

PERSPECTIVES ON *DAUBERT*:
AVOIDING AND EXPLOITING “ANALYTICAL GAPS”
IN EXPERT TESTIMONY

By

Richard O. Faulk*

Preface

Over the past decade, a growing national trend has emerged in the judiciary toward stricter scrutiny of expert testimony.¹ Texas courts are a prominent part of this movement. The trend is cheered by choruses of “junk science” critics and decried by others as an invasion of the jury’s traditional role. A veritable maze of cases has been decided regarding the admissibility and reliability of expert opinions – so many, in fact, that it is sometimes difficult to completely understand the principles that actually control. Despite the disparaging label of “junk science”² and some relatively obvious examples of what types of evidence fit that characterization,³ courts, litigators, and parties have found it increasingly difficult to define and apply a test that predictably removes “bad science” from the courtroom and allows “good science” to remain.

Since the United States Supreme Court decided *Daubert v. Merrell Dow Pharms., Inc.*,⁴ and since the Texas Supreme Court decided *E. I du Pont de Nemours & Co. v. Robinson*,⁵ a “flexible” list of “nonexclusive” factors has been applied to hundreds, perhaps thousands, of different fact scenarios, often with results that are frankly bewildering to litigators and judges – not to mention the parties themselves who seek as much reliability and predictability in the results of litigation as they do in the process itself. Challenges to expert testimony have proliferated to the point where many litigants feel they are obligatory in almost every high dollar case. Such tactics not only strain the limits of judicial and litigant resources, but also stretch the boundaries of professionalism. Lawyers and litigants dilute valuable “judicial capital” with unnecessary challenges to scientific evidence, risking their credibility when meritorious challenges must be made.

All of these problems cry out for a “bright line” rule – a rule that is simple to state, easy to apply, and predictable in its results. Fortunately, it appears that such a principle has

*Richard O. Faulk is a partner and Chair of the Litigation Department of Gardere Wynne Sewell LLP, resident in the firm’s Houston office. He is Board-Certified in Civil Appellate Law by the Texas Board of Legal Specialization and has argued appeals in Texas, Oklahoma, the Fifth and Ninth Circuits, and the United States Supreme Court. Mr. Faulk concentrates his practice in complex tort and environmental litigation, including class actions and other “mass tort” cases involving multiple plaintiffs and defendants. Mr. Faulk has published over thirty scholarly articles in his areas of practice, including several articles regarding the admissibility of scientific evidence under federal and state evidentiary rules. Recently, Mr. Faulk served as an invited speaker on scientific evidence issues before the National Academy of Sciences. In 2009 and 2004, he received the prestigious Burton Award for Legal Achievement at the Library of Congress in Washington, D.C.

emerged from the morass of post-*Daubert* and post-*Robinson* cases: It is known as the principle that precludes testimony where there is an unacceptable “analytical gap.” Since its adoption by the United States Supreme Court in *General Electric Co. v. Joiner*,⁶ and by the Texas Supreme Court in *Gamill v. Jack Williams Chevrolet, Inc.*,⁷ the “analytical gap” principle has developed as an overarching consideration for courts frustrated with the “laundry list” of “non-exhaustive” factors announced in earlier decisions.

Although it was originally developed to deal with expert opinions that were “non-scientific” in nature, such as those based upon observation and experience, courts have expanded the “analytical gap” prohibition to govern all types of expert testimony. Because the rule has its origins in the traditional concept of relevancy,⁸ it is more readily understood and applied by trial judges and litigants, and it is more easily defended against charges of subjectivity and jury usurpation. Moreover, its use also simplifies the analysis of expert testimony, which should reduce the number of unnecessary and resource-consuming challenges to expert proof.

This article surveys the development and application of this important principle and focuses on its practical benefits as an understandable and effective solution to complex problems regarding the admissibility of expert opinions. It addresses how, under this more tightly focused inquiry, advocates offering expert testimony may avoid fatal “gaps” and how advocates opposing such proof may identify and exploit them.

Origins of the “Analytical Gap” Test

Twelve years ago, the United States Supreme Court transformed the rules governing the admissibility of expert testimony in *Daubert v. Merrell Dow Pharms., Inc.*⁹ Previously, many federal courts applied the rule laid down in *Frye v. United States*,¹⁰ which broadly excluded testimony if the technique or methodology used to generate the opinion was not “generally accepted” in the scientific community.¹¹ After the Ninth Circuit affirmed a district court’s exclusion of evidence under the *Frye* test, the Supreme Court announced a new test based upon Federal Rule of Evidence 702. The new test imposed strict “gatekeeping” rules on trial courts and generally required an analysis based upon both relevancy and reliability before a challenged expert opinion could be admitted.¹²

As guidance for the lower courts, the Supreme Court provided a “nonexclusive” list of factors for trial courts to consider, including:

- Whether the technique has been tested;
- Whether the technique has been subjected to peer review and publication;
- Whether the technique has a known or knowable rate of error; and
- Whether the technique is generally accepted in the scientific community.¹³

The Supreme Court instructed the lower courts to be flexible in applying these and other appropriate factors to the facts of particular cases, apparently deciding to empower the courts to exercise their new responsibilities broadly, rather than to constrain them by “bright line” principles.

Daubert provided a vast array of opportunities to challenge not only “novel” expert testimony, but also testimony that had not been previously evaluated under the more exacting standards. Motions flooded the lower courts, imposing great burdens on trial judges to make increasingly dispositive decisions regarding disciplines in which they had little experience and less training. The appellate courts faced a similar problem if they were required to evaluate the trial judge’s ruling *de novo* in every case.

Finally, the Supreme Court provided relief in *General Electric Co. v. Joiner*.¹⁴ Although the “difficulty of the task” and “comparative lack of expertise” did not excuse courts from exercising their new “gatekeeper” role,¹⁵ the *Joiner* Court empowered the trial courts by ruling that, like other rulings on the admission of evidence, their decisions were discretionary and subject to review only for an abuse of that discretion.¹⁶ As a result, the “gatekeeper’s” decisions were less likely to be overturned, and “close calls” were more likely to be sustained. This broad standard of review reduced the level of magnification used in appellate review and empowered trial courts to act “flexibly” – just as *Daubert* intended.

But *Joiner* also reached another equally important decision. Instead of focusing entirely on the reliability of the underlying “technique” used to generate the challenged opinion – as *Daubert* did¹⁷ – *Joiner* also analyzed the “fit” between the expert’s opinion and the facts of the case:

[C]onclusions and methodology are not entirely distinct from one another. Trained experts commonly extrapolate from existing data. But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence . . . connected to existing data only by the ipse dixit of the expert. *A court may conclude that there is simply too great an analytical gap between the expert’s methodology and the conclusion.*¹⁸

The “analytical gap” found in *Joiner*, a toxic tort case, involved two problematic areas of testimony. First, the experts, who were medical doctors, assumed that all of the fluid to which the plaintiff was exposed contained PCBs, but that assumption was inconsistent with the actual record of the case.¹⁹ Second, the experts relied upon animal studies to establish causation, but the studies involved vastly higher exposures to PCBs over a short period of time, while the plaintiffs’ exposures were “minimal” over a long period of time.²⁰ The Supreme Court affirmed the trial court’s exclusion of the experts’ testimony because its failure to “fit” the facts of the case exposed an “analytical gap” fatal to the testimony’s reliability. In its most basic sense, the testimony was simply not relevant.

It is noteworthy that the “analytical gap” test was first used to affirm the exclusion of testimony that was undoubtedly *scientific* in nature. Although some have argued that the

“analytical gap” rule should only apply to testimony that is based on experience, rather than “established” scientific knowledge, neither the United States Supreme Court nor the Texas Supreme Court have accepted that distinction. Instead, they have maintained their allegiance to the *Daubert/Robinson* factors and have also applied the “analytical gap” test whenever appropriate.²¹

Even in cases such as *Kumho Tire Co. v. Carmichael*,²² which involved “non-scientific” testimony regarding tire failure analysis, the United States Supreme Court has cleaved to both the *Daubert* factors and “gap” analysis. As the Court stated, “[w]e can neither rule out, or rule in, for all cases and for all time the applicability of the factors mentioned in *Daubert*, nor can we do so for subsets of cases categorized by category of expert or by kind of evidence. Too much depends upon the particular circumstances of the particular case at issue.”²³ Although the Court professed allegiance to the factors, it stressed that the issue in *Kumho* did not concern the methodology’s reliability, but rather whether the expert’s *application* of the methodology was reliable under the facts of the case.²⁴ Thus, even in cases involving “non-scientific” testimony, and perhaps especially in such cases,²⁵ the “analytical gap” test can be controlling.

The “Analytical Gap” Test and Texas Courts

Texas courts followed the lead of the United States Supreme Court in embracing the *Daubert* test in *Robinson* and in adopting the “analytical gap” test in *Gammill v. Jack Williams Chevrolet, Inc.*²⁶ Although the plaintiffs in *Gammill* argued that the testimony of their experts in seat belt failure analysis should not be evaluated under the same reliability standards as “scientific” experts, the Texas Supreme Court disagreed holding that Rule 702’s reliability standards, as expounded in *Robinson*, apply equally to all types of expert testimony.²⁷ Although the Court recognized that “technical” experts, such as mechanics, who base their experience on observation and experience, may not be easily evaluated under the *Robinson* factors, the Court held that the “analytical gap” test set forth in *Joiner* was suitable for determining the reliability of such opinions.²⁸ As a result, when the *Gammill* Court ruled that the technical expert’s opinions were unreliable, it did so not because his techniques were improper, but rather because his analysis failed to show how his observations supported his conclusions.²⁹ Without an explanation of the reasoning used to connect the observations and the conclusions, there was a fatal “analytical gap” in the process that produced the expert’s opinion. The “gap” produced an opinion that was nothing more than “the ipse dixit of the expert.”³⁰

Three recent Texas Supreme Court decisions have applied the “analytical gap” test in cases involving crop failure analysis, lost revenues from breaches of implied covenants to prevent drainage in oilfield operations, and automobile wheel defects. In each case, the Supreme Court employed the “gap” test to the expert’s reasoning, and in at least one decision, found that no “gap” requiring reversal existed. For that reason they are worthy of comparative study.

In *Helena Chemical Co. v. Wilkins*,³¹ the Supreme Court affirmed an appellate court’s conclusion that a crop failure analyst was properly allowed to testify about causation of

crop damages. Even though the testimony was undeniably “scientific” in nature, the Court recognized that the *Robinson* factors were not necessarily controlling. Instead, “following the lead of *Gammill*, the inquiry became “whether an analytical gap exists.”³² The Court simply asked whether the expert’s “observations support his conclusions.”³³ In evaluating the expert’s opinion, the Supreme Court stressed the expert’s substantial experience in the area and noted that he thoroughly explained why the methodology used to derive his opinions from the underlying data was reliable.³⁴ Although the defendant argued that an “analytical gap” existed because the expert did not exclude other plausible causes with reasonable certainty, the Court held that the “gap” was filled by other evidence in the record extraneous to the expert’s testimony.³⁵

Experts in *Kerr-McGee Corp. v. Helton*,³⁶ and *Volkswagen of America, Inc. v. Ramirez*³⁷ were not so fortunate. In *Helton*, lessors sued their lessees for breach of an implied covenant under an oil and gas lease to prevent drainage from a well drilled by the lessees. The lessors offered the testimony of a petroleum engineer to establish the amount of gas a hypothetical offset well would have produced, that a reasonably prudent operator would have drilled the well, and the amount of royalties the lessor would have received. After cross-examination at trial, the lessee objected and moved to strike the testimony because it was speculative and unreliable. The objection was overruled and ultimately a jury returned a verdict for the lessor. Although the court of appeals affirmed the verdict, the Supreme Court reversed and rendered judgment for the lessee, holding that the expert’s testimony suffered from a fatal “analytical gap.” The Court noted that even though the expert assumed that the well would produce some gas, he failed to establish reliably how much it would produce:

[A]ssuming there were 60 feet of thickness of Lower Puryear below the hypothetical well, one “might guess” that the well would have produced some gas. And it is possible that the hypothetical well would have produced as much as [the expert] projected. But our task is not to determine whether [the expert’s] opinion regarding the hypothetical well’s productivity is correct. Rather, we must determine whether the analysis [the expert] used to reach the conclusions was reliable. Based on the record, there is simply too great an analytical gap between the data and the opinion to conclude that it is.³⁸

Although the expert certainly examined facts and data that would be appropriate in reaching an opinion regarding damages, the Court found “no explanation of how these factors affected his calculations,” if at all.³⁹ With such a “gap” in his analysis, his opinion was unreliable even if the data he used was the type generally used by petroleum engineers to estimate production and even if the underlying facts and data were accurate.⁴⁰ It is noteworthy that, despite the obligatory citations to *Robinson* in its opinion, the Supreme Court did not use the *Robinson*’s “flexible” and “nonexclusive” factors to evaluate the testimony in *Helton*. The Court’s decision thus suggested a departure from *Robinson*’s vague standards and a new focus on the reliability of the expert’s reasoning process.

Almost a year after *Helton*, the Texas Supreme Court announced yet another “analytical gap” decision in *Volkswagen of America, Inc. v. Ramirez*.⁴¹ This time, the Court’s elevation of the “analytical gap” test was unmistakably clear. In *Ramirez*, a vehicle manufacturer was sued by the administrator of the estate of a driver killed in an accident allegedly involving a defective wheel. After a verdict for the plaintiffs was affirmed on appeal, the Supreme Court reversed and rendered judgment for the defendant manufacturer, holding, among other things, that the testimony of the plaintiffs’ principal expert was unreliable and legally insufficient to support a finding of causation.

In *Ramirez*, the Supreme Court initially clarified that the “analytical gap” test applies not only to evaluate evidence where the *Robinson* factors “cannot be used,” but also to “scientific” testimony which is traditionally subject to those principles.⁴² But the Supreme Court did not stop with a *Robinson* analysis – it focused also, indeed primarily, on the “analytical gap” analysis to reach its decision. The expert’s reliance on “the laws of physics,” without more, was not a legally sufficient explanation.⁴³ Although he insisted that the methods and formulas were “generally accepted and used in the accident reconstruction profession,” those assurances were also insufficient to establish reliability.⁴⁴

The real problem with the reliability of the expert’s opinion in *Ramirez* was, according to the Court, that he did “not explain how any of the research or tests he relied on support[ed] his conclusion.”⁴⁵ Citing *Gammill*, the Court stressed that the expert “performed no tests and cited no publications to support his opinion” despite the fact that it is “well established that an expert must show a connection between the data relied upon and the opinion offered.”⁴⁶ Concluding, the expert did “not close the ‘analytical gap’ by explaining how the [vehicle’s] wheel could behave as he described, especially in light of the fact that there are no other studies, publications or peer review that support his opinion.”⁴⁷

In *Ramirez*, the Texas Supreme Court reveals its true concerns regarding the reliability of expert testimony. Its focus is not limited to the reliability of an expert’s methodology as determined by applying a “laundry list” of factors, from *Robinson*. Rather, its concern is for the expert’s *entire reasoning process*. Construed with *Helena Chemical*, *Gammill*, and *Helton*, *Ramirez* completes a jurisprudential evolution that clearly insists that the reasoning process be explained to ensure that the methodology and the facts and data upon which it relies are capable of producing an ultimate opinion that is relevant to the case.

In *Ramirez*, we see the *Robinson* factors (testing, publication and peer review) work together with *Gammill*’s “analytical gap” test to determine an opinion’s reliability. Indeed, we see the “gap” test assume *controlling* significance. Of course, an opinion still may be excluded for failure to satisfy *Robinson* factors alone, such as when the data or the methodology themselves prove unreliable. But even when those are shown to be trustworthy, the opinion may still fail the “gap” test if the reasoning process is not explained. With this jurisprudence, Texas courts may have developed the strictest test yet for the admissibility and legal sufficiency of expert testimony.

Avoiding and Exploiting the “Analytical Gap”

As an earlier author has recognized, there are essentially two types of “gaps” that can undermine the reliability of an expert’s opinion.⁴⁸ The first is a “gap” between the data upon which an expert relies and the actual facts of the case.⁴⁹ The second type is a “gap” between the methodology and the opinions. It arises when an expert fails to explain sufficiently how the methodology was applied to the facts to reach the ultimate conclusions.⁵⁰ Each of these problems requires different strategies by advocates.

Gaps between facts and data generally arise when an expert relies upon assumptions based upon data that is materially different from the facts of the case. The United States Supreme Court’s decision in *Joiner* is an excellent example. In *Joiner*, the plaintiffs’ causation expert made two fatally inconsistent assumptions by (i) assuming, without confirmation, that all of the substances to which the plaintiff was exposed contained PCBs, when, in fact, they did not, and (ii) extrapolating conclusions from animal studies conducted under exposure circumstances that were significantly higher in dose and shorter in duration than those sustained by the plaintiff. As a result, the data upon which the causation opinion was based did not support a conclusion under the plaintiffs’ actual exposure circumstances and the resulting “analytical gap” rendered the causation opinion unreliable and therefore inadmissible.

Clearly, the focus here is not on the methodology itself, but rather upon a comparison of the data used by the expert with the facts of the case. However the analysis is labeled, the inquiry is primarily an exercise in relevancy, a process with which trial courts are quite familiar. Effective advocates should be able to preclude this problem by working with the expert to avoid using data and studies that conflict with the factual scenario presented by the client’s claim or making sure that any variances are not sufficiently material to compromise a traditional relevancy analysis. Failing to do so justifies – indeed invites – opponents to take advantage of this error by pointing out the immateriality of the data supporting the opinion. The absence of a “fit” between the “supporting” information and the ultimate opinion is a concept easily understood by trial judges, irrespective of any lack of scientific training. The simplicity of the analysis renders this error especially dangerous to those who proffer experts who fail to understand the importance of relevancy in legal proceedings.

“Gaps” between methodology and conclusions present a different issue and a greater practical challenge. These arise when an opinion either is based on flawed calculations that, when conducted properly, fail to support the expert’s opinions, or when the expert fails to explain how the methodology’s application produced the opinion. The Texas Supreme Court’s decisions in *Helton* and *Ramirez* are excellent examples.

In *Helton*, there was little doubt that, as a general rule, the principles of petroleum engineering could project that the hypothetical test well would produce some amount of gas. But given the facts presented in the record, it was impossible to calculate whether the well would produce an amount sufficient to be profitable. In fact, numerous variables in

the analysis were either not considered or received inadequate attention to justify anything other than speculation – and speculations do not constitute reliable expert testimony. In *Helton*, the expert could not explain how the methodology could produce a reliable opinion, and the failure of calculations, as well as the experts’ inability to explain the process, resulted in “analytical gaps” that fatally compromised the opinion’s reliability and relevance. In *Ramirez*, on the other hand, the expert’s methodology itself was insufficiently substantiated under the *Robinson* criteria, and the lack of foundation was compounded by the expert’s complete failure to explain how the methodology produced an opinion relevant to the case. In both cases, the absence of detailed testimony showing how the expert’s observations and data supported the expert’s conclusions created an unbridgeable “analytical gap.”

The “methodology-conclusion” gap can only be avoided by careful advocacy that guarantees that the testimony is presented in a “step by step” process – a process that informs and persuades the trial court and jury of the merits of the procedures that were followed to produce the opinions. At the same time, the process must produce a *record* that, when examined by a critical appellate court, will explain how certain data used in certain methodologies can and do produce opinions that are relevant to the issues in the case. Simply stated, there are no “short cuts” to reliability under Texas law. In the absence of a completely substantiated record that demonstrates both reliability of data and methodology, as well as relevance of that information and process to the proceedings, even opinions generated by the most qualified expert witnesses will be deemed unreliable. For those who are challenging suspect opinions, the importance of cross-examination cannot be overstated. But the cross-examination can only be effective if advocates understand the proper way of reaching reliable and relevant conclusions, and if they can persuasively reveal the flaws in arguments that non-scientist trial judges can understand.

If, as the cases hold, unreliable opinions are necessarily *irrelevant* to the controversy in which they are rendered, trial courts can employ their traditional tools to reach the correct conclusions regarding their admissibility. By simplifying the exercise in this manner, and by using these arguments sparingly and selectively instead of as a repetitive and predictable ploy, advocates can enhance their chances at obtaining results when the challenges are truly justified and, at the same time, preserve and build the “judicial capital” necessary for professional credibility and success.

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ENDNOTES

¹ See generally, Richard O. Faulk and Diana L. Panian, *A Decade of Dabubert: The Continuing Trend Toward Expert Testimony in State Courts*, Mealey’s Emerging Toxic Torts (Jan 23, 2004).

² See generally, Peter W. Huber, *Galileo's Revenge: Junk Science in the Courtroom* (1991). Huber's label and thesis have their detractors. See e.g., Kenneth J. Chesbro, *Galileo's Retort: Peter Huber's Junk Scholarship*, 42 Am. U. L. Rev. 1637 (1993).

³ Some of these illustrations were noted by the Texas Supreme Court when it stated that "a person with a degree should not be allowed to testify that the world is flat, that the moon is made of green cheese, or that the Earth is the center of the solar system." See *E. I du Pont de Nemours & Co. v. Robinson*, 923 S.W.2d 549, 558 (Tex. 1995). Unfortunately, experience shows that the flaws in most defective expert opinions are rarely so obvious, and it is not always so easy to separate trash from treasure when alleged "junk" science is concerned.

⁴ 509 U.S. 579 (1993).

⁵ 923 S.W.2d 549, 557-58 (Tex. 1995).

⁶ 522 U.S. 136 (1997).

⁷ 972 S.W.2d 713 (Tex. 1988).

⁸ See generally Hon. Harvey Brown, *Eight Gates for Expert Witnesses*, 36 Hous. L. Rev. 743, 804-10 (1999).

⁹ 509 U.S. 579 (1993).

¹⁰ 293 F. 1013, 1014 (D. C. Cir. 1923)

¹¹ *Id.* at 1014)("[T]he thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs."). See also Faulk and Panian, *supra* note 1 (describing present day use and adaptation of *Frye* in some states) and Richard O. Faulk, *Strategic and Scientific Considerations in Toxic Tort Defense*, 35 Def. L. J. 405 (1986)(discussing pre-*Daubert* reliance on *Frye*).

¹² See *Daubert*, 509 U.S. at 588-89 (noting that expert's methodology not only must be "generally accepted" within the field, but also that principle must "support what it purports to show.").

¹³ Similar "nonexclusive" factors were adopted by the Texas Supreme Court in *Robinson*:

1. the extent to which the theory has been or can be tested;
2. the extent to which the technique relies upon the subjective interpretation of the expert;
3. the technique's potential rate of error;
4. whether the underlying theory or technique has been generally accepted in the relevant scientific community; and
5. the non-judicial uses which have been made of the theory or technique.

Robinson, 923 S.W.2d at 557.

¹⁴ 522 U.S. 136 (1997).

¹⁵ *Id.* at 144 (Breyer, J., concurring).

¹⁶ 522 U.S. at 143.

¹⁷ The plaintiff in *Joiner*, against whom summary judgment was granted after his multiple experts testimony was excluded, argued that *Daubert* required the trial court's evaluation to focus "solely on principles and methodology, not on the conclusions they generate." *Id.* Indeed, this argument seems derived precisely from the Supreme Court's language in *Daubert*. *See Daubert*, 509 U.S. at 595.

¹⁸ 522 U.S. at 146.

¹⁹ *Id.* at 140.

²⁰ *Id.* at 144.

²¹ *See e.g., Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999)("non-scientific" tire failure analysis); *Volkswagen of America, Inc. v. Ramirez*, 159 S.W.2d 897 (Tex. 2005)("accident reconstruction"); *Kerr-McGee Corp. v. Helton*, 133 S.W.2d 245 (Tex. 2004)(petroleum engineer opining on gas productivity of hypothetical well and amount of resulting royalties); *Helena Chemical Co. v. Wilkins*, 47 S.W.3d 486 (Tex. 2001)(crop failure analysis).

²² 526 U.S. 137 (1999).

²³ *Id.* at 150.

²⁴ *Id.* at 153.

²⁵ The specificity of the inquiry regarding non-scientific testimony primarily involves a question of relevance. The *Kumho* Court noted that the trial court was faced with an inquiry that was "specific, not general" into the "reasonableness" of the expert's approach and his "particular method of analyzing data" to "draw conclusions regarding the particular matter to which the expert testimony was directly relevant." *Id.* at 153-54. Hence, the reasoning process employed by the expert based upon the facts of the case becomes overwhelmingly important.

²⁶ 972 S.W.2d at 721, 726.

²⁷ *Id.* at 726.

²⁸ *Id.* at 727-28.

²⁹ *Id.* at 726.

³⁰ *Id.* at 727.

³¹ 47 S.W.3d 486 (Tex. 2001).

³² *Id.* at 754 ("Even though the subject matter of [the expert's] testimony is scientific in nature, a *Robinson* inquiry is not necessarily appropriate. Following the lead of *Gammill*, the inquiry becomes whether an 'analytical gap' exists; do [the expert's] observations support his conclusions?").

³³ *Id.*

³⁴ Significantly, the opposing party did not contest the reliability of this data.

³⁵ *Id.* at 504. Thus, even if an expert's opinion, standing alone, is unreliable, the reliability problem can be cured in a "no evidence" review if the "gap" is filled by other evidence in the record. In this way, an otherwise "defective" expert opinion may still be considered with other evidence to justify a judgment for the party who presented the testimony.

³⁶ 133 S.W.2d 245 (Tex. 2004).

³⁷ 159 S.W.2d 897 (Tex. 2005).

³⁸ 133 S.W.2d at 257.

³⁹ *Id.*

⁴⁰ *Id.* at 258.

⁴¹ 159 S.W.2d 897 (Tex. 2005).

⁴² *Id.* at 905. Even though the *Robinson* factors may not easily resolve the reliability of testimony based solely on “skill and experience,” the witness in *Ramirez* testified that “accident reconstruction is basically application of the laws of physics.” Hence, the *Robinson* factors clearly applied.

⁴³ *Id.* at 906.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ See Keller, *Bridging the Analytical Gap: The Gammill Alternative to Overcoming Robinson and Havner Challenges to Expert Testimony*, 33 St. Mary’s L. J. 277, 312 (2002).

⁴⁹ *Id.*

⁵⁰ *Id.*