[PUBLISH]

IN THE UNITED STATES COURT OF APPEALS

FOR THE ELEVENTH CIRCUIT

No. 13-10922

D.C. Docket No. 1:11-cv-02733-JOF

PATRICIA HUGHES,
Mother and Administratrix of the
Estate of Allene J. Hughes

Plaintiff - Appellant,

versus

KIA MOTORS CORPORATION,
KIA MOTORS AMERICA, INC.

Defendants - Appellees.

Appeal from the United States District Court
for the Northern District of Georgia

(September 12, 2014)

Before TJOFLAT and WILSON, Circuit Judges, and BUCKLEW,[*] District Judge.

---

[*] Honorable Susan C. Bucklew, United States District Judge for the Middle District of Florida, sitting by designation.

TJOFLAT, Circuit Judge:

On May 2, 2005, Allene Hughes was involved in a vehicle collision with a Mack truck in Chattanooga, Tennessee. The collision sent her Kia Optima pinballing about, colliding with two parked cars, a fence, a tree, three metal posts supporting a carport awning, and a flag pole before ultimately coming to rest against a house. On May 3, Allene was declared dead from traumatic brain injury.

Patricia Hughes, Allene's mother and the administratrix of her estate, filed suit against Kia Motors Corporation and Kia Motors America, Inc. (collectively, "Kia") in Georgia Superior Court, alleging that Kia's failure to equip the Optima with a fuel shut-off switch led to Allene's death. Kia removed the case to federal court,[1] and discovery commenced. When discovery closed, Kia moved to exclude the testimony of Hughes's causation expert, Dr. Joseph L. Burton, and also moved for summary judgment. The District Court granted both of Kia's motions. Hughes now appeals. Because the court did not abuse its discretion in excluding Burton's testimony and did not improperly grant summary judgment in Kia's favor, we affirm.

---

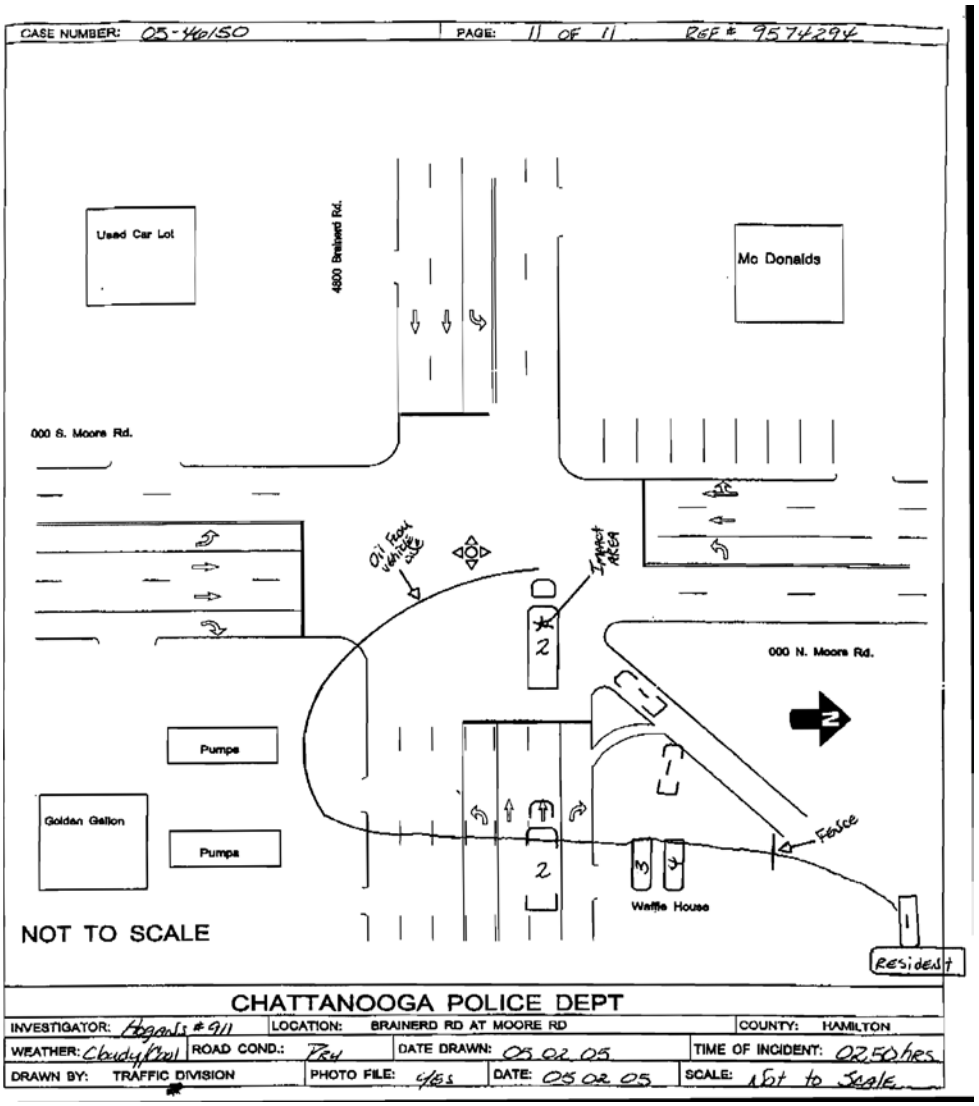
[1] Kia asserted diversity jurisdiction under 28 U.S.C. § 1332, as the parties were citizens of different states and the amount in controversy exceeded $75,000. Hughes is a resident of Georgia, Kia Motors Corporation is a foreign national corporation organized under the laws of the Republic of Korea and having its headquarters and principal place of business in Seoul, South Korea, and Kia Motors America, Inc. is incorporated under California law with its principal place of business in California.

I.

Allene Hughes died as a result of injuries she incurred from a vehicle collision in Chattanooga, Tennessee, at 2:45 a.m. on May 2, 2005. That night, Allene drove her 2004 Kia Optima out of a Waffle House parking lot onto Club Drive, a one-way street. However, Allene exited the parking lot in the wrong direction, and ended up traveling against the correct direction of traffic (no other cars were on the Club Drive at the time). Upon realizing her mistake and reaching the intersection of Moore and Brainerd Roads, Allene entered the through lanes of Brainerd Road and was struck by the front of a westbound Mack truck pulling a loaded fuel tanker trailer.

After impact, the Mack truck came to a stop in the intersection. The Optima traveled farther. The Optima initially traveled south, entering the property of a gas station and convenience store. It then turned back toward the north, crossing all the lanes of Brainerd Road and entering the parking lot of the Waffle House. In the parking lot, the Optima struck a parked Geo Tracker and a parked Toyota Corolla. It then ran through a fence to the north of the Waffle House, entering Club Drive, and traveled east onto residential property. There, the Optima sideswiped a tree in the front yard and struck three support posts of a carport awning and a flagpole. The Optima came to a rest against the house.

The diagram below, which the police officers who arrived on the scene created, indicates the Optima's movement from the moment it left the Waffle House until it came to a rest against the house. In the diagram, Allene's vehicle is indicated with the number 1, the Mack truck is number 2, and the Geo Tracker and Toyota Corolla are indicated with numbers 3 and 4.



DE 68-12, at 5.

When the Emergency Medical Service ("EMS") arrived on the scene, Allene had already been removed from the Optima. She was unresponsive, but was breathing four to six times per minute with the assistance of a bag-valve mask. EMS reported that her only obvious injury was an abrasion to the left knee.

EMS transported Allene to Erlanger Medical Center, where doctors discovered evidence of traumatic brain injury, left frontal subdural hematoma, and epidural right pulmonary contusion. She also had suffered a pelvic fracture. An emergency craniotomy and implantation of a Scott cannula to drain the blood from subdural cavity was unsuccessful. Allene was brain dead. At 2:30 p.m. on May 3, Allene was declared dead.

II.

On July 15, 2011, Patricia Hughes, Allene's mother and the administratrix of her estate, filed a wrongful death action against Kia in the Superior Court of Gwinnet County, Georgia. The complaint included two theories of liability: strict liability for the inherently dangerous design of the Optima and negligence based on alleged defects in the Optima's airbag deployment system, its lack of a fuel flow shut-off device, Kia's failure to warn of the unreasonable dangers inherent in the design of the Optima, and Kia's failure to remedy the defective condition of the Optima.

Kia filed a timely notice of removal, pursuant to 28 U.S.C. § 1446(b), in the United States District Court for the Northern District of Georgia. After Kia filed its answer to the complaint's allegations and affirmative defenses, the case proceeded to discovery.

A.

Hughes hired Ralph Cunningham, an accident reconstructionist,[2] who prepared a report on the collision between the Optima and the Mack truck. According to the Mack truck's Engine Control Module, which makes a permanent record of a vehicle's speed before and shortly after a hard breaking event, the Mack truck approached the intersection where the collision occurred at 39 miles per hour (mph). When the driver applied the brakes, the truck began to rapidly decelerate at a steady speed until the truck came to a stop. Cunningham estimated that the truck was traveling at a speed of not less than 10 mph and not more than 24 mph when it struck Allene's Optima.

Cunningham's report indicates that the truck struck the Optima at 12 degrees forward of perpendicular to the left side. For point of reference, a collision that is perpendicular to the left side—a T-bone collision—would be 0 degrees. A head-on

[2] Cunningham has a B.S.E. degree from Century University, an Engineer in Training certification, and full accreditation as a Traffic Accident Reconstructionist.

collision would be 90 degrees. Thus, the collision was closer to perpendicular than head-on.

When the vehicles collided, the Optima's driver's side airbag deployed. Although the Optima was originally equipped with a driver's front airbag, it had deployed at some point prior to the May 2 collision and was not replaced; the deployed airbag had been cut away from the steering wheel. The region of greatest permanent deformation coincided with the left "A" pillar and front-door hinge region, where the inward crush was 20 inches. The crush diminished toward the rear, and scrapes on the left rear door and back of the Optima indicated sliding contact, which Cunningham opined was likely from the vehicles separating from each other. The brake pedal jammed such that it could not be applied, and it deformed toward the right side of the vehicle, jamming the throttle pedal in an applied position.

Cunningham calculated the total delta-v—which represented the sudden change in velocity that occurred during the contact phase of the collision with the Mack truck—as 37.5 mph. Because the collision was neither head-on nor perfectly perpendicular, the total delta-v could be separated into its longitudinal and lateral

components. Cunningham calculated the longitudinal delta-v using the total delta-v, the 12 degree angle of impact, and simple trigonometry.[3]

From his calculations, Cunningham concluded that the longitudinal delta-v, the sudden change in velocity in the longitudinal direction during the contact phase of the collision, equaled approximately 8 mph. Cunningham did not calculate lateral delta-v—the change in velocity along the perpendicular plane—because Hughes's attorneys did not request that he do so.

Cunningham estimated the Optima's probable post-impact travel if it had been equipped with a fuel shut-off device by using two estimated speeds at which the Optima could have been traveling when it collided with the Mack truck—38 mph and 26 mph.[4] Based on these two speeds, Cunningham predicted that the Optima would have traveled between 69 and 98 feet if it had been traveling 38

---

[3] The calculation can be expressed as follows:

$$\frac{\text{longitudinal delta v}}{\text{total delta v}} = \sin 12°$$

$$\frac{\text{longitudinal delta v}}{37.5 \text{ mph}} = \sin 12°$$

$$\text{longitudinal delta v} = \sin 12° \, (37.5 \text{ mph})$$

$$\text{longitudinal delta v} \approx 8 \text{ mph}$$

[4] Cunningham estimated using the maximum rate of acceleration possible for the Optima and a lesser rate of acceleration of five feet per second per second. Cunningham believed that even a speed of 26 using this lower acceleration rate was "somewhat improbably high," DE 110, at 9, but he did not calculate the Optima's velocity using any other acceleration rate.

mph, and between 32 and 46 feet if it had been traveling at 26 mph. Had it traveled the longer distance, the Optima would have stopped roughly on the curb of the northwest corner of the gas station and convenience store. Had the Optima been traveling at 26 mph, it would have come to a rest on Brainerd Road in the eastbound lanes.

B.

Hughes also hired a medical expert, Dr. Joseph Burton,[5] to determine Allene's cause of death. His report concluded that Allene "died of blunt force trauma that occurred predominantly to the left side of her head." DE 63-2, at 4. He further concluded, based extensively on Cunningham's report, that

> the fact that the [Optima] did not stop operating in a timely manner after the initial impact with the Mack Truck was contributory or causative of [Allene's] brain injuries. . . . [H]ad the [Optima] stopped in a timely manner and did not have the additional impact it is more to a reasonable degree of forensic, medical, and scientific probability that [Allene] would not have sustained a fatal brain injury.

DE 63-2, at 10. Burton suggested that "[t]he dynamics of the left/frontal collision with the Mack Truck combined with the deploying side airbag would have caused [Allene's] body to move forward towards the intrusion [at the A-pillar] and

[5] Dr. Burton has an M.D. degree from Emory University Medical School. He is board certified in forensic pathology. He has been chief medical examiner in several counties, a clinical professor in forensic pathology and director of forensic pathology training program at the Emory University Medical School.

leftward interacting with the side impact airbag." DE 63-2, at 9. Based on these dynamics, Burton opined that "[i]t is possible that [Allene] sustained her left sided brain injury in this impact due to her body moving forward past the deployed torso bag and her head interacted with the intruding structures of the [Optima]." DE 63-2, at 9. As the Optima impacted other objects and the various curbs, Allene's body "would have the opportunity to have interaction of her head with the steering wheel (due to there being no airbag there to prevent interaction) and the instrument panel in a manner which would either exacerbate or potentially cause her brain injury." DE 63-2, at 9.

Thus, Burton summarized, Allene "could have sustained her brain injury in the first impact and then due to subsequent impacts her head and body could have interacted in a manner that would have exacerbated the brain injury she already received." DE 63-2, at 11. Alternatively, Allene "could have possibly sustained the brain injury that caused her death as a result of her head's contact with the steering wheel and/or instrument panel during the additional impacts the [Optima] experienced as a result of not stopping in a timely manner." DE 63-2, at 11.

Burton explained in his report that a specific error rate for clinical impressions is difficult to calculate, but he held his opinion "to a reasonable degree of forensic and scientific medical probability and certainty." DE 63-2, at 11. Burton explained that his conclusions were "supported by extensive references to

the literature, to research and to 30 years of training, education and experience." DE 63-2, at 12. He further indicated that his opinions were "based on the specific data [he] evaluated, the condition of the subject vehicle which [he] personally inspected, [his] personal evaluation of various photographic evidence submitted with the case file and on [his] education, background and training." DE 63-2, at 13.

Burton assured that the methodology he employed "comport[ed] to the scientific method of inquiry." DE 63-2, at 13. He explained that the scientific method involves stating the problem, collecting data, formulating a hypothesis, validating the hypothesis, and considering the potential for error.

C.

When Kia deposed Dr. Burton on May 3, 2012, he described his methodology for reaching his opinion. Burton explained that he assessed the forces that acted on the Optima, "[n]ot only how much they were, but where they were coming from and how they were impacting in this case the package the person was in, the [Optima] in this case." DE 67-1, at 13. Burton opined that "[w]e're not dealing with some kind of high delta-v, high g-force crash." DE 67-1, at 22. Burton explained that, according to the National Highway Traffic Safety Administration (the "NHTSA"), "if the delta-v is over 26, they consider it a severe impact," whereas a delta-v of 0 to 10 is "minor." DE 67-1, at 22.

Kia asked Burton about his impression of the collision between the Optima and the Mack truck, and he explained that the collision was 12 degrees forward of a 90-degree side impact and "resulted in a delta-v for the [Optima] of about . . . 8 miles an hour." DE 67-1, at 26. Burton described the pulse, or time of impact, as "relatively short[,] like less than a hundred milliseconds." DE 67-1, at 26. He reasoned that "it is a big truck hitting a little car but it is not hitting it when it is going very fast and it resulted in what would be, according to NHTSA, a low or minor delta-v to the [Optima]." DE 67-1, at 26. Burton acknowledged that the 8 mph he referred to was actually the longitudinal delta-v, not the total or lateral delta-v, but he opined that "delta-v is not the most important factor" in predicting injury for a side impact. DE 67-1, at 26–27.

Instead, Burton explained that the two most important factors for predicting injury for a side impact are amount of intrusion into the interior of the Optima and the velocity of the adjacent door panel. Burton said that he believed that Cunningham's report said that the Mack truck had slowed to approximately 12 mph, which meant "the front of the truck is moving at 12 miles an hour which means at some point in time the door panel or part of the [Optima], its interior, will be moving at approximately 12 miles an hour also." DE 67-1, at 27–28. We pause here to note two things. First, Cunningham's report actually said the truck had slowed to between 10 and 24 mph when it struck the Optima; the report never said

the truck was traveling at 12 mph when it impacted the Optima. Second, and more importantly, Burton's explanation demonstrates that he measured the velocity of the adjacent door panel as equal to the speed at which the truck was traveling at impact.

Kia's attorney then asked Burton to assume that Cunningham had calculated that lateral delta-v during his deposition, which was taken earlier.[6] Burton was asked to assume that lateral delta-v was approximately 37 mph. Then, Kia's attorney asked Burton for the velocity of the Optima's interior door resulting from the impact with the truck, to which Burton repeated his earlier calculation, which he reached based on Cunningham's report, of 12 mph. Burton then said, "If I assume hypothetically that [the truck] hit [the Optima] at 36 miles an hour or 35, then at some point in time part of the interior structure of the [Optima] was moving at that speed." DE 67-1, at 33. Notably, Burton assumed that the 35 or 36 mph represented the truck's velocity at the moment of impact, rather than lateral delta-

[6] In fact Cunningham had been asked to do so. Using the angle of impact, the total delta-v, and trigonometry, he calculated lateral delta-v as approximately 37 mph. The equation below demonstrates how Cunningham arrived at lateral delta-v.

$$\frac{\text{lateral delta v}}{\text{total delta v}} = \cos 12°$$

$$\frac{\text{lateral delta v}}{37.5 \text{ mph}} = \cos 12°$$

$$\text{lateral delta v} = \cos 12° \, (37.5 \text{ mph})$$

$$\text{lateral delta v} \approx 37 \text{ mph}$$

v.[7] Then relying on that assumption about the Mack truck's velocity—which was different than the assumption Kia's attorney asked Burton to make—he calculated the interior velocity as equivalent to the truck's assumed velocity.

Kia's attorney followed Burton's response by asking, "[I]f the assumption you're making of Mr. Cunningham making that approximately 37-mile-per-hour delta-v is in fact true, you would now agree with me that at some point in that impact between the [Optima] and the Mack Truck part of that driver's door was traveling at least 35 miles per hour. Is that fair?" DE 67-1, at 33. Pause for a moment to recognize that by asking about lateral delta-v—rather than the velocity of the truck at impact—Kia's attorney changed the thing being measured and asked if it would support the same conclusion. In other words, Burton appears to have assumed that the truck's velocity would be equivalent to the Optima's interior velocity at the moment of impact, whereas Kia's attorney asked if the Optima's lateral delta-v, its lateral change in velocity, would equal the Optima's interior velocity. But the truck's velocity and the Optima's lateral delta-v are different measurements, and Burton likely should have recognized as much. Apparently missing this sleight of hand, however, Burton agreed with Kia's attorney that a

[7] Cunningham never calculated the truck's actual velocity at the moment of impact; he estimated the truck's velocity was between 10 and 24 mph.

delta-v of approximately 37 mph would result in an interior velocity of at least 35 mph.

During his deposition, Burton agreed that if lateral delta-v exceeded 35 mph, it "could have caused a fatal brain injury." DE 67-1, at 43. He further stated that he would hold that opinion to a reasonable degree of medical certainty. Then, the following colloquy occurred between Kia's attorney and Burton:

> Q: But as I parse those words, you're not of the opinion that the impact between the Mack truck and the [Optima] in fact was the impact that was the cause of her fatal injury in this case?
>
> A: My opinion is that I don't know enough about the other impacts to exclude them. . . . So I know those are all possibilities. And did that happen here versus the Mack truck impact? I don't know. I'm certainly not going to embarrass myself by arguing with somebody that the Mack truck impact couldn't produce a fatal injury because I would look ridiculous and whatever credibility I might have to a jury or to a court I would lose if I tried to say that there's no way that Mack truck impact could have killed this lady. I wouldn't say that.

DE 67-1, at 43–44.

Burton conceded that he lacked sufficient information to conclude that the impact with the Toyota Corolla or the Geo Tracker—the two cars the Optima collided with in the Waffle House parking lot—caused the fatal brain injury. He also conceded that he could not conclude whether Allene received her injuries from the side airbag, the A pillar, or the steering wheel rim, admitting that "[a]ll three have the capacity to cause her brain to look the way it looks. But they all had

the capacity to leave no telltale sign of interaction with the structure either." DE 67-1, at 56. Kia's attorney followed up:

> Q: So for all of the other impacts other than the Mack truck, you don't have enough acceleration or deceleration information to make an analysis with respect to those impacts and the likelihood that during one of those impacts Ms. Hughes impacted some part of the [Optima]; is that correct?
>
> A. Well, I know enough about curb impacts and things like that to know that it has the potential to cause her injury and to have her impact a structure from it. Did it and what structure was it, I don't have enough information to answer that part of the equation.

DE 67-1, at 64–65.

Nevertheless, Burton reaffirmed toward the end of his deposition that he held the opinion that it was "more likely than not that" Hughes's brain injury was caused by some event after impact with the Mack truck because he believed the side airbag "offered her significant protection in that Mack truck impact." DE 67-1, at 71.

III.

A.

Kia moved to exclude Burton's testimony, arguing that Burton's opinion was not the product of reliable methodology and it did not fit the evidence in the case. Specifically, Kia noted that Burton had admitted during his deposition that the velocity of the interior of the door being impacted is a critical factor to

analyzing the collision. But, Kia argued, Burton ignored lateral delta-v in forming his opinion. According to Kia, because he ignored lateral delta-v, Burton incorrectly assumed that the interior velocity of the door was 12 mph. Kia pointed to Burton's deposition, in which he agreed with Kia's attorney that if lateral delta-v were approximately 37 mph, the interior velocity of the door would have been at least 35 mph. Kia also pointed to Burton's deposition statement that if lateral delta-v were 37 mph, it could cause a fatal brain injury.

Kia also argued that Burton's opinion should be excluded because he failed to properly employ differential diagnosis as part of his methodology. According to Kia, Burton could not exclude the impact by the Mack truck as the cause of the fatal brain injury and did not have sufficient information about the other impacts to know whether Allene would have collided with any of the interior structures of the Optima. As such, he could not include any of the other impacts as part of his analysis in trying to determine causation.

Hughes opposed Kia's motion, arguing that while considering lateral delta-v may be relevant to the question of whether, as a general matter, a high lateral delta-v <u>can</u> cause death, it does not establish whether Allene <u>actually</u> received her fatal injury from the collision with the Mack truck. Hughes contended that Burton's methodology was sound because it considered the actual Optima damage and

protection from the side airbag, just without a calculation of lateral delta-v.[8] Hughes then argued that, under Tennessee law,[9] she need only prove that the Optima's design defect was a substantial factor in causing Allene's death. In other words, Burton was not required to exclude other causes of Allene's death. Hughes pointed to Burton's deposition testimony where he stated that he believed the side airbag provided significant protection in the Mack truck impact, and she argued that this demonstrated that Burton possessed sufficient information to determine that later impacts caused Allene's death.

Kia replied that, under Tennessee law, causation refers to both cause in-fact and proximate cause, and therefore Hughes was required prove that the collision with the Mack truck was not the cause in-fact of her death. Because Burton could not do so, Kia argued, his causation opinion should be excluded.

---

[8] Hughes also relied on information contained in Burton's supplement to his original expert report and in his declaration, both of which were filed along with Hughes's opposition to Kia's motion to exclude Burton's testimony. Kia moved to strike those two filings, and the District Court granted Kia's motion. Hughes does not challenge the propriety of the District Court's striking Burton's supplement and declaration. Therefore, we ignore those filings and the contentions contained therein for purposes of this appeal. See United States v. Pilati, 627 F.3d 1360, 1364 (11th Cir. 2010) ("[W]hen on appeal a [party] fails to raise an issue when the opportunity is presented, he waives that argument.").

[9] Georgia applies the choice-of-law principle lex loci delicti, which means apply the law of the place where the tort was committed. See Dowis v. Mud Slingers, Inc., 279 Ga. 808, 816, 621 S.E.2d 413, 419 (2005). Therefore, in this case we apply Tennessee law.

The District Court agreed with Kia and granted its motion to exclude Burton's testimony. Specifically, the court concluded that Tennessee law required that Hughes demonstrate actual causation, and thus the lack of a shut-off switch could not be a substantial factor in Allene's fatal injury if she sustained that injury on impact with the Mack truck. The court faulted Burton for failing to explain how the scientific method assisted him in reaching his opinion; Burton simply stated that he used the scientific method. The court also reasoned that in light of Burton's deposition admission that he would need to consider the forces acting on the injured person, his failure to consider lateral delta-v demonstrated a failure to follow his stated methodology. Finally, the District Court noted that Burton admitted that a delta-v of 35 mph could have caused a fatal brain injury, and, after he was informed that lateral delta-v in this case was 37 mph, that the interior velocity of the driver's side door would be at least 35 mph.

The District Court also found fault in Burton's failure to attempt to falsify his conclusions.[10] Because Burton could not rule out the initial impact as the cause

---

[10] The court expressed such failure in its dispositive order:

> [P]art of the scientific method is attempting to falsify one's conclusions. Defendants correctly argue that Dr. Burton was neither able to rule out the initial impact with the tractor trailer as the cause of Ms. Hughes's fatal brain injury, nor was he able to identify any particular impact after the tractor trailer which might have caused a fatal brain injury. Dr. Burton readily admitted that he did not know enough about the other impacts the [Optima] sustained after the initial impact

of the fatal injury and because he could not identify any particular impact after the Mack truck collision that might have caused the injury, his opinion was unreliable. Based on these problems with Burton's opinion, the court ruled his opinion inadmissible.

B.

At the same time it filed a motion to exclude Burton's testimony, Kia filed a motion for summary judgment, which the District Court granted. The court determined that Hughes presented no evidence that Allene either did or did not suffer her fatal brain injury at the time of the impact with the Mack truck. Even if Burton's testimony were admitted, the court said it would still find that Kia would be entitled to summary judgment because Hughes could not demonstrate proximate causation. The parties agreed that the front air bag did not deploy because it had deployed in a previous accident and was never replaced. Thus, the court held, there was no evidence in the record from which a reasonable juror could conclude that the lack of a shut-off switch caused Allene's fatal injuries.

> with the tractor trailer to determine whether Ms. Hughes suffered her fatal brain injury at any other point in the sequence of events.

DE 98, at 18–19 (citation omitted).

IV.

We review the District Court's exclusion of Burton's expert testimony under an abuse-of-discretion framework. Gen. Elec. Co. v. Joiner, 522 U.S. 136, 142–43, 118 S. Ct. 512, 517, 139 L. Ed. 2d 508 (1997). "[T]his standard of review requires that we defer to the district court's evidentiary ruling unless that ruling is 'manifestly erroneous.'" Quiet Tech. DC-8, Inc. v. Hurel-Dubois UK Ltd., 326 F.3d 1333, 1340 (11th Cir. 2003) (quoting Joiner, 522 U.S. at 142, 118 S. Ct. at 517). "Because the task of evaluating the reliability of expert testimony is uniquely entrusted to the district court . . . we give the district court 'considerable leeway' in the execution of its duty." Rink v. Cheminova, Inc., 400 F.3d 1286, 1291 (11th Cir. 2005) (citation omitted) (quoting Kumho Tire Co. v. Carmichael, 526 U.S. 137, 152, 119 S. Ct. 1167, 1176, 143 L. Ed. 2d 238 (1999)).

The admission of expert evidence is governed by Federal Rule of Evidence 702, which provides:

> A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:
>
> (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
>
> (b) the testimony is based on sufficient facts or data;

> (c) the testimony is the product of reliable principles and methods; and
>
> (d) the expert has reliably applied the principles and methods to the facts of the case.

Rule 702 and the Supreme Court's decisions in Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993), and its progeny make clear that district courts act as gatekeepers, excluding evidence unless is it reliable and relevant. "District courts are charged with this gatekeeping function 'to ensure that speculative, unreliable expert testimony does not reach the jury' under the mantle of reliability that accompanies the appellation 'expert testimony.'" Rink, 400 F.3d at 1291 (quoting McCorvey v. Baxter Healthcare Corp., 298 F.3d 1253, 1256 (11th Cir. 2002)). Whether an expert's testimony is reliable depends on "the particular facts and circumstances of the particular case." Kumho Tire Co., 526 U.S. at 158, 119 S. Ct. at 1179.

This court has set out three requirements that an expert must meet before his opinions may be admitted. First, the expert must be qualified on the matter about which he intends to testify. City of Tuscaloosa v. Harcros Chemicals, Inc., 158 F.3d 548, 562 (11th Cir. 1998). Second, he must employ reliable methodology. Id. Third, the expert's testimony must be able to assist the trier of fact through the application of expertise to understand the evidence or fact in issue. Id. With respect to whether an expert's methodology is reliable, we look to a number of

factors, including (1) whether the methodology can be and has been tested, (2) whether the theory or technique has been subjected to peer review, (3) the known or potential rate of error of the methodology employed, and (4) whether the methodology is generally accepted. Daubert, 509 U.S. at 593–94, 113 S. Ct. at 2797. This list of factors is not meant to be exhaustive, nor must each factor be present in a given case. The proponent of the expert opinion must carry the burden of establishing qualification, reliability, and helpfulness. United States v. Frazier, 387 F.3d 1244, 1260 (11th Cir. 2004) (en banc).

Our opinion in Frazier, is instructive, because there, as here, the expert "offered precious little in the way of a reliable foundation or basis for his opinion." Id. at 1265. In that case, the defendant sought to introduce expert testimony on the transfer of hairs and bodily fluids during sexual assault. Id. at 1252. The expert was prepared to testify that no hair or bodily fluids were discovered at the crime scene, and therefore it was unlikely the defendant had sexually assaulted the alleged victim. Id. The Government moved to exclude the expert's testimony, and the District Court did so after holding a Daubert hearing. Id. at 1252–56.

Sitting as en banc, we affirmed the District Court's exclusion of the expert's testimony, concluding that although the expert was qualified, his methodology was not reliable and his opinion would not have been helpful to the jury. Id. at 1264–66. With respect to reliability, we explained that the expert had based his opinion

on "his experience, and on various texts in forensic investigation." Id. 1265. The problem, however, was that the expert never explained how his experience or the relevant texts supported his opinion. Id. Because the basis for the opinion was left unstated, "it would be very difficult indeed for the district court (or for that matter the jury) to make even an informed assessment, let alone to verify" that the opinion was reliable. Id. We held,

> Since [the expert] was relying solely or primarily on his experience, it remained the burden of the proponent of this testimony to explain how that experience led to the conclusion he reached, why that experience was a sufficient basis for the opinion, and just how that experience was reliably applied to the facts of the case.

Id. Having failed to do so, we concluded that the district court did not abuse its discretion by excluding the expert's testimony for being unreliable. Id.

We have here a similar set of circumstances, and thus we reach a similar conclusion. Like the expert in Frazier, Burton asserts that he relied on the evidence in the case, his experience, and relevant literature. He explained in his report that he reached his conclusion based on the scientific method, without further explaining how he tested his hypothesis to support his conclusions. During his deposition, he explained a bit more—declaring that the amount of intrusion and the velocity of the adjacent door were the most important factors to his

evaluation[11]—but even then, his explanation went no further. He did not explain how those two variables were relevant, nor did he explain how he used those factors to reach his conclusion.

---

[11] The parties devote considerable attention in their briefs to the significance, or lack thereof, of Cunningham's calculation of lateral delta-v. We decline to address the point, in part because we need not do so to resolve this appeal, but also because the attorneys in this case appear to conflate multiple measurements to make their arguments.

As alluded to earlier, Burton calculated the interior velocity of the adjacent door based on the actual velocity of the Mack truck at the time of impact, which he assumed to be 12 mph. Cunningham estimated the Mack truck's velocity to be somewhere between 10 and 24 mph at impact. But Cunningham also calculated lateral delta-v as 37 mph. While Hughes claims this number is hypothetical, it is based on trigonometry. See supra note 6. When Kia asked Burton during his deposition to assume that the lateral delta-v was 37 mph, this assumption was based on evidence that could have, and likely would have, been established at trial.

Burton then testified that if the Mack truck were traveling at 37 mph when it impacted the Optima, the interior velocity of the adjacent door would be at least 35 mph. But there is no evidence in the record to assume that the Mack truck was traveling at 37 mph when it impacted the Optima. Cunningham never retreated from his estimate that the Mack truck was traveling between 10 and 24 mph at impact; his calculation of lateral delta-v is an entirely different measurement.

To be sure, Burton agreed with Kia's attorney that a lateral delta-v of 37 mph would mean the interior velocity of the adjacent door was at least 35 mph. But Burton never equated the Mack truck's velocity to lateral delta-v, and he never expressly based the interior velocity on lateral delta-v. In short, Burton appears not to have recognized that Kia's attorney asked about interior velocity using a different measurement, lateral delta-v, instead of velocity of the Mack truck.

However, Burton never indicated that he made a mistake when he said a 37 mph lateral delta-v would lead to an interior velocity of at least 35 mph, and Hughes's attorneys have not made any argument about the apparent discrepancy we describe here. Thus, we cannot say for sure that Burton misspoke. And we would therefore be left to accept Burton's testimony that a 37 mph lateral delta-v would lead to an interior velocity of at least 35 mph, which means that Burton did not employ his stated methodology—relying on intrusion and interior velocity—correctly.

All of this is to say that we cannot conclude that the District Court committed clear error by relying on Burton's admission, even though it appears to be based on a faulty assumption.

Moreover, Burton was unable to rule out the Mack truck impact as the cause of Allene's fatal injury. He admitted that he lacked sufficient information about the Optima's impacts with the Toyota Corolla and Geo Tracker to determine whether these impacts caused or did not cause the injury. And although he concluded that the impacts with the curbs had the potential to cause Allene to impact a structure inside the car and thereby cause her fatal injury, he could not opine that the curb impacts actually caused a collision with an interior structure and the fatal injury. Nor could Burton say that the impact with the house was sufficient to cause the fatal injury. Nevertheless, he asserted that Allene would not have sustained the fatal injury had the Optima been equipped with a shut-off switch.

"[S]omething doesn't become scientific knowledge just because it's uttered by a scientist; nor can an expert's self-serving assertion that his conclusions were derived by the scientific method be deemed conclusive." McDowell v. Brown, 392 F.3d 1283, 1299 (11th Cir. 2004) (alteration in original) (internal quotation marks

---

And thus, based on this factual finding, the court's legal conclusion—that Burton did not follow his methodology and thus his opinion is unreliable—is not clearly erroneous. However, we need not rely exclusively on Burton's statement because we may affirm the District Court on any basis supported by the record, Thomas v. Cooper Lighting, Inc., 506 F.3d 1361, 1364 (11th Cir. 2007), and, as described elsewhere, Hughes failed to carry her burden to demonstrate that Burton's testimony was reliable.

omitted). "The trial court's gatekeeping function requires more than simply taking the expert's word for it." Fed. R. Evid. 702, advisory committee's note, 2000 amendment (internal quotation marks omitted). As the Supreme Court explained in Joiner,

> 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 that is 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 data and the opinion proffered.

522 U.S. at 146, 118 S. Ct. at 519.

The decision to exclude expert testimony is committed to the sound discretion of the District Court, see Rink, 400 F.3d at 1291, and here the court reasonably could have questioned the reliability of Burton's ultimate opinion given the vague manner in which Burton described his methodology coupled with his inability to express an opinion about how the various impacts would have affected Allene. Cf. Kumho Tire Co., 526 U.S. at 155, 119 S. Ct. at 1177 ("The court could reasonably have wondered about the reliability of a method of visual and tactile inspection sufficiently precise to ascertain with some certainty the abuse-related significance of minute shoulder/center relative tread wear differences, but insufficiently precise to tell with any certainty from the tread wear whether a tire had traveled less than 10,000 or more than 50,000 miles." (internal quotation

marks omitted)). "[T]he deference that is the hallmark of abuse-of-discretion review requires that we not reverse an evidentiary decision of a district court unless the ruling is manifestly erroneous." Frazier, 387 F.3d at 1258 (citations omitted) (internal quotation marks omitted). Here, the District Court concluded that the leap from data to opinion was too great, and therefore excluded Burton's testimony. Because the court properly applied the law and did not make clearly erroneous factual findings in reaching its decision to exclude Burton's opinion, we hold that the court did not abuse its discretion in excluding his testimony.

V.

Having concluded that the District Court did not abuse its discretion by excluding Burton's testimony, we must consider whether summary judgment was proper. When reviewing a district court's grant of summary judgment, we exercise de novo review. Fils v. City of Aventura, 647 F.3d 1272, 1287 (11th Cir. 2011). Summary judgment is appropriate where the moving party—here, Kia—"shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). In reviewing the material facts, we draw all inferences in favor of the nonmoving party—here, Hughes. Fils, 647 F.3d at 1287.

In enhanced injury cases such as this one, general principles of causation still apply under Tennessee law.[12] That is, "[a]ny claim for 'enhanced injuries' is nothing more than a claim for injuries that were actually and proximately caused by the defective product." Whitehead v. Toyota Motor Corp., 897 S.W.2d 684, 694 (Tenn. 1995). Thus, Hughes has the burden of proof on causation, which means she must present evidence to create a genuine issue of material fact on both cause in-fact and proximate causation. Hale v. Ostrow, 166 S.W.3d 713, 718 (Tenn. 2005). As the Supreme Court of Tennessee has explained:

> The defendant's conduct is the cause in fact of the plaintiff's injury if, as a factual matter, it directly contributed to the plaintiff's injury. In a case such as this one, we must ask whether the plaintiff's injury would have happened 'but for' the defendants' act. If not, then the defendants' conduct is a cause in fact of the plaintiff's injury. It is not necessary that the defendants' act be the sole cause of the plaintiff's injury, only that it be a cause.

Id. (citation omitted). "[T]he mere occurrence of an injury does not prove negligence . . . . Even when it is shown that the defendant breached a duty of care owed to the plaintiff, the plaintiff must still establish the requisite causal connection between the defendant's conduct and the plaintiff's injury." Kilpatrick v. Bryant, 868 S.W.2d 594, 599 (Tenn. 1993) (citation omitted).

---

[12] As previously mentioned, we apply Tennessee law because Georgia applies the choice-of-laws rule of lex loci delicti. See supra note 9.

In the context of this case, the Optima's lack of a shut-off switch must have been an actual cause of Allene's enhanced injury—the fatal injury—before we consider whether it was also a proximate cause. Thus, the question of actual causation depends then on whether Allene sustained her fatal injury as a result of the impact with the Mack truck. If Allene sustained her fatal injury from the Mack truck impact, then the additional impacts were not a but-for cause of the fatal injury.[13] Without Burton's opinion that the lack of a shut-off switch caused Allene's fatal injury, Hughes has presented no evidence of actual causation.[14] She has not shown that the Mack truck impact did not cause Allene's fatal injury, nor has she shown that the lack of a shut-off switch (as opposed to some other cause, such as the removed driver's front airbag) was an actual cause of the fatal injury. As such, Kia is entitled to judgment as a matter of law because Hughes failed to create a genuine issue of material fact with respect to actual causation.

---

[13] As one treatise explains:

> If one of the two fires burns the plaintiff's property to the ground before the other spreads to the scene, the second fire is not a factual cause at all, even though it would have burned the plaintiff's property in the same way. Your acts today cannot in any practical sense cause something that happened in 1939, or even something that happened one second before you acted.

Dan B. Dobbs, Paul T. Hayden & Ellen M. Bublick, The Law of Torts § 189 (2d ed. 2011).

[14] Even with Dr. Burton's testimony, Hughes would have a problem getting past summary judgment because Burton could not exclude the Mack truck impact as a cause of death. Moreover, Burton opined to a reasonable degree of medical certainty that a lateral delta-v of 37 could have caused Allene's fatal injury. If Allene sustained her fatal injury as a result of the Mack truck impact, then the subsequent impacts would not have led to an enhanced injury.

VI.

The District Court did not abuse its discretion in excluding Burton's testimony. Nor did the court err in granting summary judgment for Kia. We therefore AFFIRM the court's judgment.

SO ORDERED.