STATE OF WISCONSIN
COURT OF APPEALS
DISTRICT I

Appellate Case No. 2009 AP 2835-CR
Milwaukee County Case No. 2006 CF 4929

STATE OF WISCONSIN,

Plaintiff-Respondent,

vs.

CHRISTOPHER D. JONES,

Defendant-Appellant.

NON-PARTY BRIEF OF AMICUS CURIAE THE INNOCENCE NETWORK

On Appeal from the Judgment of Conviction
and the Final Orders Entered in the
Circuit Court for Milwaukee County, the
Honorable Daniel L. Konkol, Circuit Judge, Presiding

Respectfully Submitted,
THE INNOCENCE NETWORK
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TABLE OF CONTENTS

TABLE OF AUTHORITIES

Wisconsin Cases Cited

Other Cases Cited

Other Authorities[1]

[1]All of the "other authorities" referenced in this Brief were filed in the trial court below and can be found in the Record on Appeal.

INTRODUCTION

One of the issues in this appeal concerns the question of whether firearm and toolmark evidence should be admissible under Wisconsin's test for expert testimony. *Cf.*, Defendant's Brief at 4-8; State's Response Brief at 2-8. Although for decades the reliability, probative value, and therefore relevance, of ballistics evidence was accepted by courts almost without question, that is no longer the case.

Several courts have now concluded that ballistics evidence no longer warrants the moniker of "science," and they have placed limits on the opinions that may be expressed at trial. As discussed in this brief, these courts hold that if a ballistics opinion is offered at trial the examiner is not permitted to express that opinion to a reasonable degree of "scientific certainty," or to proclaim that he or she is "100 percent sure of a match," or that a match could be made "to the exclusion of all other guns" in the world.

The National Academy of Sciences has weighed in as well, and several thorough reports now give serious cause for concern about the type of testimony used in Mr. Jones' case, where the State's examiner was permitted to express his opinion to a professional certainty that the bullet and casing recovered at the crime scene could have come from

no other gun in the world, and that there was "no error rate" for his conclusion. (R. 96: 89, 91, 95).

At a minimum, if this Court concludes that ballistic firearm and toolmark evidence is admissible under Wisconsin law, this Court should place appropriate limits on the examiner's opinions that may be presented at trial so as to avoid the possibility of misleading a jury as to the weight that should be accorded ballistics evidence.

A. FIREARM AND TOOLMARK EVIDENCE IS NO LONGER SUFFICIENTLY RELIABLE TO BE ADMISSIBLE UNDER WISCONSIN LAW.

1. Wisconsin law on the admissibility of expert testimony.

The *Amicus* believes the parties' briefs adequately discuss the legal standards in Wisconsin on the admissibility of scientific testimony at trial, so that will not be repeated here. The *Amicus* recognizes that Wisconsin is not a *Daubert* jurisdiction, like the federal courts, and that, instead, the general rule of relevance controls the admissibility of scientific or expert testimony. *See State v. Walstad*, 119 Wis. 2d 483, 519, 351 N.W.2d 469 (1984). However, the *Amicus* disagrees with the State's assertion that the trial court may not act as a gatekeeper to exclude certain types of so-called scientific or technical evidence from trial.

Under Wisconsin law the proposed evidence must still meet the relevance test, *i.e.* that it is probative and will assist, not confuse, the trier of fact. *Id*. In this sense, the trial court does properly act as gatekeeper to exclude the improper use of technical evidence at trial, and in some instances Wisconsin courts *have* excluded certain types of technical evidence. *See State v. Dean*, 103 Wis. 2d 228, 307 N.W.2d 628 (1981) (court rejected polygraph evidence in part because, "the legal and scientific communities remain significantly divided on the reliability and the usefulness of the polygraph," because subjective opinion is crucial to the end result of polygraphs); and *State v. Steele*, 97 Wis. 2d 72, 294 N.W.2d 2 (1980) (psychiatric testimony not permitted on defendant's capacity to form intent when based on mental health history because of substantial doubt that it was scientifically sound and probative).

Similarly, the time has come to reconsider the admissibility of firearm and toolmark evidence given the growing body of authorities, scientific and legal, which raise doubts about its reliability and probative value.

2. Recent Developments Concerning the Admissibility and Probative Value of Ballistics Evidence at Trial.

In 2008, a report by the National Research Council expressed serious concern about the lack of scientific data supporting the type of firearm opinion evidence used at trial in this case. That NRC report observed that, "[t]he validity of the fundamental assumptions of uniqueness and reproducibility of firearms-related toolmarks has not yet been fully demonstrated." *See* The National Academy of Sciences, National Research Council, Committee to Assess the Feasibility, Accuracy, and Technical Capability of a National Ballistic Database, *Ballistics Imaging* (2008), at 81 (hereinafter NRC Ballistic Imaging Report). The study cautioned that, "[a]dditional general research on the uniqueness and reproducibility of firearms-related toolmarks would have to be done if the basic premises of firearms identification are to be put on a more solid scientific footing." *Id*. at 82.

Then, just last year, another study by the National Research Council, Committee on Identifying the Needs of the Forensic Science Community, *Strengthening Forensic Science in the United States: A Path Forward*, (2009) (hereinafter NRC Forensic Science Report), reported that serious and substantial uncertainties exist with the type of ballistic

evidence used at the trial in Mr. Jones' case, because of a "lack of a precisely defined process," or any specific protocol. *Id*. at 5-21, (R61:104).

The basic premise of ballistics theory is that certain "toolmarks" found on bullets or casings can be linked to particular types of guns and compared to one specific gun. Toolmarks are either striated toolmarks consisting of patterns of scratches of striae produced by the parallel motion of tools against objects (e.g., the marks the barrel of a gun produces on fired bullets) or impression toolmarks produced on objects by the perpendicular pressurized impact of tools (e.g., breech face marks that the breach face of a gun produces on fired casings). Both types of toolmarks have class, subclass, and individual characteristics. *See* Adina Schwartz, *A Systemic Challenge to the Reliability and Admissibility of Firearms and Toolmark Identification*, 6 Columbia Science and Technology Law Review 2, 4 (2004-05) (R. 61: 61).

Class characteristics are the distinctive features shared by many items of the same type, for example the number of grooves cut into the barrel of a gun and the direction of the "twist" in those grooves. NRC

Forensic Science Report at 5-19, (R61:102). Sub-class characteristics are those common to a group of firearms produced by the manufacturing process, for example, when the barrel rifling of a batch of firearms is done by the same worn or dull tool. *Id*.

Individual characteristics are the fine microscopic markings that are said to be unique to a particular firearm. *Id*. However, the NRC Ballistic Imaging Report concluded that this premise of uniqueness has not been scientifically established: "A significant amount of research would be needed to scientifically determine the degree to which firearms-related toolmarks are unique or even to quantitatively characterize the probability of uniqueness." NRC Ballistic Imaging Report at 3.

The 2009 NRC Forensic Science Report also criticized the lack of research that has been conducted to support ballistic examiners' methods. "Because not enough is known about the variabilities among individual tools and guns, we are not able to specify how many points of similarity are necessary for a given level of confidence in the result." NRC Forensic Science Report at 5-21, (R61:104). In short, in firearm and toolmark evidence, there are simply no objective criteria for declaring

a match, and likewise, no clear rule for declaring a non-match. Unlike fingerprint and DNA evidence, there is no rule by which an examiner can declare an exclusion if there is a single difference between two samples. Instead, examiners focus on finding similarities, while dismissing or ignoring dissimilar characteristics.

The AFTE has tried to provide a definition for when an examiner can conclude there is a match because of "agreement similarities," but it is so circular that it is of little value. *See* Association of Firearm and Toolmark Examiners (AFTE) Glossary Definitions, *Theory of Identifications as it Relates to Toolmarks*, AFTE J. VOL. 30 NO. 1 (1998),(R61:105-107) (must be "sufficient agreement" in the pattern of two sets of marks which "exceeds the best agreement demonstrated between tool marks known to have been produced by different tools and is consistent with the agreement demonstrated by tool marks known to have been produced by the same tool"). The NRC found this definition lacked specificity and forced examiners to rely on their own subjective experience. NRC Forensic Science Report at 5-21, (R61:104). *See also United States v. Monteiro*, 407 F.Supp.2d 351, 369-70 (D.Mass.2006), (recognizing that the AFTE Theory "leaves much to be

desired...it is not a numeric or statistical standard, but is based on the individual examiner's expertise").

Equally troubling in this case is the fact that the State's examiner drastically overstated the reliability of his identification by testifying that there is "no error rate." (R96:95). "A perfect correspondence between the lines on a test fired cartridge and the evidence recovered from the scene is impossible; in the real world, there is no such thing as a 'perfect match.'" *Monteiro*, 407 F.Supp. 2d at 362, (R61:126), citing Afred A. Biasotti, *A Statistical Study of the Individual Characteristics* of Fired Bullets, 4 J. FORENSIC SCI. 34, 44 (1959), (R107). Indeed, absolutist claims of perfect accuracy without errors "has hampered efforts to evaluate the usefulness of the forensic science disciplines." NRC Forensic Science Report at 1-10, (R107). *See also United States v Glynn*, 578 F. Supp.2d 567, 574 (S.D. N.Y. 2008), (criticizing the tendency of ballistics experts who "make assertions that their matches are certain beyond all doubt, that the error rate of their methodology is 'zero,' and other such pretensions").

On top of all of these problems, is the additional problem of confirmation bias. Firearm toolmark examiners are given the answer

before being asked the question. Judge Gertners' description of the examination in *United States v. Green*, 405 F.Supp.2d 104 (D. Mass. 2005), is true of the examination done in Mr. Jones' case:

> The only weapon [the examiner] was shown was the suspect one; the only inquiry was whether the shell casings found earlier matched it. It was, in effect, an evidentiary 'show-up,' not what scientists would regard as a 'blind' test. [The examiner] was not asked to try to match the casings to the other test-fired Hi Point weapons in police custody, or any other gun for that matter, an examination more equivalent to an evidentiary 'line-up.' His work was reviewed by another officer, who did the same thing -- checked his conclusions under the same conditions -- another evidentiary 'show-up.'

405 F.Supp.2d at 107-08.

Confirmation bias exists particularly in firearm and toolmark identification because the only matches peer reviewed are those in which the examiner makes a positive identification. "[I]f the expert doing the check only ever checks positive matches, then his perception will be that whenever he sits at the microscope to conduct a peer review of casework, he will expect to see a positive match!" Gerard Dutton, *Commentary: Ethics in Forensic Firearms Investigation*, 37(2) AFTE J. 79, 82 (Spring 2005), (R107).

Thus, for all of these reasons, an opinion like that offered by the examiner in this case should no longer be considered probative, relevant or admissible in Wisconsin. There is no more scientific basis to support a ballistics examiner's claim that a bullet came from "no other gun in the world" than there is to support polygraph results, which are deemed of so little probative value as to be inadmissible under Wisconsin's relevance rules.

3. Testimony from the State's Examiner was not Helpful to the Trier of Fact.

In addition to a lack of probative value, the evidence here fails the second test in Wisconsin, that it assist the trier of fact. If there is such disagreement among the scientific community and the firearm and toolmark identification community over what constitutes a match, how can testimony from any firearm and toolmark examiner be helpful to the trier of fact?

One of the best known apologists for the firearm and toolmarks field acknowledges that examiners in different parts of the United States are likely to develop different conceptions of what does or does not constitute a "match," because different training materials are used as a baseline for comparison. Ronald Nichols, *Defending the Scientific*

Foundations of the Firearms and Toolmark Identification Discipline: Responding to Recent Challenges, 52(3) J. Forens. Sci. 586, 590 (May 2007), (R61:189). If two different examiners from two different states can arrive at two different answers regarding a match, then the testimony is not helpful at all, and jurors are better off drawing their conclusions based on the eye witnesses and police witnesses rather than evidence which is so disputed in its own field.

The AFTE seems to fall back on the position that if two different examiners disagree, then it should be left to the jury to decide. *Id.* at 590. But where examiners within the discipline cannot agree on the objective criteria for resolving disputes about whether in fact there is a match, then the jurors are just as equipped as the examiners to make their own conclusions. Testimony from an examiner within a discipline that is so riddled with problems cannot possibly be helpful to the jury. *See* Daniel Blinka, WISCONSIN PRACTICE SERIES: WISCONSIN EVIDENCE §702.4 at 588-89 (3rd ed. 2008) ("expert testimony that amounts to no more than the witness's ipse dixit ('because I said so') may be excluded on grounds that it is insufficiently helpful because the witness cannot articulate how he reached his conclusion").

In addition, the examiner in this case failed to document those toolmarks which formed the basis of his opinion. The very same deficiency caused the court in *United States v. Monteiro*, to rule the examiner's opinion inadmissible. The court found that the expert's methodology lacked adequate documentation because his reports said only that there was a "positive ID." 407 F.Supp.2d at 374, (R61:143). The AFTE guidelines require examiners to "document identifications by notes, sketches, or photographs." *Id*. at 374. Because the expert took no photographs and made no drawings of his observations, the basis for identification was not "reproducible and verifiable," and the evidence was inadmissible. *Id*.

Likewise, in Mr. Jones' case, the State's examiner simply declared that there was a positive ID without describing, photographing or diagraming the striations upon which he based his conclusion. These failures deprived the jurors of any chance to compare the markings themselves, or to evaluate the truthfulness of the State witness's assertions. It forced the jury to simply trust him. *See also*, *United States v. Glynn*, 578 F.Supp.2d at 574, fn 13 (witness failed to document conclusions thereby depriving jury of ability to evaluate testimony).

The *Amicus* believes undocumented testimony of the sort presented in Mr. Jones's case is not only unhelpful, but it misleads a jury, and this Court should rule such evidence inadmissible.

B. THIS COURT SHOULD LIMIT THE MANNER IN WHICH A BALLISTIC OPINION IS EXPRESSED SO THAT THE JURY IS NOT MISLED BY FALSE PRETENSIONS THAT SUCH OPINIONS ARE INFALLIBLE.

Those federal district courts which have recently examined the issue now question the routine admission of firearm and toolmark identification evidence, and they have placed limits on the type of opinion that may be expressed to a jury. In *United States v. Glynn*, the court concluded that ballistics lacked the rigor of science and that to allow any "ballistics examiner...to testify that he had matched a bullet or casing to a particular gun 'to a reasonable degree of ballistic certainty' would seriously mislead the jury." Therefore, the court held that "ballistics opinions may be stated in terms of 'more likely than not,' but nothing more." 578 F.Supp.2d at 574, 575.

Likewise, in *United States v. Monteiro*, the court noted "there is no reliable statistical or scientific methodology which will currently permit the expert to testify that it is a 'match' to an absolute certainty, or to an arbitrary degree of statistical certainty." 407 F.Supp.2d at 372. The court

therefore ruled that "an expert may not assert any degree of statistical certainty, 100 percent or otherwise, as to a match." *Id.* at 373. Other courts have reached similar conclusions. *See United States v. Green,* 405 F.Supp.2d at 124 (court did not allow an examiner to testify that the match excluded "all other guns"); *United States v. Taylor*, 663 F.Supp.2d 1170, 1179 (D.N.M 2009) (ballistics examiner precluded from "stating that he can conclude that there is a match to the exclusion, either practical or absolute, of all other guns").

Similarly, if this Court finds ballistic comparison evidence to be admissible, then it should adopt guidelines and limitations on the opinions that may be offered by such purported experts in the field. Drawing on the examples from the federal courts, the *Amicus* suggests that this Court order that in any future cases where ballistics opinion evidence is offered, the expert (1) may not be permitted to express an opinion that the field of ballistics, firearm and toolmark comparison identification is infallible, or has an error rate of zero, or any similar such pretension; (2) may not be permitted to express an opinion to a reasonable "scientific" or "professional" certainty; (3) may express only an opinion that it is "more likely than not" that a particular

identification is made; and (4) may only present opinion testimony to the jury if the witness is prepared to show (by photographs, video or other visual representations) what specific markings are being relied upon in reaching the opinion.

CONCLUSION

New evidence by respected authorities, including the National Academy of Sciences, demonstrates the serious flaws within the field of firearm and toolmark evidence. This Court should take steps to protect the truth-finding of juries and to lessen the risk of wrongful convictions as a result of unreliable, and ultimately non-probative, evidence. The sort of ballistics opinion testimony used in this case should be ruled inadmissible, and appropriate limitations on such testimony should be imposed if it is admitted in future cases.

Dated at Brookfield, Wisconsin, this 30th day of March, 2010.

Respectfully submitted,

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CERTIFICATION AS TO FORM AND LENGTH

I certify that this brief meets the form and length requirements of Wis. Stat. § 809.19 (8)(b) and (c) for a brief produced in a proportional serif font. The length of the brief is 2943 words.

Dated this 30th day of March, 2010.

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