Dealing with Dubious Testimony Provided by Opposing Experts

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It is particularly frustrating for a human factors expert attempting to offer testimony that is solidly based on established human factors data and methodology to encounter opinions offered by an opposing expert that are clearly inconsistent with that purpose. Panelists offer examples in which opposing experts have introduced dubious or false testimony, and also offer suggestions for various methods or devices to counter such testimony.

INTRODUCTION

This panel addresses the challenges that occur when testimony is given (during deposition, pre-testimony reports, or in trial) that is contrary to established research data and other authoritative criteria by a professional, especially a human factors professional, with apparent qualifications. It is the experience of some human factors specialists who serve in an expert capacity that such dubious (or even impeachable) testimony might be experienced more frequently than what we might expect in this profession. Consideration includes testimony provided by other professionals who misrepresent knowledge or methodology in the established human factors domain.

Questions that the panel addresses include these:

Do you see any trend in the number of instances in which dubious or improper testimony is being given by qualified human factors experts or other professionals commenting on human factors issues?

Describe some examples that you have faced.

How do you consult with the client attorney about the credibility of the opposite expert?

How have you responded to, or otherwise discredited or contra-testified about the opposite expert (with examples)?

It should be noted that no mention of individuals or organizations were made during this session; it is not our intent to discredit individuals or organizations. Instead, it is our objective to discuss an issue that is vital to preserving respect for the integrity of human factors testimony.

PARTICIPANT COMMENTARY

(In alphabetical order)

Richard J. Hornick

The stimulus for establishing this panel was my encounter with two situations in which qualified human factors experts gave testimony that was contrary to known human factors facts or knowledge.

The first involved a vehicle/pedestrian accident in which the female driver exited a small strip mall parking area and struck a woman crossing a two-lane roadway between the mall and a very large parking area (with several hundred spaces). A significant factor was the amount of pedestrian traffic between the large parking area and the strip mall in which there were about nine highly populated businesses (with only a few parking spaces). Vehicle traffic on the two-lane road was minimal, with long periods of none at all. The human factors expert testifying for the defendant had educational, societal, and certification credentials. In her deposition, she stated that she observed only four or five pedestrians during the period of an hour and a half. Having been at the site myself for that period of time, I knew that her testimony was false.

I returned to the site and used a digital video camera mounted on a tripod to record pedestrian (and vehicle) flow. I sampled a half-hour spanning the time of the accident. The judge permitted the video to be played during my court testimony. The jury was able to observe some 150 people of all ages and gender crossing that area in that half hour. It was clear to the court that the video revealed that about 450 pedestrians used that area during an hour and a half, not four or five as the expert testifying on behalf of the driver had claimed. The outcome of the jury deliberation was favorable to the pedestrian.

The other matter involved an unfortunate shooting with a replica 1873 Cattleman, single action revolver. Unfortunately, the manufacturer of the working replica also incorporated the unsafe feature that permitted the weapon to fire when dropped (unless a very complicated procedure were performed, not intuitive or apparent for the user). Further, an instruction manual that violated every human factors principle that is known for effective manual design accompanied the gun. In fact, the manual was a generic one intended for four different guns, including an 1875 Army Outlaw single action revolver. Indeed, the instructions for the lockout feature differed between the weapons, and even had contradictory warning instructions for carrying a loaded or unloaded gun.

The human factors expert defending the weapon wrote a disclosure statement that claimed (a) the gun was safe and (b) the manual was clear and effective.

I was able to counter that disclosure statement with one of my own that thoroughly discredited hers by addressing each and every point in her disclosure statement relative to the gun and the manual. After my statement was submitted, the gun manufacturer quickly settled the matter.

Kenneth R. Laughery

Most cases in which I have testified for some 35 years involve warning issues for products and environments. We should note that not all warnings experts come from the HF discipline, and not all HF practitioners are warnings experts, though it is true that much significant research and publications have come from our discipline
Warnings experts need to be able to address issues such as if particular warnings are necessary, are hazards open and obvious, are users familiar with the hazards, what is the goal of the warning, how do we assure attention-getting and how convey proper information for processing, how effective is it likely to be, and what is the role of a warning relative to inherent design or guarding?

After observing "warnings experts" address issues or questions such as those noted above, I have developed several concerns regarding the quality of expertise that occasionally emerges. Here are three of my concerns:

Not a Warnings Expert: I am surprised at times at how willing some "experts" are to provide opinions about warnings even though they have little or no education, training or experience in the subject matter. An example of the kind of circumstance in which this can occur is someone who is a qualified expert in another discipline (engineer or physician) extending their opinions beyond their own area of expertise. Another example is a person who has sat on a committee where warnings were discussed during product development, but the person has no qualifications regarding warnings. These two examples, while not typical, occur with sufficient frequency to be of concern.

Cherry-Picking the Literature: The concern here is with the expert who cites the scientific literature on the basis of the opinions instead of basing opinions on the scientific literature. The substantial body of scientific literature that has accumulated over the past 30 years lends itself to this problem.

Is a Warning System the Preferred Solution?: The safety hierarchy is essentially a priority scheme for dealing with hazards. It can be applied to products, environments and tasks where safety issues are involved. The priority focuses on three options; design, guard and warn, and it based on reliability. The point is that a design alternative is more likely to be an effective solution, a guard would be less likely to solve the safety problem, and warnings are least likely. This hierarchy is a widely accepted guideline across disciplines. However, some "experts" have rejected it or downplayed its importance, arguing that it is too rigid. This argument is a straw man, since there is little evidence that its application has had significant negative results.

Jake L. Pauls

First, as my forensics work constitutes only 5 to 10 percent of my professional time, I can devote much unparalleled time, effort and other resources to 'cutting edge' developments in a few fields. These fields are mainly public health (including epidemiology, etiology and policy-related advocacy), especially in relation to people movement in built environments (where my work has been cutting edge for decades), plus related model codes and safety standards development—in at least two countries. Thus I understand, in-depth and directly, the bases of society's interventions or control mechanisms for predictable and preventable injuries associated with the built environment at building scale.

Thus when I encounter input to a forensics procedure from a less-qualified "expert" I look for endemic flaws in reasoning and foundation. From separate cases in the US and Canada, two flaws are noted. First, an ergonomist arguing that a stair step geometry measurement should be made—and defended—as being made in accordance with common industry practice even though the method is contrary to published ergonomics findings and advice, *as well as what is explicitly set out in leading (ANSI) safety standards and model building codes.* Aside from noting that common practice contrary to adopted codes and standards should not trump what is actually in such codes and related foundational literature, I focus on the how the measurement method must reflect how people actually walk on stairs, especially in descent, i.e., an ergonomically justifiable basis for assessment.

Second, it is always dismaying to encounter an "expert" who claims ergonomics expertise, buttressed by membership in HFES or, worse, merely one of the Groups within HFES, sometimes only in some period in the past. For this, I maintain old HFES membership directories and check to see if corroboration exists for such membership HFES. More importantly, I try to identify errors that would be avoided had the "expert" truly been involved with HFES groups as well as the literature (both in being aware of it and contributing to it). Attainment of a CPE, or equivalent, is also one expected measure of expertise in ergonomics. Generally, I try to keep in mind that such membership and certification are usually necessary but never sufficient. The label of "expert," always in relation to a definable field, must not be diluted or perverted. I have always sought evidence of proper expertise in other professionals, either in litigation or other professional activities for some 47 years.

Alison Vredenburgh

In several housing accessibility cases, the position taken by Justice Department experts is that consensus standards are considered to make multifamily housing accessible to people with disabilities. I described the process that goes into making of the standards. I also went through the membership of the standards committee to show only a few of the members held PhDs or did research; the rest were there representing organizational interests. I also explained how absolute conformance with the standards would be problematic for many people with common disabilities. I

provided photographs of how people with various forms of mobility impairments would have problems using features that the DOJ experts claim to make a facility accessible.

In a case involving a pictorial warning on a trolley coupler, an opposing expert testified in deposition that no one would understand the pictorial, and the coupler jumper who was severely injured would not have understood the warning that she had her hands on as she straddled the coupler.

Between plaintiff's expert deposition and my deposition, I conducted a study using an actual sticker from the coupler, as well as a photo of its position for context. We then questioned a diverse group of people (age, education, ethnicity), using the ANSI pictorial standard for comprehension to determine whether people could understand the meaning of this pictorial. Participants included Spanish speakers who were interviewed in Spanish. Participants over 16 years of age were able to accurately describe the meaning of the pictorial 96% accuracy, far exceeding the 85% rate specified in ANSI. This study was published in time to bring a report copy to my deposition to counter the other expert's testimony.

Often experts in one field, such as engineering or medicine, claim that they are human factors experts through life experience. For example, a dirt bike expert testified that he had expertise in human factors from 40 years of driving a truck, *"If you're not an expert in human factors, you won't last very long. Just an informal expertise in my life. I don't have any education in it."* I countered this by presenting human factors research that he would not encounter in his life that supported the issues in the case including the factors affecting perception reaction times, safety culture, and object conspicuity.

Michael S. Wogalter

After 25 years of working in forensic consulting as a human factors expert, I have seen claims by opposing experts that were faulty with respect to human factors principles and research. Several have been repeated over the years. I discuss two here.

The first is a claim made by the other side's expert that has limited or no support in the peer-reviewed literature. For example, the other side's expert may support an opinion that warnings do not work by citing a limited set of studies that finds no effect of a warning on compliance. It is easy to counter this by pointing out that there are many more studies that show that warnings can raise compliance rates and enhance other intermediary measures. The important point is to know the literature (or to review it in the course of preparing for a case). If there are relevant studies and scholarly literature, they can be used to show that the other side's conclusion is based on a limited and faulty selection of literature.

The second main fault is related to the first one described above and the example given is similar. It occurs when the opposing expert states opinions using a specific selection of wording that has the potential to deceive. The statement offered by the opposing expert may be technically true but could give an incorrect impression of the actual state of affairs.

An example of this is a statement derived from a paper given in the mid-1980s at the annual Human Factors Society meeting in Baltimore, MD. The paper purported to have reviewed over 400 papers on warnings and the conclusion reached was that there was limited evidence that warnings are useful and effective. The statement was intended to give the impression that no matter what warning was to be given in a particular case's circumstance that it would not have mattered to prevent an injury event or reduce its seriousness. That message could give the impression that warnings, not even the best-designed ones, would have provided no benefit. However, what is not clear in the statement is that most of the literature that existed in the mid-1980s on warnings were simply guidelines and descriptions about how to supposedly design warnings, as well as a few standards, and texts with regulatory language.

Back then, there were very few empirical data-based studies in which warning effectiveness was measured. Thus, the message that the statement implies is something different than the actual state of affairs. If given to a lay jury, the statement would likely be interpreted incorrectly. An effective way to rebut this claim is to point out that there is now in existence a large body of scientific research on the topic that supports a different conclusion. Indeed, the main thrust of research on warnings since the mid-1980s has been to determine the factors that affect their effectiveness (i.e., what makes warnings work and not work), and have moved past the binary question about whether warnings work or do not work in general.

POSTSCRIPT

Because human factors and ergonomics professionals can significantly influence design and safety for the using public, it is important that our research and application data be applied with professional and scientific integrity. This is especially vital when assisting a court of law in distinguishing between truth and untruth concerning human factors issues.

This panel addressed some general and some specific examples in which human factors and other experts provided testimony that was dubious or contrary to established data or methodology in our discipline. This is not to suggest that such instances are rampant; to the contrary, they stand out by virtue of their uniqueness. Our purpose here was to identify some techniques that can counter such testimony with the intent of preserving the integrity of human factors testimony as well as that of our profession on which it is based.