An Iron Fist in a Velvet Glove on Expert Admissibility
By Duke R. Highfield and Benjamin A. Traywick

A recent South Carolina Supreme Court decision concerning the admissibility of expert testimony produces equal parts alarm and comfort on this relentlessly controversial topic. A product liability case, *Graves v. CAS Medical Systems, Inc.*, involved allegations that the defendant's heart rate and respiration monitor had failed in its intended purpose: to alert the parents that the heart rate and respiration of the child it was monitoring had slowed to dangerous levels. The child ultimately died, while the parents slept in the room. The child had been born prematurely—a triplet—and as a standard precaution had been hooked to the monitor before bed. When working properly, the monitor emits a high volume alarm when heart and respiration rates fell to specified levels.

Suing on the theory that the alarm had not sounded, and was therefore defective, the plaintiffs alleged that they had been sleeping in the room at all pertinent times, that they did not hear the alarm, and that it therefore must not have sounded. Countering this evidence was an activity log which was part of the monitor's software package: the log reflected that the alarm had in fact sounded on the night in question, as it should have, and that the parents must simply not have heard it. In support of this theory the defendant offered testimony from the plaintiffs' own doctor, who indicated that it is not unheard of for parents of triplets to become so exhausted by the many demands of such rigorous parenting, that they sleep through events easily sufficient to wake an average adult.

To establish the product defect necessary to prosecute their cause of action, the plaintiffs offered three software engineers, each of whom was offered to opine that a software failure had occurred, and that this software failure had been the cause of the alarm's failure to sound. Defense counsel challenged the admissibility of these experts' opinions on the ground that the methodology they employed to draw their conclusions was not scientifically valid. The trial court agreed, and the matter ultimately was taken up by the Supreme Court.

On the comforting side of the ledger, for those who hope for careful scrutiny of expert testimony before its being deemed admissible, the Supreme Court upheld the trial court's ruling. The opinion is extensive, but the thrust of the ruling is that none of the experts made any real effort to resolve which of the two competing pieces of hard evidence—the activity log showing that the alarm did sound, the testimony of the parents that the alarm did not sound—was more likely to have been what really happened. Each expert set forth a highly theoretical software failure which, in their view, accounted for the alarm's failure. None, though, offered any explanation for why the activity log indicated that the alarm did sound. Each, in essence, simply dismissed the activity log, on the ground that it was conclusively rebutted by, not surprisingly, the plaintiffs' testimony that the alarm did not sound. As the Court describes it:

> Turning first to Dr. Daugherity, his exclusion of complaint error as a cause was premised on the Graves' own testimony that the alarm did not sound.

He even went so far as to conclude that there is "no evidence that support a finding that the alarm actually functioned on the night of the incident." When presented with the evidence from the machine's internal log that the alarm did go off, Dr. Daugherity dismissed it as unreliable, based on the "undisputed testimony that the alarm did not function," i.e., the Graves' contention that the alarm failed.

Fortunately, the Supreme Court noticed and rejected the circularity of this argument: I allege that the alarm failed; the evidence that the alarm did not fail is incompatible with my allegation; therefore the evidence that the alarm did not fail is unreliable. Or, as the Court put it:

> Simply put, an expert does not assist the [jury]in determining whether a product failed if he starts his analysis based upon the assumption that the product failed (the very question he was called upon to resolve).

In that all of the experts' opinions were of similarly unimpressive logical caliber, the Court is to be applauded for declaring a limitation of our system's tolerance for practices which chip away at its legitimacy.

Less encouraging is the Court's giving its imprimatur to a mode of proof which lightens the burden on parties seeking to establish a product defect. The mode of proof is called "reasoning to the best inference", which is similar to a doctor's employment of differential diagnosis: establish the actual problem by establishing the relative improbability of the other possibilities. To the more cynical, "reasoning to the best inference" calls to mind another well-known (now discredited) analytical phenomenon, intelligent design: because the world is so complex, its construction must have been the singular creative act of an intelligent being.

Theological considerations aside, the problem with "reasoning to the best inference" is that it has as its core assumption precisely what the court had earlier rejected: starting one's analysis with the assumption that the litigant's preferred conclusion is correct. An expert operating under this approach assumes the defect is what assists his client's cause, and legitimizes not with reference to the theory itself, but solely with reference to the improbability of other potential causes. Legitimate scientific analysis—the hallmark of a robust expert opinion in product defect cases—focuses on the validity of the hypothesized defect, and subjecting that hypothesis to rigorous testing to see if it, in and of itself, makes sense in light of the evidence generated. A scientist says: does the physical evidence support *my theory*? Does *my theory* of what happened make sense in light of the evidence presented? Can *my theory* withstand scrutiny by other scientists? Can *my theory* overcome the countervailing evidence the other side has produced? "Reasoning to the best inference", on the other hand, asks whether the physical evidence supports some other, non-causal theory; whether some other, non-causal theory makes sense in light of the evidence generated; subjecting some other, non-causal theory to scrutiny.

This approach allows the expert to switch the focus from the details of why his theory is the cause of the injury, to why other theories are not the cause of the injury. So it moves the inquiry from what is specifically relevant to what is vaguely related. Its weaknesses when compared to the scientific method are obvious and severe. Most fundamentally it has the effect of shifting the burden to the defense, by allowing an expert to say in essence, "Well, I can't articulate scientifically reliable details as to why my theory is valid…but I can't think of anything else so it must be right." If this methodology gains widespread acceptance, the burden would be on the defense to say, "Wait, these other possibilities may well have been the cause." Ultimately, the court's apparent validation of this approach may serve to weaken the proof demanded of experts, facilitating resolution of cases by jury speculation which, as a matter of principle central to our judicial system's functioning, is rightly impermissible.

In fairness, the opinion's overall tone is in line with a very clear emphasis the court has adopted on the need for stringent enforcement of trial courts' gatekeeping function with respect to the admissibility of expert testimony. For example, the opinion includes language emphasizing the importance of the trial court's imposing rigorous evaluation of the expert's efforts to eliminate the other causes, and to the expert's conclusion as to the actual cause. So it is clear that the trial courts are encouraged to continue to wield their gatekeeping authority, even in the instance of a "reasoning to the best inference" expert opinion. It will be fascinating to see how the courts address this issue when experts using this type of analysis are offered.