

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

UNITED STATES OF AMERICA,

Plaintiff,

v.

GERALD JOHNSTED,

Defendant.

OPINION & ORDER

12-cr-146-wmc

Defendant Gerald Johnsted is charged with two counts of mailing threatening communications in violation of 18 U.S.C. § 876 and two counts of intentionally conveying false and misleading information in violation of 18 U.S.C. § 1038(a)(1). (Dkt. #16.) Before this court is Johnsted's challenge to the government's introduction of testimony by a handwriting expert pursuant to Federal Rules of Evidence 702 and 403; *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993); and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). (Dkt. #11.) Specifically, Johnsted has moved to exclude the report and expert testimony of United States Postal Service handwriting analyst Gale Bolsover, who would opine that the hand printing on the communications at issue belong to the defendant.¹ After reviewing Bolsover's proposed opinion testimony for relevance and reliability, as well as hearing evidence from the parties, the court finds that the science or art underlying handwriting analysis falls well short of a reliability threshold when applied to hand printing analysis. Because the government has not demonstrated that Bolsover's analysis is supported by principles and methodology that are scientifically valid, at least in light of the

¹ In addition to the work of Ms. Bolsover's, Johnsted moves to exclude the reports and testimony of handwriting expert Debra Campbell. (*See* Mot. to Exclude (dkt. #11).) The government has advised that it does not intend to introduce Campbell's reports or to have her testify, so that portion of defendant's motion has been rendered moot.

particular facts and circumstances of this case, the court will exclude Bolsover's testimony and report.

RELEVANT FACTS

On or about August 14, 2009, B.D. and his wife received communications by mail containing threats to injure them. Both the communications and the address on the envelope were printed by hand. U.S. Postal Service personnel designated those documents as Q-1-A, Q-1-B and Q-1-C. Additional threatening communications were delivered by mail on or about January 2, 2010, which were designated Q-2-1 and Q-2-2. These communications were also hand printed.

Examiners acquired handwriting exemplars (designated as K-1-1 through K-1-19) from defendant on March 10, 2010. After analyzing the questioned documents and known documents supplemented by Exhibits K-3 through K-5, Gale Bolsover produced a report on February 2, 2012, concluding that "Gerald Johnsted . . . has been identified as the writer of the questioned entries." (Dkt. #14-4.)

Defendant Johnsted was indicted on November 7, 2012. (Dkt. #1.) On March 4, 2013, the defendant moved to exclude any reports and testimony as to handwriting analysis that the government planned to offer. (Dkt. #11.) This court held a *Daubert* hearing on July 25, 2013, to aid it in determining whether this evidence was sufficiently reliable and relevant to be admissible under Rule 702. (Dkt. #27.)

OPINION

Federal Rule of Evidence 702 states that an expert may testify in the form of an opinion or otherwise only 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.

Pursuant to Rule 702, the United States Supreme Court has charged trial judges with ensuring "that any and all scientific testimony or evidence admitted is not only relevant, but reliable." *Daubert*, 509 U.S. at 589. This obligation entails making "a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." *Id.* at 592-93. In *Daubert*, the Supreme Court dealt specifically with scientific testimony. In *Kumho Tire*, the Court held that the trial court's gatekeeping responsibility applies to "all 'scientific,' 'technical,' or 'other specialized' matters within [Rule 702's] scope." *Kumho Tire Co.*, 526 U.S. at 147. The Court also emphasized in *Kumho Tire* that a trial court's role is "to determine reliability *in light of the particular facts and circumstances of the particular case.*" *Id.* at 158 (emphasis added).

This court must, therefore, determine whether Bolsover's opinions "rest[] on a reliable foundation" -- that is, whether they are based on scientifically valid principles -- and

“[are] relevant to the task at hand.” *Daubert*, 509 U.S. at 597. The “task at hand” in this case is Bolsover’s analysis comparing unknown hand printing samples to known hand printing samples.

In *Daubert*, the Supreme Court laid out several factors that a court may consider in assessing the reliability of evidence: (1) whether the technique can be and has been tested; (2) whether it has been subjected to peer review and publication; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the technique’s operations; and (5) “general acceptance” within the relevant scientific community. *Daubert*, 509 U.S. at 593-94. These factors are “meant to be helpful, not definitive.” *Kumho Tire Co.*, 526 U.S. at 151. “[W]hether *Daubert*’s specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine.” *Id.* at 153. The inquiry’s “overarching subject is the scientific validity – and thus the evidentiary relevance and reliability – of the principles that underlie a proposed submission.” *Daubert*, 509 U.S. at 594-95. “The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate.” *Id.* at 595.

In this case, both parties (and the government in particular) cite a large number of cases addressing whether *handwriting* analysis passes muster under *Daubert*. Given this court’s obligation to inquire into the evidence’s reliability, the court devotes most of this opinion to analyzing the expert testimony with reference to the *Daubert* factors, while maintaining an overarching focus on the scientific validity of the principles underlying the methodology of hand *printing* analysis, to determine their relevance and reliability “in light of the facts and circumstances of this particular case.”

The Supreme Court advises that the first *Daubert* factor -- whether a theory or technique has been tested -- is “a key question” in the analysis. *Daubert*, 509 U.S. at 593. Both the government and its expert explain that the art of handwriting analysis is premised on two main principles: “handwriting is unique, meaning that no two people write exactly alike, and no one person writes exactly the same way twice.” (Pl.’s Br. (dkt. #30) 6.) As guiding principles for expert analysis, these would appear more dubious than many, but purportedly they form the foundation for a science able to detect (1) qualities unique to the writing of but one person (the principle of individuality); and (2) the telltale marks of someone attempting to copy or closely mimic that uniqueness (the principle of variation). http://www.fbi.gov/about-us/lab/forensic-science-communications/review/2009_10_review02.htm; see also *United States v. Starzeczyzel*, 880 F. Supp. 1027, 1031-32 (S.D.N.Y. 1995).

The government cites to a number of studies as demonstrating that handwriting is unique, including some showing that twins’ writings were individualistic and others demonstrating computer software’s ability to measure selected handwriting features. (Pl.’s Br. (dkt. #30) 6-7.) Defendant contends that these studies are problematic, and that even one of the government’s own studies states that “the individuality of writing in handwritten notes and documents has not been established with scientific rigor.” (Def.’s Reply (dkt. #31) 4 (quoting Pl.’s Exh. 12, at 1).) Defendant also points out that Bolsover knows of no studies supporting the second fundamental premise of handwriting analysis -- that no one person writes exactly the same way twice. (*Id.*)

Even accepting that studies have adequately tested the first principle -- that all handwriting is unique -- the government does not dispute the troubling lack of evidence testing or supporting the second fundamental premise of handwriting analysis. Even more

troubling is an apparent lack of double blind studies demonstrating the ability of certified experts to distinguish between individual's handwriting or identify forgeries to any reliable degree of certainty. This lack of testing has serious repercussions on a practical level: because the entire premise of interpersonal individuality and intrapersonal variations of handwriting remains untested in reliable, double blind studies, the task of distinguishing a minor intrapersonal variation from a significant interpersonal difference -- which is necessary for making an identification or exclusion -- cannot be said to rest on scientifically valid principles. The lack of testing also calls into question the reliability of analysts' highly discretionary decisions as to whether some aspect of a questioned writing constitutes a difference or merely a variation; without any proof indicating that the distinction between the two is valid, those decisions do not appear based on a reliable methodology. With its underlying principles at best half-tested, handwriting analysis itself would appear to rest on a shaky foundation. *See Deputy v. Lehman Bros., Inc.*, 345 F.3d 494, 509 (7th Cir. 2003) (noting that among courts, "there appears to be some divergence of opinion as to the soundness of handwriting analysis").

This is compounded in the present case by the fact that Bolsover purports to have engaged in hand *printing*, not handwriting, analysis. Given that the written communications at issue in this case are exclusively printing, and limited printing at that, this court is obligated to consider that specific discipline. *See Kumho Tire*, 526 U.S. at 158. The government argues that distinguishing between hand printing and handwriting is "a distinction without a difference," (Pl.'s Br. (dkt. #30) 23.) As support, it points out that many, if not all, of the standards governing analysis of hand printing are identical to those governing analysis of handwriting. For instance, the government notes that Forensic

Document Examiners (“FDEs”) are “trained to treat hand printing and handwriting the same” and that they “look at the same class characteristics and individual characteristics in the writing.” (*Id.* at 24.) The Scientific Working Group for Forensic Document Examination (“SWGDOC”) does not distinguish between the two, defining a “handwritten item” as “an item bearing something written by hand (for example, cursive writing, hand printing, signatures).” (*Id.* at 9.) And the examination standards “make clear there is no difference in the examination protocol” when examining hand printing, rather than handwriting. (*Id.* at 24.)

These facts may well be true, but it is this very lack of distinction that the court finds problematic. The government’s evidence indicates only that current standards of analysis are the same for handwriting and hand printing, not that they *should* be. The absence of such evidence might be less important if a consensus existed that hand printing and handwriting can reliably be analyzed in the same way, but that is not the case. As defendant points out and Bolsover conceded, “eminent authorities in the field of handwriting comparison state that critical differences exist in the analysis of hand printed and cursive documents.” (Def.’s Reply (dkt. #31) 2 (citing Hr’g Tr. (dkt. #29) 56, 57).) Indeed, most of the studies on handwriting analysis cited by both parties either do not involve hand printing or do not distinguish between the two, despite the apparent differences that exist.

More problematic still, those studies that *do* involve hand printing have yielded ambiguous results. For example, the 2003 Kam study upon which the government relies indicates FDEs made correct identifications less frequently than laypersons in hand printing analyses (though they also made incorrect identifications less frequently than laypersons).

(Pl.'s Exh. 28, at 3.) Additionally, as defendant points out, Kam's analysis revealed a higher false identification rate for hand-printed documents than handwritten documents. (*See id.* (wrong association rate of FDEs was 5.5% for non-hand-printed documents and 9.3% for hand-printed documents).) The 2002 Srihari and the 2009 Durina studies apparently also included hand printing, but it does not appear that they actually differentiated between printing and writing in reporting their results. (*See* Pl.'s Exhs. 12, 30.) Ultimately, the limited testing that exists is inconclusive as to the reliability of hand printing analysis. Thus, while the government appears to be technically correct that standards exist controlling the technique's operations (one of the *Daubert* factors), that fact does not tend to establish reliability without some evidence that those standards are actually appropriate in the hand printing context.

The standards at issue are also extremely discretionary, which likewise tends to undermine the reliability of the techniques used in handwriting analysis. As the government indicates, some flexibility in standards may be required to adapt to the different variables that may arise from case to case, meaning that a "numeric baseline" may not be appropriate (Pl.'s Br. (dkt. #30) 21), but the standards governing handwriting analysis appear almost entirely discretionary. Bolsover indicated that analysts must rely on their individual training and experience to differentiate between an intrapersonal variation and an interpersonal difference in handwriting. (Def.'s Br. (dkt. #31) 5 (citing Hr'g Tr. (dkt. #29) 62, 65).) Though SWGDOC provides guidelines for nine separate conclusions an analyst can draw, Bolsover conceded that analysts must rely entirely on their experiences and individual training to determine when a case warrants a particular conclusion. (Hr'g Tr. (dkt. #29) 98-99.) By itself, a lack of more clearly-defined standards may not warrant

exclusion, but the standards governing handwriting analysis only minimally “control[] the technique’s operation.” *Daubert*, 509 U.S. at 594.

Likewise, peer review and publication on the specific practice of hand printing analysis (another of the *Daubert* factors) is limited. While Bolsover pointed out numerous peer-reviewed journals that address forensic document examination, she conceded the discipline of forensic document examination comprises more than just hand printing analysis. (Hr’g Tr. (dkt. #29) 53-54.) A mere list of journals does not convince the court that the specific techniques at issue in this case have been peer reviewed, particularly given the relative dearth of studies addressing hand printing. The government also argues that every examiner’s work is reviewed by another examiner and that additional peer review is built into the lab accreditation process (Pl.’s Br. (dkt. #30) 11), but the court is not persuaded that this fact adds to the reliability of the analysis here, since those examiners and accreditors would presumably apply the same standards of handwriting analysis that Bolsover applies, none of which have been adequately tested, at least in the hand printing context.

The known or potential rate of error is also a relevant factor under *Daubert*. The court agrees with the government that a 0% error rate is unnecessary for purposes of demonstrating reliability. *See Daubert*, 509 U.S. at 590 (“[I]t would be unreasonable to conclude that the subject of scientific testimony must be ‘known’ to a certainty; arguably, there are no certainties in science.”). As already discussed above, however, the testing that has been performed as regards to hand printing analysis has yielded ambiguous results at best.

Finally, *Daubert* explains that the court may consider other factors in analyzing whether a given expert's testimony rests on scientifically valid principles. *See id.* at 593 (“Many factors will bear on the inquiry, and we do not presume to set out a definitive checklist or test.”). Here, the court finds the lack of reliable blind testing worth emphasizing. The government seeks to dismiss the need for such testing, stating that “FDEs cannot be swayed by doing a side-by-side comparison of a known and questioned writing, because FDEs start from a neutral position in every comparison they make.” (Pl.’s Br. (dkt. #30) 29.) This misses the point of double blind testing, which is generally meant to avoid the possibility of observer effects and biases. (*See* Nat’l Academy of Sciences, *Strengthening Forensic Science in the United States: A Path Forward* 8 (2009) (Def.’s Exh. 40) (noting that “[a] body of research is required to establish the limits and measures of performance and to address the impact of sources of variability and potential bias” and that “[s]uch research . . . seems to be lacking in most of the forensic disciplines that rely on subjective assessments of matching characteristics”).) At any rate, this information about testing procedures, though not determinative on its own, is another indicator that the methodology at issue lacks a baseline level of reliability, particularly given the reality that “[t]he findings of forensic science experts are vulnerable to cognitive and contextual bias.” (*Id.* at 8 n.8.)

In addition, the government failed to provide indicia of reliability as regards Bolsover’s testimony in this specific matter. Her report is entirely conclusory, without any discussion of the underlying bases that allowed her to “identif[y]” Gerald Johnsted as the writer of the questioned communications. (*See* Stephen Meyer Aff. Exh. 4 (dkt. #14-4).) When asked about her report at the hearing, Bolsover conceded that it was nothing more than a “naked opinion” and justified it by saying that lab examiners “are not being paid by

the hour.” (Hr’g Tr. (dkt. #29) 49-50.) Even when given the opportunity at the hearing, Bolsover failed to provide *any* characteristics of uniqueness or variations in the communications at issue to give the court some level of baseline confidence that she had based her testimony on “sufficient facts or data” and that she “reliably applied the principles and methods to the facts of the case.” Fed. R. Evid. 702. The government’s decision to provide nothing more than Bolsover’s single-sentence conclusion, and in particular to provide no explanation of the underlying basis for her conclusion, leaves the court with nothing to hang its hat on in determining whether Bolsover’s methodology and analysis in this case are supported by scientifically-valid principles. Just as troubling, it would also leave defendant and his counsel with nothing on which to base an effective cross-examination (one of the “traditional” means of attacking shaky evidence). *See Daubert*, 509 U.S. at 596.

The government points out that every circuit court to review a district court’s decision to admit handwriting analysis has affirmed that decision. *See Deputy*, 345 F.3d at 509 (collecting cases). But that argument is unavailing here. First, although circuit courts have affirmed lower courts’ decisions to permit expert testimony on handwriting analysis, there remains “some divergence of opinion as to the soundness of handwriting analysis,” and “[s]everal district courts . . . have rejected handwriting analysis, finding it lacks scientific reliability.” *Id.* (collecting cases). As defendant correctly points out, the circuit courts were also reviewing the district courts’ decisions under deferential standards of review; they were not laying down a rule that handwriting analysis must always be admissible under Rule 702. *See United States v. Prime*, 431 F.3d 1147, 1152 (9th Cir. 2004) (abuse of discretion); *United States v. Crisp*, 324 F.3d 261, 265 (4th Cir. 2003) (abuse of

discretion); *United States v. Mooney*, 315 F.3d 54, 62 (1st Cir. 2002) (abuse of discretion); *United States v. Jolivet*, 224 F.3d 902, 906 (8th Cir. 2000) (finding “no abuse of discretion, much less plain error”); *United States v. Paul*, 175 F.3d 906, 909 (11th Cir. 1999) (abuse of discretion); *United States v. Jones*, 107 F.3d 1147, 1156 (6th Cir. 1997) (applying abuse of discretion standard to expert’s case-specific testimony); *United States v. Velasquez*, 64 F.3d 844, 850-51 (3d Cir. 1995) (abuse of discretion).

The lack of a definitive ruling on admissibility of expert testimony on handwriting is understandable given the Supreme Court’s holding that a Rule 702 inquiry involves “determin[ing] reliability in light of the particular facts and circumstances of the particular case.” *Kumho Tire Co.*, 526 U.S. at 158. Certainly none of the cases discussed above dictates that this court *must* find expert testimony regarding handwriting analysis admissible, much less *must* find that hand printing analysis is admissible in the particular facts and circumstances of this case.

The dearth of studies demonstrating the reliability of hand printing analysis may be due to a lack of investigation into the discipline, which does not necessarily mean that such analysis is unreliable by its nature. Even so, the Supreme Court in *Daubert* directed trial judges to play the role of gatekeeper as far as unreliable evidence is concerned, understanding the risks that attend:

[I]n practice, a gatekeeping role for the judge, no matter how flexible, inevitably on occasion will prevent the jury from learning of authentic insights and innovations. That, nevertheless, is the balance that is struck by Rules of Evidence designed not for the exhaustive search for cosmic understanding but for the particularized resolution of legal disputes.

Daubert, 509 U.S. at 597.

The court is also aware that in general, “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence” and that “[t]hese conventional devices . . . are the appropriate safeguards where the basis of scientific testimony meets the standards of Rule 702.” *Id.* at 596. The proffered expert testimony here, however, does not even qualify as the “shaky but admissible” variety. It is testimony based on two fundamental principles, one of which has not been tested or proven, and neither of which have been proven sufficiently reliable to assist a lay jury beyond its own ability to assess the similarity and differences in the hand printing in this case. Because the government has not provided enough evidence to demonstrate the reliability of handwriting analysis to the hand printing in this case, Bolsover’s expert analysis will be excluded at trial.

ORDER

IT IS ORDERED that the testimony and report of government witness Gale Bolsover are EXCLUDED.

Entered this 8th day of October, 2013.

BY THE COURT:

/s/

WILLIAM M. CONLEY
District Judge