

11 S.W.3d 575 (2000)

The GOODYEAR TIRE AND RUBBER COMPANY, Appellant,
v.
Dennis THOMPSON and Cigna Insurance Company, Appellees.

No. 1998-SC-0054-DG.

Supreme Court of Kentucky.

February 24, 2000.

576 *576 John M. Famularo, Daniel E. Danford, Stites & Harbison, Lexington, for appellant.

Carl R. Clontz, Clontz & Cox, Mt. Vernon, for appellee, Dennis **Thompson**.

Randall L. Hardesty, Richard M. Joiner, Mitchell, Joiner, Hardesty & Lowther, Madisonville, for appellee, Cigna Insurance Company.

JOHNSTONE, Justice.

The **Goodyear Tire and Rubber Company (Goodyear)** appeals from a decision of the Court of Appeals, which reversed the trial court's granting of a directed verdict in a products liability case. We reverse and reinstate the judgment of the Madison Circuit Court.

The principal question raised on appeal is whether a trial court may apply the factors for determining the admissibility of expert scientific testimony set forth in Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993), and Mitchell v. Commonwealth, Ky., 908 S.W.2d 100 (1995), *overruled on other grounds*, Fugate v. Commonwealth, Ky., 993 S.W.2d 931 (1999), to the testimony of engineers and other experts who are not scientists.

Appellee, Dennis **Thompson**, was injured in the course of his employment while changing a multi-piece **tire** rim manufactured by **Goodyear**. In addition to bringing a workers' compensation claim, he filed a products liability suit against **Goodyear**. In the suit, he alleged that **Goodyear** negligently designed the rim in question and that **Goodyear** failed to warn of dangers inherent in changing tires with multi-piece rims. Appellee, Cigna Insurance Company (Cigna), the workers' compensation carrier for **Thompson's** employer, intervened in the suit to recover by way of subrogation the benefits it paid **Thompson**.

Prior to trial, **Goodyear** moved for a hearing pursuant to KRE 104(a) to assess the qualifications of **Thompson's** proffered expert, Dr. O.J. Hahn, to testify concerning **Goodyear's** liability for negligent design and failure to warn. The trial court granted the motion and a hearing was held on the matter on May 7, 1996. Dr. Hahn was present at the hearing, was
577 questioned *577 by **Thompson's** counsel, and was cross-examined by counsel for **Goodyear**. At the conclusion of the hearing, the trial court excluded Dr. Hahn as an expert witness.

Subsequently, **Thompson** informed the trial court that, if Dr. Hahn was not allowed to testify as an expert witness, he had no other evidence to present. **Goodyear** moved for a directed verdict. A recess was called, after which the trial court denied **Thompson's** motion to continue. **Thompson** then moved to place Dr. Hahn's testimony into the record by avowal. The motion was granted. At the conclusion of Dr. Hahn's avowal testimony, the trial court granted **Goodyear's** motion for a directed verdict.

In his appeal to the Court of Appeals, **Thompson** argued that, in the hearing to determine whether Dr. Hahn was qualified to testify as an expert, the trial court misapplied the standard set forth in Daubert, supra. The Court of Appeals disagreed with this argument. Nonetheless, it reversed the trial judge and held that the trial court abused its discretion in excluding Dr. Hahn as witness. Relying on case law from the Ninth Circuit, the Court of Appeals held that Daubert and Mitchell only

applied to testimony that is based on scientific knowledge and, thus, the trial court erred as a matter of law in applying the *Daubert* factors to Dr. Hahn's testimony which was based on his engineering knowledge.

WHETHER THE TRIAL COURT ERRED IN APPLYING DAUBERT AND MITCHELL TO DETERMINE THE ADMISSIBILITY OF DR. HAHN'S TESTIMONY

Subsequent to the rendition of the Court of Appeals' opinion in this case, the United States Supreme Court granted certiorari in a case to address the issue of whether *Daubert* was limited to testimony based on scientific knowledge. We abated oral argument in this case until the Supreme Court rendered its opinion, which it did on March 23, 1999. See *Kumho Tire Company v. Carmichael*, 526 U.S. 137, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999). After careful review of the additional briefing on the issue, review of the *Kumho* decision itself, and consideration of the oral arguments presented, we adopt the reasoning of *Kumho* and hold that *Daubert* and *Mitchell* apply

not only to testimony based on "scientific" knowledge, but also to testimony based on "technical" and "other specialized" knowledge. [See KRE 702]. We also conclude that a trial court may consider one or more of the more specific factors that *Daubert* [and *Mitchell* mention] when doing so will help determine that testimony's reliability. But ... the test of reliability is "flexible," and *Daubert's* [and *Mitchell's*] list of specific factors neither necessarily nor exclusively applies to all experts or in every case. Rather, the law grants [the trial] court the same broad latitude when it decides how to determine reliability as it enjoys in respect to its ultimate reliability determination. See *General Electric Co. v. Joiner*, 522 U.S. 136, 143, 118 S.Ct. 512, 139 L.Ed.2d 508 (1997) ([a trial court's reliability determination is reviewed for abuse of discretion]).

Kumho, 526 U.S. at 140-41, 119 S.Ct. at 1171, 143 L.Ed.2d at 246-47. Therefore, the Court of Appeals' central holding that *Daubert* and *Mitchell* only apply to testimony based on scientific knowledge is in error.

Next, we note that abuse of discretion is the proper standard of review of a trial court's evidentiary rulings. See *Tumey v. Richardson*, Ky., 437 S.W.2d 201, 205 (1969); *Transit Authority of River City (TARC) v. Vinson*, Ky.App., 703 S.W.2d 482, 484 (1985). The same standard applies under the Kentucky Rules of Evidence, including KRE 702. *Mitchell*, 908 S.W.2d at 102; accord *United States v. Abel*, 469 U.S. 45, 54, 105 S.Ct. 465, 470, 83 L.Ed.2d 450, 459 (1984). While the Kentucky Rules of Evidence allow a trial court "to admit a somewhat broader range of *578 scientific testimony than would have been admissible under *Frye*,^[1] they leave in place the 'gatekeeper' role of the trial judge in screening such evidence." *General Electric Company v. Joiner*, 522 U.S. 136, 141-142, 118 S.Ct. 512, 517, 139 L.Ed.2d 508, 516 (1997). A trial court's ruling on the admission of expert testimony is reviewed under the same standard as a trial court's ruling on any other evidentiary matter. Compare *Fugate*, 993 S.W.2d at 935 (the decision as to the qualifications of an expert rests in the sound discretion of the trial court and will not disturb such ruling absent an abuse of discretion) with *Justice v. Commonwealth*, Ky., 987 S.W.2d 306, 314-15 (1998) (a trial court's ruling on relevancy under KRE 403 is reviewed under an abuse of discretion standard). Thus, we are left with the question of whether the trial court abused its discretion in excluding Dr. Hahn's testimony.

KRE 702

For the sake of clarity, we begin with a brief review of the application of *Daubert* and *Mitchell* to a proffer of expert testimony pursuant to KRE 702.

"If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." KRE 702.

When faced with a proffer of expert testimony, the trial judge must determine at the outset of trial, pursuant to KRE 104,

"whether the expert is proposing to testify to (1) scientific [, technical, or other specialized] knowledge that (2) will assist the trier of fact to understand or determine a fact in issue." Daubert, 509 U.S. at 592, 113 S.Ct. at 2796, 125 L.Ed.2d at 482. In order to meet the above standard, proffered expert testimony, which is based on "scientific, technical, or other specialized knowledge," must be both relevant and reliable. *Id.* at 589, 113 S.Ct. at 2795, 125 L.Ed.2d at 480.

The consideration of relevance has been described as one of "fit."

"Fit" is not always obvious, and scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes.... The study of the phases of the moon, for example, may provide valid scientific [, technical, or other specialized] "knowledge" about whether a certain night was dark, and if darkness is a fact in issue, the knowledge will assist the trier of fact. However, (absent creditable grounds supporting such a link), evidence that the moon was full on a certain night will not assist the trier of fact in determining whether an individual was unusually likely to have behaved irrationally on that night.

Daubert, 509 U.S. at 591, 113 S.Ct. at 2796, 125 L.Ed.2d at 481-82 (internal citation omitted).

The consideration of reliability entails an assessment into the validity of the reasoning and the methodology upon which the expert testimony is based. It is the inquiry into the reasoning and methodology where application of the *Daubert* and *Mitchell* factors comes most into play. We emphasize that the inquiry into reliability and relevance is a flexible one. The factors enumerated in *Daubert* and *Mitchell* are neither exhaustive nor exclusive. A trial court may apply any or all of these factors when determining the admissibility of any expert testimony.

The factors set forth in *Daubert* and adopted in *Mitchell* that a trial court may apply in determining the admissibility of an expert's proffered testimony include, but are not limited to: (1) whether a theory or technique can be and has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) whether, with respect to a particular technique, there is a high known or potential rate of error and whether there are standards controlling the technique's operation; and (4) whether the theory or technique enjoys general acceptance within the relevant scientific, technical, or other specialized community. Daubert, 509 U.S. at 592-94, 113 S.Ct. at 2796-97, 125 L.Ed.2d at 482-83.

Finally, we address the impact of Johnson v. Commonwealth, Ky., 12 S.W.3d 258 (1999), on the *Daubert* and *Mitchell* analysis. We stated in *Johnson* that trial courts in the Commonwealth may take judicial notice of methods and techniques which already have been recognized by existing case law as reaching the status of scientific reliability, e.g., analysis of fibers, ballistics, and fingerprints. *Id.* at 262. However, we noted that "judicial notice does not preclude proof to the contrary." *Id.* at 262. Judicially noticed reliability shifts the burden to the opponent of the method or technique to prove to the trial judge's satisfaction that the method or technique no longer meets KRE 702's standard of reliability. *Id.* at 263. The proponent may rely entirely on the judicially noticed method or technique or may "introduce extrinsic evidence as additional support or in rebuttal." *Id.* at 262. Thus, while *Daubert* and *Mitchell* apply to all expert testimony pursuant to KRE 702, the application is markedly different depending on whether the method or technique, upon which the testimony is based, has been recognized as reliable by existing case law. This difference is exemplified in the evolution of the reliability of certain methods of DNA analysis.

In *Mitchell*, *supra*, we held that the trial court did not abuse its discretion in admitting DNA evidence in that particular case. Mitchell, 908 S.W.2d at 102. However, we also held that the admissibility of all DNA evidence would continue to be determined on a case-by-case basis. *Id.* at 101. In Fugate, *supra*, we overruled that portion of *Mitchell* which retained the case-by-case basis for the admissibility of DNA evidence derived from the PCR and RFLP methods of analysis. Fugate, 993 S.W.2d at 937-38. Under *Fugate*, the PCR and RFLP methods of DNA analysis are no longer subject to a pre-trial *Daubert* hearing. In other words, a trial court may take judicial notice of the reliability of these methods of analysis. However, Johnson, *supra*, makes clear that these two methods of DNA analysis are not forevermore beyond the reach of the application of *Daubert* and *Mitchell*. Rather, a party still may challenge the reliability of the PCR and/or RFLP methods of DNA analysis, though he or she bears the burden of proving that the methods of analysis are not, or are no longer, reliable under KRE 702. This would result in a reverse *Daubert* hearing where the party moving to exclude the evidence tries to prove that the challenged expert testimony is based on "scientific, technical, or other specialized knowledge" that is not reliable.

WHETHER THE TRIAL COURT ABUSED ITS DISCRETION IN EXCLUDING DR. HAHN'S TESTIMONY

In his complaint, **Thompson** alleged that he was injured when he was struck by an FL type lock ring from a wheel assembly which exploded while he was in the process of mounting the assembly to the axle of a trailer. He alleged that **Goodyear** was "negligent in the design, manufacture, testing, and inspection of the lock ring" which injured him. Further, he alleged that **Goodyear** was negligent in failing to warn him about the inherent dangers associated with the lock ring.

Multi-piece rims are used in conjunction with tube-type tires, most frequently on trucks.... Multi-piece rims consist of two or more components which, when assembled and the **tire** inflated, are held together by the force of the air pressure in the **tire**....

580 A multi-piece rim consists of a rim base, the largest part of the metal structure *580 supporting the **tire**, and one or more detachable side rings serving as a flange to keep the inflated **tire** on the rim base. The rim base, side ring, lock rings, and **tire** are collectively referred to as a "wheel."

For multi-piece rims, the rim base and the side or locking rings are the primary components which support the **tire's** bead. This is referred to as a split side ring in two piece assemblies.... In the case of two piece assemblies, the circumferentially continuous outer small component is termed a side ring....

There are basically four multi-piece wheel designs.... The third type rim (exemplified by **Goodyear's** "LW" type rim) is a two piece assembly composed of a demountable rim base and a split side ring....

Servicing Multi-Piece Rim Wheels, 45 Fed.Reg. 6706 (1980)—Plaintiff's Exhibit # 8.

The subject matter of Dr. Hahn's proffered testimony had two components: (1) the type of multi-piece **tire** rim, which was involved in the explosion that injured **Thompson**, was negligently designed; and (2) **Goodyear** failed to warn **Thompson** concerning the dangers inherent in changing a **tire** with the type of multi-piece **tire** rim involved in the explosion. Upon review of the record of the preliminary hearing which was held to determine the admissibility of Dr. Hahn's proffered testimony, we conclude that the trial court did not abuse its discretion in excluding Dr. Hahn as a witness.

NEGLIGENT DESIGN

The essence of Dr. Hahn's testimony concerning negligent design was that there was a safer design. Dr. Hahn testified that the multi-piece wheel assembly at issue in this case relies on a tongue and groove system for securing its components. However, he testified that it is impossible to perform a visual inspection to determine whether the components were properly assembled after inflation. This, he alleged, was a design defect. He stated that the only way to ensure that the component pieces are properly assembled is to bolt them together. He also stated that the problem could be eliminated by employing a single piece rim.

As to his theory that the components of the wheel assembly should have been bolted together, Dr. Hahn testified that **Goodyear** experimented in the 1970's with bolting the pieces together, but the experiments failed. He testified:

It [(bolting the pieces together)] didn't work because they did not use the technology. If they had used the technologies from the 30's they would have been successful or if they had used the technology which they used in our aerospace division for aircraft it would have worked also.

....

If they had used the 30's technology they would have succeeded. You see the bolt system was too weak and they claim it didn't stand up in use and in the bolt system they used in the B-52's was satisfactory so a bolt system of the same strength and type as used in the B-52 would have been satisfactory.

Dr. Hahn's theory that the 1930's technology would work was based on his review of patents for rim components. He explained, in "1938 there is a proposal to tie the ends of the side ring together so it cannot slip off. That is recognized in 1938 as very important." He also referred to a 1953 patent which emphasized the advantages of a single piece design. In explaining why he believed that the technology used in the wheel assemblies of B-52's^[2] would work in the trucking industry, Dr. Hahn testified:

581 *581 The weight process of the B-52 is larger. The air pressure is larger. The loadings of turning and downward pressure is larger so all the key elements ... are exceeded in the aircraft **tire** compared to the truck **tire** so the conditions for severity of service are exceeded. So the truck **tire** is not seeing the loads of pressure and the size forces [the B-52] that system sees.

On cross-examination, Dr. Hahn was directly asked, "[H]ave you ever used a B-52 bolting system and tried it in the multi-piece trucking industry?"

Dr. Hahn replied that he had not.

Dr. Hahn was then asked whether he submitted his theory concerning the feasibility of the B-52 bolting system to any **tire** manufacturer, to OSHA, or subjected the theory to any sort of peer review to see if the theory would work. Again, Dr. Hahn stated that he had not. He was asked if he had published any articles concerning his theory on the B-52 bolting theory. He stated that he had not. Additionally, he stated that he had never participated in the design of the **Goodyear** FL ring, that he had never designed a side ring or designed a **tire**, and that he had never participated in the process of manufacturing tires.

In excluding Dr. Hahn's testimony concerning **Goodyear's** alleged negligent design, the trial court stated in pertinent part:

[T]he court finds the proffered expert lacking.... The problem I have with the testimony that is proffered by the plaintiffs [sic] can Dr. Hahn's theory or technology be tested? Apparently it can. Has it been subject to peer review and publication? It has not. Further, Dr. Hahn offered no proof of any widespread acceptance of his theory or technology. An inference or assertion in a design case it seems to this court must be derived by some kind of scientific methodology. Engineering is not an art. It is a science. It involves principles of physics. It involves high mathematics. It involves scientific testing methodology. None of that was offered with respect to the inquiry today regarding either the expert or his theory and technology in this case.

The test for abuse of discretion is whether the trial judge's decision was arbitrary, unreasonable, unfair, or unsupported by sound legal principles. Commonwealth v. English, Ky., 993 S.W.2d 941, 945 (1999). Applying this standard, it is clear that the trial judge did not abuse her discretion in excluding Dr. Hahn's testimony.

The trial judge expressly found that the proffered testimony did not satisfy three of the *Daubert* and *Mitchell* factors. The only other factor, the potential rate of error of using the B-52 locking technology in the trucking industry, had no application in this case because Dr. Hahn had not performed any tests using the technology. Moreover, Dr. Hahn's assertion that **Goodyear** could have made a safer wheel assembly using 1930's technology or the technology used on B-52's was founded only on his bare assertion that this was so. As noted by the *Kumho* Court, neither *Daubert* nor the rules of evidence require a trial court "to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert." Kumho, 526 U.S. at 157, 119 S.Ct. at 1179, 143 L.Ed.2d at 256. Finally, the trial judge found that Dr. Hahn's theory was not based on any viable methodology. As stated in *Daubert*, the central inquiry into the admissibility of testimony pursuant to FRE 702 (identical to KRE 702) is an "assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." Daubert, 509 U.S. at 592, 113 S.Ct. at 2796, 125 L.Ed.2d at 482.

582 *582 **FAILURE TO WARN**

Dr. Hahn's proffered testimony that **Goodyear** should have warned **Thompson** about the inherent dangers of changing the wheel assembly in question was based on his theory that there was a safer method of changing multi-piece tires. In explaining, Dr. Hahn testified:

The only warning is essentially to assemble these components, add air to them in a small amount, such as 3 p.s.i., to seat them and then mount them on the axle. Inflate them on the axle so there is ... no more handling of the components after they have been inflated. The handling of the components after inflation in a[n] unprotected manner is the core problem which the industry has to warn about. The industry has to say the only safe way where you cannot be hurt is if you mount the wheels in dual application or if you take a demountable one on the front, air out, lugs out, which covers the side ring to prevent it from leaving the axle.

Dr. Hahn testified that the warning outlined above was not required by OSHA regulations, which were admitted into evidence as an exhibit. He further testified that the warning provided by **Goodyear** in connection with changing the wheel assembly at issue did not violate OSHA regulations. In response to a question from the trial judge, Dr. Hahn stated that no company recommends or uses his proposed method of assembly and attachment of multi-piece rims. Also, he testified that he had not written about his method, nor had it otherwise been submitted to any kind of peer review. Finally, in response to a question by the trial judge as to whether he had ever tested his method of changing multi-piece tires, Dr. Hahn stated that he was a Scout Master and was responsible for a scout bus when a **tire** blew out in a "dual setting." He testified that while using his method to change the **tire** on the scout bus, the inner dual **tire** blew out. He testified that the resulting explosion was fully contained and did not damage the dual sets.

In excluding Dr. Hahn's testimony concerning **Goodyear's** alleged failure to warn, the trial court stated in pertinent part:

Clearly in Kentucky ... recovery may be had for inadequate warning as a separate and distinct cause of action. The issue here is whether or not Dr. Hahn may testify as an expert to prove inadequate warning or to prove that **Goodyear** in this case breached its duty to adequately warn. Dr. Hahn offers antidotal [sic] testimony with respect to what he calls a warning. However, ... the only industry standards that are offered at this time by the plaintiffs are the OSHA standards and Dr. Hahn concurs that **Goodyear** is in compliance with the OSHA standards on the warning issue. It is the court's ruling that [the] offered proof ... of a better or safer way to install in this particular case is not sufficient evidence to prove breach of duty to warn. Dr. Hahn ... can offer no industry involvement with respect to looking at what he calls reverse installation..... No companies are currently using this reverse method of assembly and attachment and he has not himself formally tested that. He does provide antidotal [sic] testimony that it worked on his boy scout bus but certainly not in the same situation and the circumstances that the plaintiff alleges here. So, absent any definable testimony or qualification on Dr. Hahn's part, the court finds that he is not an expert witness.

583 Once again, we cannot say that the trial judge abused her discretion in excluding Dr. Hahn as an expert witness concerning the allegation that **Goodyear** breached its duty to warn. Dr. Hahn had not formally or rigorously tested his reverse installation procedure. In fact, he only offered a single instance in which he had used this method of reverse installation. Obviously, he did not testify as to the error rate associated with his reverse *583 method of installation. He had not submitted his reverse installation to any sort of peer review. Finally, Dr. Hahn did not demonstrate any acceptance of his procedure either in the industry or through OSHA standards. Thus, none of the *Daubert* and *Mitchell* factors favor admissibility of Dr. Hahn's testimony.

SUMMARY

The principles established in *Daubert* and *Mitchell* concerning the admissibility of expert testimony apply not only to expert testimony based on scientific knowledge, but are equally applicable to expert testimony based on technical or other specialized knowledge. In assessing the admissibility of expert testimony pursuant to KRE 702, a trial court, pursuant to KRE 104, must determine at a preliminary hearing whether the expert is proposing to testify to (1) scientific, technical, or other specialized knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. In making this

determination, the trial court must ensure that any and all expert testimony that is admitted is both relevant and reliable.

KRE 702 gives the trial court the discretionary authority, reviewable for its abuse, to determine admissibility of expert testimony in light of the particular facts and circumstances of the particular case. The discretion given to a trial court in determining the admissibility of expert testimony "is discretion to choose among reasonable means of excluding expertise that is *fausse* and science that is junky.... [T]he *Daubert* factors are not holy writ, in a particular case the failure to apply one or another of them may be unreasonable, and hence an abuse of discretion." *Kumho*, 526 U.S. at 158, 119 S.Ct. at 1179, 143 L.Ed.2d at 256-57 (Scalia, J., concurring).

We conclude that the trial court employed reasonable means to determine the admissibility of Dr. Hahn's testimony, and we hold that the trial court did not abuse its discretion in excluding his testimony. Therefore, the decision of the Court of Appeals is reversed and the judgment of the Madison Circuit Court is reinstated.

COOPER, KELLER, and WINTERSHEIMER, JJ., concur.

STUMBO, J., concurs in part and dissents in part by separate opinion.

LAMBERT, C.J., dissents by separate opinion, with GRAVES, J., joining that dissent.

STUMBO, Justice, concurring in part and dissenting in part.

I concur with that part of the majority opinion which adopts the *Kumho Tire* decision and thereby applies the *Daubert* analysis to the testimony of engineers and other "non-scientific" expert witnesses. However, I believe that Hahn's proposed testimony satisfied *Daubert's* requirements of reliability and relevance and that the trial court abused its discretion in excluding his testimony. I therefore join the dissent to the extent that it objects to the exclusion of Hahn's testimony.

LAMBERT, Chief Justice, dissenting.

In the case at bar, the expert whose testimony was excluded was Dr. O.J. Hahn. From the record, it appears that Dr. Hahn is at least sixty years of age and the holder of a B.S. degree in engineering physics, an M.S. in nuclear engineering, an M.A. in mechanical engineering, and a Ph.D. in mechanical engineering from Princeton University. Since 1973 he has taught engineering at the University of Kentucky and since 1984 has been a professor of mechanical engineering at UK. Among the courses he has taught at UK are engineering safety and engineering experimentation. He is a member of the Society of Automotive Engineers, American Society for Quality Control, American Nuclear Society, American Society of Mechanical Engineers, American Chemical Society, and Kentucky Health Physics Society. He has authored or co-authored many published articles in various areas of *584 engineering and is a member of several honorary societies for engineers. He has research specialization in safety of mechanical systems. He has testified as an expert witness on multi-piece rims in over one hundred cases in forty-nine states and has studied such rims for over twenty-six years. Despite the foregoing qualifications, the trial court found that "he is not an expert witness" and excluded his proffered testimony.

The only discernable basis for the majority opinion upholding the ruling of the trial court is trial court discretion: "KRE 702 gives the trial court the discretionary authority, reviewable for its abuse, to determine admissibility of expert testimony in light of the particular facts and circumstances of the particular case."^[1] In effect, the majority holds that there is no rule of law with respect to the admissibility of scientific evidence—that only the view of the trial judge matters. Manifestly, such an approach will lead to inconsistent, unpredictable and perhaps arbitrary decision-making that no appellate court will be empowered to correct.

The trial court and this Court's majority have confused the concept of admissibility of evidence with the concept of weight and credibility of evidence. As shown by the quotation from the trial court in the majority opinion at page 582, the trial court was pre-occupied with industry practices and virtually disregarded the education, training and experience of the witness. The trial court appears to have confused its role as gatekeeper with the jury's role in determining the weight evidence should have. In contrast, the view of the Court of Appeals was as follows: "The Court [in *McKendall*]^[2] explained that because testimony from such a witness would be helpful and relevant, he was qualified as an expert witness, and it would

be for the jury to determine the weight to be accorded his testimony. Moreover, it is the role of cross-examination to discredit the expert's testimony by raising points such as his failure to have tested or created the safety device he espoused."^[3]

The Court of Appeals summarized Dr. Hahn's avowal testimony as follows: "Dr. Hahn testified that when using a multi-piece locking system, like the FL-type lock, a bolting system like that used on B-52 bombers is safer than that used by **Thompson** in this case. He explained that since the system works on B-52 bombers, and all the key elements are exceeded in aircraft tires as compared to truck tires, it would obviously work with a truck **tire**."^[4] Any flaw in the foregoing analysis would have been revealed in cross-examination. Dr. Hahn's testimony should have gone to the jury where a proper assessment of weight would have been made.

Upon reading the majority opinion, one is left to ponder an extraordinary incongruity. Recently, this Court has authorized the per se admission of expert scientific evidence relating to DNA identification on the view that the basic science was sufficiently reliable that *Daubert* hearings need not occur.^[5] Less than twenty years ago, the use of human DNA for the purpose of identification was unknown,^[6] but this Court is now entirely comfortable with its use to prove the identity of perpetrators of crime. In this case, however, we have declared our lack of confidence in basic mechanical engineering, a discipline which has been known and widely accepted for a century or more. The admissibility issue in this case did not concern DNA identification, brain surgery or rocket science. It concerned *585 a wheel. Despite this, however, we have held that a Ph.D. mechanical engineering professor with many years of teaching and other professional experience may be prevented from testifying because the trial judge did not have confidence in his methodology and did not believe that his testimony satisfied the *Daubert* test.

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GRAVES, J., joins this dissenting opinion.

[1] *Frye v. United States*, 293 F. 1013 (D.C.Cir.1923).

[2] The B-52 is a long-range, heavy bomber which is capable of flying at high subsonic speeds at altitudes up to 50,000 feet.

[1] Majority opinion at page 583.

[2] *McKendall v. Crown Control Corp.*, 122 F.3d 803, 807 (9th Cir.1997).

[3] Court of Appeals opinion page 6.

[4] Court of Appeals opinion page 7.

[5] *Fugate v. Commonwealth, Ky.*, 993 S.W.2d 931, 937 (1999).

[6] *Harris v. Commonwealth, Ky.*, 846 S.W.2d 678, 680 (1992).

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