In the

United States Court of Appeals For the Seventh Circuit

No. 15-2602
SANDRA HALL, special administrator of the estate of Chelsea Weekley, Plaintiff-Appellant,
v.
Ann Flannery, et al., Defendants-Appellees.
Appeal from the United States District Court for the Southern District of Illinois. No. 13 CV 914 — Staci M. Yandle, Judge.
Argued February 17, 2016 — Decided November 4, 2016

Before BAUER, FLAUM, and WILLIAMS, Circuit Judges.

WILLIAMS, *Circuit Judge*. Chelsea Weekley suffered a skull fracture as an infant and underwent surgery 17 years later to fix it. She died several days after the surgery, and her mother, Sandra Hall, sued the hospital and the surgeons. Hall argued that the surgery caused Weekley to suffer a seizure and die, and that the surgeons should have prescribed anti-seizure

medication. But the defendants argued that no seizure had occurred and that a heart-related ailment was the likely cause of death. A jury trial was held and the jury found in the defendants' favor.

On appeal, Hall argues that the district judge erroneously permitted three of the defendants' experts to opine about Weekley's likely cause of death. We conclude that Hall forfeited her arguments as to two of these experts by making perfunctory and underdeveloped arguments concerning the experts' testimony, qualifications, and methodology. However, we find that the third expert lacked the requisite qualifications to opine that Weekley's heart ailment was the likely cause of death. Because there is a significant chance that the erroneous admission of this expert testimony affected the outcome of the trial, we vacate the district court's judgment and remand for further proceedings.

I. BACKGROUND

A. Weekley's Surgery and Death

When Chelsea Weekley was approximately five months old, she was dropped and suffered a skull fracture. As the fracture expanded over time, a cyst formed in the area. The fracture and cyst did not become a cause for concern until, at the age of 17, she was hit in the head and suffered a loss of consciousness, blurred vision, and dizziness. After CT and MRI scans confirmed the extent of the fracture and the cyst, Weekley underwent a "cranioplasty" surgery to repair the fracture and the area of the dura (the thick membrane surrounding the brain) where the cyst had formed. The surgery was performed at SSM Cardinal Glennon Children's Hospital

("Hospital") by Dr. Ann Flannery, a neurosurgeon, and Dr. Raghuram Sampath, a neurosurgical resident.

Weekley was discharged a day after the surgery and was found dead in her bed three days later. The coroner observed that Weekley was in a "normal resting position," that her legs were straight and her ankles crossed, and that her right arm was bent near her head "as if using it to lay on." The coroner also observed that her hands were "cramped up," that her bladder was empty, and that her feet were near the headboard while her head was near the foot of the bed.

Weekley's autopsy was performed by Dr. Raj Nanduri, a board-certified forensic pathologist. According to Dr. Nanduri, forensic pathology concerns the effect of sudden, accidental, and suicidal death on the human body. After performing a physical, microscopic, and toxicological examination of Weekley's body, Dr. Nanduri was unable to identify a cause of death. So she asked Dr. Mary Case, a neuropathologist, to examine Weekley's brain. Dr. Case found that the surgery damaged the dura and surface of Weekley's brain. Based on this finding, Dr. Nanduri concluded that Weekley had died from a seizure brought about by the surgical damage. Neither Dr. Nanduri nor Dr. Case was aware of or had reviewed the pre-surgery CT and MRI scans when they made their findings.

B. Pre-Trial Proceedings

Weekley's mother, Sandra Hall, sued Dr. Flannery, Dr. Sampath, and the Hospital, alleging that they provided Weekley with negligent post-operative care, and that this negligence caused Weekley to suffer a seizure and die. Before trial, Hall filed two motions *in limine* ("MILs") that concerned three

of the defendants' expert witnesses: Dr. John Ruge, a pediatric neurologist; Dr. Douglas Miller, a neuropathologist; and Dr. Steven Rothman, a pediatric neurologist.

In MIL #48, Hall sought to bar Dr. Miller from testifying that anything other than a seizure had caused Weekley's death, on the ground that Dr. Miller had not provided such an opinion to a reasonable degree of medical certainty. The district judge granted this MIL, though only to the extent that Dr. Miller had in fact failed to disclose any such opinion.

In MIL #49, Hall sought to bar the defendants and their witnesses from denying that Weekley's death was caused by a seizure. In doing so, Hall argued that Dr. Ruge and Dr. Rothman were "not qualified through education or experience to give an opinion to a reasonable degree of medical certainty as to Weekley's forensic cause of death." In addition, Hall argued that Dr. Ruge had failed to offer any scientific explanation for his opinion that Weekley had not died from a seizure, and that Dr. Rothman had failed to offer any cause-of-death opinions to a reasonable degree of medical certainty. The district judge denied the MIL, noting that the defendants' experts could provide any cause-of-death opinions that had been previously disclosed.

C. Trial Proceedings

At trial, the defendants elicited cause-of-death testimony from Dr. Ruge, Dr. Miller, and Dr. Rothman. Dr. Ruge testified that Weekley's death was not brought about by a seizure, and opined that "focal interstitial chronic inflammation" of Weekley's heart (i.e., thickening of the heart's connective tissue) was the likely cause of death. Hall's attorney objected immediately, stating,

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[T]here's been absolutely no foundation laid, no qualifications, nothing that would suggest that this gentleman is qualified to give, nor has that been disclosed as one of the opinions as to cause of death.

A sidebar ensued in which the parties and the district judge focused on whether Dr. Ruge had previously expressed these opinions with the requisite degree of medical certainty. No one mentioned Dr. Ruge's qualifications or methodology. After consulting Dr. Ruge's expert report and deposition transcript, the district judge concluded that the opinions had been properly disclosed and did not violate her ruling on MIL #49.

Dr. Miller testified next. Before he shared his cause-of-death opinions, Hall's attorney objected, stating,

The Court has already determined after argument and briefing that defendants' expert Dr. Douglas Miller is barred from testifying, suggesting or implying that Chelsea Weekley's cause of death was anything other than a seizure. In addition, this motion in limine was also granted that defendants' opinion witnesses cannot express any opinions as to cause of Chelsea Weekley's death that has [not] previously been stated to a reasonable degree of medical certainty.

The district judge concluded that although Dr. Miller had previously stipulated that he had reached his opinions with a reasonable degree of medical *probability* but not medical *certainty*, his opinions had been adequately shared before trial and thus would not constitute a prejudicial surprise to Hall. Dr. Miller

then testified that "it's overwhelmingly probable that [Weekley's death] was not caused by a seizure."

Finally, Dr. Rothman testified that he did not believe Weekley suffered any seizures before her death. Hall did not object to any of Dr. Rothman's cause-of-death opinions during trial.

At the end of trial, the jury returned a general verdict "find[ing] for all of the defendants and against the plaintiff." This appeal followed.

II. ANALYSIS

Hall argues on appeal that the district court erred in permitting Dr. Ruge, Dr. Miller, and Dr. Rothman to testify about the specific cause of Weekley's death. The admissibility of expert testimony is governed by Federal Rule of Evidence 702 and Daubert v. Merrell Dow Pharmaceuticals., 509 U.S. 579 (1993). Such testimony is permitted if the witness is "an expert by knowledge, skill, experience, training, or education," and her opinion is "the product of reliable principles and methods" that have been reliably applied to the facts of the case. FED. R. EVID. 702. Because we are not concerned with the witness's general qualifications but instead with his "foundation for ... answer[ing] a specific question[,] ... we must look at each of the conclusions he draws individually to see if he has the adequate education, skill, and training to reach them." Gayton v. McCoy, 593 F.3d 610, 617 (7th Cir. 2010) (citations and internal quotation marks omitted).

We review de novo whether a district judge has properly followed Rule 702 and *Daubert*. *Kunz v. DeFelice*, 538 F.3d 667, 675 (7th Cir. 2008). So long as the judge applied the Rule

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702/Daubert framework, we review the judge's decision to admit or exclude expert testimony for abuse of discretion. *Id.* If, however, the district judge failed to apply the framework, we review the judge's decision de novo. *Metavante Corp. v. Emigrant Sav. Bank*, 619 F.3d 748, 760 (7th Cir. 2010); see also United States v. Adame, 827 F.3d 637, 645 (7th Cir. 2016); Naeem v. McKesson Drug Co., 444 F.3d 593, 608 (7th Cir. 2006).

Even if an expert's testimony was erroneously admitted or excluded, reversal is not warranted unless the error has affected a party's "substantial rights." FED. R. CIV. P. 61; see Naeem, 444 F.3d at 608–09. This occurs when the erroneous ruling has had a "substantial influence over the jury, and the result reached was inconsistent with substantial justice." Farfaras v. Citizens Bank & Trust of Chi., 433 F.3d 558, 564 (7th Cir. 2006) (citation omitted); Jones v. Lincoln Elec. Co., 188 F.3d 709, 725 (7th Cir. 1999). "Evidentiary errors satisfy this standard only when a significant chance exists that they affected the outcome of the trial." EEOC v. Mgmt. Hospitality of Racine, Inc., 666 F.3d 422, 440 (7th Cir. 2012) (quoting Old Republic Ins. Co. v. Emp'rs Reinsurance Corp., 144 F.3d 1077, 1082 (7th Cir. 1998)); DeBiasio v. Ill. Cent. R.R., 52 F.3d 678, 685 (7th Cir. 1995).

A. Claim Forfeited as to Dr. Miller and Dr. Rothman

In her appellate brief, Hall states in conclusory fashion that Dr. Miller and Dr. Rothman should not have been allowed to testify that seizure was not the cause of Weekley's death. But Hall makes no effort to explain *why* either doctor's cause-of-death testimony was improperly admitted, or to identify the specific testimony that was improperly admitted.

This failure is fatal, as "we are not in the business of formulating arguments for the parties." *United States v. McClellan*, 165 F.3d 535, 550 (7th Cir. 1999).

Hall does cite Dr. Miller's testimony that an epilepsy-related cause-of-death finding can be made in the absence of other potential causes such as heart attack, as well as Dr. Rothman's testimony that clenched fists can be linked not only to seizure but also to heart attack and lung disease. However, Hall failed to take the critical next step of arguing that Dr. Miller and Dr. Rothman lacked the requisite qualifications and/or methodology to supply this testimony. Rather, Hall merely cited this testimony to underscore her contention that *Dr*. Ruge had supplied "wholly unfounded and baseless cause of death testimony." See Estate of Moreland v. Dieter, 395 F.3d 747, 756 (7th Cir. 2005) ("The defendants' Daubert challenge to the testimony of a different expert hardly suffices to preserve the argument against [the expert at issue]."). Indeed, Hall conceded at oral argument that she was not arguing that Dr. Miller's and Dr. Rothman's testimony violated Rule 702 and Daubert. So Hall has forfeited her claim as to Dr. Miller and Dr. Rothman. See Otto v. Variable Annuity Life Ins. Co., 134 F.3d 841, 854 (7th Cir. 1998) ("This court has refused to consider unsupported or cursory arguments."); United States v. Berkowitz, 927 F.2d 1376, 1384 (7th Cir. 1991) (holding that "perfunctory and undeveloped arguments" are forfeited on appeal).

B. Reversible Error Involving Dr. Ruge

1. Rule 702/Daubert Framework Should Have Been Applied

Hall argues that the district judge erred in permitting Dr. Ruge to testify that Weekley's cause of death was not attributable to seizure, and that a heart-related issue was the likelier explanation. Both Hall and the defendants contend that we should review the admission of this testimony for abuse of discretion. But that overlooks the fact that the abuse of discretion standard is available only when the district judge actually applied the Rule 702/Daubert framework, which did not occur here.

In MIL #49, Hall argued that Dr. Ruge offered cause-of-death opinions without being "qualified through education or experience" and without the requisite "scientific explanation." With that challenge to Dr. Ruge's credentials, the district judge should have conducted a *Daubert* inquiry, even though Hall did not expressly reference *Daubert* or Rule 702 by name. And when Hall objected at trial that "there's been absolutely no foundation laid, no qualifications, nothing that would suggest that this gentleman is qualified to give ... opinions as to cause of death," the district judge was squarely faced with a need to determine if Dr. Ruge was qualified as an expert in this area, even if the word "*Daubert*" was not spoken.

But the objections did not prompt the judge to examine Dr. Ruge's qualifications and methodology or to apply the *Daubert* test. Instead, the judge focused solely on whether the challenged opinions had been previously disclosed. Perhaps even more curiously, neither party made any effort to clarify that

Hall had in fact invoked Rule 702 and *Daubert*, and that the district judge should therefore comment on more than whether the opinions had been previously disclosed. The parties' failure to do so, however, did not extinguish the need to apply the Rule 702/*Daubert* framework to Dr. Ruge's opinions. Because that application never occurred, our review of the admission of these opinions is de novo.

2. Adequate Qualifications and Methodology for Dr. Ruge's Seizure Opinion

At trial, Dr. Ruge opined that Weekley had not suffered a seizure before she died. He noted that she had no documented history of seizures, and that her body and bed did not display the typical signs of seizure such as violent convulsions, tongue damage, and urinary incontinence. He also stated that seizures typically do not result from cranioplasty (the surgical procedure Weekley underwent), and that the cranioplasty here had not damaged Weekley's brain.

This opinion was not erroneously admitted. For one, Dr. Ruge possessed sufficient qualifications to opine on the operation performed and the possible occurrence of a seizure afterward. At the time of trial, Dr. Ruge had practiced pediatric neurosurgery for approximately 25 years and was serving as the chief of pediatric neurosurgery for the Advocate Health Care system, which encompassed two major children's hospitals and approximately ten other hospitals. In addition, he was certified by the American Board of Neurological Surgery, was affiliated with multiple neurological and medical societies, and was a former editorial board member for the publications *Critical Reviews in Neurology* and *Child's Nervous System*. And perhaps most notably, he had operated on growing skulls fractures like Weekley's, and had published articles on

various pediatric neurosurgery topics including epilepsy, cranial cysts, and severe head injury.

In addition, Dr. Ruge's seizure-related opinions were based on sufficiently reliable methodology. Dr. Ruge arrived at his conclusions based on his review of the autopsy report; Weekley's medical records, including the MRI and CT scans taken before surgery, Dr. Flannery's operative report, and Dr. Flannery and Dr. Sampath's post-surgery progress notes; and deposition testimony. See Gayton, 593 F.3d at 618 (holding that district court abused its discretion in finding expert's methodology unreliable where expert made differential diagnosis based on decedent's autopsy report and medical records and testimony of prison guards and other witnesses); Walker v. Soo Line R.R. Co., 208 F.3d 581, 591 (7th Cir. 2000) (holding that district judge did not abuse his discretion in admitting expert testimony informed by expert's experience and examination of medical records, despite lack of in-person examination). In addition, Dr. Ruge relied on his medical experience, which as discussed above is substantial, particularly with regard to pediatric neurosurgery. See Kumho Tire Co. v. Carmichael, 526 U.S. 137, 156 (1999) ("[N]o one denies that an expert might draw a conclusion from a set of observations based on extensive and specialized experience."); Metavante Corp., 619 F.3d at 761 ("An expert's testimony is not unreliable simply because it is founded on his experience rather than on data"); Smith v. Ford Motor Co., 215 F.3d 713, 718 (7th Cir. 2000) ("While extensive academic and practical expertise in an area is certainly sufficient to qualify a potential witness as an expert, Rule 702 specifically contemplates the admission of testimony by experts whose knowledge is based on experience." (citations and internal quotation marks omitted)).

Hall contends that Dr. Ruge lacked the requisite qualifications because pathology is not his area of professional focus. However, this argument ignores the fact that "[o]rdinarily, courts impose no requirement that an expert be a specialist in a given field." Gayton, 593 F.3d at 618 (citation omitted); see also Gaydar v. Sociedad Instituto Gineco-Quirurgico y Planificacion Familiar, 345 F.3d 15, 24–25 (1st Cir. 2003) ("The proffered expert physician need not be a specialist in a particular medical discipline to render expert testimony relating to that discipline. In fact, it would have been an abuse of discretion for the court to exclude [the expert]'s testimony [about plaintiff's pregnancy] on the sole basis that his medical specialty was something other than gynecology or obstetrics."); Pineda v. Ford Motor Co., 520 F.3d 237, 244 (3d Cir. 2008) (explaining that a district court abuses its discretion by excluding testimony simply because "the proposed expert does not have the specialization that the court considers most appropriate" (citation omitted)). The fact that an expert may not be a specialist in the field that concerns her opinion typically goes to the weight to be placed on that opinion, not its admissibility. See, e.g., Huss v. Gayden, 571 F.3d 442, 452 (5th Cir. 2009); Mitchell v. United States, 141 F.3d 8, 15 (1st Cir. 1998); Kannankeril v. *Terminix Int'l, Inc.,* 128 F.3d 802, 809 (3d Cir. 1997).

Here, the issue of whether a seizure occurred shortly before Weekley's death did not concern knowledge that is held solely by pathologists. Dr. Nanduri, the pathologist who examined Weekley after her death, testified that a seizure-related cause-of-death finding is made by excluding all other apparent causes, and that she arrived at her finding here based on the damage to Weekley's dura and cortex—damage that a non-pathologist could have observed. Moreover, Dr. Ruge stated that he "routinely cared for patients who ... have

seizures as part of their neurosurgical condition," witnessed numerous seizures himself, and operated on individuals with head injuries comparable to Weekley's. So Dr. Ruge possessed the requisite qualifications to testify about seizures. *See Gayton*, 593 F.3d at 618 (holding that general practitioner could testify about possible effects of certain medications on decedent's heart condition because the issue did not concern "specialized knowledge held only by cardiologists"); *Banister v. Burton*, 636 F.3d 828, 831–32 (7th Cir. 2011) (holding that emergency-room surgeon who treated shooting victim was adequately qualified to testify about victim's ability to throw or crawl at the time of treatment, despite not being a biomechanics expert or an orthopedic surgeon).

3. Inadequate Qualifications for Dr. Ruge's Heart Opinion

While Dr. Ruge was qualified to opine on Weekley's surgery and the possibility of seizure, this qualification does not extend to his opinion that Weekley's heart-related issue was the likelier cause of death. *See Gayton*, 593 F.3d at 617 ("[W]e must look at each of the conclusions [an expert] draws individually to see if he has the adequate education, skill, and training to reach them." (citations and internal quotation marks omitted)).

Neither Dr. Ruge's trial testimony nor his expert report and curriculum vitae indicate that he possesses any specialized education, knowledge, experience, or skill concerning focal interstitial chronic inflammation specifically, or more broadly cardiology. Indeed, Dr. Ruge acknowledged at trial that when he read the inflammation finding in Weekley's autopsy report, he "didn't know what that was exactly." So he

conducted a Google search and found several papers explaining that it is "a finding in young athletes who die suddenly of cardiac arrhythmias," even though their "hearts can look very normal." Based on this research, he opined that focal interstitial chronic inflammation "makes more sense [as a cause of death] based on the whole story, the whole picture."

We do not doubt that Dr. Ruge is an intelligent doctor who possesses considerable knowledge about surgery, pediatrics, and neurology. However, the record lacks sufficient evidence demonstrating that this knowledge and the related experiences render Dr. Ruge qualified to opine about Weekley's heart. See Dura Auto. Sys. of Ind., Inc. v. CTS Corp., 285 F.3d 609, 613 (7th Cir. 2002) (remarking that a surgeon "would be competent to testify that the cancer was too advanced for surgery, but [that] in offering the additional and critical judgment that the radiologist should have discovered the cancer sooner he would be, at best, just parroting the opinion of an expert in radiology"); Jones v. Lincoln Elec. Co., 188 F.3d 709, 723–24 (7th Cir. 1999) (holding that district court should have barred material scientist from testifying about conclusions that "were rooted in medical knowledge and training which [he] did not have" and that were "derived primarily, if not completely" from a physiologist); see also Avila v. Willits Envtl. Remediation Trust, 633 F.3d 828, 839 (9th Cir. 2011) (concluding that chemist, who had expertise in cancer immunology and medical toxicology, had no "special training or knowledge regarding metal working industries" and could not opine that power plant's activities created dioxins); Wheeling Pittsburgh Steel Corp. v. Beelman River Terminals, Inc., 254 F.3d 706, 715-16 (8th Cir. 2001) (concluding that hydrologist was qualified to testify about flood-risk management but not about safe warehousing practices). Because Dr. Ruge did not possess the requisite

qualifications to opine about the impact of Weekley's heart on her cause of death, we need not address his methodology.

4. Hall's Substantial Rights Were Affected

The fact that Dr. Ruge's heart-related cause-of-death testimony was erroneously admitted does not automatically entitle Hall to a new trial. Rather, she must show that this error had a "substantial influence over the jury." *Farfaras*, 433 F.3d at 564. We conclude that it did.

It is undisputed that Weekley's cause of death was a critical issue at trial. Hall pointed to seizure—a relatively difficult fact to prove since (as both parties agree) such a finding is made only by ruling out all other possible alternatives. It is no surprise that the defendants chose not only to argue that a seizure had not occurred, but also to offer an alternative cause—heart troubles. And Dr. Ruge played a critical role supporting this alternative cause, testifying about multiple studies he had read that linked the heart condition that Weekley had to the circumstances under which she passed away.

Critically, the import of Dr. Ruge's testimony cannot be minimized on the ground that it was merely "cumulative" of testimony provided by other experts. *See Naeem*, 444 F.3d at 609 (finding improperly admitted expert testimony did not affect substantial rights because certain of the expert's objectionable statements were "corroborated by other witnesses"); *Palmquist v. Selvik*, 111 F.3d 1332, 1339, 1342 (7th Cir. 1997) (finding that exclusion of evidence was harmless error because the proposed evidence was cumulative). To be sure, Dr. Miller and Dr. Rothman briefly referenced the effect a heart attack can have on cause-of-death findings generally, while

Dr. Nanduri and Dr. Case acknowledged that heart disturbances can result in death for a healthy young adult. However, Dr. Ruge was the only expert to opine about the purportedly "numerous papers" that identify young athletes who died suddenly of heart-related illness. We cannot ignore the distinct possibility that Dr. Ruge's discussion of these publications played a key role in the jury's verdict, given the threshold nature of the cause of death inquiry. See Chapman v. Maytag Corp., 297 F.3d 682, 688 (7th Cir. 2002) (remanding for new trial where precise impact of expert's erroneously admitted testimony on comparative fault could not be determined, given the jury's general verdict); see also Estate of Barabin v. AstenJohnson, Inc., 740 F.3d 457, 465-67 (9th Cir. 2014) (en banc) (remanding for new trial where district court erroneously permitted expert to testify about evidence that was "critical" to plaintiffs' case); Wheeling Pittsburgh Steel, 254 F.3d at 715 (finding reversible error where district court permitted hydrologist to repeatedly testify beyond scope of his expertise "on ultimate issues of fact that the jury was required to answer").

The defendants contend that reversal would be improper because "there is no basis to conclude that admission of the Defendants' experts' testimony influenced the jury's verdict." They argue that even if the jury had not heard any testimony from the defendants' experts regarding alternative causes of death, the jury could have found for the defendants on the grounds that they did not breach their standard of care, or that any such breach did not cause Weekley's death. In support, the defendants cite several Illinois state court decisions that found a new trial to be unnecessary where it was possible that the jury's verdict rested on an issue that was not subject to appeal. *See Tabe v. Ausman*, 902 N.E.2d 1153, 1159 (Ill. App.

Ct. 2009); Strino v. Premier Healthcare Assocs., P.C., 850 N.E.2d 221, 229–30 (Ill. App. Ct. 2006); Krklus v. Stanley, 833 N.E.2d 952, 959–60 (Ill. App. Ct. 2005).

But state law is not applicable to this inquiry. "In this circuit the harmlessness standard is treated as procedural and therefore in a diversity case is governed by federal law and [Rule] 61." Sokol Crystal Prods., Inc. v. DSC Commc'ns Corp., 15 F.3d 1427, 1435 (7th Cir. 1994) (citation and footnote omitted); see also 11 Charles A. Wright et al., Federal Practice & Procedure § 2883 (3d ed. 2016) ("It is unsound [for a federal court to apply a state court's harmless-error standard] because the harmless-error doctrine, explicitly stated both in Rule 61 and in an Act of Congress, is an important principle of judicial administration that goes to the proper relation between the trial judge and the jury and the proper relation between appellate courts and trial courts."). Because the defendants have not satisfied Rule 61's harmless-error standard, a new trial is warranted.

III.CONCLUSION

We REVERSE the district judge's decision to admit Dr. Ruge's heart-related cause-of-death testimony, VACATE the judgment, and REMAND the case for proceedings consistent with this opinion.