, yet he sought to have us gagged. The purpose of the open hearing was public harassment. Standards of due process were not met.

From Silbergeld's assertion of Needleman's "intellectual integrity," we

presume that either she has not read the Office of Research Integrity's and the University of Pittsburgh's investigation reports or she has an interest in ignoring them.

Silver must not have read the investigation reports or our well-documented replies<sup>8,9</sup> to the essay he cites. We refute his charges as follows.

1. *Silver*: We are "scientific pawns" of the lead industry.

*Response*: Neither of us is or ever was employed by the industry. We are not pawns of any interest.

2. *Silver*: Industry used us to "cripple or possibly destroy Needleman's future scientific activities."

*Response*: If Needleman's activities are crippled it is because of his deliberate misrepresentations and what the University of Pittsburgh Hearing Board called "substandard science."

3. *Silver*: We were represented by "lead industry attorneys."

*Response*: We retained our attorney solely because Scarr's daughter worked at our attorney's firm. Silver repeated Needleman's lie.

4. *Silver*: He used demeaning quotation marks about the term "scientific witnesses."

*Response*: We've qualified as scientific witnesses on numerous occasions; we're both recognized experts on methodology and child development. Ernhart has conducted major studies on lead and child development.

5. *Silver*: We made "false accusations of scientific misconduct."

*Response*: This is defamatory and false. The University of Pittsburgh Hearing Board debated whether deliberate misrepresentation constituted scientific fraud. It did not exonerate Needleman. In civil law, "deliberate misrepresentation" is the criterion for fraud.

6. *Silver*: Silver recommended punishment by professional organizations for our "attempt artfully to pull commercial chestnuts out of the fire by impugning the integrity of colleagues."

*Response*: Whistleblowers in misconduct cases are often harassed and maligned, as in this egregious example. Silver's misguided effort to undo Needleman's self-inflicted damage astonished us. Editors of professional journals have a duty to avoid becoming uninformed apologists, particularly when this defames others. The annotation and editor's note should be retracted. □

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## 4. *Silver* Responds

I will reply to five of the six specific charges made by Scarr and Ernhart as follows:

1. I should have written "used as pawns by the lead industry" rather than "utilizing pawns of the lead industry."

3. Whatever the basis for the choice, the law firm that represented the lead industry represented Scarr and Ernhart.

4. The quotation marks around "scientific witnesses" were uncalled for and I withdraw them and the implied slur.

5. In fact, Needleman was never convicted of scientific misconduct.

6. This statement is an editorial opinion made as a general recommendation and does not apply to any particular person. □

George A. Silver  
Contributing Editor

## 5. *Silbergeld* Responds

It is somewhat disappointing to realize that my annotation has provoked expected responses from the expected parties: Drs Scarr and Ernhart, who brought charges of scientific misconduct against Dr Needleman; Jerome Smith, representing the lead industry trade association; and Dr Edgar Schoen, who has written widely to challenge the lead screening recommendations of the Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics. While taking issue with some details of my annotation, they fail to acknowledge the weight of scientific research in this and other countries, in addition to the particular examinations of Needleman's work by the US Environmental Protection Agency (EPA), CDC, WHO, and other groups. All find that lead exposure, at low doses, seriously and persistently damages the neurological development of children. A recent review of epidemiology<sup>1</sup> cites Needleman's work as exemplary in the field of environmental epidemiology.

While Scarr and Ernhart may now downplay their roles in the Needleman case, it was their charges to the National Institutes of Health (NIH) Office of Scientific Integrity that set in motion the investigations by NIH and the University of Pittsburgh. We agree that the Office of Scientific Integrity's current procedures are unacceptable. I remain convinced that Needleman's fight for open hearings was an important victory for everyone, including whistleblowers. That Needleman is a man of integrity is my judgment, but it is one shared by the Charles E. Dana Foundation, which awarded Needleman one of its highest prizes; and the University of Pittsburgh, which awarded him the Chancellor's Medal for distinguished public service; and the Heinz Foundation, which recently gave him its H. John Heinz Award in Environment.

I am not surprised that Smith denies that the lead industry has hindered public understanding of lead toxicity or public health policy. But the lead industry's efforts to influence scientific debate on lead toxicity through the strategic funding of research on lead toxicity are well documented.<sup>2</sup> So too is the industry's involvement in promoting the approval of tetraethyl lead as a gasoline additive in the 1920s. There are several scholarly analyses of the role of the lead industry in overcoming early lead-related concerns of the Public Health Service and physi-