

**STATE OF NEW MEXICO, Plaintiff-Appellee
vs.
JUAN DURAN, Defendant-Appellant.**

No. 21,188

SUPREME COURT OF NEW MEXICO

1994-NMSC-090, 118 N.M. 303, 881 P.2d 48

August 25, 1994, Filed. As Corrected December 16, 1994

CERTIFICATION FROM THE NEW MEXICO COURT OF APPEALS. Bruce E. Kaufman, District Judge

COUNSEL

Sammy J. Quintana, Chief Public Defender, Christopher Bulman, Assistant Public Defender, Santa Fe, New Mexico, for Defendant-Appellant.

Hon. Tom Udall, Attorney General, Margaret McLean, Assistant Attorney General, Santa Fe, New Mexico, for Plaintiff-Appellee.

JUDGES

BACA, MONTGOMERY, FROST

AUTHOR: BACA

OPINION

{*304} **OPINION**

BACA, Justice.

{1} This opinion is the companion to our opinion in **State v. Anderson** 118 N.M. 284, 881 P.2d 29 (1994) (No. 21,069). In **Anderson**, we hold that deoxyribonucleic acid ("DNA") evidence is admissible in New Mexico courts and that any controversy regarding the procedures used and results obtained goes to the weight of the evidence and is a matter properly left to the jury. **Id.** at 301 881 P.2d at 46. Here, we address the admissibility of testimony and other evidence concerning the "ceiling method" for estimating the population frequency of a DNA pattern. The defendant, Duran, filed an interlocutory appeal in the Court of Appeals and the Court of Appeals certified this

appeal to us. NMSA 1978, Section 34-5-14(C) (Repl. Pamp. 1990). We affirm the trial court's ruling that the evidence involving DNA typing and the statistical probabilities based on both the fixed-bin method used by the Federal Bureau of Investigation ("the FBI") (discussed at length in **Anderson** 118 N.M. at 295-301, 881 P.2d at 40-46) and the "modified ceiling principle" method recommended in the report entitled **DNA Technology in Forensic Science** ("the NRC report"), jointly prepared by the Committee on DNA Technology in Forensic Science, the Board on Biology, the Commission on Life Sciences, and the National Research Council (also discussed in **Anderson**) were admissible at trial.

I.

{2} Duran was charged with criminal sexual penetration in the second degree (five counts) and kidnapping. Because this Court has not been supplied with any of the underlying facts in this case, we proceed immediately to recite the procedural history.

{3} After charging Duran, the State notified him that it intended to introduce DNA evidence at trial. Duran filed a motion to exclude the scientific testimony regarding the DNA evidence and requested a hearing pursuant to **United States v. Frye**, 54 App. D.C. 46, 293 F. 1013 (D.C. Cir. 1923).¹ The trial court conducted the **Frye** hearing and took judicial notice of the expert testimony presented in **Anderson**. The trial court concluded that the DNA profiling evidence was relevant and admissible and determined that "the protocol and/or procedures employed by the FBI . . . when combined with the calculation of the coincidental match probabilities under the NRC approach, is generally accepted as reliable in the relevant scientific community." Duran requested that the court's order be certified for interlocutory appeal and applied to the Court of Appeals for leave to file the appeal. The Court granted the application and certified the appeal to this Court.

II.

{4} We first address Duran's argument that the trial court abused its discretion in denying his motion to exclude the DNA profiling evidence. Duran incorporates all of the arguments contained in the answer brief of Defendant Jay Allen Anderson in **State v. Anderson** and more specifically argues that the modified ceiling method recommended in the NRC report is "not based on well-recognized scientific principle, and therefore is not valid."

{5} This Court has already determined in **Anderson** 118 N.M. at 301, 881 P.2d at 46, that DNA profiling evidence and probability statistics based on the FBI's fixed-bin method are admissible in New Mexico courts. In **Anderson** we applied the relevancy standard set out in **State v. Alberico**, 116 N.M. 156, 861 P.2d 192 (1993), and concluded that any questions concerning the particular procedures or the statistical methodology used by the FBI to compute probability statistics pertained to the weight of the evidence not its admissibility {305} and was properly left to the jury. **Id.** at 301, 881 P.2d at 46.

{6} Duran's argument, however, presents us with a slightly different question because this appeal, while questioning the validity of DNA typing evidence in general, challenges specifically the modified ceiling method utilized by the FBI to reach a statistical probability that the match was "coincidental." The "ceiling principle" was described in detail by the State's expert witness, FBI special agent Michael Vick:

[The NRC] recommend[s] that we use something called the 95% upper confidence limit. What that means is that you will take your statistics that you have developed for your different populations and you run it through an equation that they have set forth in the report, that gives you . . . a 95% confidence limit. . . . that [your] figure . . . is correct. . . . Then you . . . compare that [figure] between all of the different racial categories -- the Blacks, the Whites and the Hispanics -- and rather than presenting three different statistics, you . . . take the statistic from each of those categories that is the most conservative. So if you have 5% in the Caucasian, 10% in the Blacks, and 8% in the Hispanics, you would take 10% as being the value for that particular band, because that's the most conservative across all three of your databases. . . . So if the figure that you arrived at from your own calculations based on your own data base is 10% or above, in other words, it was 15% or 20%, you can use those calculations. If the 95% upper confidence limit using your database gives you a figure that is below 10%, say 8% or 5%, . . . you can never use anything below 10%.

Agent Vick stated that the ceiling method generally would result in a more conservative estimate than the FBI's fixed-bin method and that the FBI in this case prepared statistical probabilities based on both its fixed-bin method and the modified ceiling principle.

{7} Duran first points out that he is Hispanic and that the defendant in **Anderson** was Caucasian. Duran states that

because no new database has been developed, the FBI used the same databases in Duran's case as used in Anderson's case. However, rather than making a calculation in Duran's case based on the Hispanic database alone, under the modified ceiling principle, the FBI used three databases (Hispanic, Caucasian, and African-American) to generate their probability estimate.

While acknowledging that the ceiling method generally yields a more conservative result than that reached through the fixed-bin method, Duran contends that the ceiling method is not scientifically valid because the NRC's recommendation "was made without actual knowledge of the extent of the problem which it is designed to correct." Duran directs this Court to an article in which many reputable scientists question the use of the NRC's ceiling principle. **See William C. Thompson, Evaluating the Admissibility of New Genetic Identification Tests: Lessons from the "DNA War"**, 84 J. Crim. L. & Criminology 22 (1993). Basically, these scientists believe that the ceiling method, although more conservative than the fixed-bin method, cannot adequately compensate for the possibility of substructure in the population because no one is certain to what

extent subgroups exist in the population, if at all, and to what extent the results will be unreliable if the substructuring theory is valid. Duran contends that because there is much controversy over the substructure argument and how to adequately compensate for substructures in the population, if they exist, the modified ceiling method is not scientifically valid.

{8} Duran further contends that because he is a Hispanic from Northern New Mexico, neither the FBI's fixed-bin method of computing a statistical probability nor the modified ceiling method will yield an accurate result because "the accused is a member of a historically-isolated population arising from a small founder group' representing a relatively small subset of a larger population. Such a group has no way to develop new genes or to have new genes introduced into their system."

{9} Duran's arguments relate to whether the statistical methodology employed by the FBI to reach a result is grounded in valid, objective science. Although we find that the expert {306} testimony in this case reflects an ongoing controversy over how the results of DNA typing evidence should be calculated, we hold that this is "a dispute over the accuracy of the probability results, and thus this criticism goes to the weight of the evidence, not its admissibility." **Anderson** 118 N.M. at 299, 881 P.2d at 44 (quoting **United States v. Bonds**, 12 F.3d 540, 564 (6th Cir. 1993), **aff'g United States v. Yee**, 134 F.R.D. 161 (N.D. Ohio 1991)) (other citations omitted). This "battle of the experts can properly take place before the jury. Defense counsel will have the opportunity to call their own experts and to engage in vigorous cross-examination of the State's experts. "With adequate cautionary instructions from the trial judge, vigorous cross-examination of the [State's] experts, and challenging testimony from defense experts, the jury should be allowed to make its own factual determination as to whether the evidence is reliable." **United States v. Jakobetz**, 955 F.2d 786, 800 (2d Cir.), **cert denied**, 121 L. Ed. 2d 63, 113 S. Ct. 104 (1992). The jury is free to believe or disbelieve the expert testimony and to determine how much weight it will give the results of DNA typing in their deliberations. **Cf. State ex rel. Human Servs. Dep't v. Coleman**, 104 N.M. 500, 504, 723 P.2d 971, 975 (Ct. App. 1986) (results of paternity testing).

{10} Furthermore, following our reasoning in **Anderson**, 118 N.M. at 301, 881 P.2d at 46, we conclude that the DNA typing evidence in this case meets the standard of rules of evidence in SCRA 1986, 11-702 (Repl. Pamp. 1994) (testimony by experts) and SCRA 1986, 11-703 (Repl. Pamp. 1994) (bases of expert opinion testimony). We also conclude that the probative value of the DNA typing evidence outweighs its prejudicial effect, thus satisfying rule of evidence in SCRA 1986, 11-403 (Repl. Pamp. 1994). Here, the evidence and the testimony will be probative because they link Duran to the crimes for which he has been charged. "Although we agree that the aura of infallibility surrounding DNA evidence does present the possibility of a decision based on the perceived infallibility of the evidence, we conclude that the damaging nature of the DNA evidence and the potential prejudice caused by this evidence does not require exclusion." **Anderson**, 118 N.M. at 302, 881 P.2d at 47.

III.

{11} Next, we address Duran's argument that a further evidentiary hearing is necessary to determine the correct application of the modified ceiling principle method of obtaining a statistical calculation of the probability that someone other than the defendant could have contributed the sample found at the scene of the crime [or on the victim]. Duran contends that a further hearing is necessary because "experts harbor[] differing interpretations of the correct application of the NRC's interim recommendation." We acknowledge that different experts arrive at different numbers using the various methods for calculating statistical probability. However, we believe that both the State's expert testimony and the Defendant's expert testimony regarding statistical results may properly be placed before the jury which will be free to believe or disbelieve any of the testimony before it. This conclusion is in accordance with our conclusion that the jury must make its own determination as to how it will utilize the contradicting expert testimony regarding the DNA typing evidence and its resulting statistical calculations. Therefore, a further evidentiary hearing to determine which statistical calculation should be admitted is unnecessary.

IV.

{12} Finally, we respond to Duran's assertion in his brief-in-chief that "the State's argument that DNA typing evidence should be admissible to inculcate an accused because such evidence also has the potential to exculpate an accused is irrelevant." The State responds to Duran's argument by stating in its answer brief that "the State's intent was to inform this Court and alert this Court that the only challenged use of DNA typing evidence is DNA evidence indicating a match and resulting probability statistic. . . . The defense challenge to the reliability of laboratory methodology, if valid would necessarily bar the use of DNA typing to exculpate an {307} accused." We disagree with the State's comparison between the use of DNA typing evidence to exculpate and inculcate an accused.

{13} The use of DNA typing evidence to exculpate an accused is conclusive. Because a visual match must first be declared before the statistical methodology is employed a visual non-match is conclusive that the known contributor could not be the same person as the unknown contributor of DNA. Because the State appears to be suggesting that the use of DNA typing evidence to exculpate an accused is compromised by the appeals of Duran and Anderson, it is pertinent at this point to clarify that neither our opinion in **Anderson** nor that in this case in any way affects the use of DNA evidence to exculpate a person accused of a crime.

V.

{14} In conclusion, we hold that the trial court did not abuse its discretion in determining that the DNA typing evidence and the accompanying statistical calculations in this case would be admissible at trial. Any debate over the resulting probabilities that the "match" is random goes to the weight of the evidence and is properly left for the jury to determine. Accordingly, we **AFFIRM** the trial court's ruling.

{15} IT IS SO ORDERED.

JOSEPH F. BACA, Justice

WE CONCUR:

SETH D. MONTGOMERY, Chief Justice

STANLEY F. FROST, Justice

[1](#) After the court held the hearing in this case, this Court decided **State v. Alberico**, 116 N.M. 156, 861 P.2d 192 (1993), in which we rejected the **Frye** test in favor of the relevancy test for admitting scientific testimony under SCRA 1986. 11-702 (Repl. Pamp. 1991).