

**IN THE
COURT OF APPEALS OF INDIANA**

FORD MOTOR COMPANY,)	
)	
Appellant-Defendant,)	
)	
vs.)	No. 49A05-9608-CV-322
)	
VICKI AMMERMAN, Guardian of PAMELA)	
AMMERMAN and LANA AMMERMAN,)	
)	
Appellees-Plaintiffs.)	

APPEAL FROM THE MARION SUPERIOR COURT, ROOM #5

The Honorable David L. Rimstidt, Judge

Cause No. 49D05-9311-CT-1305

February 12, 1999

OPINION - FOR PUBLICATION

RUCKER, Judge

Case Summary

Lana and Pamela Ammerman (referred to collectively as "the Ammermans") sustained

severe and permanent injuries when a 1986 Bronco II 4x4 in which they were passengers rolled over. The vehicle was manufactured by Ford Motor Company. The Ammermans sued Ford on various theories of liability, and they also sought punitive damages. The case proceeded to trial by jury upon the theory of strict liability in tort pursuant to Indiana's Product Liability Act. The jury returned a verdict in the Ammermans' favor. Lana Ammerman was awarded compensatory damages in the amount of \$400,000.00 and Pamela Ammerman was awarded compensatory damages in the amount of \$4 million. The jury also awarded each of the Ammermans \$29 million in punitive damages for a total punitive damages award of \$58 million. On motion by Ford the trial court reduced the total punitive damages award to \$13.8 million. Ford also filed a motion for relief from judgment which the trial court denied. Ford now appeals and the Ammermans cross appeal.

Issues on Direct Appeal

1. Did the trial court err in admitting as scientific evidence the emergency avoidance testing conducted by the Ammermans' expert.
2. Did the trial court err by excluding Ford's evidence that passenger cars roll over on paved surfaces from side force alone in light of the Ammermans' theories that (i) passenger cars are immune from rollover and, (ii) Bronco IIs should have been designed to perform the same as passenger cars.
3. Was the evidence sufficient to sustain an award of punitive damages.
4. Was the punitive damages award, even as remitted, violative of (i) the due process clause of the U.S. Constitution, and (ii) Indiana common law and the proportional penalties clause of the Indiana constitution.
5. Did the trial court err in denying Ford's motion for relief from judgment when actions of the Ammermans' experts immediately after trial contradicted their trial testimony and their representations to the trial court.

Issue on Cross Appeal

Did the trial court err in remitting the award of punitive damages.

Background

As a result of the gasoline shortages of the late-1970s, the automotive industry attempted to make its fleet more fuel efficient. R. at 5643. Pursuant to governmental regulations and consumer demands, Ford decided to introduce a new compact pickup truck and sports utility vehicle (SUV), the Ranger and the Bronco II, respectively. R. at 5645.

Ford elected to make the Bronco II a derivative vehicle of the Ranger because only a moderate investment would be required, making the Bronco II more profitable than other alternatives presented. / R. at 7194-95. As a derivative vehicle the Bronco II shared the same assembly line with the Ranger and was practically identical from the "B" pillar forward. R. at 7193.

Using an entirely new platform, as opposed to modifying that used for the Ranger, would have delayed production one to two years, placing Ford at least a year-and-a-half behind the release of General Motors' ("GM") competitive SUV, the Chevrolet S-10 Blazer. R. at 8880. The first Bronco II, known as "Job 1," was to be manufactured in mid-January 1983 and to be released in mid-March 1983. R. at 6041. GM was scheduled

to release the Blazer in the early fall of 1982. *Id.* Ford projected sales of the Bronco II to reach 468,000 with a net profit realized on each vehicle of \$3,570 and total net profits of \$1.6 billion dollars. R. at 7194-95.

Ford selected the Jeep CJ-7 as its image vehicle which meant that the CJ-7 was Ford's developmental point of reference. R. at 7696, 8711. The goals for the Bronco IIs came from the CJ-7's performance, package dimensions, and characteristics. R. at 8711-12. At the time Ford selected the CJ-7 as its image vehicle, Ford knew that studies showed that the Jeep CJ-5 and CJ-7 had rollover propensities significantly higher than other vehicles in their class. R.

at 7698. ² The popular television program "60 Minutes" aired a segment which described the danger of Jeep rollovers in late 1980 of which Ford was aware, yet it continued to use the CJ-7 as its developmental model. ³ R. at 5995, 7188. According to some experts in the field, the tendency to roll over is caused by a low static stability index ("SI"). The SI describes the relationship between a vehicle's track width and the height of the vehicle's center of gravity. The lower the SI, the higher the risk of rolling over. A vehicle with a narrow track and a high center of gravity is more likely to roll.

In February 1981, Ford engineers offered management five proposals to make the Bronco II more stable. Proposals One and Two involved slight increases in the Bronco II's stability index to 2.02 and 2.03, respectively. R. at 6001-02. Proposals Three, Four and Five involved additional widening of the track and lowering of the center of gravity. These changes would result in SIs of 2.09, 2.19, and 2.25, respectively. ⁴ R. at 6001-04. Proposals One and Two could be completed by the production deadline date for the Bronco II; but Proposals Three, Four, and Five "[could] not be contained within Job #1, 1983 P/U 4x4 timing" because they involved increasing ride height, widening the track, and/or making body revisions. R. at 6001. As a result Ford chose to proceed with Proposal Two knowing

that the Bronco II would have a stability index of 2.03, worse than that of the CJ-7 at 2.04. R. at 6003.

In addition to an automobile's stability index, its tendency to roll over is governed by the amount of understeer or oversteer ⁵ and its sensitivity to steering inputs. R. at 5990. Ford added a front stabilizer bar to the Bronco in order to increase the Bronco II's roll stiffness, hoping to increase the amount of its understeer. R. at 7467. When equipped with a front stabilizer bar the Bronco II was an understeer vehicle, but when it approached its cornering limit, the Bronco II became an oversteer vehicle. R. at 6658-61. After adding a front stabilizer bar, Ford performed only subjective tests to evaluate the bar, without performing objective tests such as limit maneuvers or lane change testing. R. at 6676-81.

Another factor affecting the Bronco II's stability was Ford's use of the twin I-beam (swing-axle) suspension. Swing axles have a tendency to "jack" because lateral forces on the tire tend to push the axle up. Jacking has two effects: (1) the tires will move inward under the vehicle, causing the vehicle to become narrower, and (2) the front of the vehicle moves up, making the vehicle taller. R. at 6231-34. As a result, stability decreases instantaneously. Jacking causes the Bronco II to jump up or "spike," when the vehicle experiences lateral forces of about .65 Gs. R. at 6267. Ford knew about the jacking

problem associated with the twin I-beam suspension. The engineering department published a paper as early as 1965 warning that in smaller vehicles twin I-beams created jacking during

cornering. R. at 6251. Ford did have safer choices, and its own engineers recommended the use of a MacPherson strut which lowers the center of gravity. However, the executive in charge of making the suspension decision elected to go with the twin I-beam as a result of pressures from his superiors. R. at 7970-72. Ford also sought additional marketing advantages available with the twin I-beam. 6

After the decision to go with Proposal Two had been made, Ford built a mechanical prototype of the Bronco II using the Jeep CJ-7 as its image vehicle and making the Proposal Two modifications. Ford then scheduled extensive testing of the mechanical prototype. R. at 7209. As a result of the testing, Ford engineers reported that the Bronco II's track needed to be widened or its ride height lowered. R. at 7212.

After the mechanical prototype testing, Ford built engineering prototypes. Initially, the prototypes were tested with the vehicle performing J-turns 7 of up to 55 m.p.h. and 360 degrees of steer. R. at 7215. The vehicle would tip over at speeds as low as 30 m.p.h. Id. Ford's engineers tried a combination of different suspensions, tires, and steering designs in an attempt to stabilize the Bronco II. Id. By mid-March 1982, development engineers again reported that to improve the problem of rollovers, the track width had to be increased by three to four inches. R. at 7222.

In April 1982, Ford scheduled a meeting to review a track-widening proposal and to “develop a contingency plan which will not delay Job #1.” R. at 7230. The engineers concluded that a 2-inch increase in track width was the minimum required for a minor improvement in stability. R. at 7239. A significant improvement in J-turn handling could be achieved on a Bronco II by using 14-inch wheels or increasing track-width 3 to 4 inches. R. at 7241. Neither of these recommendations was ever implemented. 8 R. at 7276. Even modest increases of two inches were rejected by Ford because “even with 110% effort, Job #1 would be in serious jeopardy.” R. at 7268, 7286. Eight months from the commencement of Job #1, the engineers once again recommended increasing the track by two inches which would have delayed Job #1 by three months. R. at 7284-85. These recommendations were necessitated by the results of a test conducted on track during May 1982 at the Arizona Proving Grounds. The test drivers experienced the prototypes tipping up onto two wheels, outriggers failing, and vehicles pole-vaulting over. R. at 8809-10. In fact live J-turn testing was halted because it was too dangerous for the engineers and test drivers. R. at 8809-11. Ford did not resume live J-turn testing until May 1989, six years after production of the Bronco II had commenced. R. at 7339. Ford implemented several superficial changes in order to increase the Bronco II's stability, including adding weight below the center of gravity, adding sealant to the tires, and changing the wheels. R. at 6045-48, 6965. Ford did

not make any major changes because they required widening the track or removing the twin I-beam. R. at 6074-77. Both of which were costly and would have delayed production.

On May 28, 1982, at or around the time of the Arizona Proving Grounds testing, Ford collected all documents relating to Bronco II's handling characteristics. This was the first time in Ford history that it had gathered engineering documents relating to any particular vehicle prior to production. All documents were maintained in a single location - Ford's Office of General Counsel. These documents were reviewed by Ford employees with the intent to "clos[e] the loop of vehicle documentation in this case." R. at 6964. One hundred thirteen documents were specifically related to the Bronco II program reports, test requests, test plans, and simulation analysis. Fifty-three of the documents disappeared. One of those documents, an "assessment update" issued two months before the production deadline, contained a separate document identified as "attachment two." The attachment listed seven major risks due to incomplete testing of the Bronco II. R. at 7337. The attachment was never found nor made available to the Ammermans. On November 24, 1982, Ford approved the Bronco II, certifying it was ready for production. The Bronco IIs placed on the market did not have the recommended increased track-width of at least 2 inches or a lower center of gravity. R. at 8879-80.

After the advent of production Ford engineers continued to raise questions concerning Bronco II's stability. In September 1986 Ford considered but disregarded larger tires because they would decrease the SI and "raise questions with . . . OGC [Office of General Counsel]." R. at 6136. Another Ford engineer recommended consideration of more permanent methods

of improving the Bronco's stability, including lowering the vehicle's center of gravity, adding more weight, and widening the track width. The engineers were essentially ignored. By placing the Bronco II on the market, Ford failed to meet its own design criteria. Ford's design goals for the Bronco II were the following:

1. Extremely safe;
2. Reduce rollover propensity to minimum including panic situations;
3. Avoid (virtually preclude) over correction in accident avoidance maneuvers;
4. Remain stable at all speeds under maximum steering inputs per human factors analysis;
5. Respond safely to large steering inputs which are typical of accident avoidance or emergency maneuvers; and
6. Handling and stability equal or better than any vehicle in class.

R. at 5960. The vast majority of vehicles will not roll over or tip-up during J-turns and emergency avoidance maneuvers. R. at 7069-70.

Although the National Highway Transportation Safety Administration ("NHTSA")⁹ has never promulgated rollover resistance standards, it has investigated defects which contribute to a propensity for rollover. The NHTSA conducted a defect investigation of the Bronco II from late 1988 until October 1990. At trial, the parties stipulated that "Ford did not provide any information to the NHTSA concerning the January to May 1982 APG [Arizona Proving Grounds] testing of Bronco II prototypes. The issues of whether the NHTSA asked for such information and whether Ford should have provided it to them [were] for . . . the jury to settle." R. at 8486.

In September 1988 NHTSA requested information from Ford concerning the Bronco II. Ford acknowledges that it was supposed to provide information that answered questions posed by NHTSA but indicated it “didn’t notice that [NHTSA] delineated development testing.” R. at 8492-93. The NHTSA requested that Ford:

[f]urnish the number and copies of all owner reports, . . . investigations, memoranda, and other records from all sources either received or authorized by Ford, or which Ford is otherwise aware, pertaining to (a) rollover, stability or similar performance or (b) the subject alleged defects of the Bronco II . . . (c) any information Ford may have comparing the Bronco II’s stability factor (center of gravity height) with other motor vehicles.

Identify the parties involved and describe any and all tests and analyses at (1) Ford, . . . or subject alleged defects, or (b) used to establish the stability of the Bronco II. . . .
Furnish copies of all reports, notes, tables, graphs, film, photographs, or similar documentation which were developed for each.

Furnish a copy of all documents not specifically requested which Ford believes are pertinent to the alleged defects and the resolution of the alleged defects, or were used in formulating its assessment of the alleged defects.

R. at 10146, 10149, 10150. Ford asserted that it believed the Spring 1982 APG testing did not have to be submitted to the NHTSA. Robert Munson, Ford’s representative responsible for responding to the NHTSA and Jeffrey Miller, then NHTSA chief counsel and current lobbyist for the automobile industry, confirmed that Ford sent the NHTSA production testing but did not submit the APG live limits testing. The NHTSA neither conducted tests of its own nor questioned Ford about the documents produced. After considering Ford’s response alone, the NHTSA issued a closing report on October 31, 1990, stating there “appears no reasonable expectation that further investigation would lead to a determination of the

existence of a safety-related defect with respect to any of the allegations regarding the propensity of the Bronco II to rollover.” R. at 10197-98.

After the Bronco II was put on the market, Ernest Grush, Ford’s automotive safety office statistician, acknowledged that he met with representatives of Consumer Union 10 (“CU”) in April 1989 to discuss Bronco II accident data. CU was contemplating publishing a report about the Bronco II’s instability. A day after this meeting, Jerry Sloan, another Ford representative, authored a memorandum reporting on the meeting, stating that Ford visited with CU to “moderat[e] what might otherwise be a totally disastrous story.” R. at 9264. Sloan’s memorandum reported that Ford had “clouded their [Consumer Union’s] minds, loosened some conclusions, . . . and sent them off to search for additional information which may work to our advantage.” R. at 9264.

Facts and Procedural History

On August 2, 1991, Pamela and Lana Ammerman were riding as passengers in a 1986 Ford Bronco II 4x4 which was owned and driven by Fred Watkins, Jr. There were two vehicles ahead of Watkins, a pickup truck and a Chevy Blazer. As Watkins approached

the two vehicles, he began to pass them. When Watkins was abreast of the truck, it pulled into the left lane forcing Watkins onto the left shoulder. Watkins then steered to the right to bring his Bronco back onto the road. However, he once again swerved left after he collided with the Blazer. Immediately thereafter, Watkins swerved right to avoid hitting a guardrail. Upon

this maneuver, the Bronco slid sideways and rolled over. Both Pamela and Lana were ejected from the vehicle, and both sustained serious and permanent injuries. Pamela underwent exploratory surgery for a blood clot on the back of her abdominal wall. She was diagnosed with a crushed pelvis and closed head injuries, including a skull fracture, contusions, and swelling of her brain. As a result of her closed head injuries, Pamela suffered cognitive deficits, speech problems, weakness on the left side of her body, and swallowing problems requiring a feeding tube. Pamela was not discharged from the hospital until twelve weeks after the accident and underwent physical therapy for eighteen months. Pamela's brain damage is permanent, and she currently has the mental capacity of a twelve- or thirteen-year-old girl. Another side effect of the brain injuries has been the onset of a bipolar disorder (manic depression), and she has attempted suicide as a result of her condition. Pamela needs both medical and psychiatric care in order to stabilize her mood. Her medical expenses exceeded \$200,000.00 and she lost an estimated \$723,717.00 to \$971,757.00 in earning capacity. Lana suffered a femoral fracture of the left thigh bone, right clavicle fracture of the collar bone, and a collapsed lung. Because she lost a large part of her temporal muscle leaving a "caved in" appearance, Lana was forced to undergo multiple reconstructive surgeries which have not completely cured her facial injuries. She continues to walk with an unsteady gait although a rod was inserted to stabilize her femur. Lana's medical expenses totaled over \$80,000.00.

The Ammermans filed a six-count complaint against Ford asserting various theories of liability including products liability, negligence, breach of warranty, and strict liability in

tort. The case ultimately was presented to the jury upon the theory of strict liability in tort pursuant to Indiana's Product Liability Act. After a twelve-day trial resulting in a record exceeding 10,000 pages, the jury returned a verdict in the Ammermans' favor. Lana was awarded compensatory damages in the amount of \$400,000.00, and Pamela was awarded compensatory damages in the amount of \$4 million. The jury also awarded each of the Ammermans \$29 million in punitive damages for a total punitive damages award of \$58 million.

Thereafter Ford filed a timely motion for relief from judgment pursuant to Ind. Trial Rule 60(B)(8) contending that certain tests performed by the Ammermans' experts shortly after the trial contradicted their trial testimony. The trial court denied the motion. Also Ford filed a motion to correct errors seeking various alternative forms of relief. One of which was the entry of judgment on the evidence for a substantially reduced punitive damages award pursuant to T.R. 59(J)(5). The trial court granted the motion and remitted the punitive damages award to slightly more than \$13.8 million. This appeal followed.

Discussion and Decision

Admissibility of Scientific Evidence

At trial one of the theories the Ammermans advanced was that Ford ignored its engineers' recommendation to give the Bronco a higher SI. The Ammermans argued that "[h]ad Ford taken appropriate steps to increase the index to 2.25," the accident would not have occurred. Brief of Appellee at 25. The Ammermans introduced expert testimony by Dr. Michael Kaplan, an engineer with a Ph.D. in solid mechanics. Dr. Kaplan testified that

a vehicle's SI determines whether it is stable and whether it would tend to roll over. According to Dr. Kaplan, the Bronco's SI made it unstable. Dr. Kaplan also asserted that vehicles with higher stability indices would not roll over, and automobile manufacturers could make vehicles immune to rollover by increasing the indices. In support of his theory, Dr. Kaplan and his partner, Robert Hooker, presented their own emergency avoidance maneuver ("EAM") test. This test involved Hooker driving utility vehicles around pylons using simulated emergency maneuvers. Dr. Kaplan testified that the protocol for the test was the following:

- a) to drive a vehicle (with outriggers) in a 12-foot lane at a pre-determined speed (usually 35-50 MPH in 5 mile increments) as close to an obstacle (traffic pylons) which block a lane of traffic before inputting steer to the left (in a left avoidance maneuver) to avoid the pylons; and
- b) as the vehicle clears the barrier (pylons), input steering back to the right to correct the first steer; and
- c) then input a third steer to straighten the vehicle back into the original lane of travel; and
- d) make all inputs as quickly as possible; but
- e) picking off cones with outriggers is not a negation of a test, nor does picking off the cone with the vehicle itself necessarily negate the test. The protocol is to 'avoid and correct.'

R. at 5960-62. Ford challenged the test as unscientific and inadmissible under Ind. Evidence Rule 702(b). The trial court admitted the test and all expert testimony based thereon. Ford contends the trial court erred in so doing.

An expert's opinion must be based on more than subjective belief or unsupported speculation. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 590, 113 S. Ct. 2786, 2795, 125 L. Ed.2d 469 (1993), cert. denied, 516 U.S. 869, 116 S. Ct. 189, 133 L. Ed.2d 126 (1995). Evid. R. 702(b) provides: "Expert scientific testimony is admissible only if the court is satisfied that the scientific principles upon which the expert testimony rests are reliable." Thus, the proponent of the expert testimony must establish that the requirements of Evid. R. 702(b) have been met. *McGrew v. State*, 682 N.E.2d 1289, 1290 (Ind. 1997). When this is done, the burden shifts to the opponent of the evidence who

then must attack the basis for receipt of the evidence, usually through the use of preliminary questions. *Weinberg v. Geary*, 686 N.E.2d 1298, 1301 (Ind. Ct. App. 1997), reh'g denied. The trial court assumes the function of "gatekeeper" in ensuring that an expert's testimony rests on a reliable foundation and is relevant to the issue at hand. *Hottinger v. Trugreen Corp.*, 665 N.E.2d 593, 596 (Ind. Ct. App. 1996). Determining whether expert testimony is reliable, and thus admissible, is a matter within the trial court's discretion. *Daubert*, 113 S. Ct. at 2795. The issue for the trial court is whether a sufficient basis for reliability has been established so that the expert testimony will be likely, in fact, to "assist the trier of fact to understand the evidence or [correctly] determine a fact in issue." Evid. R. 702(a); *Weinberg*, 686 N.E.2d at 1301. We will reverse the court's determination only "if the trial court's decision is clearly against the

logic and effect of the facts and circumstances before the court, or the reasonable, probable and actual deductions to be drawn therefrom." *Burkett v. State*, 691 N.E.2d 1241, 1245 (Ind. Ct. App. 1998). Of course, whenever expert testimony is admitted its opponent is free to challenge both the credibility of the expert and the weight to be given his testimony by the jury.

Ford relies heavily on criteria established in *Daubert* in arguing that the Ammermans failed to meet their burden regarding liability. Although *Daubert* is not binding upon the determination of state evidentiary law issues, it is helpful to us as "[t]he concerns driving *Daubert* coincide with the express requirement of Indiana Rule of Evidence 702(b) that the trial court be satisfied of the reliability of the scientific principles involved." *Steward v. State*, 652 N.E.2d 490, 498 (Ind. 1995).

In determining whether scientific evidence is reliable, the trial court must determine whether it appears sufficiently valid or, in other words, trustworthy to assist the jury. *Daubert*, 113 S. Ct. at 2795 n.9. In so doing, the trial court "must make a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and whether that reasoning or methodology properly can be applied to the facts in issue." *Hottinger*, 665 N.E.2d at 596. While not presuming to set out a definitive checklist or test regarding factors which bear on the reliability inquiry, the *Daubert* court outlined key considerations: (1) whether the theory or technique at issue can be and has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate of error; (4) the existence and maintenance of standards

controlling the technique's operation; (5) and whether the technique is generally accepted within the relevant scientific community. *Id.* at 2796-97. Although these considerations are useful, "there is no specific 'test' or set of 'prongs' which must be considered in order to satisfy Indiana Evidence Rule 702(b)." *McGrew*, 682 N.E.2d at 1292. Rather, reliability may be established by judicial notice or by sufficient foundation to convince the trial court that the relevant scientific principles are reliable. *Id.* at 1290; *Steward*, 652 N.E.2d at 499. When laying a sufficient foundation, the focus must be on the principles and methodology behind the science rather than the conclusions generated. *Daubert*, 113 S. Ct. at 2797; *Hottinger*, 665 N.E.2d at 596-97.

We have reviewed the evidence and arguments, and we find no abuse of discretion in the court's decision to admit the testimony of Dr. Kaplan. We proceed by addressing the

various points raised by Ford.

Ford challenges the admissibility of Dr. Kaplan's test results contending: (1) it lacked established protocols including instrumentation; (2) it was neither generally accepted nor reviewed by the relevant scientific community; and (3) Dr. Kaplan and Hooker designed and conducted the test exclusively for litigation purposes. According to Ford, Dr. Kaplan's test was unreliable because it was performed without preset protocols *11* or instrumentation. *12* Specifically, Ford argues the lack of requirements renders the test unreliable because the test can neither be duplicated nor verified. Ford further argues one cannot determine the test's

error rate due to a lack of standards controlling the test's operation. The Ammermans counter that preset protocols and instrumentations are unnecessary. They argue that failure to establish protocols or instrumentations does not render EAM tests unreliable, and that it is not uncommon to conduct EAM tests without instrumentation or specific protocols. The Ammermans further contend that the objective of Dr. Kaplan's test was to push each vehicle to its own particular limits in order to verify whether it would roll. Given the variations in each vehicle, defined protocols would not necessarily push a vehicle to its limits.

Because "[s]cientific methodology today is based on generating hypotheses and testing them to see if they can be falsified," a key consideration is whether a technique can be and has been tested. *Daubert*, 113 S. Ct. at 2796. Another consideration is the technique's known or potential rate of error. *Id.* at 2797. Thus, the existence and maintenance of standards controlling the test's operation is relevant to the trial court's inquiry. *Id.* at 2797. This is in keeping with the focus on principles and methodology. See *Hottinger*, 665 N.E.2d at 596-97. Accordingly, a sufficient foundation may be laid when the expert testimony provides reasonably specific details regarding the testing process utilized and the basis for the resulting opinion. *Davis v. State*, 598 N.E.2d 1041, 1049 (Ind. 1992), reh'g denied. However, the more technical the technique or test involved, the less particularized are the foundational requirements. *Hopkins v. State*, 579 N.E.2d 1297, 1303 (Ind. 1991). "It thus would appear that the greater the level of expertise involved, the more that procedural particulars are left to the expert's discretion." *Id.*

Ford does not appear to object to EAM tests in general. In fact, they do not question the methodology or theory behind EAM tests. Instead, Ford challenges Dr. Kaplan's opinion due to the procedures utilized during *his* EAM tests. Dr. Kaplan affirmed that his test has no protocol for steering inputs. He asserted that such a protocol is unrealistic because

[p]eople faced with a situation in the real world where they're driving down the road and there's an obstacle in front of them don't have any protocol for how much turn they need to put in the steering wheel. What they're concerned with is avoiding the obstacle . . . and so our test protocol doesn't involve putting in a specific amount of steer. What the protocol involves is making a sharp turn to avoid the obstacle.

R. at 7074. Contrary to Ford's assertion, Dr. Kaplan testified that there does exist a protocol regarding the particular path traveled during the test. Dr. Kaplan further testified

that he and Hooker performed the tests at the same speeds. Dr. Kaplan affirmed that the only instrumentation utilized is an internal camera which records the amount the steering wheel is turned. According to Dr. Kaplan, instrumentation is irrelevant when determining a vehicle's tendency to roll over; it is more appropriate when determining a vehicle's handling properties. Dr. Kaplan testified that "you don't need instruments to tell you [whether a vehicle will tip up or not]. What you have to do is just look at the test results and see whether or not the vehicle tips up in these turns." R. at 7081-82. Both sides questioned Dr. Kaplan extensively on the matters of protocol and instrumentation. In response, Dr. Kaplan provided details regarding the testing process utilized and the basis for his opinion.

Ford presented testimony critical of Dr. Kaplan's test. Ford's expert, Lee Carr, rendered his opinion of Dr. Kaplan's test:

Q: I gather it's the conclusions that Mr. Hooker draws and not his methodology with which you disagree? Is that accurate?

A: Yes.

Q: Do you have any criticisms of the methodology utilized by Mr. Hooker?

A: Yes, in the context that I don't really have any instrumentation or data to work with to truly evaluate what he's doing.

R. at 4118-19. We are therefore left with two contradictory opinions concerning whether Dr. Kaplan's testing procedures were sufficient.

Conflicting opinions between experts as to the validity of testing procedures do not necessarily render the opinion of one expert inadmissible. *Orr v. State*, 472 N.E.2d 627, 633 (Ind. Ct. App. 1984) and cases cited therein. ¹³ Instead, unless the conflict is such as to persuade the court that the testimony of the one expert is so much in error, or so lacking in scientific basis that it will not, in fact, assist the jury to correctly determine a fact in issue, the conflict should go simply to the weight of the evidence. See *Davidson v. State*, 580 N.E.2d 238, 243 (Ind. 1991).

We find that the conflict at issue here, test protocols and instrumentation, or lack thereof, did not require the exclusion of Dr. Kaplan's testimony and, accordingly, the court did not abuse its discretion in allowing the evidence. Such conflicts did certainly go to the weight of the evidence and, as such, were properly put before the jury.

After listening to the examination on foundation, the court stated that it found Dr. Kaplan's tests were capable of producing reliable results, the tests were themselves capable of being tested, they were documented sufficiently to allow peer review, and other entities had used similar testing. The court did express concern about the Daubert element dealing with the known or potential rate of error but stated that much of the preliminary questioning had touched on that factor and it was the court's view that under the circumstances the potential for error should be left to the jury in determining the weight to be given the evidence. We can find no abuse of discretion in that determination.

It is clear from the record that the court understood its role as gatekeeper and fully considered the evidence bearing upon admissibility in reaching its determination. As the Daubert court observed, "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." 113 S. Ct. at 2798.

Ford also maintains the evidence to which Dr. Kaplan testified was not generally accepted by the scientific community, and therefore, was unreliable. According to Ford, no other entity uses a test similar to the Kaplan/Hooker test to assess vehicle stability. The Ammermans counter that EAM tests similar to the one at issue are widely used by a variety of entities, including automobile manufacturers.

General acceptance within the relevant scientific community does have a bearing on the inquiry into whether a test is reliable. Daubert, 113 S. Ct. at 2797. Acceptance, however, is not a rigid requirement although the trial court may consider widespread acceptance when

ruling evidence admissible. McGrew, 682 N.E.2d at 1291 n.4. In addition, whether a known technique attracts only minimal support is also relevant to the admissibility inquiry. *Id.* It is important to note that this approach is more liberal than the traditional "general acceptance" standard established by *Frye v. United States*, 54 App. D.C. 46, 293 F. 1013 (1923). Instead of wholesale exclusion under an uncompromising "general acceptance" test, appropriate means of attacking shaky evidence include vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof. Daubert, 113 S. Ct. at 2798.

Both sides subjected Dr. Kaplan to vigorous examination. Dr. Kaplan testified that the EAM, alternatively known as obstacle avoidance maneuver, consists of a "rapid turn into the adjoining lane and a continuous rapid turn back into the original lane." R. at 7014-15. The purpose behind such a maneuver is to test a vehicle's performance when a driver attempts to avoid an obstacle in his or her path by making rapid, consecutive turns. On direct examination, the Ammermans introduced a list compiled by Dr. Kaplan which identified a number of entities that use emergency avoidance maneuvers to evaluate vehicles for rollover. The entities listed included automobile manufacturers such as Ford, American Motors, and Toyota. It also included private consultation companies as well as Consumer Union. During voir dire examination, Dr. Kaplan testified that although all EAM tests are performed for the same purpose, their protocols may differ with respect to speeds, distances, and whether pylons are used. In fact, Dr. Kaplan stated that no other entity follows the exact protocol as that used by his company.

Following extensive direct examination and preliminary questioning, the trial court found the Ammermans' expert testimony met the Daubert standard. The trial court observed that "[t]he techniques must also in Daubert be generally accepted within the scientific community that we're dealing with, and I think that there's been an adequate foundation laid by the exhibits which showed that other entities have used the test and similar tests to the one in question." R. at 7154. We agree with the trial court. Although the Ammermans introduced evidence that other entities use the EAM, Ford failed to produce evidence that EAM tests are totally unacceptable. It is true that Dr. Kaplan's test

differs from others used. However, it also appears that the majority of the EAM tests in use differ somewhat from one another. We cannot say that these variations render Dr. Kaplan's test inadmissible. Rather, any variations go to the weight of the evidence and are a matter for the jury to resolve.

Ford also contends that the Ammermans' failure to establish that Dr. Kaplan's test was neither reviewed by his peers nor published brings its reliability into question. Whether a theory or technique has been subjected to peer review and publication is a pertinent consideration. *Daubert*, 113 S. Ct. at 2797; *Hottinger*, 665 N.E.2d at 596. However, publication is not a sine qua non of admissibility. *Daubert*, 113 S. Ct. at 2797. Although publication may be considered a component of "good science" in that it increases the likelihood that substantive flaws in the given methodology will be detected, neither publication nor lack thereof is dispositive when considering the scientific validity of a particular technique or methodology on which an expert opinion is premised. See *Hottinger*, 665 N.E.2d at 596; cf. *Daubert*, 113 S. Ct. at 2797 (noting that well-grounded but innovative

theories may not be published while some propositions are too particular, too new, or of too limited interest to be published).

The Ammermans do not refute Ford's claim that Dr. Kaplan's test has not been published in a peer-reviewed journal. However, this fact alone should not render his expert testimony inadmissible. Rather, the reliability of a test should be brought into question through vigorous cross-examination and the presentation of contrary evidence. See *Daubert*, 113 S. Ct. at 2798. In this case, Ford had ample opportunity to attack Dr. Kaplan's test with considerable preliminary questions. Following Ford's preliminary examination, the trial court stated in pertinent part:

The *Daubert* test also says that your theories must be subject to peer review, and I think that also goes to the repeatability aspect of the arguments that have been made here. I don't think that peer review is required; but, obviously, these tests are documented well enough that they are subject to review of peers.

R. at 7153-54. We agree with the trial court. Although not subjected to peer review in the formal sense, the adversary nature of the trial subjected Dr. Kaplan's test to thorough scrutiny and increased the likelihood of detecting substantive flaws in his methodology. Ford had ample opportunity to contradict and disprove Dr. Kaplan's testimony through cross-examination and presentation of its own evidence.

Ford further contends the admission of Dr. Kaplan's expert testimony was in error given the fact that Dr. Kaplan and Hooker developed their test exclusively for litigation purposes. "[W]hether the experts are proposing to testify about matters growing naturally

and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for purposes of testifying" is a factor considered relevant by some courts. See *Smelser v. Norfolk S. Ry. Co.*, 105 F.3d 299, 303 (6th Cir. 1997), cert. denied, ___ U.S. ___, 118 S. Ct. 67, 139 L. Ed.2d 29 (1997) (quoting *Daubert v. Merrell Dow Pharm., Inc.*, 43 F.3d 1311, 1317 (9th Cir. 1995), cert. denied, ___ U.S. ___, 116 S. Ct. 189, 133 L. Ed.2d 126 (1995)). These courts believe the fact that an opinion arises from tests developed independent of litigation "important,

objective proof that the research comports with the dictates of good science.'" Smelser, 105 F.3d at 303. Although the authority of other jurisdictions is worthy of consideration, we find no Indiana case which requires or even suggests that a test's origins has a bearing on whether it is admissible. Not even Daubert itself advocates such a rule. Again, any questions regarding whether research comports with the dictates of good science should be addressed through cross-examination and presentation of evidence.

Exclusion of Ford's Evidence

Ford contends the Ammermans' case was premised on the twin assertions that passenger cars are immune from rollovers and that Ford violated its own design goals by failing to give the Bronco II the same rollover stability as it set out in a 1973 letter to the National Highway Traffic Safety Administration. In an effort to explain or contradict these contentions, Ford sought to introduce "hard evidence" in the form of studies of passenger car rollovers, federal statistics, and foundational research. The trial court excluded the evidence, however, based upon a determination that it was irrelevant. In response, Ford made an offer

of proof. Ford now complains that the exclusion of evidence left the jury with a misleading impression with respect to whether it is feasible to design a passenger car which is immune to on-road, tire-induced rollovers and whether enforcement of passenger car design standards against the Bronco II would result in a rollover proof vehicle. Thus, Ford concludes that the exclusion of this evidence prejudiced its defense.

Evidence is relevant if it has a tendency to prove a material fact. *Booker, Inc. v. Morrill*, 639 N.E.2d 358, 363 (Ind. Ct. App. 1994). The question of relevance is for the discretion of the trial judge and will be reversed only where a clear abuse of discretion is shown. *Id.* Moreover, a trial court is afforded considerable latitude in the admission or exclusion of evidence. *Indiana Ins. v. Plummer Power Mower*, 590 N.E.2d 1085, 1088 (Ind. Ct. App. 1992). Reversal based upon the erroneous exclusion of evidence is justified only where the evidence relates to a material matter or substantially affects the rights of the parties. *Faulkner v. Markkay of Indiana, Inc.*, 663 N.E.2d 798, 800 (Ind. Ct. App. 1996).

Even assuming the evidence Ford sought to introduce was relevant, the record reveals that Ford was permitted to introduce evidence contradicting and explaining the Ammermans' assertions. We find support for this conclusion in the testimony of two of Ford's expert witnesses, Carr and Donelson. At trial Carr explained how engineers set and test performance goals in the design of different types of vehicles and the factors impacting a vehicle's rollover stability. R. at 11067-69. He then went on to explicitly state that all vehicle makes and models have been involved in rollovers, R. at 10954, and that it is not possible to design a vehicle that is immune to rollovers. R. at 11112. Donelson testified

concerning the statistical relationship between T/2H 14 as a single characteristic and the rollover rates of numerous vehicles as an outcome of accidents. During his testimony, Donelson presented charts indicating that passenger cars and utility vehicles alike are subject to rollovers. R. at 10707, 10725-27. He also testified that it is misleading to look at rollover rates for a single class of vehicles without comparison to rollover rates of other classes of vehicles. According to Donelson, numerous factors contribute to vehicle

rollovers, some of which are not related to the vehicle design. R. at 10765. In light of the testimony offered by Carr and Donelson, we conclude that Ford was afforded an opportunity to contradict and explain the Ammermans' assertions and, therefore, the exclusion of additional evidence did not leave the jury with a false or misleading impression. Also, having examined Ford's offer of proof, we conclude the excluded evidence was merely cumulative of the testimony already provided.

Sufficiency of Evidence Supporting Punitive Damages

Ford contends the evidence at trial was not sufficient to support any award of punitive damages. Ford's argument is based on three grounds: (1) for the automobile industry as a whole the NHTSA rejected stability index as a predictor of rollover propensity, (2) NHTSA specifically investigated allegations that the Bronco II had an inordinate propensity to roll over and concluded that further investigation was not likely to yield any evidence that the Bronco II was defective from a rollover safety standpoint, and (3) there was no clear and convincing evidence that Ford possessed an "evil state of mind" in the production of the

Bronco II or that there was a "high degree of danger" that the Bronco II would roll over. Brief of Appellant at 50.

When reviewing a challenge to the sufficiency of the evidence, we will affirm a judgment of punitive damages if, considering only the probative evidence and the reasonable inferences supporting it, without weighing evidence or assessing witness credibility, a reasonable trier of fact could find such damages proven by clear and convincing evidence. *Bud Wolf Chevrolet, Inc. v. Robertson*, 519 N.E.2d 135, 137 (Ind. 1988).

Contending that the NHTSA rejected stability index as a predictor of rollover propensity, Ford asserts "NHTSA's determination conclusively negates the culpable mental state required to sustain a punitive sanction under Indiana law." Brief of Appellant at 46. First, we disagree with Ford's assertion. Although the NHTSA is not currently attempting to develop stability regulations, NHTSA has made clear in its statements to the public that stability issues are not to be discounted when investigating rollover propensity. In *re Ford Motor Co. Bronco II Products Liability Litigation*, 909 F. Supp. 400, 408 (E.D. La. 1995). The agency has stated that cost-benefit considerations have been the primary consideration in opting not to promulgate such a standard. *Id.* In a 1987 report the NHTSA declared that it "believes it may be appropriate to consider rulemaking on vehicle rollover characteristics when its ongoing and planned research relating to stability and other aspects of the problem is completed." R. at 7611. Hence, the NHTSA's decision not to adopt a stability index standard has been the result of inconclusive and incomplete research, and not an outright rejection of a stability factor as an indicator of rollover propensity. Second, Ford's argument

on this point presupposes that the Ammermans' punitive damages claim rested solely on stability index. That is not the case. As is evident from the trial court's jury instructions, the Ammermans' claim was based upon the premise that "Ford Motor Company acted willfully or wantonly with conscious disregard for probable injury, or with gross negligence regarding the manufacture of the 1986 Bronco II 4x4." R. at 11610-11. Stated differently this case proceeded to the jury on the theory that Ford manufactured a

dangerous and defective product and in so doing Ford showed "utter indifference or conscious disregard of the rights of others," namely that its defective product would cause injury. *Id.* The stability index issue was but a single component, albeit an important one, in the Ammermans' overall claim.

We also disagree with Ford's second assertion that NHTSA's report issued after an investigation of the Bronco II precludes a finding that Ford acted with the requisite culpability on which a finding of punitive damages may rest. In support Ford cites cases from other jurisdictions which Ford contends stand for the proposition that compliance with federal regulations precludes a finding of punitive damages. We first observe the cases on which Ford relies do not support its position. ¹⁵ In any event, at present there are no federal regulations concerning rollover characteristics. Thus there were no federal regulations with

which Ford was bound to comply. Further, the record is clear that the NHTSA investigation was essentially limited to examining documents Ford provided the agency. The record is clear also that Ford did not provide the agency with the results of its prototype testing, including the live testing conducted at the Arizona Proving Grounds in May 1982. During one such test Bronco II engineering prototypes tipped-up when exposed to sufficient side force, and the testing was suspended because of the danger it posed to the drivers. R. at 8809-11. Consequently, we cannot say NHTSA's conclusion would have been the same had Ford provided the agency with documentation concerning the prototype testing.

Finally Ford contends there was no clear and convincing evidence that it possessed an "evil state of mind" in the production of the Bronco II or that there was a "high degree of danger" that the Bronco II would roll over. Pointing to relevant case authority Ford argues a plaintiff must establish at least two critical facts in order to warrant punitive damages. First she must prove that the defendant acted "consciously, and with a highly reprehensible state of mind comparable to malice or wantonness, in producing injury." Brief of Appellant at 44 (citing *Orkin Exterminating Co. v. Traina*, 486 N.E.2d 1019, 1023 (Ind. 1986)). Second, the plaintiff must establish that the defendants conduct involved "probable injury and a high degree of danger to the plaintiff, of which the defendant was fully aware." Brief of Appellant at 44 (citing *Picadilly, Inc. v. Colvin*, 519 N.E.2d 1217, 1221 (Ind. 1988)). Ford then argues and attempts to demonstrate that neither element was satisfied in this case.

We have no quarrel with Ford's general statement of the law. However it is not the law controlling this case. Here, the trial court gave the following jury instruction on punitive damages:

In order to recover the award of punitive damages the Plaintiffs claim, you must first find that they are entitled to recover damages for strict liability. Then, in addition, the Plaintiffs have the burden of proving the following proposition by clear and convincing evidence: Ford Motor Company acted willfully or wantonly with conscious disregard for probable injury, or with gross negligence regarding the manufacture of the 1986 Bronco II 4x4 in this case. . . . You are instructed that the following terms used in these Instructions with regard to the issue of punitive damages have the following meanings:

Willful and wanton misconduct: A course of action which shows an actual or deliberate intention to cause injury or which, under existing conditions, shows either an utter indifference or conscious disregard for the rights of others. Gross negligence: The intentional failure to perform a manifest duty in reckless disregard of the consequences as affecting the life or property of another, such a gross want of care and regard for the rights of others as to justify the willfulness and wantonness. Recklessness is characterized by reasonably . . . by highly unreasonable conduct or a gross departure from ordinary care, in a situation where a high degree of danger is apparent. A person acts recklessly when one disregards a substantial risk of danger, that either is known or would be apparent to a reasonable person in the same position.

R. at 11610-11. Ford did not object to the instruction at trial, nor does it challenge the instruction on appeal. Therefore the jury was bound to apply the facts of this case to the law as given to it by the trial court. Pursuant to the trial court's jury instructions, the Ammermans first had to show Ford was strictly liable in tort. Apparently they have carried that burden in that Ford does not challenge this point on appeal; nor does Ford challenge the award of compensatory damages. Second, pursuant to the trial court's instructions, the Ammermans could prove entitlement to punitive damages on alternative grounds. More specifically they

were required to prove by clear and convincing evidence that in the manufacture of the 1986 Bronco II 4x4, Ford engaged either in "a course of action which shows an actual or deliberate intention to cause injury, *or* [engaged in a course of action] which, under existing conditions, shows either an utter indifference or conscious disregard for the rights of others." R. at 11610-11 (emphasis added).

The trial court observed and we agree that the record shows:

[t]he Bronco II's which rolled off the assembly line are dangerous and defective. Ford's knowledge of the defect cannot be reasonably questioned. The continued push to production of this product after all of the internal protestation to the contrary, is the crassest form of corporate indifference to the safety of the ultimate user or consumer and constitutes gross negligence.

Id. We believe the jury could have reached a similar conclusion. At the very least the evidence shows that in the manufacture of the 1986 Bronco II 4x4, Ford engaged in a course of action which, under existing conditions, showed an utter indifference for the rights of consumers.

Motion For Relief From Judgment

Following trial, Ford moved for relief from judgment pursuant to T.R. 60(B)(8). The trial court denied the motion. Ford claims it erred in so doing because certain tests performed by Hooker and Dr. Kaplan immediately after the trial contradicted Dr. Kaplan's trial testimony. More specifically a test performed in 1995 showed Hooker tipping a 1993 Jeep Cherokee. Ford maintained the test undermined Dr. Kaplan's testimony that a mid 1980s Jeep Cherokee with an SI of approximately 2.24 could not be made to tip. The 1993

Cherokee, however, neither was the same Cherokee nor equipped the same as the one used for the Ammerman trial. Ford then filed a supplement to its T.R. 60(B) motion following a test conducted in 1996 during which Hooker tipped a Bronco 4x2 modified to meet Dr. Kaplan's stability-index standard. Ford asserted that this test contradicted testimony that the Bronco 4x4 could be modified to produce a safe vehicle. Ford argued that if the results of the 1995 and 1996 tests had been available at trial, the outcome would have been different because (1) the tests would have undermined Dr. Kaplan's testimony, and (2) the tests would have proven the test unreliable, and therefore, inadmissible.

Indiana Trial Rule 60(B)(8) provides for relief for reasons other than mistake, surprise, neglect, fraud, default without notice or grounds that could be rectified with a motion to correct error. T.R. 60(B)(8). *16* Relief is therefore justified only in exceptional circumstances. *Showalter v. Brubaker*, 650 N.E.2d 693, 699 (Ind. Ct. App. 1995). When a motion for relief from judgment is filed, the burden is on the movant to demonstrate that relief is both necessary and just. *Levin v. Levin*, 645 N.E.2d 601, 604 (Ind. 1994). The movant must show it has a good and meritorious defense to the cause of action. *Butler v. Shiphewana Auction, Inc.*, 697 N.E.2d 1285, 1289 (Ind. 1998). A meritorious defense is one which shows a different result would be reached if the case were retried on the merits.

Id. "The catalyst needed to obtain the proper relief is some admissible evidence which may be in the form of an affidavit, testimony of witnesses, or other evidence obtained through discovery." *Chelovich v. Ruff & Silvian Agency*, 551 N.E.2d 890, 892 (Ind. Ct. App. 1990). The evidence must, as presented to the trial court, indicate the judgment would not remain unchanged, and an injustice would be foisted upon the defaulted party if the judgment is allowed to stand. *Id.* The decision of whether to deny a T.R. 60(B) motion is left to the equitable discretion of the trial court. *Levin*, 645 N.E.2d at 604. "In exercising its discretion, the trial court must balance the alleged injustice suffered by the party moving for relief against the interests of both the prevailing party and society generally in the finality of litigation." *Greengard v. Ind. Lawrence Bank*, 556 N.E.2d 1373, 1375 (Ind. Ct. App. 1990). We will reverse the trial court's grant or denial of the motion only upon a clear showing of an abuse of discretion. *Lake County Trust v. Highland Plan Comm'n*, 674 N.E.2d 626, 628 (Ind. Ct. App. 1996), *trans. denied*. An abuse of discretion occurs when the trial court's judgment is clearly against the logic and effect of the facts and inferences supporting the judgment for relief. *Id.* We will not reweigh the evidence in conducting this review. *Levin*, 645 N.E.2d at 604.

Ford contends the two subsequent tests justify setting aside the judgment. Ford argues the new information would result in a different judgment by undermining Dr. Kaplan's testimony in the eyes of the jury and by rendering Dr. Kaplan's testimony inadmissible. The tests at issue utilized different vehicles than those used in the tests conducted on behalf of the

Ammermans. *17* The later tests, therefore, are not comparable to the original tests. Furthermore, the trial court and jury considered extensive testimony and evidence critical of Dr. Kaplan's test and stability index theory. The 1995 and 1996 tests thus would amount to nothing more than cumulative evidence. Consequently, the results are not so

exceptional as to justify extraordinary relief pursuant to T.R. 60(B)(8).

Ford must also demonstrate that there is admissible evidence of a meritorious defense against the Ammermans. See *Butler v. Shipshewana Auction Inc.*, 697 N.E.2d at 1289. Hence, Ford must present evidence demonstrating a different result would be reached if the case were retried on the merits. See *id.* The only evidence available to Ford is the 1995 and 1996 test results. We agree with the trial court that these results are not outcome determinative. Ford had numerous occasions to challenge Dr. Kaplan's testimony and did so. As the trial court pointed out, Ford "had ample opportunity to impeach the results of the Kaplan/Hooker tests through their own experts, testing and facilities." R. at 5124. The jury was free to weigh the evidence presented by both Ford and the Ammermans. The evidence considered included that regarding Dr. Kaplan's stability index theory as well as the test itself. Clearly, the jury gave more weight to the Ammermans' evidence. In addition, the trial

court considered and weighed the evidence presented in determining the Ammermans laid a sufficient foundation for the admissibility of Dr. Kaplan's test. The tests at issue here would simply go to the weight and credibility of the evidence, not to its admissibility. Given the vast amounts of evidence and testimony presented at trial, we cannot say that the 1995 and 1996 tests would result in a judgment different from the one here.

In sum, Ford has failed to show that relief is necessary and just. Based upon the facts before us, we cannot say an abuse of discretion has occurred. The trial court found and we agree that the test results would not have altered the trial's outcome. The trial court's judgment is supported by the evidence, and we decline to disturb its decision.

Reduction of the Jury's Award and the Ammermans' Cross-Appeal

During closing argument counsel for the Ammermans offered the jury three alternative methods for computing punitive damages: (1) triple the amount of the compensatory damages, (2) multiply the sum of \$83.00 [the money Ford saved on each Bronco II by failing to make it safe] by 468,000 [the number of Bronco IIs Ford anticipated selling], or (3) multiply the sum of \$83.00 by 700,000 [the number of Bronco IIs Ford actually sold]. 18 R. at 11455-56. The jury eventually awarded Lana and Pamela equal shares of \$58 million. Noting the third alternative would render an award of \$58.1 million, the trial court concluded the jury must have adopted the third alternative in awarding punitive damages. Relying on *BMW of North America, Inc. v. Gore*, 517 U.S. 559, 116 S. Ct. 1589, 134 L. Ed.2d 809 (1996), the trial court also concluded that the jury's award unwittingly

offended the U.S. Constitution because it was based on the number of Bronco IIs Ford sold worldwide. Accordingly, the trial court reduced the \$58 million award to \$13.8 million, which represented Ford's retooling costs, along with an additional \$54.00 representing the cost for additional hardware installed on each vehicle.

Without conceding that any award of punitive damages is warranted in this case, Ford contends that even as remitted the award is still excessive. According to Ford, the award violates the due process clause of the United States Constitution as well as Indiana common law and the proportional penalties clause of the Indiana Constitution. 19 On cross-appeal the Ammermans complain the trial court erred in remitting the collective

\$58 million punitive damages award to \$13.8054 million.

The trial court reduced the award pursuant to Indiana Trial Rule 59(J)(5) which provides in relevant part that a trial court may "[i]n the case of excessive or inadequate damages, enter final judgment on the evidence for the amount of the proper damages. . . ." T.R. 59(J)(5). This remedy is available only where as a matter of law the evidence is not sufficient to support the verdict. *Carbone v. Schwarte*, 629 N.E.2d 1259, 1261 (Ind. Ct. App. 1994). In determining whether the trial court properly entered final judgment on the evidence, this court employs the same standard as the trial court. *Id.* That is, we must determine whether the evidence is insufficient to support the verdict as a matter of law. In

so doing, we must consider only the evidence and reasonable inferences favorable to the non-moving party; we may not weigh conflicting evidence or judge witness credibility. *Id.*

In *Gore* the U.S. Supreme Court examined the question of whether a \$2 million punitive damages award was grossly excessive and thus violative of the Due Process Clause of the Fourteenth Amendment. The underlying facts of that case are these. Dr. Ira Gore purchased a new BMW automobile and discovered the car had been repainted. He sued the American distributor of BMW alleging, among other things, that the failure to disclose the repainting constituted fraud under Alabama law. At trial BMW acknowledged that it followed a nationwide policy of not advising its dealers, and hence their customers, of pre-delivery damage to new cars when the cost of repair did not exceed three percent of the car's suggested retail price. Gore's vehicle fell into that category. The jury returned a verdict finding BMW liable for compensatory damages of \$4,000.00 and assessed \$4 million in punitive damages. On appeal the Alabama Supreme Court reduced the punitive damages award to \$2 million, finding the jury "improperly computed the amount of punitive damages by multiplying Dr. Gore's compensatory damages by the number of similar sales in other jurisdictions." 20 *Id.* 116 S. Ct. at 1595.

On appeal, the U.S. Supreme Court recognized that punitive damages may be imposed to further a state's legitimate interests in punishing unlawful conduct and deterring its repetition. *Id.* However, when an award is grossly excessive in relationship to those interests it violates the due process clause of the Fourteenth Amendment. *Id.* The Court noted that a state may protect its citizens by prohibiting deceptive trade practices and requiring automobile distributors to disclose pre-delivery repairs which influence the value of a new car. However, the record reflected that there was no uniform method of protecting those interests throughout the states. The Court described the status of the law in this regard as a "patchwork of rules representing the diverse policy judgments of lawmakers in 50 States." *Id.* at 1596. In essence, the non-disclosure of pre-delivery repairs was not an activity that was unlawful in all states. The Court then concluded "[a] State may not impose economic sanctions on violators of its laws with the intent of changing the tortfeasor's lawful conduct in other states." *Id.* at 1597. It is this latter quote upon which the trial court in this case relied in reducing the punitive damages award from \$58 million to a little over \$13.8 million.

The Ammermans complain the trial court erred in reducing the jury award because: (1) the decision to remit presupposes that the jury's award was based upon a multiplication of

\$83.00 times the 700,000 Bronco IIs Ford sold nationwide, and (2) the Gore quote refers specifically to conduct that is "lawful" in other jurisdictions. 21 As for the former, the

Ammermans point out there was evidence before the jury concerning Ford's profits and net worth. Specifically, the jury's award represented slightly more than 1% of Ford's \$5.3 billion in net profit for 1984. As for the latter, the Ammermans argue that manufacturing a defective product does not represent lawful conduct in any jurisdiction.

We agree with the Ammermans there was evidence before the jury concerning Ford's net profits. The law is settled that a fact-finder may consider a tortfeasor's financial condition when determining punitive damages. *Ramada Hotel Operating Co. v. Shaffer*, 576 N.E.2d 1264, 1268 (Ind. Ct. App. 1991) ("Based upon the theory that it will take a greater penalty to dissuade the rich than the poor from oppressive conduct, the wealth of the defendant may be shown so that the jury will assess damages which will punish it."). However, the record is clear that in closing arguments before the jury counsel for the Ammermans did not focus on Ford's net profits as a basis for punitive damages. Rather, counsel invited the jury to return an award of punitive damages based on alternatives that would punish Ford for conduct occurring beyond the borders of this State. 22 The jury complied. Gore prohibits

extra-territorial sanctions and as such the trial court properly determined that the jury's punitive damages award unwittingly offended the U.S. Constitution.

The Ammermans insist that Gore prohibits a State from imposing sanctions for a tortfeasor's conduct that is lawful in another State. According to the Ammermans, placing a dangerous and defective product into the stream of commerce is unlawful in every state of the union. Pointing to favorable jury verdicts in other jurisdictions Ford counters there is "not a shred of evidence suggesting that the distribution of Bronco IIs was unlawful in any other state." Brief of Appellant at 66 . We assume that no jurisdiction condones the sale of defective products. Nonetheless it is up to each jurisdiction to make that determination for itself. Thus we need not explore whether the sale of Ford's Bronco IIs are unlawful in other states. An Indiana jury has determined that Ford has transgressed the laws of this State. Thus any punitive damages award should be limited to protecting this State's consumers. We conclude therefore that as a matter of law the evidence in this case was not sufficient to support an award of punitive damages in the amount of \$58 million. The trial court properly reduced the award under the provisions of T.R. 59(J)(5).

Concerning Ford's argument that even as remitted the award is still unconstitutionally excessive, we disagree. In addition to criticizing the extra-territorial nature of a punitive

damages award that is inconsistent with the principles of state sovereignty and comity, the Gore Court also specifically set forth three "guideposts" to determine whether an award is grossly excessive: (1) the degree of reprehensibility of the conduct at issue, (2) the disparity between the harm or potential harm suffered by the complaining party and the punitive damages the complaining party received, and (3) the difference between the punitive damages remedy and the civil penalties authorized or imposed in comparable cases. *Id.* at 1598-99. We employ the same test here. Only if the guideposts demonstrate that Ford did not receive adequate notice of the magnitude of the sanction that this state might impose for the willful manufacture and distribution of a defective product, can we

then say that the \$13.8 million punitive damages award is grossly excessive.

Reprehensibility

As Gore makes clear "Perhaps the most important indicium of the reasonableness of a punitive damages award is the degree of reprehensibility of the defendant's conduct." 517 U.S. at 575, 116 S. Ct. at 1599. It is apparent to this court that Ford was motivated by profits rather than safety when it put into the stream of commerce a vehicle which it knew was dangerous and defective. Ignoring its own data and the advice of its engineers, Ford manufactured a vehicle prone to rollover accidents in spite of being aware that such accidents result in more serious injury than any other. The trial court characterized Ford's conduct as "the crassest form of corporate indifference." R. at 11610-11. We conclude that Ford's conduct was highly reprehensible as well.

Disparity between harm suffered and damages received

Dr. Gore's injury was purely economic and resulted in a compensatory award of \$4,000.00. Striking down the \$2 million punitive damages award the U.S. Supreme Court noted there must exist a "reasonable relationship" between the injury suffered and the damages received. The court observed "when the ratio is a breathtaking 500 to 1 . . . the award must surely raise a suspicious judicial eyebrow." Gore, 116 S. Ct. at 1603. Even so, the Court reiterated its refusal to draw any type of "mathematical bright line between the constitutionally acceptable and constitutionally unacceptable that would fit every case." Gore, 517 U.S. at 582-83, 116 S. Ct. at 1602.

Unlike Gore the injuries suffered by the plaintiffs in this case are physical, permanent, and severe. And in the case of Pamela the injuries are psychological and emotional as well. In its order of remittitur the trial court awarded Pamela \$10,900,027.00 and awarded Lana \$7,300,027.00. The award Pamela received in punitive damages is less than 3 times the amount of her \$4 million compensatory award. As for Lana the award of punitive damages is a little more than 18 times the amount of her \$400,000.00 compensatory award. Neither ratio in our view "raise[s] a suspicious judicial eyebrow." To the contrary both ratios bear a reasonable relationship to the injuries the women suffered and the award they received. It is also instructive that the U.S. Supreme Court has sustained awards of punitive damages where the ratio to compensatory damages far exceeded those in this case. See, e.g., *Browning-Ferris Industries of Vermont Inc. v. Kelco Disposal Inc.*, 492 U.S. 257, 109 S. Ct. 2909, 106 L. Ed.2d 219 (1989) (upholding a \$6 million punitive damages award where

compensatory damages totaled of \$51,146.00 - a ratio of 117 to 1- on a claim of anti-trust violation and interference with contractual rights); *TXO Prod. Corp. v. Alliance Resources Corp.*, 509 U.S. 443, 113 S. Ct. 2711, 125 L. Ed.2d 366 (1993) (upholding a \$10 million punitive damages award where compensatory damages totaled \$19,000.00-a ratio of 526 to 1-on a common-law slander of title action).

Sanctions for comparable misconduct

Comparing the punitive damages award and the civil or criminal penalties that could be imposed for comparable misconduct provides a third indicium of excessiveness. Gore, 517 U.S. at 583. In Gore the conduct of the defendant was comparable to a violation of Alabama's Deceptive Trade Practices Act which carried a maximum civil penalty of

\$2,000.00. The Court noted that the \$2 million punitive damages award was "substantially greater than the statutory fines available in Alabama and elsewhere for similar malfeasance." *Id.* In this case however there is no comparable civil statutory penalty for the manufacture and sale of a defective product. The same is true for criminal penalties. 23 Thus this portion of the *Gore* indicia of excessiveness is not applicable. In any event in the same context the court also observed "[m]oreover, at the time BMW's policy was first challenged, there does not appear to have been any *judicial decision* in Alabama or elsewhere indicating that application of [a Deceptive Trade Practices Act] might give rise to such severe punishment." *Id.* (emphasis added). Here, Ford complains that nothing in Indiana's judicial history could

have provided it with fair notice that such a huge award of punitive damages would be assessed. We disagree.

In this jurisdiction we will not reverse an award of damages as being excessive unless the damages appear so unreasonable as to convince us the jury was motivated by passion or prejudice. *Archem, Inc. v. Simo*, 549 N.E.2d 1054, 1061 (Ind. Ct. App. 1990), cert. dismissed, 498 U.S. 1076, 111 S. Ct. 944, 112 L. Ed.2d 1032 (1991). A high ratio of punitive damages alone will not be grounds to reverse an award of punitive damages. *Id.* The purpose of punitive damages is to punish the wrongdoer and thereby deter others from engaging in similar conduct in the future. *Id.* When reviewing an award of punitive damages we consider two primary factors. First, the nature of the tort and the extent of the actual damages sustained should be considered. Second, the economic wealth of the defendant should be considered. *Indiana & Michigan Elec. Co. v. Stevenson*, 173 Ind. App. 329, 363 N.E.2d 1254, 1263 (1977), trans. denied; *Bright v. Kuehl*, 650 N.E.2d 311, 316 (Ind. Ct. App. 1995), reh'g denied.

This case was presented to the jury on the Ammermans' assertion of strict liability in tort pursuant to Indiana's Product Liability Act. See Ind. Code § 33-1-1.5-1 to 33-1-1.5-5. 24 Liability for injury under the Act is premised on the claim that the product in question is in a defective condition unreasonably dangerous. *Id.*; *Rupert v. Mach. Tool Corp.*, 661 N.E.2d 826, 827 (Ind. Ct. App. 1995). As we have previously observed no issue has been raised in this appeal challenging whether the Ammermans carried their burden of proving that Ford

put into the stream of commerce a vehicle that was in a defective condition unreasonably dangerous. The question posed is whether Ford did so "willfully or wantonly with conscious disregard for probable injury, or with gross negligence . . ." R. at 11610. "Willful and wanton misconduct" is defined as "a course of action which shows actual or deliberate intention to cause harm or which, under existing conditions, shows either an utter indifference or conscious disregard for the rights of others." *Id.* The record shows that Ford was aware that rollover accidents "tend [] to be more serious than any others." R. at 8483 (cross examination of Ford executive). Although Ford protests loudly to the contrary, the record also shows the jury had before it clear and convincing evidence from which it could conclude that in the manufacture of the 1986 Bronco II 4x4 Ford acted willfully and wantonly in that Ford "show[ed] either an utter indifference or conscious disregard for the rights of others." R. at 11611.

In *Emerson v. Markle*, 539 N.E.2d 35 (Ind. Ct. App. 1989) this court upheld punitive

damages of \$150,000 where the compensatory award totaled \$1,000 -a ratio of 150 to 1- when the defendant had been found to have launched a crusade to "intentionally and maliciously" destroy the plaintiff's reputation and career. *Id.* at 40. For similar conduct, in *Archem* we upheld punitive damages of \$750,000 where the compensatory award totaled \$11,000 -a ratio of 68 to 1. Ford's conduct in this case was willful and wanton. In our view Ford knew or should have known that an award of punitive damages could have resulted in a ratio as high as 100 to 1. See *Emerson*, 539 N.E.2d 35. That is especially so given that Ford's economic wealth (\$219 billion in total assets, \$21.7 billion in net worth, and \$5.3 billion in net profits) is a factor to be considered in assessing punitive damages. See, e.g., *Dow Chemical v. St. Vincent Hosp.*, 553 N.E.2d 144 (Ind. Ct. App. 1990) (finding appellant's total assets of \$14.356 billion sufficient to sustain a punitive damages award of \$5 million). We conclude that as remitted the award of punitive damages was not excessive.

Judgment affirmed.
SHARPBACK, C.J., and GARRARD, J., concur.

1 Approximately three hundred million dollars was saved by making the Bronco II a derivative of the Ranger. R. at 8880.

2 The Highway Safety Research Institute released a report in February 1980 which concluded that Jeep CJ vehicles had a more than triple rollover fatality rate relative to that of standard sized utility vehicles. R. at 7703.

3 Ford had just approved the Bronco II program on October 22, 1980. R. at 7188.

4 Adopting Proposal Five would have resulted in \$13.8 million dollars in retooling costs and \$54 per vehicle in piece cost. R. at 6001.

5 A vehicle that has "oversteer" can produce extremely high lateral accelerations with small steering inputs. R. at 5990. An "understeer" vehicle, on the other hand, can have larger gross steering inputs, yet will not achieve a lateral G force level above roll stability characteristics. *Id.*

6 A narrow track-width was required in order to sell the Bronco II in Japan which was a market that Ford wanted to fill. R. at 8861.

7 The "J-turn" is a test "commonly used to evaluate the rollover performance of motor vehicles." R. at 7009. The test is performed by keeping the steering wheel in a straight position then turning it and holding it in that turn. R. at 7013-14.

8 There was discussion about implementing changes in later years, but this was never done. R. at 7286.

9 The NHTSA is an administration in the Department of Transportation. 49 U.S.C.A. § 105. Its jurisdiction includes "prescrib[ing] motor vehicle safety standards for motor

vehicles and motor vehicle equipment in interstate commerce; and [] carry[ing] out needed safety research and development." 49 U.S.C.A. § 30101.

10 Consumer Union is a non-profit organization whose self-described mission is to "test products, inform the public, and protect consumers."

11 Protocols include defined steering inputs, speed, distances traveled, and the path followed.

12 Instrumentation includes recording the vehicles' speed as well as measuring yaw rate and lateral acceleration.

13 While Orr was decided prior to adoption of the Rules of Evidence, the point of law remains valid.

14 T/2H is the formula for determining a vehicle's stability index.

15 See, e.g., *Richards v. Michelin Tire Corp.*, 21 F.3d 1048, 1059 (11th Cir. 1994) (holding that compliance with NHTSA's regulations represents "some evidence" of due care and that wantonness is not present when a manufacturer takes steps to warn of possible danger); *Sloman v. Tambrands, Inc.*, 841 F. Supp. 699, 703 (D.Md. 1993) (holding that under Maryland law "actual malice" was required for an award of punitive damages and because product complied with labeling regulations no actual malice was shown); *Chrysler Corp. v. Wolmer*, 499 So.2d 823, 826 (Fla. 1986) (finding that a 1977 Plymouth Volare station wagon satisfied NHTSA standards on fuel system integrity in its compliance testing); *Miles v. Ford Motor Co.*, 922 S.W.2d 572, 589 (Tx. Ct. App. 1996) (holding that Ford's reliance on NHTSA's studies concerning tension eliminators in safety belts weighed in favor of their use and that punitive damages were precluded where Ford used them in certain pickup trucks).

16 Trial Rule 60(B)(8) provides:

On motion and upon such terms as are just the court may relieve a party or his legal representative from an entry of default, final order, or final judgment . . . for . . . any reason justifying relief from the operation of the judgment, other than those reasons set forth in sub-paragraphs (1), (2), (3), and (4).

17 The Cherokee used for the Ammermans' test was a 1985 Cherokee equipped and tested with P205/75R15 tires. P205/75R15 tires are smaller than the P225/75R15 tires found on the 1993 Cherokee. According to trial testimony, a larger tire size impacts a vehicle's tendency to rollover by increasing the vehicle's center of gravity. Dr. Kaplan testified at trial that the 1985 Cherokee equipped with P205 tires did not tip.

In 1996, Dr. Kaplan and Hooker tested a modified Bronco 4x2 whereas they tested a Bronco 4x4 for the Ammermans' case. In fact, the trial court found any testing conducted with the Bronco 4x2 immaterial due to its dissimilarities to the Bronco 4x4. The trial

court therefore granted Ford's Motion in Limine preventing any discussion of the Bronco 4x2 during the trial.

18 We note in passing that Ford did not object to counsel's invitation to the jury.

19 Article I § 16 of the Indiana Constitution provides "Excessive bail shall not be required. Excessive fines shall not be imposed. Cruel and unusual punishments shall not be inflicted. All penalties shall be proportionate to the nature of the offense." Other than quoting a portion of Article I § 16 Ford does not elaborate further on its Indiana constitutional argument.

20 The Alabama Supreme Court reached this conclusion based upon a record that revealed Gore's counsel made the following closing argument:

They've taken advantage of nine hundred other people on those cars that were worth more If what Mr. Cox said is true, they have profited some four million dollars on those automobiles. Four million dollars profits that they have made that were wrongfully taken from people. That's wrong, ladies and gentlemen. They ought not be permitted to keep that. You ought to do something about it . . . I urge each and every one of you and hope that each and every one of you have the courage to do something about it. Because, ladies and gentlemen, I ask you to return a verdict of four million

dollars in this case to stop it.

BMW of North America, Inc. v. Gore, 646 So.2d 619, 627 (Ala. 1994).

21 In a footnote the Supreme Court observed "[g]iven that the verdict was based in part on out-of-state conduct that was lawful where it occurred, we need not consider whether one State may properly attempt to

change a tortfeasor's *unlawful* conduct in another State." Gore, 116 S. Ct. at 1598, n.20 (emphasis in the original).

22 In closing arguments, after discussing Ford's profits and net worth, counsel for the Ammermans stated the following with reference to punitive damages:

How do you make an impression on a company of this size If its a food service worker, would you hesitate to award Five Dollars and Fifty Cents (\$5.50) for one hour. No. There are three ways that I thought up to suggest to you . . . these are suggestions. This is your business. One is to triple the compensatory damages. Whatever award that you make for each of these girls, you triple it for the punitive damages. The second is to take that number, that Eighty-three Dollars (\$83.00) a unit that we know they saved, that two and a half percent of that additional profit that Ford made, and multiply it times the

468,000 units they anticipated. And I did the math last night and it is Thirty-eight Million Nine Hundred and Forty-Four Thousand

dollars (\$38,944,000). . . . The other way is to take that same number times the number of vehicles that they actually sold and say to Ford Motor Company, we are going to take away from you this time, so you never do this again, the profit that you should not have earned on the Bronco II. We're going to take it away from you.' Fifty-eight Million One Hundred Thousand Dollars (\$58,100,000)."

R. at 11455-56.

23 Ford contends the analogous conduct in this case is that of criminal recklessness. Brief of Appellant at 74. The Class D felony offense carries a maximum monetary fine of \$10,000.00.

24 Repealed by P.L. 1-1998 § 15. Now see Ind. Code §§ 34-20-1-1 to 34-20-9-1.