http://scholar.google.com/scholar_case?case=11690110151960979103&q=Milward+v.+Acuity+Specialty+Products+Group,+Inc.,+639+F.+3d+11&hl=en&as_sdt=6,31&as_vis=1

Milward v. Acuity Specialty Products Group, Inc., 639 F. 3d 11 (1st Circuit 2011)

Excerpts:

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This case never reached the second phase. The district court ruled that the testimony of plaintiffs' expert on general causation, Dr. Martyn Smith, was inadmissible under Federal Rule of Evidence 702. The court so ruled after reviewing written statements and materials and conducting a four-day evidentiary hearing in which it heard testimony from plaintiffs' experts Dr. Smith, a toxicologist, **and Dr. Carl Cranor, an expert on scientific methodology**; and from defendants' experts Dr. David Garabrant, an epidemiologist, Dr. David Pyatt, a toxicologist, and Dr. John Bennett, a pathologist. The district court, in a detailed opinion, ruled that "Dr. Smith's proffered testimony that exposure to benzene can cause APL lacks sufficient demonstrated scientific reliability to warrant its admission under Rule 702." ***Milward v. Acuity Specialty*** *Prods. Grp.,* ***Inc.***, 664 **F**.Supp.2d 137, 140 (D.Mass.2009). The court entered final judgment for defendants and plaintiffs timely appealed.

Pages 17-18:

This **"weight of the evidence" approach to making causal determinations** involves **a mode of logical reasoning often described as "inference to the best explanation,"** in which the conclusion is not guaranteed by the premises.[7] *See Bitler v. A.O. Smith Corp.*, 391 **F.3d** 1114, 1124 n. 5 (10th Cir. 2004). As explained by plaintiffs' expert on methodology Dr. Cranor, Distinguished Professor of Philosophy at the University of California, Riverside, inference to the best explanation can be thought of as involving six general steps, some of which 18*18 may be implicit. **The scientist must (1) identify an association between an exposure and a disease, (2) consider a range of plausible explanations for the association, (3) rank the rival explanations according to their plausibility, (4) seek additional evidence to separate the more plausible from the less plausible explanations, (5) consider all of the relevant available evidence, and (6) integrate the evidence using professional judgment to come to a conclusion about the best explanation.**

In this mode of reasoning, the use of scientific judgment is necessary. "No algorithm exists for applying the **Hill guidelines** to determine whether an association truly reflects a causal relationship or is spurious." *Restatement* § 28 cmt. c(3). Because "[n]o scientific methodology

exists for this process . . . reasonable scientists may come to different judgments about whether such an inference is appropriate." *Id.* § 28 reporters' note cmt. c(4).

The fact that **the role of judgment in the weight of the evidence approach is more readily apparent than it is in other methodologies** does not mean that the approach is any less scientific. No matter what methodology is used, "an evaluation of data and scientific evidence to determine **whether an inference of causation is appropriate** requires judgment and interpretation." *Id.* § 28 cmt. c(1).[8] The **use of judgment in the weight of the evidence methodology** is similar to that in differential diagnosis, *see Cruz v. Bridgestone/Firestone N. Am. Tire, LLC,* 388 Fed.Appx. 803, 806-07 (10th Cir.2010) (explaining that differential analysis in general is best characterized as a process of **reasoning to the best explanation**), which we have repeatedly found to be a reliable method of medical diagnosis, *see Granfield v. CSX Transp., Inc.*, 597 **F.3d**474, 486 (1st Cir.2010); *Dalkon Shield*, 156 **F.3d** at 253.

http://www.progressivereform.org/CPRBlog.cfm?idBlog=616EE094-D602-ED68-85FD84E7EB0A212E

Milward v. Acuity Specialty Products: How the First Circuit Opened Courthouse Doors for Wronged Parties to Present Wider Range of Scientific Evidence

by Carl Cranor

Carl Cranor Bio: http://philosophy.ucr.edu/carl-cranor/

Articles favoring adoption of the Precautionary Principle:

- "Protecting Early Warners and Late Victims in a Precautionary World?". Late Lessons from Early Warnings: Science Precaution, Innovation, David Gee, ed. (European Environmental Agency, **2013**), pp. 581-606.
- "Some Legal Implications of the Precautionary Principle: Improving Information Generation and Legal Protections," the *European Journal of Oncology*, Library Vol. 2 (**2003**), pp. 31–51.
- "Toward Understanding Aspects of the Precautionary Principle," the *Journal of Medicine and Philosophy* (**2004**). http://www.glerl.noaa.gov/seagrant/ClimateChangeWhiteboard/Resources/Uncertainty/climatech/crannor04PR.pdf

- "What Could Precautionary Science Be? Research for Early Warnings and a Better Future," in *Precaution: Environmental Science and Preventive Public Policy*, ed. **Joel A. Tickner** (Washington, D.C. : Island Press, **2003**), pp. 305–320. [Invited]
- "Learning from the Law to Address Uncertainty in the Precautionary Principle," *Science and Engineering Ethics*, Vol. 7, (**2001**), pp. 313–326.
- "Asymmetric Information, the Precautionary Principle and Burdens of Proof in Environmental Health Protections," *Protecting Public Health and the Environment: Implementing the Precautionary Principle*, ed. **Carolyn Raffensperger** and **Joel Tickner** (Washington, D.C., Island Press: **1999**), pp. 74–99 [Invited].

Carl Cranor is listed as a participant at the 1998 Wingspread Precautionary Principle conference:

http://www.who.int/ifcs/documents/forums/forum5/wingspread.doc ;
http://www.gdrc.org/u-gov/precaution-3.html

This is the html version of the file http://www.who.int/ifcs/documents/forums/forum5/wingspread.doc.
Google automatically generates html versions of documents as we crawl the web.

Wingspread Statement on the Precautionary Principle

The release and use of toxic substances, the exploitation of resources, and physical alterations of the environment have had substantial unintended consequences affecting human health and the environment. Some of these concerns are high rates of learning deficiencies, asthma, cancer, birth defects and species extinctions; along with global climate change, stratospheric ozone depletion and worldwide contamination with toxic substances and nuclear materials.

We believe existing environmental regulations and other decisions, particularly those based on risk assessment, have failed to protect adequately human health and the environment - the larger system of which humans are but a part.

We believe there is compelling evidence that damage to humans and the worldwide environment is of such magnitude and seriousness that new principles for conducting human activities are necessary.

While we realize that human activities may involve hazards, people must proceed more carefully than has been the case in recent history. Corporations, government entities, organizations, communities, scientists and other individuals must adopt a precautionary approach to all human endeavors.

Therefore, it is necessary to implement the Precautionary Principle: When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

In this context the proponent of an activity, rather than the public, should bear the burden of proof.

The process of applying the Precautionary Principle must be open, informed and democratic and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action.

--Racine, WI, January 20, 1998 Wingspread Participants:

(Affiliations are noted for identification purposes only.)

Dr. Nicholas Ashford, Massachusetts Institute of Technology
Katherine Barrett, Univ. of British Columbia
Anita Bernstein, Chicago-Kent College of Law
Dr. Robert Costanza, University of Maryland
Pat Costner, Greenpeace
Dr. Carl Cranor, Univ. of California, Riverside
Dr. Peter deFur, Virginia Commonwealth Univ.
Gordon Durnil, attorney
Dr. Kenneth Geiser, Toxics Use Reduction Institute, Univ. of Mass., Lowell
Dr. Andrew Jordan, Centre for Social and Economic Research on the Global Environment, **Univ. Of East Anglia**, United Kingdom
Andrew King, United Steelworkers of America, Canadian Office, Toronto, Canada
Dr. Frederick Kirschenmann, farmer
Stephen Lester, Center for Health, Environment and Justice
Sue Maret, Union Institute
Dr. Michael M'Gonigle, University of Victoria, British Columbia, Canada
Dr. Peter Montague, Environmental Research Foundation
Dr. John Peterson Myers, W. Alton Jones Foundation
Dr. Mary O'Brien, environmental consultant
Dr. David Ozonoff, Boston University
Carolyn Raffensperger, Science and Environmental Health Network
Hon. Pamela Resor, Massachusetts House of Representatives
Florence Robinson, Louisiana Environmental Network
Dr. Ted Schettler, Physicians for Social Responsibility
Ted Smith, Silicon Valley Toxics Coalition
Dr. Klaus-Richard Sperling, Alfred-Wegener- Institut, Hamburg, Germany
Dr. Sandra Steingraber, author
Diane Takvorian, Environmental Health Coalition
Joel Tickner, University of Mass., Lowell
Dr. Konrad von Moltke, Dartmouth College
Dr. Bo Wahlstrom, KEMI (National Chemical Inspectorate), Sweden
Jackie Warledo, Indigenous Environmental Network

http://www.masstortsstateoftheart.com/2011/08/articles/the-law/from-postnormal-science-to-postnormal-law/

From Post-Normal Science to Post-Normal Law?

POSTED ON AUGUST 3, 2011 BY DAVID OLIVER

What the appellate court has said in *Milward* is that somehow, based solely on the subjective weight given each bit of data and his interpretation of "the totality" of the data, an expert is free to testify to a conclusion that not only is unsupported by, but is completely at odds with, the premises from which it was derived. What's going on here?

What's up is that the Court has bought into, whether it recognizes it or not, the concept of "post-normal science". **It's an idea advanced by Jerome Ravitz and embraced by Carl Cranor and many in the movement that seeks to incorporate the precautionary principle into our laws.** The idea is explicated most clearly in "Towards a Non-Violent Discourse in Science" in which Ravitz explains that the Enlightenment's view of science which has prevailed to this day - that "in the natural sciences, whose conclusions are true and necessary and have nothing to do with human will" ... we must "give up this idea and this hope of [ours] that there may be men so much more learned, erudite and well-read than the rest of us as to be able to make that which is false become true in defiance of nature" (Galileo Galilei) - is yielding to a new conception of science necessitated by our modern scary world. A world in which "facts are uncertain, values in dispute, stakes high and decisions urgent". **A world in which Enlightenment-style science too often serves "the morally dubious worlds of profit, power and privilege"**.