

# The State of New Hampshire

CHESHIRE COUNTY

SUPERIOR COURT

STATE OF NEW HAMPSHIRE

V.

DAVID MCLEOD

Docket No.: 213-2010-CR-00585-00588

## **ORDER GRANTING STATE'S MOTION IN LIMINE RE: TESTIMONY OF DEFENSE EXPERT**

Defendant, David McLeod ("Defendant" or "McLeod"), stands charged with four counts of second-degree murder in connection with the deaths of the Hina family during a fire on January 14, 1989. Defendant was indicted in July 2010. The State moves to limit the testimony of Defendant's fire expert, John Lentini ("Lentini"). Lentini testified relative to Defendant's motion to preclude certain expert testimony on May 25, 2011; the parties presented their arguments on the present motion on July 28, 2011. For the reasons that follow, the State's Motion in Limine Re: Testimony of Defense Expert is **GRANTED** as moot. Lentini is also precluded from testifying about the cause and origin of the fire at 88 High Street .

### **Factual Background**

A full recitation of relevant facts of the investigation is provided in the Court's Order on Defendant's Motion to Preclude Certain Expert Testimony, Defendant's Motion in Limine IV to Preclude Introduction of the Statements of Sandra Walker to Agents of Law Enforcement, and the State's Motion in Limine Regarding the Admissibility of Sandra Walker's Statements to Fire Investigators.

## Discussion

The State seeks to preclude Lentini from testifying about or commenting on a number of issues which he raised in his testimony on McLeod's motion to preclude certain expert testimony: 1) people sitting in prison due to faulty arson science; 2) the State's fire experts' opinions not being sufficiently reliable to send someone to the penitentiary; 3) the reliance by scientists versus law enforcement officers on certain types of evidence; 4) the NFPA 921<sup>1</sup> Committee's intent that some guidelines be interpreted and evidence be relied on in a particular way. State's Mot. Limine Def. Expert ¶ 6. The State argues that this testimony is outside of Lentini's area of expertise; is not of a type reasonably and customarily relied upon by experts in the field; is not helpful to the jury; and would cause prejudice to the State. In his objection, Defendant argues that the State fails to specify the nature and scope of the testimony it seeks to exclude. Obj. State's Mot. Limine Def. Expert ¶ 4.

[E]xpert testimony must rise to a threshold level of reliability to be admissible." Baxter v. Temple, 157 N.H. 280, 284 (2008). For purposes of evaluating the reliability of expert testimony under N.H. Evid. R. 702, the New Hampshire Supreme Court adopted the test described by the United States Supreme Court in Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993) ("Daubert"); See Baker Valley Lumber v. Ingersoll-Rand, 148 N.H. 609, 614 (2002). These requirements were later codified by the legislature in RSA 516:29-a.

Reviewing the basis for the expert's opinion in light of the factors in RSA 515:29-a is meant to "ensure that proposed expert testimony imparts 'scientific knowledge' rather than guesswork." Ruiz-Troche v. Pepsi Cola of Puerto Rico Bottling Co., 161 F.3d 77, 81 (1st Cir. 1998), quoting Daubert, 509 U.S. at 592. However, the scientific knowledge need not be "absolute or irrefutable." Baxter, 157 N.H. at 285, quoting State v. Dahood, 148 N.H. 723, 727 (2002). The focus is on the principles and methodology used, not on the conclusions they generate. Baker Valley Lumber, 148 N.H. at 615. The

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<sup>1</sup> NFPA 921 is the National Fire Protection Agency's Guide for Fire and Explosion Investigations. State's Ex. 46. Both Defendant's and the State's fire analysis experts testified that NFPA 921 is the definitive treatise to which fire investigators look in order to comply with the current scientific standards of reliability in determining the cause and origin of a fire. NFPA 921 "was developed by the Technical Committee on Fire Investigations "Committee" to assist in improving the fire investigation process and the quality of information on fires resulting from the investigative process." Id. 921-1. The Committee consists of 29 members and 20 alternates; Lentini is listed as a member in the 2011 edition of NFPA 921. Id. 921-3.

burden of establishing the reliability of a particular technique rests on the proponent of the expert testimony. State v. Hungerford, 142 N.H. 110, 121 (1997).

Lentini testified that he approaches fire investigations with the presumption that the fire was an accident rather than arson: he “start[s] each case with the expectation that the fire is an accident because most fires are accidents.”<sup>2</sup> He explained that this approach makes it a challenge to diagnose a fire as arson and that otherwise, too many fires would be misdiagnosed as arson.

To avoid improperly diagnosing a fire as arson, Lentini approaches fire investigations with the presumption of innocence which exists in criminal law. He testified that he wrote a book advocating for an expectation bias in fire investigation: he proposes that fire investigators approach fires with the presumption that they are accidents. On cross-examination, the State’s counsel read the following quotation from Lentini’s book: “In this author’s view, approaching a fire investigation without presumption is an error.”

NFPA 921 provides the following guidance on expectation bias and bias in general.

**4.3.7 Avoid Presumption.** Until data have been collected, no specific hypothesis can be reasonably formed or tested. All investigations of fire and explosion incidents should be approached by the investigator without presumption as to origin, ignition sequence, cause, fire spread, or responsibility for the incident until the use of scientific method has yielded testable hypotheses, which cannot be disproved by rigorous testing.

**4.3.8 Expectation Bias.** Expectation bias is a well-established phenomenon that occurs in scientific analysis when investigator(s) reach a premature conclusion without having examined or considered all of the relevant data. Instead of collecting and examining all of the data in a logical and unbiased manner to reach a scientifically reliable conclusion, the investigator(s) uses the premature determination to dictate investigative processes, analyses, and, ultimately, conclusions, in a way that is not scientifically valid. The introduction of expectation bias into the investigation results in the use of only that data that supports this previously formed conclusion and often results in the misinterpretation and/or the discarding of data that does not support the original opinion. Investigators are strongly cautioned to avoid expectation bias through proper use of scientific method.

**4.3.9 Confirmation Bias.** Different hypotheses may be compatible with the same data. When using the scientific method, testing of hypotheses should be designed to disprove the hypothesis. Confirmation bias occurs

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<sup>2</sup> Quotations from Lentini’s testimony are taken from an audio recording of the May 25, 2011 hearing.

when the investigators instead tries to prove the hypothesis. This can result in failure to consider alternate hypotheses. A hypothesis can be said to be valid only when rigorous testing has failed to disprove the hypothesis.

When asked whether his approach to fire investigation, insofar as it is grounded in expectation bias, runs contrary to the tenets of NFPA 921, Lentini acknowledged that “this is absolutely true.”

In fact, Lentini has attempted to change the scientific consensus, as embodied by his fellow members of the Committee. He submitted proposals to the Committee, asking that it approach fires with the assumption that they are accidents. Lentini conceded during his testimony that all of his proposals have been rejected. He also admitted that insofar as the Committee represents “the prevailing view of the fire investigation community,” that community has soundly rejected his approach. “It has been rejected by my colleagues in a document that is peer-reviewed.” In his investigations, Lentini nevertheless operates with expectation bias because this approach is grounded in the presumption of innocence.

Lentini’s expectation bias, in addition to running expressly and admittedly afoul of NFPA 921, goes to the heart of his methodology. The formulation of a premature conclusion as to the cause of the fire “or responsibility for the incident” (NFPA 921 § 4.3.7) leads to an investigator’s failure to “examine[] or consider[] all of the relevant data.” Id. § 4.3.8. NFPA 921, which by Lentini’s admission embodies the scientific consensus notwithstanding his disagreement with it, denounces as scientifically invalid both the approach and the conclusions made with expectation bias. “Instead of collecting and examining all of the data in a logical and unbiased manner to reach a scientifically reliable conclusion, the investigator(s) uses the premature determination to dictate investigative processes, analyses, and, ultimately, conclusions, in a way that is not scientifically valid.” Id. In fact, following the recommended methodology, the scientific method,<sup>3</sup> allows fire investigators to avoid expectation bias. “Investigators are strongly cautioned to avoid expectation bias through proper use of scientific method.” Id.

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<sup>3</sup> “The basic methodology of the fire investigation should rely on the use of a systematic approach and attention to all relevant details.” NFPA 921 § 4.1. The systematic approach recommended by the NFPA 921 is the scientific method. Id. § 4.2. “The scientific method is a principle of inquiry that forms the basis for legitimate scientific and engineering processes, including fire incident investigation.” Id. § 4.3.

Because Lentini's methodology runs afoul of the governing authority on fire investigation and has been repeatedly rejected by the scientific community, his expert testimony is inadmissible under Daubert and RSA 516:29-a. Based on the requirements articulated in NFPA 921, the Court cannot conclude that Lentini's "testimony is the product of reliable principles and methods" or that he has "applied the principles and methods reliably to the facts of the case." RSA 516:29-a, I. His methodology has been rejected by "the appropriate scientific literature." RSA 516:29-a, II (a) (4).

"[G]eneral acceptance" can yet have a bearing on the inquiry. A "reliability assessment does not require, although it does permit, explicit identification of a relevant scientific community and an express determination of a particular degree of acceptance within that community." [U.S. v. Downing, 753 F.2d 1224, 1238 (3d Cir. Pa. 1985)]. See also 3 Weinstein & Berger P702[03], pp. 702-41 to 702-42. Widespread acceptance can be an important factor in ruling particular evidence admissible, and "a known technique which has been able to attract only minimal support within the community," Downing, 753 F.2d at 1238, may properly be viewed with skepticism.

Daubert, 509 U.S. at 594.

Furthermore, Lentini's testimony will be marginally helpful to the jury because it has been found fundamentally unreliable by the prevailing consensus in his field. "[T]he court is called upon to reject testimony that is based upon premises lacking any significant support and acceptance within the scientific community, or that otherwise would be only marginally helpful to the fact-finder." Fed. Evid. R. 702, Advisory Committee Notes, but see Daubert v. Merrell Dow Pharmaceuticals, Inc., 43 F.3d 1311, 1318 (9th Cir. 1995), on remand from Daubert, 509 U.S. 579 (1993) (scientific experts might be permitted to testify if they could show that the methods they used were also employed by "a recognized minority of scientists in their field.") McLeod has not demonstrated that even a recognized minority of fire investigators employs Lentini's methods. Aside from mentioning his book advocating for the use of expectation bias in fire investigation, Lentini "did not discuss the research in sufficient detail that the [] court could determine if the research was scientifically valid." See U.S. v. Rincon, 28 F.3d 921, 924 (9th Cir. Cal. 1994).

### Conclusion

“The proper focus for the trial court is the reliability of the expert's methodology or technique. The trial court functions only as a gatekeeper, ensuring a methodology's reliability before permitting the fact-finder to determine the weight and credibility to be afforded an expert's testimony.” Baker Valley Lumber, 148 N.H. at 616, quoting Daubert, 509 U.S. at 592-595. Because the methodology underpinning Lentini's opinions and conclusions as outlined in the State's motion as well his conclusion as to the cause and origin of the fire has been repeatedly rejected by the scientific community and is denounced as scientifically invalid by the governing authority on fire investigation, NFPA 921, the State's Motion in Limine Re: Testimony of Defense Expert is **GRANTED** as moot. He is prohibited from testifying to the topics raised in the State's Motion in Limine Re: Testimony of Defense Expert. The Court also orders that Lentini is precluded from testifying about the cause and origin of the fire at 88 High Street.

So Ordered.

DATED: \_\_\_\_\_

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Hon. Marguerite L. Wageling  
Presiding Justice