UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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UNITED STATES OF AMERICA, :

REPLY MEMORANDUM

-against- :

S3 11 Cr. 500 (KMK)

LOUIS McINTOSH, :

Defendant, :

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I. Ballistics

A. A *Daubert* Hearing is Necessary

For many years, courts in this and other districts have routinely admitted evidence of firearms identification. Often, the evidence came through the testimony of on-the-job experts that claimed the ability to differentiate the toolmarks produced by one firearm from all other firearms in the world, a claim that was advanced despite the absence of any database or other method of comparison. The government's criticism of the defense in this case for not hiring our own ballistics "expert" is nothing more than in invitation for the defense to sign on to a fundamentally unsound principle. We respectfully decline the government's invitation to "drink the Kool-Aid".

As the following discussion shows, despite decades of uncritical acceptance of this evidence, federal courts – supported by prestigious scientific studies – are expressing an increasing level of concern about claims made by firearms examiners regarding the underlying "science" of the discipline and the purported ability of firearms examiners to

match particular weapons – to the exclusion of all other weapons in the world – to other physical evidence, such as bullets and cartridge casings.

This shift in attitude is, in part, a function of the *Daubert* revolution in federal court, and reflects, as well, recognition of the role that junk science, shoddy forensic work, and outright falsification of the results of forensic examinations have played in the conviction of the innocent. In ACTUAL INNOCENCE the authors tracked the cases of numerous innocent people convicted of crimes and identified the following eight factors that are most commonly involved when the innocent are convicted: (1) mistaken eyewitness testimony; (2) false confessions; (3) falsified scientific testing; (4) "snitch" witnesses who lied for advantage; (5) junk science; (6) police and prosecutorial misconduct; (7) lackluster or impaired performance by defense counsel; and (8) systemic racial bias.[1] The federal system suffers the same deficiencies. *See, e.g., United States v. Glynn*, 578 F.Supp.2d 567, 574 (S.D.N.Y. 2008), where Judge Rakoff, after conducting a *Daubert*/702 hearing and reviewing the available literature, concluded that "ballistics examination not only lacks the rigor of science but suffers from greater uncertainty than many other kinds of forensic evidence." *See also United States v. Montiero*, 407 F.Supp.2d 351 (D. Mass. 2006); *United States v. Green*, 405 F.Supp.2d 104 (D. Mass. 2005); *United States v. Diaz*, 2007 WL 485967 (N.D. Cal. Feb. 12, 2007) (the government's ballistics witness was precluded from testifying that a ballistics match was

[1] J. Dwyer, P. Neufeld, and B. Scheck, ACTUAL INNOCENCE (Doubleday 2000).

made to the exclusion of all other weapons.)

In *United States v. Williams*, 506 F.3d 151 (2d Cir. 2007), the Court was presented with an opportunity to state, definitively, that expert testimony in the field of firearms identification generally passes the requirements of *Daubert* and Rule 702. The Court did not do so. Thus, in this Circuit, the discipline of firearms identification remains an issue that requires, at a minimum, case-by-case and/or expert-by-expert analysis. In *Williams*, the Court also cautioned that evidence routinely admitted prior to *Daubert* had not been "grandfathered" from gate keeping scrutiny. *United States v. Williams*, 506 F.3d at 162. The Court stated, "expert testimony long assumed reliable before Rule 702 must nonetheless be subject to the careful examination that *Daubert* and *Kumho Tire* require." *Id.*

The cautionary note sounded in *Williams* in 2007 is particularly prescient in light of the Spring 2008 report of the National Research Council ("NRC"), an arm of the National Academy of Sciences. *See* D.L. Cork, *et al.*, BALLISTIC IMAGING (The National Academies Press 2008). The National Academy of Sciences is the official research body that advises the federal government on scientific and technical matters. Its charter to do so was initially granted by Congress in 1863. In that report, after a four-year study of the feasibility of a national ballistics database (commissioned by the Department of Justice), the NRC made, *inter alia*, the following finding:

> **Finding: The validity of the fundamental assumptions of uniqueness and reproducibility of firearm-related toolmarks**

has not yet been fully demonstrated.

> There is one baseline level of credibility, however, that must be demonstrated lest any discussion of ballistic imaging be rendered moot – namely, that there is at least some "signal" that may be detected. In other words, the creation of toolmarks must not be so random and volatile that there is no reason to believe that any similar and matchable marks exist on two exhibits fired from the same gun. The existing research, and the field's general acceptance in legal proceedings for several decades, is more than adequate testimony to that baseline level. Beyond that level, we neither endorse nor oppose the fundamental assumptions. Our review in this chapter is not – and is not meant to be – a full weighing of the evidence for or against the assumptions, but is ample enough to suggest that they are not fully settled, mechanically or empirically.
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> Another point follows directly: *Additional general research on the uniqueness and reproducibility of firearm-related toolmarks would have to be done if the basic premises of firearms identification are to be put on a more solid scientific footing.*

NRC Report at 81-82 (bold and italic text in original). The Report was also critical of the practice of firearms examiners testifying to their opinions in terms of great and insupportable certainty. *Id.* at 82. In particular, the Report noted the following:

> *Conclusions drawn in firearms identification should not be made to imply the presence of a firm statistical basis when none has been demonstrated.* [E]xaminers tend to cast their assessments in bold absolutes, commonly asserting that a match can be made "to the exclusion of all firearms in the world." Such comments cloak an inherently subjective assessment of a match with an extreme probability statement that has no firm grounding and unrealistically implies an error rate of zero.

Id. at 82 (italics in original). The Report also noted:

> [S]tatements on toolmark matches (including legal testimony) should be supported by the work that was done in the laboratory, by the notes and documentation made by examiners, and by proficient testing or established error rates for individual examiners in the field and in that particular laboratory, but should not overreach to make extreme probability statements.

Id. at 82, 85.

In assessing the "science" of toolmark analysis, the NRC made the following observation:

> Ultimately, as firearms identification is currently practiced, an examiner's assessment of the quality and quantity of resulting toolmarks and the decision of what does or does not constitute a match comes down to a subjective determination based on intuition and experience.

NRC Report at 55. Indeed, the discipline itself acknowledges the subjective nature of the assessment. As reprinted in the NRC Report, the following represents the standard utilized by the Association of Firearms and Toolmark Examiners:

> Theory of Identification as It Relates to Toolmarks
>
> A. The theory of identification as it pertains to the comparison of toolmarks enables opinions of common origin to be made when the unique surface contours of two toolmarks are in "sufficient agreement."
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> B. This "sufficient agreement" is related to the significant duplication of random toolmarks as evidenced by the correspondence of a pattern or combination of patterns of surface contours. Significance is determined by the comparative examination of two or more sets of surface contour patterns comprised of individual peaks, ridges and furrows. Specifically, the relative height or depth, width, curvature and spatial relationship of the individual peaks, ridges and furrows within

> one set of surface contours are defined as compared to the corresponding features in the second set of surface contours. Agreement is significant when it exceeds the best agreement demonstrated between toolmarks known to have been produced by different tools and is consistent with the agreement demonstrated by toolmarks known to have been produced by the same tool. The statement that "sufficient agreement" exists between two tool marks means that the agreement is of a quantity and quality that the likelihood another tool could have made the mark is so remote as to be considered a practical impossibility.
>
> C. Currently, the interpretation of individualization/ identification is subjective in nature, founded on scientific principles and based on the examiner's training and experience.

AFTE Theory of Identification, reproduced in NRC Report at 59. In other words, something is a match when it is not not a match. That determination is self-described as "subjective" and the "science" from which the subjective determination proceeds is never identified. Further, no objective criteria exist by which it may be determined when agreement "exceeds" the level needed to cross from non-match to match. References to "likelihood" imply a database by resort to which likelihood may be assessed when none exists. All of this is the antithesis of science.

The NRC Report was followed the next year by a second report from the National Academies of Science, STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD (National Academies Press 2009). Among the many conclusions reached by that study is the following:

> [W]ith the exception of nuclear DNA analysis, . . . no forensic method has been rigorously shown to have the capacity to

> consistently, and with a high degree of certainty, demonstrate a connection between evidence and a specific individual or source.

Id. at 7 n.1. That includes, of course, the expert evidence challenged in this case.

The Supreme Court of the United States has also weighed in on this issue. In *Melendez-Diaz v. United States*, 129 S.Ct. 2527 (2009), the Court acknowledged its own concerns that "serious deficiencies have been found in the forensic evidence used at criminal trials," *id.* at 2537, and citing the 2009 NAS Report, pointed out a litany of problems with the state of forensic sciences in the United States such as "subjectivity, bias, and unreliability of common forensic tests such as latent fingerprint analysis, pattern/impression analysis, and tool mark and firearms analysis." *Id.* at 2438.

To return to Judge Rakoff's opinion in *Glynn*, after conducting a *Daubert* hearing in that case, the Court was convinced that "ballistics evidence not only lacks the rigor of science but suffers from greater uncertainty than many other kinds of forensic evidence." *United States v. Glynn,* 578 F.Supp.2d at 574. Instead of barring the testimony outright, Judge Rakoff concluded, however, that the testimony of the expert would be permitted only if the expert made no claims that what he was doing was "science" and if the expert limited his level of certainty to "probable," *i.e.*, that a match was simply "more likely than not." *Id.* at 575.

B. Rule 702 and the *Daubert* and *Kumho Tire* Criteria

The admission of expert evidence is governed by FED. R. EVID. 702, which states:

> If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Because the admissibility of expert testimony is governed by FED. R. EVID. 104(a), the proponents of expert testimony must satisfy Rule 702's criteria by a preponderance of the evidence. A trial judge faced with a challenge to expert testimony must determine, in the final analysis, whether "the reasoning or methodology underlying the testimony is scientifically valid and . . . whether that reasoning or methodology properly can be applied to the facts in issue." *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 572, 592-593 (1993). *Daubert* set out four basic criteria to guide this assessment: (1) whether the theory can be, and has been, tested; (2) whether the technique is subject to publication and peer review; (3) the known or potential error rate together with the existence of standards and controls; and (4), the degree of acceptance within the relevant discipline. *Id.* at 594. These criteria are not, however, exclusive. *Wills v. Amerada Hess Corp.*, 379 F.3d 32, 48 (2d Cir. 2004).

In setting the guidelines for a *Daubert* challenge, the Second Circuit has noted that the manner in which a trial judge exercises his or her gate-keeping function, *i.e.*, the nature of the *Daubert* challenge itself, "is fluid and will necessarily vary from case to case." *Amorgianos v. Amtrak*, 303 F.3d 256, 266 (2d Cir. 2002). With particular regard

to the field of firearms identification, there are numerous issues: (1) the "scientific" basis of the discipline has never been established;[2] (2) the discipline is wholly subjective in nature, amounting to an examiner's opinion that is based on little more than "I know it when I see it;" (3) there is a great risk that identifications are claimed based on examiners assigning too much significance to a small amount of data; (4) there is a risk of an examiner confusing class, sub-class and individual characteristics of evidence – a risk compounded by the fact that the "discipline" has no set criteria for distinguishing sub-class characteristics from individual characteristics; (5) there is no known error rate in the discipline; and (6) the accepted criteria for declaring a match -- quoted above – are subjective, circular and tautological. These issues must be explored at a *Daubert*/702 hearing.

C. Conclusion

It is a simple truth that our legal system has a tendency to be cautious. That is completely appropriate but *"[w]hen scientific methodologies once considered sacrosanct are modified or discredited, the judicial system must accommodate the change in the scientific landscape."*[3] This Court should, at the very least, order a *Daubert* hearing at

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[2] The Government repeats the mantra of all ballistics examiners that "each firearm will transfer a unique set of marks on bullets and shell casings when ammunition is fired from that gun." Government's Memorandum in Opposition to Defendants' Pretrial Motions, Jan 27. 2012 ("Gov. Brief") at 12. The Government does not and cannot provide, however, any scientifically accepted validation for this claim.

[3] Statement of the Honorable Harry T. Edwards, Senior Judge of the United States Court of Appeals for the D.C. Circuit attached as Exhibit A (emphasis in the original).

this point.

II. Venue

A. The Pre-trial Determination of Venue is Appropriate

As a "threshold matter," the government is incorrect when it contends that it is premature for the Court to consider the defendant's motion to dismiss Count Seven and Eight for lack of venue. In *United States v. Knight*, 822 F.Supp 1071, 1077 (S.D.N.Y. 1993), the Court determined pre-trial that there was "no constitutional basis for venue in the Southern District of New York" of a count of the indictment which alleged that the defendant had engaged in a monetary transaction with money that had been obtained by means of threats communicated through interstate commerce. Courts are routinely required to make pre-trial rulings on venue. *See, e.g., United States v. Brennan*, 183 F.3d 139, 149 (2d Cir. 1999); *United States v Reed*, 773 F.2d 477 (2d Cir. 1985). Accordingly, the motion for a pre-trial determination of venue is completely appropriate.

B. Venue Must be Proven by the Beyond a Reasonable Doubt Standard

Venue has long been an anomaly in federal criminal jurisprudence. While it is essential to a criminal prosecution, and must be proved by the government as to each count charged, it has long been the case that the burden of proof for venue is only by a preponderance of the evidence, and not beyond a reasonable doubt. *See, e.g. United States v. Geibel*, 369 F.3d 682, 695-96 (2d Cir. 2004) ("[b]ecause it is not an element of the crime, the government bears the burden of proving venue by a preponderance of the

evidence") *citing United States v. Smith,* 198 F.3d 377, 382 (2d Cir. 1999). *See also United States v. Ramirez*, 420 F.3d 134, 139 (2d Cir. 2005) (same).

In *In re Winship*, 397 U.S. 358, 364 (1970), the Supreme Court declared that "the Due Process Clause protects the accused against conviction except upon proof beyond a reasonable doubt of every fact necessary to constitute the crime with which he is charged." That principle was echoed by the Court in *Mullaney v. Wilbur*, 421 U.S. 684, 685 (1975) and reaffirmed in *Patterson v. New York*, 432 U.S. 197, 215 (1977) (prosecution "must prove every ingredient of an offense beyond a reasonable doubt"); *County Court of Ulster County v. Allen*, 442 U.S. 140, 156 (1979) (burden-shifting devices must not "undermine the factfinder's responsibility at trial, based on evidence adduced by the State, to find the *ultimate* facts beyond a reasonable doubt") (emphasis in original); *United States v. Gaudin*, 515 U.S. 506, 511, 514-15 (1995) (the "Constitution gives a criminal defendant the right to demand that a jury find him guilty of all the elements of the crime with which he is charged").

More recently, in the sentencing context, an undeviating line of cases has reaffirmed the principle set forth in *Winship* in the context of the Sixth Amendment right to a jury trial. For example, the Supreme Court has declared repeatedly that a defendant has the right to have a jury determine beyond a reasonable doubt any fact required to increase the criminal penalty. *See Blakely v. Washington*, 542 U.S. at 304 ("[w]hen a judge inflicts punishment that the jury's verdict alone does not allow, the jury has not

found all the facts 'which the law makes essential to the punishment,'. . . and the judge exceeds his proper authority"); *United States v. Booker*, 543 U.S. 220, 244 (2005) ("any fact . . . which is necessary to support a sentence exceeding the maximum authorized by the facts established by a plea of guilty or a jury verdict must be admitted by the defendant or proved to a jury beyond a reasonable doubt"). *See also Cunningham v. California*, 549 U.S. 270, 281 (2007) ("[t]his Court has repeatedly held that, under the Sixth Amendment, any fact that exposes a defendant to a greater potential sentence must be found by a jury, not a judge, and established beyond a reasonable doubt, not merely by a preponderance of the evidence").[4]

It follows therefore that all facts essential to a conviction fall within this description because by definition all facts essential to conviction are a prerequisite to punishment. Accordingly, proper venue is necessary in order to punish a defendant.

It does not matter whether venue is technically an "element" of an offense – a factor that many courts – having found that it is not – have used to dispense with the

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[4] *See also Jones v. United States*, 526 U.S. 227, 243 n. 6 (1999) ("under the Due Process Clause of the Fifth Amendment and the notice and jury trial guarantees of the Sixth Amendment, any fact (other than prior conviction) that increases the maximum penalty for a crime must be charged in an indictment, submitted to a jury, and proven beyond a reasonable doubt"); *Apprendi v. New Jersey*, 530 U.S. 466, 490 (2000) ("[o]ther than the fact of a prior conviction, any fact that increases the penalty for a crime beyond the prescribed statutory maximum must be submitted to a jury, and proved beyond a reasonable doubt"); *Ring v. Arizona*, 536 U.S. 584, 609 (2002) (holding that following a jury verdict of a defendant's guilt of first-degree murder, a trial judge's determination alone of the presence or absence of aggravating factors required for imposition of the death penalty violates the Sixth Amendment right to a jury trial capital prosecutions.

reasonable doubt standard. The Supreme Court has rejected such reliance on nomenclature, applying the reasonable doubt requirement regardless whether particular facts are labeled "elements" or "sentencing factors." *See United States v. Booker*, 543 U.S. at 230-232. *See also United States v. Jones*, 526 U.S. at 243 n.6. As the Court explained in *Booker*, summarizing its previous decisions since *Jones*, including *Ring v. Arizona*, 536 U.S. 584, 588-89 (2002), the Court "reaffirmed [its] conclusion that the characterization of critical facts is constitutionally irrelevant." 543 U.S. at 231. *See also Harris v. United States*, 536 U.S. 545, 557-66 (2002) (interpreting *Apprendi* as holding that any fact that increased a sentence beyond the maximum was an element of an aggravated offense).

In addition, the Supreme Court has held that "any fact" means *any fact* – whether that fact is a recognized element of the offense or merely a sentencing factor – because that was the practice at the time the Bill of Rights was formulated. As the Court explained in *Apprendi*, "[a]ny possible distinction between an 'element' of a felony offense and a 'sentencing factor' was unknown to the practice of criminal indictment, trial by jury, and judgment by court as it existed during the years surrounding our Nation's founding." *Apprendi v. New Jersey*, 530 U.S. 466, 478 (2000). Thus, the Supreme Court held,

> [b]ecause the 'consequences' of a guilty verdict for murder and for manslaughter differed substantially, we dismissed [in *Mullaney v. Wilbur*] the possibility that a State could circumvent the protections of *Winship* merely by 'redefin[ing] the elements

> that constitute different crimes, characterizing them as factors that bear solely on the extent of punishment.'

Id. at 485.

The same is true here with respect to the characterization of venue. Categorizing it as an "element" or not does not alter the constitutional imperative that all such facts that are necessary for conviction and punishment be established beyond a reasonable doubt.

The tradition of the reasonable doubt standard as a necessary bulwark against unjust convictions is integral to the foundation of the criminal justice system. As the Supreme Court explained in *In re Winship*,

> [t]he reasonable doubt standard plays a vital role in the American scheme of criminal procedure. It is a prime instrument for reducing the risk of convictions resting on factual error. The standard provides concrete substance for the presumption of innocence – that bedrock "axiomatic and elementary" principle whose "enforcement lies at the foundation of the administration of our criminal law."

In re Winship, 397 U.S. at 363, *quoting Coffin v. United States*, 156 U.S. 432, 453 (1895).

Since the Supreme Court decided *Jones*, *Apprendi*, and *Booker*, those opinions that have addressed the issue have held fast to the preponderance standard chiefly by employing circular reasoning: because venue is not an element, it need not be proven beyond a reasonable doubt; and the reason venue need not be proven beyond a reasonable doubt is because it is not an element. *See, e.g., United States v. Chen*, 378 F.3d 151, 159 (2d Cir. 2004) ("venue is not an element of the crime; the government therefore bears the burden of proving venue only by a preponderance of the evidence"). Upon examination,

however, the basis for employing the preponderance standard for venue is nothing more than an empty string of case citations through the years, without any supporting reasoning.

The notion that venue in a criminal case need be established merely by a preponderance of the evidence has become so commonplace that is stated as a rule, without any further comment or explanation except for a case citation. However, tracing those citations to their source reveals that the "rule" lacks *any* substantive legal underpinning. Tracing demonstrates that the Second Circuit's reliance on the preponderance standard derives ultimately from an Eighth Circuit case, *Blair v. United States*, 32 F.2d 130 (8th Cir. 1929), in which the court did not decide much less analyze the issue.[5] The entirety of the discussion of this issue in *Blair* is as follows:

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[5] *United States v. Rommy*, 506 F.3d 108 (2d Cir. 2007) cited *United States v. Chen*, 378 F.3d 151 (2d Cir. 2004), which cited *United States v. Geibel*, F.3d 682 (2d Cir. 2004) and *United States v. Svoboda*, 347 F.3d 471 (2d Cir. 2003). *Geibel* in turn cited *United States v. Rosa*, 17 F.3d 1531, 1542 (2d Cir. 1994), which cited *United States v. Potamitis*,739 F.2d 784, 791 (2d Cir. 1984); *United States v. Jenkins*, 510 F.2d 495, 497 (2d Cir. 1975); *United States v. Stephenson*, 895 F.2d 867, 874 (2d Cir. 1990); and *United States v. Maldonado-Rivera*, 922 F.2d 934, 968 (2d Cir. 1990). Each of these cases leads inexorably back to *Blair*.

Potamitis, *Jenkins*, and *Maldonado-Rivera* are even all on the same tributary. *Potamitis* cited *United States v. Panebianco*, 543 F.2d 447, 455 (2d Cir. 1976), which in turn cited *United States v. Leong*, 536 F.2d 993, 996 (2d Cir. 1976), which in turn cited *Jenkins*, which in turn cited *United States v. Catalano*, 491 F.2d 268, 276 (2d Cir. 1974), which in turn cited both *United States v. Trenary*, 473 F2d. 680, 682 (9th Cir. 1973) and *United States v. Braver*, 450 F.2d 799, 804 n. 11 (2d Cir. 1971), both of which relied upon *Hill v. United States*, 284 F.2d 754, 755 (9th Cir. 1961), which relied upon *Dean v. United States*, 246 F.2d 335 (8th Cir. 1957), which relied upon *Blair*.

Similarly, *Maldonado-Rivera* relied on *Potamitis* and *Panebianco*, and also cited *United States v. Griley*, 814 F.2d 967, 973 (4th Cir. 1987) as authority for the proposition that venue is