NATIONAL COMMISSION ON FORENSIC SCIENCE

Views of the Commission Regarding Use of the Term "Reasonable Scientific Certainty"

Subcommittee
Reporting and Testimony
Status
Adopted by the Commission

Date of Current Version	22/03/16
Approved by Subcommittee	29/01/16
Approved by Commission	22/03/16

Commission Action
On March 22, 2016, the Commission voted to adopt this Views Document by a more than two-thirds majority affirmative vote (86% yes, 7% no, 7% abstain)

Note: This document reflects the views of the National Commission on Forensic Science, and does not necessarily represent the views of the Department of Justice or the National Institute of Standards and Technology. This document does not formally recommend any action by a government entity, and thus no further action will be taken upon its approval by the Commission.

Overview
It is the view of the National Commission on Forensic Science (NCFS) that legal professionals should not require that forensic discipline testimony be admitted conditioned upon the expert witness testifying that a conclusion is held to a "reasonable scientific certainty," a "reasonable degree of scientific certainty," or a "reasonable degree of [discipline] certainty." The legal community should recognize that forensic scientists, medical professionals and other scientists do not routinely use "to a reasonable scientific certainty" when expressing conclusions outside of a courtroom context. Forensic science service providers and forensic science medical providers should not endorse or promote the use of this terminology. The Commission recognizes the right of each jurisdiction to determine admissibility standards but expresses this view as part of its mandate to "develop proposed guidance concerning the intersection of forensic science and the courtroom."

Views of the Commission
Forensics experts are often required to testify that the opinions or facts stated are offered "to a reasonable scientific certainty" or to a "reasonable degree of [discipline] certainty." Such statements have no scientific meaning and may mislead factfinders when deciding whether guilt has been proved beyond a reasonable doubt. "Outside of the courts, this phrasing is not routinely used in scientific disciplines. Thus, in prescribing a different standard for admissibility in Daubert v. Merrell Dow Pharmaceuticals., 509 U.S. 579, 590 (1993), the Supreme Court

acknowledged that "it would be unreasonable to conclude that the subject of scientific testimony must be 'known' to a certainty; arguably, there are no certainties in science." In the courtroom setting, the phrase's reference to "certainty" risks misleading or confusing the factfinder. Moreover, the phrase in its varying forms, is not formally defined in standard medical or scientific reference materials. In the courts, this phrase is almost always a matter of custom, but in some jurisdictions, it results from an appellate court ruling or trial judges' or lawyers' belief that it is a necessary precondition for admissibility.

I – The Historic Background to Use of the "Reasonable Degree of Certainty" Terminology

As best as can be ascertained, the "reasonable degree of certainty" formulation was first applied to scientific evidence in 1935, when a witness was "asked whether he could determine with reasonable scientific certainty the cause of the capsizing of the boat." Herbst v. Levy, 279 Ill. App. 353, 358 (Ill. App. Ct. 1935). This was not the mandate of the court but a stylistic approach adopted by a lawyer. Not until 1969 was the terminology linked to the admissibility determination:

> If the witness, based upon his background skill, possesses extraordinary training to aid laymen in determining facts and if he bases his answer upon what he believes to be reasonable scientific or engineering certainty, generally the evidence should be admitted, subject, of course, to the cross-examination of the adversary.

Twin City Plaza, Inc. v. Central Surety & Ins. Corp., 409 F.2d 1195, 1203 (8th Cir. 1969). This statement was made without legal or scientific analysis as to what the term meant or why its use was being mandated.

The modern view recognizes that the term is not required as a condition of admitting expert evidence. A review of state court case law, undertaken by the Hawaii Supreme Court in 2014, confirmed this and concluded, for its state, that "trial courts should not require a 'reasonable degree of scientific certainty' before admitting expert opinions but may exclude expert testimony based on speculation or possibility." State v. DeLeon, 131 Haw. 463, 484 (Haw. 2014). See also State v. Johnson, 290 Neb. 862, 862 N.W.2d 757, 773 (Neb. 2015) ("An expert does not have to couch his or her opinion in the magic words of 'reasonable certainty,'").

The same is true in federal courts–neither the *Daubert* trilogy of cases [*Daubert v. Merrell Dow Pharmaceuticals*, *Joiner v. General Electric*, or *Carmichael v. Kumho Tire*] nor Federal Rules of Evidence 702-705 require such language. As well, both the *Daubert* and *Frye* tests, when properly implemented, serve to screen out speculative testimony and thus further demonstrate the lack of need for the "reasonable degree of certainty" language.

II – The Problems Arising from this Terminology

Multiple problems abound with phrases such as "scientific certainty" or "[discipline] certainty." These include the following:

- There is no common definition across science or within disciplines as to what threshold

establishes "reasonable" certainty. Therefore, whether couched as "scientific certainty" or "[discipline] certainty," the term is idiosyncratic to the witness.

- Use of the term "scientific" cloaks the opinion with the rigor, acceptance and reproducibility of scientific study .
- Coupled with the term "reasonable," a juror might equate it with certainty at the level demanded by the "beyond a reasonable doubt" standard of proof.
- The term invites confusion when presented with testimony expressed in probabilistic terms. How is a lay person, without either scientific or legal training, to understand an expert's "reasonable scientific certainty" that evidence is "probably" linked to a particular source?

The susceptibility of the term to varying definitions is illustrated in *Burke v. Town of Walpole*, 405 F.3d 66 (1st Cir. 2005), a bite mark identification case. The U.S. Court of Appeals for the First Circuit had to interpret the term as used in an arrest warrant:

> [W]e must assume that the magistrate who issued the arrest warrant assigned no more than the commonly accepted meaning among lawyers and judges to the term "reasonable degree of scientific certainty"—"a standard requiring a showing that the injury was *more likely than not* caused by a particular stimulus, based on the general consensus of recognized [scientific] thought." Black's Law Dictionary 1294 (8th ed. 2004) (defining "reasonable medical probability," or "reasonable medical certainty," as used in tort actions). That standard, of course, is fully consistent with the probable cause standard.

Id. at 91. The case involved a magistrate, not a jury, and it seems doubtful that a jury would understand that the term "reasonable scientific certainty" meant only "more probable than not" —that is, any probability greater than 50%. It is more likely that the jury would understand the term to mean 95% certain or perhaps "beyond a reasonable doubt."

III – Toward a Meaningful Alternative (or Alternatives):

The Commission recognizes that recommending the abandonment of a long-used phrase is a first step and an incomplete one.

Additional work is needed in both the scientific and legal communities to identify appropriate language that may be used by experts to express conclusions and opinions to the trier of fact based on observations of evidence and data derived from evidence. Rather than use "reasonable…certainty" terminology, experts should make a statement about the examination itself, including an expression of the uncertainty in the measurement or in the data. The expert should state the bases for that opinion (the underlying information, studies, observations) and its limitations.

Developing such a framework and language may best be undertaken through the OSAC structure or this Commission. As a first step, however, the term "reasonable degree of scientific [or discipline] certainty" has no place in the judicial process.