

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
Judge William J. Martínez**

Civil Action No. 13-cv-0489-WJM-KLM

ARIELLE LAMOURE,

Plaintiff,

v.

LIBBEY GLASS, INC., a Delaware corporation,

Defendant.

ORDER DENYING FED. R. EVID. 702 MOTIONS

Plaintiff Arielle Lamoure (“Lamoure”) sues Libbey Glass, Inc. (“Libbey”) claiming that she was injured due to an alleged manufacturing defect in a Libbey wineglass. (ECF No. 17.) Both parties have filed Federal Rule of Evidence 702 motions seeking to exclude each other’s expert witnesses. (ECF No. 64 (Libbey); ECF No. 65 (Lamoure).) For the reasons explained below, both motions are denied.¹

I. LEGAL STANDARD

A district court must act as a “gatekeeper” in admitting or excluding expert testimony. *Bitler v. A.O. Smith Corp.*, 400 F.3d 1227, 1232 (10th Cir. 2004). Admission of expert testimony is governed by Rule 702, which provides:

A witness who is qualified as an expert by knowledge, skill,

¹ Lamoure’s motion and reply, and her response to Libbey’s motion, are all scanned images of printed pages. That is not permitted under this Court’s [Electronic Case Filing Procedures \(Civil Cases\) \(Version 6.0\), Part I, § 1.3\(f\)](#): “Filers shall only scan documents unavailable in an electronic format. Documents shall be converted to PDF directly from the software application in which they were created (e.g., Word, WordPerfect, Excel).” Lamoure’s subsequent filings shall conform with this directive.

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.

Fed. R. Evid. 702. The proponent of the expert testimony bears the burden of proving the foundational requirements of Rule 702 by a preponderance of the evidence. *United States v. Nacchio*, 555 F.3d 1234, 1241 (10th Cir. 2009) (en banc).

II. BACKGROUND

Lamoure owns and operates a Breckenridge restaurant. (ECF No. 17 ¶ 5.) In March 2011, she was injured while detailing a wineglass purchased from Libbey. (*Id.* ¶ 7.) Specifically, Lamoure claims that while she was holding the glass by the foot and polishing the bowl, the stem snapped and the resulting fragments sliced into her hand and wrist. (ECF No. 74 at 1.) Lamoure further claims that the wineglass was new and had just been taken from its packaging and run through the dishwasher. (ECF No. 64-2 at 2.)

As the discussion below demonstrates, this case appears to turn largely on whether the wineglass had a manufacturing defect or whether it was weakened by handling at the restaurant. The wineglass itself is no longer available for study because Lamoure's employees immediately cleaned up the fragments and threw them

away. (*Id.*)

III. ANALYSIS

A. Preliminary Considerations

There is a fair argument that both parties are proffering, through these motions and related filings, what amounts to late-disclosed expert material. Although both parties complain about this, neither party has formally moved for exclusion under Federal Rule of Civil Procedure 37(c) or otherwise attempted to satisfy the standards set forth there. In any event, because the proverbial “unclean hands” appears to be relatively mutual in this instance, the Court in its discretion will consider the late-disclosed material (if it really is late-disclosed) as if properly disclosed.

B. Pecoraro

Lamoure’s first expert is George Pecoraro. Libbey attacks Pecoraro’s opinion as unreliable for several reasons. In determining whether the proffered testimony is reliable, the Court assesses whether the reasoning or methodology underlying the testimony is valid and whether that reasoning or methodology can be properly applied to the facts in issue. See *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 592–93 (1993). The Supreme Court in *Daubert* listed four factors relevant to assessing reliability: (1) whether the theory has been tested; (2) whether the theory has been subjected to peer review and publication; (3) the known or potential rate of error associated with the theory; and (4) whether the theory has attained widespread or general acceptance. *Id.* at 592–94.

1. Pecoraro's Report

Pecoraro has a Ph.D. in material science and has “been involved with the science of glass in the practice of glass technology for 50 years.” (ECF No. 64-2 at 2.) Pecoraro obtained eleven new Libbey wineglasses and, through an associate, tested their resistance to breakage at the stem from pressure applied by a hydraulic press. (*Id.* at 2–3.) Five of the eleven wineglasses were tested “as received from the supplier” (apparently new out of the packaging). (*Id.* at 2.) The remaining six “were deliberately gently abraded or slightly damaged by rubbing two stems together ([simulating what could happen when] two or three stem ware glasses would be carried in one hand at the same time) and also by lightly abrading the stem with 200 grit emery paper. This controlled damage simulates normal handling of the glasses at the restaurant.” (*Id.* at 2.) Pecoraro does not disclose precisely how much damage was applied, but does specify that two of the intentionally damaged wineglasses had “heavy contact with another wine glass” and two others had “light contact with another wine glass.” (*Id.* at 6 (capitalization normalized).)

After breaking each glass, Pecoraro's associate measured the “‘mirror radius’ at the point of failure of the stem. The ‘mirror radius’ is an area of smooth glass that surrounds the fracture origin. The larger the radius, the lower the breaking force.” (*Id.* at 3.) Using an equation not described in the report, Pecoraro converted that mirror radius into a measurement of “tension stress at fail” in pounds per square inch (psi). (*Id.* at 6 (capitalization normalized).) The five undamaged wineglasses had a tension stress at fail of between 25,170 and 42,250 psi. (*Id.*) The six damaged glasses failed

at between 7,650 and 10,420 psi. (*Id.*)

Pecoraro interprets this data in light of a test he did in 2007 when retained as a glassware expert in a different case. For that case, he created a “spectrum of fracture strengths” supposedly measuring the force necessary to break different sorts of glassware at the stem, and then categorizing that force as follows:

Very Difficult = not possible for average man

Difficult = hard for average man, not possible for average woman

Moderate = easy for average man

Easy = easy for average woman, very easy for average man

Very easy = very easy for woman

(*Id.* at 9.) Pecoraro’s spectrum showed that fully tempered safety glass breaks at a “Very Difficult” level of at least 22,500 psi, whereas a typical glass intentionally nicked in the stem breaks at a “Very Easy” 900 psi. (*Id.*)

Pecoraro reasons that, according to his spectrum, “an average size woman could deliberately break a stem ware glass by bending the stem with as much strength as 10,665 psi. [¶] However, Ms. Lamoure is a petite size woman. She weighs only 115 pounds. She would not be able to break the glass stem with only minimal force exerted during the detailing of the glass.” (*Id.* at 4.) Pecoraro concluded that the wineglass that injured Lamoure must have had some sort of manufacturing flaw bringing its failure force down to 900 psi “where the most gentle of handling would break it.” (*Id.*)

2. Methodology

Libbey generally challenges Pecoraro's report for a lack of scientific rigor. Libbey objects, for example, to Pecoraro's use of "subjective, qualitative measurements, such as light or heavy contact with another wine glass, the size of the 'average' man and woman, and descriptions that it was 'very difficult' or 'very easy' to break a glass." (ECF No. 64 at 7.) Moreover, at his deposition, Pecoraro explained that he created his "spectrum of fracture strengths" by having himself, his associate, and his wife try to break various types of glass by hand, although he did not consider any of them to be an "average" man or woman. (*Id.* at 4, 8–9.) Libbey therefore argues that Pecoraro does not rely on accepted scientific standards or replicable experimental techniques, and his opinion should be excluded on those grounds. (*Id.* at 9–10.)

Lamoure responds, somewhat surprisingly, with a declaration from her *other* expert, Reimanis, opining that Pecoraro's methods and measurements are at least generally grounded in techniques and terms (such as "heavy" and "light") used in material-testing laboratories, and that Pecoraro's fracture strength spectrum has some support in an article from the *Journal of Hand Surgery*, which Reimanis (but apparently not Pecoraro) consulted as a part of his own opinion. (ECF No. 74 at 6.)

Although the shortcomings of Pecoraro's methods are evident, "the rejection of expert testimony is the exception rather than the rule." Fed. R. Evid. 702 advisory committee's note. Pecoraro's methods were not so inherently unreliable as to make his opinion inadmissible. Thorough cross-examination, rather than outright rejection, is the appropriate method under the circumstances to test Pecoraro's methods and conclusions.

3. Equations

The equation by which Pecoraro converted mirror radius into “tension stress at fail” is not evident in Pecoraro’s report. (ECF No. 64-2.) “Without any information about the equation(s) used to reach these numbers,” Libbey argues, “it is impossible to verify the accuracy of the calculations.” (ECF No. 64 at 9.) Lamoure’s response is twofold. She first notes that Libbey had a chance to ask about equations at Pecoraro’s deposition but did not. (ECF No. 74 at 7.) She then refers to her other expert’s (Reimanis’s) materials, which contain an article with equations for converting mirror size to fracture strength. (ECF No. 74-9.)

Lamoure is treading close to the line here, but again, the Court finds that this gap in Pecoraro’s opinion is best addressed through cross-examination. It does not make Pecoraro’s opinion so unreliable as to be inadmissible.

4. Sufficient Facts or Data

Libbey attacks Pecoraro’s “spectrum of fracture strengths” because it was developed through a sample size of three (Pecoraro, his wife, and his associate). But “[t]echnical or methodological deficiencies in the survey, including the sufficiency of the universe sampled, bear on the weight of the evidence, not the survey’s admissibility.” *Harolds Stores, Inc. v. Dillard Dep’t Stores, Inc.*, 82 F.3d 1533, 1544 (10th Cir. 1996). Thus, the Court will not exclude his opinion on this basis.

In this context, Libbey also points to an order from the Southern District of New York excluding Pecoraro’s opinion in a product liability lawsuit based on a shattered coffee carafe. (ECF No. 64 at 12.) The New York case involved an experiment by Pecoraro that attempted to simulate an alleged design defect in the carafe. See

Karnauskas v. Columbia Sussex Corp., 2012 WL 234377, at *7–8 (S.D.N.Y. Jan. 24, 2012). The experiment repeatedly failed to break the glass in question, and only succeeded after Pecoraro applied force in an unrealistic manner. *Id.* at *9. The New York court excluded Pecoraro’s testimony because his methodology had no connection to his conclusions regarding the alleged design defect. *Id.* at *10.

The same does not hold true in this case. Pecoraro’s experiment with Libbey wineglasses established that undamaged Libbey wineglass stems can withstand a fair amount of pressure, whereas damaged stems can break under much lower pressure. Pecoraro also concluded, through his spectrum of fracture strengths, that Lamoure could likely apply less pressure than even the average woman, leading Pecoraro to believe that the wineglass in question was particularly weak in the stem. Taking Lamoure’s story at face value (*i.e.*, that these wineglasses had never before been handled other than taking them from their original packaging, placing them in the dishwasher, and removing them from the dishwasher), Pecoraro excluded the possibility that normal wear and tear caused the stem to weaken. He then concluded that a manufacturing defect must have caused the break.

Pecoraro’s opinion turns on numerous assumptions. At trial, Libbey will have an opportunity to attack all of those assumptions. But assuming the assumptions hold up, a clear connection exists between Pecoraro’s experimental methodology and his conclusions. The Court therefore finds the New York decision inapplicable.

Finally, Libbey argues that, absent analysis of the actual wineglass that injured Lamoure, Pecoraro’s conclusions “are of no relevance to the issue of whether the particular wine glass at issue actually contained a defect.” (ECF No. 64 at 14.) The

Court disagrees. Again, although Pecoraro's experimental methods and assumptions can be challenged, he nonetheless offers a sufficiently reliable means of concluding that, absent a manufacturing defect, a Libbey wineglass should not break at the stem under the minimal pressure allegedly being applied by Lamoure at the time of her injury. The fact that the original wineglass was immediately discarded does not change this.² Consequently, the Court will not exclude Pecoraro's expert testimony.

C. Reimanis

1. Reimanis's Report

Ivar Reimanis is Lamoure's second expert. Reimanis's report is four paragraphs long. (ECF No. 64-4.) His first paragraph summarizes his qualifications: he is a Distinguished Professor of Metallurgical and Materials Engineering at the Colorado School of Mines, as well as director of the Colorado Center for Advanced Ceramics, and he has more than twenty years of experience in the area of "the fracture of brittle materials, including glass." (*Id.* at 1.)

His second paragraph describes his conclusions "[b]ased on [his] review of the testing that was conducted by Dr. Pecoraro and [Reimanis's own] observation and analysis of two wine glasses which reportedly broke in Ms. Lamoure's restaurant subsequent to [the date of Lamoure's injury] in the same manner as the glass that injured Ms. Lamoure." (*Id.*) Reimanis opines that "[i]t is highly likely that [the wineglass that injured Lamoure] contained some kind of defect . . . thereby lowering its failure load to be within a range that someone like Ms. Lamoure could have had the strength to

² Libbey makes an identical challenge to Reimanis's report (ECF No. 64 at 15), which the Court rejects for the same reasons.

fracture.” (*Id.*)

His third paragraph describes his reasons for believing that Pecoraro’s methodologies “are sound from an engineering and glass science perspective.” (*Id.*)

His fourth paragraph describes his own analysis of the above-mentioned two wineglasses that broke while being detailed at Lamoure’s restaurant sometime after Lamoure’s injury. (*Id.* at 2.) Reimanis measured the mirror radius of the fragments. (*Id.*) He also counted the number of fragments: “When glass is weak, it breaks into a small number (as low as two) pieces. When glass is strong, it shatters in many pieces.” (*Id.*) Finally, Reimanis found no evidence of wear on the glasses. Based on these data points, Reimanis concluded “that these two wine glasses failed at strengths well below what should have been normal strength for such wine glasses.” (*Id.*)

2. Overall Foundation

Libbey argues that Reimanis’s opinion is actually based largely on Pecoraro’s report, and therefore does not really present his own opinion. (ECF No. 64 at 12–13.) In response, Lamoure submits a declaration from Reimanis where he states that his “ultimate conclusion was based on [his] own analysis” of the two wineglasses he personally analyzed. (ECF No. 74-2 ¶ 9.) He further declares, “I did not rely on Dr. Pecoraro’s opinions in forming my own opinions.” (*Id.*)

Libbey is free to challenge this assertion at trial. Whatever the connection between Reimanis’s opinions and Pecoraro’s opinions, the Court sees no basis for wholesale exclusion of Reimanis’s testimony.

3. Factual Basis

Libbey attacks certain of Reimanis's assertions as inaccurate. First, Libbey points to evidence in the record that the two broken wineglasses indeed had wear and tear before breaking, thus undermining Reimanis's statement that he found no wear and tear. (ECF No. 64 at 13.) Libbey argues that this "severely undermines [Reimanis's] reliability." (*Id.*) But the Court does not see such a disconnect between facts and conclusions as to make Reimanis's testimony entirely unreliable.

Libbey next disputes Reimanis's assumption that the wineglasses were weak because they broke into a small number of fragments. (*Id.* at 14.) Libbey learned at Reimanis's deposition that "he did not know the number of pieces of the broken wine glasses," and "he did not have the complete glasses." (*Id.*) Lamoure responds that Reimanis inferred the number of pieces based on the appearance of the fracture surfaces: "When a glass fractures at a low fracture stress the surfaces are smooth and when glass fractures at a high fracture stress the surfaces are rough and crack branching occurs." (ECF No. 74 at 13.) This appears to be circular reasoning: the surface was smooth, meaning the glass likely had a low fracture stress, meaning it likely was weak, meaning it likely broke into only a few pieces, meaning it likely was weak because it broke into only a few pieces. This accordingly presents a fertile area for cross examination, not exclusion.

4. Equations

Libbey points out that Reimanis's report, like Pecoraro's report, contains no equations for converting mirror radius into fracture strengths. (ECF No. 64 at 11.) As noted previously, however, Reimanis's report attached an article describing an equation

for converting mirror radius into fracture strength. See Part III.B.3, *supra*. Thus, the lack of equations in the report itself is not a reason to exclude Reimanis's testimony.

D. Bayer

1. Bayer's Report

Richard Bayer is Libbey's rebuttal expert. Libbey's arguments above are essentially the same attacks that Bayer makes on Pecoraro's and Reimanis's reports. (ECF No. 65-1.) Bayer also specifically attacks Pecoraro's conclusion that the wineglass at issue here broke under stress of about 900 psi. Bayer opines that "[a] wine glass with a strength this low would be so fragile that it would be unable to survive the packing process at the point of manufacture, the distribution process and being transported and placed into and out of a dishwasher rack." (*Id.* at 3.) "It is my opinion, within a reasonable degree of engineering certainty," says Bayer,

that the wine glass that caused injury to Ms. Lamoure did not have a glass strength as low as 900 psi It is more likely that the subject wine glass received contact in its stem by another glass during the handling at the restaurant or was otherwise damaged at the restaurant thereby lowering the glass strength.

(*Id.* at 5.)

2. Qualifications

Lamoure claims that Bayer "is not qualified to render opinions within a reasonable degree of engineering certainty." (ECF No. 65 at 3 (boldface omitted).) Lamoure says that Bayer "is not an engineer or a scientist and has no education, background or training in the field of engineering." (*Id.* at 4.) Libbey responds that Bayer has worked for thirty years in the glass industry, including as the quality

assurance manager in a glass container division and a manager of product safety at “the largest glass container company in the world.” (ECF No. 73 at 4.) He has over 150 hours of education “in the field of glass fracture analysis.” (*Id.*) He estimates that he is performed “over 25,000 fracture analyses” in the course of his career. (*Id.*)

To qualify as an expert, the witness must possess such “knowledge, skill, experience, *training*, or education” in the particular field as to make it appear that his or her opinion would rest on a substantial foundation and would tend to aid the trier of fact in its search for the truth. *LifeWise Master Funding v. Telebank*, 374 F.3d 917, 928 (10th Cir. 2004) (emphasis added). Bayer’s qualifications, at least through training, are sufficient to allow him to give expert opinions on glass fracture. *See also Lovato v. Burlington N. & Santa Fe Ry. Co.*, 2002 WL 1424599, at *4 (D. Colo. June 24, 2002) (finding expert sufficiently qualified, and stating, “Whatever shortcomings [the defendant] may perceive in [plaintiff’s expert’s] academic or professional background are more properly addressed in cross-examination. [The defendant’s] challenge to [his] qualifications go to the weight of the witness’s testimony, and not to its admissibility.”).

Lamoure presses the argument, however, asserting that Bayer could not define “reasonable degree of engineering certainty” when asked to do so at his deposition. (ECF No. 65 at 5.) The court rejects this argument for two reasons. First, there is no requirement that an expert state his or her conclusion to a “reasonable degree of [subject matter] certainty.” *See In re Swine Flu Immunization Products Liab. Litig.*, 533 F. Supp. 567, 578 (D. Colo. 1980); *see also Stutzman v. CRST, Inc.*, 997 F.2d 291, 296 (7th Cir. 1993); 29 Charles Alan Wright et al., *Federal Practice & Procedure* § 6264

nn.43–44 (1st ed., Apr. 2015 update). Thus, Bayer’s use of the phrase (likely invoked talismanically, as experts tend to do) has little or no bearing on his qualifications.

Second, this dispute really comes down to a matter of rhetoric. Lamoure deposed Bayer about his definition of “reasonable degree of engineering certainty” because of the following statement in Bayer’s report: “Fracture analysis of the actual failed wine glass is the only way to know the reason for its failure within a reasonable degree of engineering certainty.” (ECF No. 65-1 at 2–3.) Lamoure interprets this to mean that, in Bayer’s mind, “reasonable certainty” really means “absolute certainty.” (ECF No. 79 at 2.) Even if Lamoure has correctly interpreted Bayer’s views, it goes to his credibility, not his qualifications.

3. Reliability

Lamoure makes a number of challenges under the general heading of reliability. She first claims that Bayer did nothing more than “read[] [Pecoraro’s and Reimanis’s] reports and provid[e] an opinion contrary to those reports without any foundation or background knowledge.” (ECF No. 65 at 8.) Although perhaps inadvisable, this is not unusual for rebuttal expert. It does not require Bayer’s exclusion.³

Lamoure next objects to Bayer’s theory that “the subject wine glass received contact in its stem by another glass during the handling at the restaurant or was otherwise damaged at the restaurant thereby lowering the glass strength.” (ECF No. 65-1 at 5.) Lamoure says that this disregards her “detail[ed]” deposition testimony about “her restaurant’s habit and practice with regard to the handling of wine glasses.”

³ Lamoure’s overall relevance objection is based on the same argument (ECF No. 65 at 12–15) and fails for the same reason.

(ECF No. 65 at 8.) If so, Lamoure has every reason to raise it during cross-examination, but the Court will not exclude Bayer's testimony on these grounds.

Lamoure further contends that Bayer's conclusions are based on references that he has not disclosed. (*Id.* at 9–10.) Lamoure specifically refers to a portion of Bayer's report which states as follows: "Small imperfections on the molded surface can result in a glass tensile strength of 30,000 to 40,000 psi. Handling damage will produce a strength of 10,000 to 20,000 psi." (ECF No. 65-1 at 2.) At his deposition, Bayer admitted his expert file did not contain any documentation supporting these figures, and that they derive from his own general knowledge in the field. (See ECF No. 65 at 9–10.) If this is a problem, however, it is a problem Bayer shares with Reimanis. To rebut the charge that he derived his opinions from those of Pecoraro, Reimanis now asserts that his "knowledge of the 'normal strength of wine glasses' is . . . founded . . . on my knowledge of the properties of glass, the ability of glass to achieve certain stresses and my knowledge and experience with manufactured glass and glass fracture analysis." (ECF No. 74-2 ¶ 11.) Bayer apparently can say the same. Both opinions remain admissible.

Finally, Lamoure contends that Bayer is biased because he works for an organization that Libbey routinely retains for expert consulting in similar matters. (ECF No. 65 at 12.) Bias is the classic example of something to be explored on cross-examination. *United States v. Baldrige*, 559 F.3d 1126, 1135 (10th Cir. 2009). In sum, none of the foregoing arguments justifies excluding Bayer's testimony.

IV. CONCLUSION

For the reasons set forth above, the Court ORDERS as follows:

1. Libbey's Motion to Exclude Expert Testimony Pursuant to Federal Rules of Evidence 702 (ECF No. 64) is DENIED;
2. Lamoure's FRE 702 Motion to Exclude the Opinions of Defendant's Expert Richard Bayer (ECF No. 65) is DENIED; and
3. This matter REMAINS SET for a five-day jury trial to begin on January 11, 2016, with a Final Trial Preparation Conference at 2:00 p.m. on December 29, 2015, in Courtroom A801.

Dated this 23rd day of June, 2015.

BY THE COURT:



William J. Martinez
United States District Judge