71813-4



## NO. 71813-4-I

# COURT OF APPEALS FOR THE STATE OF WASHINGTON DIVISION I

## CHAD HURN,

Appellant,

-V-

STATE OF WASHINGTON,

Appellee.

APPELLANT'S SUPPLEMENTAL BRIEF King County Case No. 13-1-01806-0 SEA

By:

Chad Hurn.

CHAD HURN - #884673 Washington State Correctional Center 1313 No. 13th Avenue Walla Walla, WA 991362

.

## TABLE OF CONTENTS

I.	Introduction	1
II.	The Testimony Of The Fingerprint Analyst Did Not Assist The Trier Of Fact Under ER 702 Especially Where An Unknown Individual Was Higher Ranked As Matching The Palm Print Than Chad Hurn.	2
III	. It Was An Abuse Of Discretion To Deny Mr. Hurn A Franks Hearing (Franks v. Delaware, 438 U.S. 154, 98 S. Ct. 2674, 57 L. Ed. 2d 667 (1978)).	8
IV	. Denying Cross-Examination On The State's Chief Witness Denied Mr. Hurn His Right To Confrontation.	12
VI	. Failure To Give Instructions On Lesser Included And Lesser Degree Offenses Was Error.	16
	A. Refusal Of Lesser For Assault in the Second Degree Was Error.	16
	B. Failure to Give Lesser For Unlawful Possession Of A Firearm in the First Degree Was Error.	19
	C. Failure To Give Lesser Included Offense/Degree For Identity Theft Was Error.	23
V.	Conclusion	24
Ap	pendices	
•	Appendix #1 - Experts Recommend Measures to Reduce Huma Error in Fingerprint Analysis, NIST Tech Beat: Feb. 21, 2012 Appendix #2 - FBI — Statement on Brandon Mayfield Case,	ın

- Appendix #2 FBI Statement on Brandon MayJela Cas Federal Bureau of Investigation\_ https://www.fbi.gov/ / statement. . . (May 24, 2004)
- Appendix #3 06/11/06 Judgment & Sentence.

## TABLE OF AUTHORITIES

## Washington Cases

<i>In re Crace</i> , 174 Wn.2d 835, 280 P.3d 1102 (2012)	17
Lakey v. Puget Sound Energy, Inc., 176 Wn.2d 909, 296 P.3d 860 (2013)	2
State v. Buss, 76 Wn.App. 780, 887 P.2d 920 (1995)	16
State v. Chenoweth, 160 Wn.2d 454, 158 P.3d 595 (2007)	<u>8</u>
State v. Cord, 103 Wn.2d 361, 693 P.2d 81 (1985)	12
State v. Harris, 97 Wn. App. 865, 989 P.2d 553 (1999)	13
State v. Humphries, 181 Wn.2d 708, 336 P.3d 1121 (2014)	20
State v. Knutson, 64 Wn.App. 76, 823 P.2d 513 (1991)	21
State v. Garrison, 118 Wn.2d 870, 827 P.2d 1388 (1992)	8
State v. Guizzotti, 60 Wn.App. 289, 803 P.2d 808 (1991)	16
State v. Mullins, 128 Wn.App. 633, 116 P.3d 441 (2005).	21
State v. Polk, 2015 WL 1945004. (Div. 3 2015)	21
State v. Ollivier, 178 Wn.2d 813, 312 P.3d 1 (2013)	12
State v. Rowe, 60 Wn. 2d, 798, 3776 P.2d 446 (1962)	23
State v. Smits, 58 Wn.App. 333, 792 P.2d 565 (1990)	15
State v. Thein, 138 Wn.2d 133, 977 P.2d 582 (1999)	12
State v. Turner, 167 Wn.App. 871, 275 P.3d 356 (2012)	17
State v. Whyde, 30 Wn.App. 162, 632 P.2d 913 (1981)	13, 16

## Washington Statutes

RCW 9.41.010	19, 21
RCW 9.41.030	21, 22
RCW 9.94A.030	21, 22

## Washington Constitution

Art. I, sec. 22	13
-----------------	----

## Washington Evidence Rules

ER 607	14
ER 608	14
ER 702	2

## **Federal Cases**

Davis v. Alaska, 415 U.S. 308, 94 S. Ct. 1105, 39 L. Ed. 2d 347 (1974)	15
Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993)	7
Franks v. Delaware, 438 U.S.154, 98 S. Ct. 2674, 57 L. Ed. 2d 667 (1978	) 8
United States v. Abel, 469 U.S. 45, 105 S.Ct. 465, 83 L.Ed.2d 450 13 (1984)	
United States v. Bustamante, 45 F.3d 933 (5th Cir., 1995)	14
United States Constitution	
Amend. VI	13
Other Jurisdictions	
Billodeau v. State, 277 S.W.3d 34 (Tex. Ct. Crim. App. 2009) People v. Hughes, 111 A.D.3d 1170, 975 NY.S.2d 507 (2013) State v. Levell, 128 Haw. 34, 282 P.2d 576 (2012)	15 15 15
Miscellaneous	
Strengthening Forensic Science in the United States: A Path Forward, at 143-44 (2009)	6
Roger Park & Tom Lininger, The New Wigmore: Treatise on Evidence: Impeachment & Rehabiitation, § 6.1, at 243-46 (2012);	13
13A Wash. Prac, Fine & Eade, §606, p.127 (Thomson Reuters, 1998 w/2013-14 Supp)	23
13B Wash.Prac., Fine & Eade, §2807, p.193 (Thomson Reuters, 1998 w/2013-14 Supp)	17

Tegland, Courtroom Handbook on Washington Evidence, Sec. 607.2, pp. 262 - 263 (Thomson Reuters, 2014).	14	
Tegland, 5A Wash Prac: Evidence § 225 (3d ed. 1989)	15-16	
Meisenholder, 5A Wash Prac: Evidence § 299, at 264 (1965)		
Appendices		
Appendix #1 - Experts Recommend Measures to Reduce Human Error in Fingerprint Analysis, NIST Tech Beat: Feb. 21, 2012.	7	
Appendix #2 - FBI — Statement on Brandon Mayfield Case, Federal Bureau of Investigation, https://www.fbi.gov//statement (May 24, 2004)	5	
Appendix #3 - 06/11/06 Judgment & Sentence.	15	

## SUPPLEMENTAL ASSIGNMENTS OF ERROR

1. Whether the expert testimony from the fingerprint analyst assisted the trier of fact under ER 702 especially where an unknown individual was ranked higher as "matching" the palm print from the jeep than Chad Hurn?

2. Whether it was an abuse of discretion to deny Mr. Hurn a *Franks* hearing and suppression pursuant to *Franks v. Delaware*, 438 U.S. 154, 98 S. Ct. 2674, 57 L. Ed. 2d 667 (1978)?

3. Whether Mr. Hurn was denied his right to confrontation when the court disallowed cross-examination of the State's central witness regarding prior false allegations of domestic violence?

4. Whether it was error to deny instructions on lesser included offenses and/or lesser degrees of the offenses charged?

## **ISSUES RELATED TO ASSIGNMENTS**

A. Whether ER 607 allows denial of cross examination on the State's key witness under *Davis v. Alaska*, 415 U.S. 308, 316-17, 94 S. Ct. 1105, 39 L. Ed. 2d 347 (1974)?

B. Whether it was error to deny a lesser included offense for Assault in the Second Degree?

B. Whether it was error to deny giving a lesser included offense/ degree for unlawful possession of a Firearm in the First Degree?

C. Whether it was error to deny giving a a lesser included offense/degree for Identity Theft Second Degree.

### I. INTRODUCTION

Chad Hurn was charged and convicted of 13 felonies stemming from an incident February 19, 2013 and subsequent search warrants issued February 19th and 20th obtained by Detective D. Stangeland. Here are the felonies:

Count 1	- Assault in the Second Degree
Count 2	- Unlawful Possession of Firearm in the Second Degree
Count 3	- Possessing A Stolen Firearm
Count 4	- Possessing Stolen Vehicle (Jeep Wrangler)
Count 5	- Possession of Stolen Vehicle (Acura)
Count 6	- Possession of Stolen Vehicle (Suburu)
Count 7	- Making or Having Vehicle Theft Tools
Count 8	- Identity Theft in the Second Degree (A. Gregory)
Count 9	- Identity Theft in the Second Degree (L. Elliott)
Count 10	- Identity Theft in the Second Degree (I. Zanine)
Count 11	- Tampering With a Witness
Count 12	- Communication With A Minor For Immoral Purposes
Count 13	- Intimidating a Witness

CP 84, pp. 118-122.

Defense counsel filed an opening brief. He raised the following issues: (1) error in the introduction of "prior bad acts" evidence; (2) error in denying severance; (3) failure to prove Assault in the Second Degree; and (4) failure to suppress statements where Mr. Hurn invoked his right to counsel.

Mr. Hurn raises additional grounds on appeal. These include the following: (A) failure to hold *Franks* hearing and suppress fruits of an unlawful search and seizure; (B) error in allowing testimony of palm print

expert; and (C) failure to give lesser included instructions on Assault in the Second Degree, Unlawful Possession of Firearm in the First Degree, and Identity Theft in the Second Degree.

## II. The Testimony Of The Fingerprint Analyst Did Not Assist The Trier Of Fact Under ER 702 Especially Where An Unknown Individual Was Ranked Higher As Matching The Palm Print Than Chad Hurn.

The fingerprint testimony in this case failed to assist the trier of fact under ER 702, which provides that "[i]f 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." To admit expert testimony under ER 702, the trial court must determine that the witness qualifies as an expert and that the testimony will assist the trier of fact. *Lakey v. Puget Sound Energy, Inc.*, 176 Wn.2d 909, 918, 296 P.3d 860 (2013).

The fingerprint analyst in this case, Betty Newlin, testified that a partial palm print found on the inside of a jeep, "matched" the palm print on Chad Hurn's left hand. VRP 1082, 1086.

It has been asserted by the State and its expert that no two people's fingerprints are exactly the same. VRP 1082. In other words, it is argued that a latent print found at the scene of a crime which matches the

suspect's prints must mean the accused left the print at some point in the

past. The State's expert also testified that there are no errors in fingerprint

identification:

- Q. Do you know what the rate of error is in your field?
- A. We don't have an error rate in the latent fingerprint field.
- Q. Are these validation studies that should have been done many decades ago?
- A. No, it's only been recent, since the questions have arisen.
- Q. Questions about scientific validity you mean?
- A. Certainly.
- Q. What is the rate of inter-rater reliability in your field?
- A. You know, I don't know what that is.
- Q. What percentage of your comparisons involve palm prints?
- A. You know, I don't know; I could take a guess and say maybe 30 percent, it varies.

VRP, 1125-26.

These assertions of total accuracy and lack of error are readily undermined by the State's own expert in this case. Ms. Newlin acknowledged that she never took a palm print from Mr. Hurn to compare (she apparently relied on an AFIS copy). VRP 1113 - 14. She did two searches in the automated fingerprint identification system - a closed one and an open one. VRP 1114. In the closed search Ms. Newlin asked the AFIS system to compare the latent palm print from the jeep to the palm prints of Chad Hurn. VRP 1114. In the open search, the palm prints of Mr. Hurn came back "in the number two position." VRP, 1114 - 15. Ms. Newlin explained that the AFIS system does not declare matches, she does where the areas are "similar." VRP, 1114. We never heard who the person in the first "candidate" position was or the reasons why that person's palm print was a "match."

Thus, Ms. Newlin was allowed to testify that a palm print off the jeep "matched" Chad Hurn's left hand (VRP 1115) and that she never makes a mistake in fingerprint/palm print analysis. (Q. Any possibility you could be wrong? A. No. Q. Any possibility you could have made a mistake? A. No. - VRP 1098.)

Ms. Newlin had to acknowledge, however, that the claim of "no error" was not based on any studies, research, or analysis. VRP 1125. There was no scientific study supporting the belief that fingerprints are unique to each person. Ms. Newlin was cross-examined about at least one high-profile case that showed the inaccuracy of the "no errors" claim. VRP 1116.

The case was the 2004 case of Brandon Mayfield, an attorney from Oregon, who was arrested as a material witness by the FBI because his fingerprint matched a latent print found at the scene of the Madrid train bombings. The bombings killed 191 people and injured hundreds more. Mayfield was held for 17 days before Spanish authorities conducted their own analysis and found the real culprit: an Algerian national, Ouhnane Daoud, who along with others orchestrated the terrorist attack. The FBI

-4-

later apologized to Mayfield and conducted an extensive review of their

fingerprint analysis procedures. Appendix #2 - FBI - Statement on

Brandon Mayfield Case, Federal Bureau of Investigation,

https://www.fbi.gov/.../statement. . . (May 24, 2004). In Mr. Hurn's case,

like the *Mayfield* case, there was more than one "match."

It should be noted that Ms. Newlin testified on cross-examination

that there are no standardized criteria by which to declare a "match:"

Q. Let me put it this way: Your personal criteria for determining whether or not to make a match, is that a matter of subjectivity?

A. At some point, yes, certainly it is.

Q. So your personal criteria for determining whether or not there's a match can differ from those of your coworkers?

A. It can, yes.

Q. So to that extent, there is no standardization that applies to all of you as to exactly what criteria you use and how much weight each criterion is to be given in determining whether or not there's a match?

A. No, there is no numerical standard, if that's what's your looking for, there's not; there is a process that we go through, that is standard.

VRP 1099 - 1100.

This testimony emphasized the problem with fingerprint analysis that is found in other areas of forensic science: subjectivity. Instead of relying on tested scientific methods, the process is mostly based on the subjective beliefs of the analyst. The process is intentionally kept subjective so the examiner can consider the quality of each individual ridge in the particular print being examined, but that leads to unreliable results that are generally not repeatable. The features compared in each fingerprint analysis are not predetermined for their reliability; rather, they are chosen by the examiner at the time of the analysis based on which features are of the highest quality.

In Strengthening Forensic Science in the United States: A Path Forward, at 143-44 (2009), the National Research Council of the National Academy of Sciences observed that proponents of fingerprint examination claim that analyses have zero-error rates - something that is not true. The report also states that uniqueness does not guarantee that two individuals' prints are always sufficiently different that they cannot be confused. It was hoped that studies would accumulate data on how much a person's fingerprints vary from impression to impression, as well as the degree to which fingerprints vary across a population. With such research, examiners could begin to attach confidence limits to conclusions about whether a print is linked to a particular person.

Three years later the National Institute of Standards and Technology (NIST) and the Department of Justice's National Institute of Justice (NIJ) documented 149 potential sources of human error in the analysis of crime scene fingerprints:

... several high-profile cases in the United States and abroad during the past 20 years have shown that forensic examiners can sometimes make mistakes when analyzing or comparing prints, or even in communicating findings to law enforcement officials or juries. Such errors can be devastating, resulting in missed opportunities to identify the guilty or wrongful convictions of the innocent.

As with any laboratory procedure, there are a multitude of human factors that can influence the results of latent print analysis examples include inadequate training, poor judgment, vision limitations, lack of sleep and stress. The chances of error increase if the examiner also must deal with organizational factors such as a lack of standards or quality control, poor management, insufficient resources or substandard working conditions (such as bad lighting).

Appendix #1 - Experts Recommend Measures to Reduce Human Error in Fingerprint Analysis, NIST Tech Beat: Feb. 21, 2012.

The very problems noted by the NIJ and the Academy of Sciences

are seen in Mr. Hurn's trial. In this case, Ms. Newlin's testimony failed because she never clearly identified the reasoning or methodology underlying her opinions:

Faced with a proffer of expert scientific testimony, then, the trial judge must determine at the outset . . . whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails 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.

Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 592-93, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993));

It is significant that Ms. Newlin could cite no studies, publications or the opinion of any other fingerprint examiner in support of her testimony as to "no errors." There were no standards and no peer review of her work. These deficiencies undermine the relevance and reliability of Ms. Newlin as a scientific expert. This is especially true where another candidate was positioned in the first spot on the list of possibilities. There was absolutely no explanation as to how that person was excluded or, if he was excluded, what process was used.

## III. It Was An Abuse Of Discretion To Deny Mr. Hurn A *Franks* Hearing (*Franks v. Delaware*, 438 U.S. 154, 98 S. Ct. 2674, 57 L. Ed. 2d 667 (1978)).

The defense requested a *Franks* hearing in its challenge to two search warrants. The defense claimed that material falsehoods or omissions made intentionally or with reckless disregard for the truth in the affidavits supporting the warrants. CP 60, p.44.; VRP, 1831. *State v. Chenoweth*, 160 Wn.2d 454, 478-79, 158 P.3d 595 (2007); *State v. Garrison*, 118 Wn.2d 870, 872-73, 827 P.2d 1388 (1992). Mr. Hurn asserted that he made a substantial preliminary showing of material misrepresentations and/or omissions, that he was entitled to a *Franks* hearing. *Garrison*, 118 Wn.2d at 872. This runs contrary to the courts conclusions of law regarding the defense motion to suppress (CrR 3.6 motion) - specifically, conclusions #2, #4, #5 & #6 (CP 120, p. 776).<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> The defense objected to CrR 3.6 Findings of Fact #8 (that Bernhardt was terrified), #9 (that witness McKinney was able to see the person he claimed to have heard crying or that it was Bernhardt), #21 (that Off. Willet took hold of Hurn as opposed to detaining him), #24 (the

To begin, there were two warrants in this case obtained by Det. Stangeland. On 02/19/13 at approximately 2 pm Det. Stangeland prepared a search warrant to search the 1997 Acura, Mr. Hurn's residence, and Mr. Hurn's property at jail. Dt. Stangeland relied heavily upon statements made by Karla Bernhardt and Chad Hurn. In her 2 pm affidavit for the first warrant, Det. Stangeland noted that Ms. Barnhardt had lied about her identity. However, Det. Stangeland omitted some critical facts: (1) that Ms. Barnhardt had lied to both the responding officer and to Det. Stangeland; (2) that Det. Stangeland did not know the false identity of Bernhardt until she had spoken with Mr. Hurn; (3) that Det. Stangeland had only spoke by phone with Ms. Barnhardt and failed to confirm her identity; (4) that Ms. Barnhardt initially told Officer Mabry that no shots were fired; (5) that Det. Stangeland only had access Officer Mabry's report but not the video; and (6) that about 2/3 of the way through her interview

incomplete description of the form Hurn had about his civil rights), #34 (the characterizing of Hurn's account to officers as "inconsistent"; #37 (the failure to mention that stolen mail found in the Acura was in a woman's purse; and #43 (that owners of a recovered IRS check, fake ID, and stolen Acura reported lack of permission after the search). The defense also objected to facts being omitted in the CrR 3.6 findings including the fact that Ms. Bernhardt was not crying at the moment of first contact with Officer San Miguel (Mabry), that Ms. Barnhardt denied witnessing a gun being fired upon first contact with police but revised her report upon continued questioning, and that Officer San Miguel (Mabry) never knew Bernhardt's identity until after she submitted her report. CP 129, p. 791. Those same objections are renewed here.

with Mr. Hurn, Mr. Hurn said "I don't have anything really to say to you." CP 60, pp. 24 -25.

On 02/20/13 Det. Stangeland seized Mr. Hurn's property from the jail, including two cell phones, which were turned over to the Criminal Intelligence Unit of SPD for forensic examination. The warrant did not authorized a forensic search of the cell phones. Det. Stangeland also searched Mr. Hurn's residence on the same day (i.e., 02/20/13) and a 1997 Acura. Detective Stangeland recovered two handguns and several pieces of apparently forged ID found in a laptop case. Evidence taken from the 1997 Acura included several license plates, a handgun holster, and a woman's Prada bag. CP, p.25.

On 02/25/13, Det. Stangeland sought a second search warrant in order to search DOL records and forensically search Mr. Hurn's phones. In her affidavit for the second warrant, Det. Stangeland represented that the warrant previously signed by Judge Eadie on 02/19/13 authorized a forensic search of Mr. Hurn's cell phones. CP 60, p. 25. The search warrant signed by Judge Eadie did not authorize a forensic search of cell phones. *Id*.

Other errors and omissions in Det. Stangeland's affidavits for search warrants are seen by review of the *Certificate for Determination of Probable Cause* (CP 5). The officers noted in their reports that the

-10-

temporary permit in the back of the vehicle was registered to Chad Hurn. CP 1, p.5. However, that information was later determined to have been incorrect due to a miscommunication between officers. CP 1, p.5. This was left out of the affidavits.

In addition, on 02/19/13 Detective Janes assisted the investigation by going to Chad Hurn 's address. He located the Acura referenced in Det. Stangeland's affidavits and described in police reports as WA license 263VUF. Arrangements were made by Det. Janes to impound the Acura. He noted that the VIN (vehicle identification number) was different from the one associated with that plate. CP 1, p.5.

These facts were also left out of the search warrant targeting Chad Hurn: that the registered owner of the Acura with the temporary permit was not Chad Hurn, that there was police miscommunication identifying Hurn to the temporary permit on the Acura, that Chad Hurn was not associated with the temporary permit on the Acura and that the VIN number on the Acura was not associated with the temporary permit or Chad Hurn.

If at the hearing the defendant establishes the allegations of error and/or omission, then the material misrepresentation must be stricken or the omitted material must be included and the sufficiency of the affidavit then assessed as so modified. *State v. Cord*, 103 Wash.2d 361, 367, 693

-11-

P.2d 81 (1985). If at that point the affidavit fails to support a finding of probable cause, the warrant will be held void and evidence obtained when the warrant was executed must be suppressed. *Id.*; See also *State v. Ollivier*, 178 Wn.2d 813, 848, 312 P.3d 1 (2013).

It is well settled that " '[P]robable cause requires a nexus between criminal activity and the item to be seized, and also a nexus between the item to be seized and the place to be searched.' " *State v. Thein*, 138 Wn.2d 133, 140, 977 P.2d 582 (1999). Moreover, a nexus must be established by specific facts. *Thein*, 138 Wn.2d at 145. "Absent a sufficient basis in fact from which to conclude evidence of illegal activity will likely be found at the place to be searched, a reasonable nexus is not established as a matter of law." *Id.* at 147.

In this case, the warrants fail. If the omitted facts are added to Det. Stangeland's affidavits in support of the warrants, there is no probable cause connecting Mr. Hurn to the Acura searched. A *Franks* hearing should have been held on the matter.

## IV. Denying Cross-Examination On The State's Chief Witness Denied Mr. Hurn His Right To Confrontation.

The State's main witness in this case was Karla Jo Barnhardt, a heroin addict that used a false name in reporting the incident of gun fire forcing her from the car she refused to leave. VRP 887, 912-13. On cross

examination the defense attempted to cross her on a prior domestic violence incident where she lied to police (as she admittedly did on the day of the shots fired call on February 19, 2013). VRP 699-700, 711, 946. The defense should have been allowed to cross-examine Ms. Barnhardt where conviction hinged so heavily on her credibility.

Both the state and federal constitutions guarantee defendants the right to confront and cross examine adverse witnesses. Wash. Const. art. I, sec. 22; U.S. Const. amend. VI. For example, evidence that a rape victim has accused others generally may be relevant if the defendant can demonstrate that the previous accusation was false. *State v. Harris*, 97 Wn.App. 865, 872, 989 P.2d 553 (1999).

Bias is a common ground for impeachment and may be proved using direct examination, cross-examination, or extrinsic evidence. See Roger Park & Tom Lininger, THE NEW WIGMORE: TREATISE ON EVIDENCE: IMPEACHMENT & REHABIITATION, § 6.1, at 243-46 (2012); *State v. Whyde*, 30 Wn.App. 162, 166, 632 P.2d 913 (1981) ( "Bias and interest are relevant to the credibility of a witness."); *United States v. Abel*, 469 U.S. 45, 52, 105 S.Ct. 465, 83 L.Ed.2d 450 (1984) ("Proof of bias is almost always relevant because the jury, as finder of fact and weigher of credibility, has historically been entitled to assess all evidence which might bear on the accuracy and truth of a witness' testimony.").

-13-

In United States v. Bustamante, 45 F.3d 933 (5th Cir., 1995), the court held that FRE 608(b) allowed the government to inquire into specific instances of conduct relevant to Bustamante's character for truthfulness.

ER 607 therefore allows impeachment of a witness and crossexamination is guaranteed by the Sixth Amendment, United States Constitution. As noted by Tegland:

A party as the right to cross-examine a witness to reveal bias, prejudice, or a financial interest in the outcome to the case (citing *Delaware v. Arsdall*, 475 U.S. 673, 106 S.Ct. 1431, 89 L.ed.2d 674, 20 Fed. R. Evid. Serv. 1 (1986)...

Cross-examination to reveal bias is not considered impeachment on a collateral matter. Thus, subjects may be explored for purposes of sowing bias even thought they might not be relevant on other issues.

Tegland, Courtroom Handbook on Washington Evidence, Sec. 607.2, pp. 262 - 263 (Thomson Reuters, 2014).

Thus, evidence of a witness' bias, hostility or motive to lie is not collateral but directly probative of credibility. It is also grounded in the constitutional right to confront witnesses. Extrinsic proof of a reason to fabricate, bias, hostility or motive is not collateral and should be admitted. *Davis v. Alaska*, 415 U.S. 308, 316-17, 94 S. Ct. 1105, 39 L. Ed. 2d 347 (1974) (holding "exposure of a witness' motivation in testifying is a proper and important function of the constitutionally protected right of cross examination"); *State v. Levell*, 128 Haw. 34, 40, 282 P.2d 576,

582 (2012); *People v. Hughes*, 111 A.D.3d 1170, 975 NY.S.2d 507 (2013) (holding defendant's supervisor's notices of discipline and defendant's grievances and pending lawsuit should have been permitted as evidence of motive to fabricate but error was harmless given overwhelming proof of guilt); *Billodeau v. State*, 277 S.W.3d 34, 42-43 (Tex. Ct. Crim. App. 2009) ("The possible animus, motive, or ill will of a prosecution witness who testifies against the defendant is never a collateral or irrelevant inquiry, and the defendant is entitled, subject to reasonable restrictions, to show any relevant fact that might tend to establish ill feeling, bias, motive, interest, or animus on the part of any witness testifying against him."). Because assault cases often turn on whether or not to believe the complainant, the credibility of the complainant is particularly crucial.

Interest in the outcome of the case is also fair ground for impeachment of the complainant. In *State v. Smits*, 58 Wn.App. 333, 792 P.2d 565 (1990), defendant was convicted of third-degree assault of police officer. The Court of Appeals held that: (1) defendant was entitled to cross-examine officer as to possibility of officer bringing civil suit against defendant; and (2) the failure to allow defendant to cross-examine officer as to possibility of bringing civil suit against defendant was not harmless error. The *Smits* court cited 5 Robert Meisenholder, *Washington Practice: Evidence* § 299, at 264 (1965) and 5A Karl Teglund, *Washington*  Practice: Evidence § 225 (3d ed.1989).

In State v. Whyde, 30 Wn.App. 162, 632 P.2d 913 (1981), the court held that evidence of a victim's civil action for damages against the defendant is a proper area of impeachment because a victim taking or contemplating such action exhibits a clear financial interest in the outcome of the criminal action as well as ill-will toward the defendant. State v. Buss, 76 Wn.App. 780, 787–89, 887 P.2d 920 (1995) (similar); State v. Guizzotti, 60 Wn.App. 289, 292–94, 803 P.2d 808 (1991) (similar).

In sum, evidence of a witness' bias, hostility or motive to lie is not collateral but directly probative of credibility. Extrinsic proof of a reason to fabricate, bias, hostility or motive is not collateral and should be admitted. Such cross-examination is guaranteed by the courts.

## V. Failure To Give Instructions On Lesser Included And Lesser Degree Offenses Was Error.

### A. Refusal Of Lesser For Assault in the Second Degree Was Error.

In this case, the trial court refused to give an instruction on Unlawful Display of A Weapon as a lesser included offense to the Assault 2° charges (Count #1) (CP 90, p. 218). The Washington Supreme Court has recognized that Unlawful Display of a Weapon is a lesser included offense for Assault in the Second Degree. In the case of *In re Crace*, 174 Wn.2d 835, 280 P.3d 1102 (2012). Justice Chambers dissented but explained why there was prejudice in defense counsel not requesting such

a lesser in that case:

Because the majority only analyzes prejudice, so will I. A jury could well have found that Crace lacked the ability to form the intent to commit assault. Witnesses testified that he was hysterical, screaming that he was being pursued, and wielding a sword. When a police officer arrived, Crace ran for him, screaming for help. Crace dropped his sword 50 feet away from the officer. While he continued to run toward the officer he stopped five to seven feet away. Under these facts, he was entitled to a jury instruction on the lesser included offense of unlawful display of a weapon, a nonstrike offense. There is a reasonable probability that given the option of a verdict that would have allowed it to find Crace did the act but lacked the malice necessary for the greater offense, the jury would have returned a verdict on the lesser crime. This would have spared Crace the consequences of a third strike. How much more prejudice do we need?

Crace, 174 Wn.2d at 849-50.

In *State v. Turner*, 167 Wn.App. 871, 275 P.3d 356 (2012), the jury found defendant not guilty of Second Degree Assault but guilty of the lesser included crime of Unlawful Display of a Weapon. When requested by the defense as was done in Mr. Hurn's case, Displaying a Weapon is a lesser included offense of Second Degree Assault with a deadly weapon.

In addition, in this case, the trial court specifically found in its CrR 3.6 findings of fact that Hurn was trying to get Barnhardt to leave his car, not assault her:

5. Once in the car, Hurn asked Barnhardt for money to drive her to her destination. Barnhardt told Hurn she had none. Hurn became irate and unwilling to drive her anywhere, He ordered (her) from the vehicle.

6. Barnhardt did not want to be stranded in the area at 1 a.m. She told Hurn that if he drove her to her friend's house she would have the friend give Hurn money.

7. Hurn who has a prior serious offense Burglary 2 conviction, then displayed a gun in his hand and told Barnhardt, "this has rounds in it." He then fired the gun through the open sun roof of the car he was driving.

8. Barnhardt was terrified and scrambled out of the car. Hurn drove off.

CP 120, p. 770.

It is clear from these findings alone that Mr. Hurn displayed the gun to get Barnhardt out of the car, not assault her. Like the *Crace* case, there is a reasonable probability that given the option of a verdict that would have allowed it to find Hurn did the act but lacked the malice necessary for the greater offense, the jury would have returned a verdict on the lesser crime.

# **B.** Failure to Give Lesser For Unlawful Possession Of A Firearm in the First Degree Was Error.

Similarly. on Count #2. Mr. Hurn was charged with Unlawful Possession of a Firearm in the First Degree, which includes a lesser offense Unlawful Possession of a Firearm in the Second Degree. Mr. Hurn asked for a lesser, CP 90, p.208). As noted 13B WASH.PRAC, Fine &

Eade, Sec. 2807, p.193(Thomson Reuters, 1998 w/2013-14 Supp):

Second degree unlawful possession of a firearm is an offense of a lesser degree than first degree unlawful possession of a firearm. Consequently, an instruction on the second degree offense can be given when there is evidence that the defense committed only the lesser.

The court instructed the jury that Mr. Hurn's prior 2006 Burglary in the Second Degree was a "serious offense." CP 93A, p.247. To be convicted of first degree unlawful possession of a firearm, Mr. Hurn needed this prior "serious offense." CP 93A, p. 252.<sup>2</sup>

In Mr. Hurn's case, the defense attorney stipulated that Mr. Hurn had a prior 2005 Burglary in the Second Degree,<sup>3</sup> an element of Unlawful Possession of a Firearm in the First Degree. The prosecutor spoke of the stipulation to Burglary in the Second Degree in opening statement. VRP 688. Mr. Hurn did not sign the stipulation. CP 88, p.206. This violated the rule set out in *State v. Humphries*, 181 Wn.2d 708, 336 P.3d 1121 (2014), where a defendant was convicted of Second-Degree Assault with a firearm enhancement and First-Degree Unlawful Possession of a Firearm. The Court of Appeals affirmed and the Supreme Court accepted discretionary review.

 $<sup>^2\,</sup>$  A "serious offense" is defined under RCW 9.41.010 (*Terms defined*), none of which include Burglary  $2^\circ\,$ 

<sup>&</sup>lt;sup>3</sup> See Appendix #3 - 06/11/06 Judgment & Sentence.

The Supreme Court held that: (1) as a matter of first impression, the trial court could not accept defense counsel's stipulation to a fact that satisfied an element of unlawful possession of a firearm; (2) the signature by defendant on the stipulation did not constitute an informed and voluntary waiver of his constitutional rights; and (3) the error in trial court accepting the stipulation was not harmless.

In this case, a stipulation that the parties agree to Burglary in the Second Degree was discussed with the court on February 26, 2014 before opening statements. VRP 656. The stipulation was announced to the jury by the prosecutor in opening statement on the same day. VRP 688. ("We'll ask you to find Defendant guilty of Count 2, Unlawful Possession of a Firearm in the First Degree for possessing a .25 caliber Raven and .357 caliber Magnum when he was prohibited by law from possessing a firearm because he's been convicted of Burglary in the Second Degree."). see also VRP 1535-36, 1666-67. Mr. Hurn never signed the stipulation. CP 88, p.206 (The defense attorney signed the stipulation.) Even if Mr. Hurn had subsequently signed the stipulation after the prosecutor made its opening it was nothing other than a "forced acquiescence to what had already occurred," as found in *Humphries*.

In addition, RCW 9.41.030 gives a definition of "serious offense", which does not include Burglary in the Second Degree:

1

(21) "Serious offense" means any of the following felonies or a felony attempt to commit any of the following felonies, as now existing or hereafter amended:

(a) Any crime of violence;  $\dots^4$ 

RCW 9.41.010(3)(a), in turn, defines "crime of violence: as including Burglary in the Second Degree. This conflicts with RCW 9.94A.030(54), which does not include Burglary in the Second Degree in its definition for "violent crime." RCW 9.94A.030(54) therefore conflicts with RCW 9.41.010(3)(a) - under .030(54) a person does not have violent criminal history with a prior Burglary in the Second Degree but under RCW 9.41.010(3)(a) he does.

This conflict should be resolved in favor of Mr. Hurn under the rule of lenity. "A statute is ambiguous if it can be reasonably interpreted in more than one way." *State v. Mullins*, 128 Wn.App. 633, 642, 116 P.3d 441 (2005). "If the language of a penal statute is ambiguous, the courts apply the rule of lenity and resolve the issue in a defendant's favor." *State v. Knutson*, 64 Wn.App. 76, 80, 823 P.2d 513 (1991). Thus, in *State v. Polk*, 2015 WL 1945004. \*6 (Div. 3 2015), the appellate court held that each incident of possession of child pornography in the second degree is

<sup>&</sup>lt;sup>4</sup> RCW 9.94A.030(54) contains a definition for "violent crime" which does not include Burglary in the Second Degree.

one unit of prosecution, even if possession includes more than one depiction or image consistent with RCW 9.68A.011(4)(f) or (g).

Thus, Burglary in the Second Degree is not included in the statutory definition of "serious offense" under RCW 9.41.030(21). The State will argue that Burglary in the Second Degree is a "crime of violence" under RCW 9.41.030(3)(a) although RCW 9.94A.030(54) says that Burglary in the Second Degree is not a "violent offense." There is no denial that there is a conflict in statues.

As noted in Washington Practice, "this situation will be relatively rare such as where there is a genuine factual controversy about whether the predicate offense qualifies as a 'serious offense' or as some other felony or designated misdemeanor." *Id.*, Sec. 2807, ftnte. 1. The defense believes that the issue is present in this case.

Since there was a genuine issue as to whether the Burglary in the Second Degree qualified as predicate offense for the unlawful possession of a firearm in the first degree, a stipulation should not have been entered and the jury should not have been given a binding instruction that Burglary in the Second Degree was a predicate for unlawful possession of a firearm in the first degree. Minimally, a lesser offense of unlawful possession of a firearm in the second degree should have been given.

# C. Failure To Give Lesser Included Offense/Degree For Identity Theft Was Error.

Finally, Mr. Hurn asked for lesser included offenses on Count #8 & #9 (Attempted Identity Theft in the Second Degree for Identity Theft 2°). On Count #9, Mr. Hurn believes he was entitled to a lesser included offense instruction on Identity Theft in the First Degree - i.e., Identity Theft in the Second Degree.)

Every crime includes an attempt to commit that crime as a lesser offense. 13A WASH. PRAC, Fine & Eade, 6006, p.127 (Thomson Reuters, 1998 w/2013-14 Supp) citing RCW 10.61.010; *State v. Rowe*, 60 Wn. 2d, 797, 798, 3776 P.2d 446 (1962). In this case, the State argued that Mr. Hurn committed identity theft in the second degree because fake IDs and licenses were found in his apartment - there was no evidence of use. VRP 1912.<sup>5</sup>

<sup>&</sup>lt;sup>5</sup> The prosecutor argued in closing as follows: "Did the Defendant knowingly possess a means of identification or financial information of another person, of Alexander Gregory? Well, we know that he did because we have the Defendant's real ID or at least presumably his real ID. But then when you look at that laptop bag in that brown wallet, what did you see? Well, you saw three different IDs, two different Social Security cards and the Group Health ID of Alexander Gregory. And for this charge, we're relying on the Defendant having that fake ID in Alexander Gregory's name and, in addition, a check. ..." (VRP, p. 1912)

<sup>&</sup>quot;So for Lance Elliott, No. 38. Again, we need to prove the Defendant knowingly possessed a means of identification. Well, we know that he not only had the driver's license, but he also had the social security card as

In any event, he was entitled to instructions on Attempted Identity Theft in the Second Degree since attempt is always a lesser of the crime charged.

### VI. CONCLUSION

The Court of Appeals should reverse and remand for a new trial because the trial court failed to hold a *Franks* hearing, failed to suppress fruits from the various seizures, allowed the unsupportable testimony of a palm print expert; denied cross examination on a the State's key witness, and failed to give lesser included offense/degree instructions on Assault in the Second Degree, Unlawful Possession of Firearm in the First Degree, and Identity Theft in the Second Degree.

DATED this <u>30th</u> day of July, 2015.

Chad Hurn .

Chad Hurn - #884673 Washington State Correctional Center 1313 No. 13th Avenue Walla Walla, WA 99362

well. And, again, you're going to have that Multiple Acts Instruction, the instruction I talked about that you have to be unanimous. The reason we have that here is because there's multiple IDs or multiple means of identification." (VRP, p.1914)

# APPENDIX #1

ABOUT PNAS (/SITE/ABOUTPNAS/INDEX.XHTML) COLLECTED ARTICLES (/SITE/MISC/COLLECTEDPAPERS.XHTML) BROWSE BY TOPIC (/SEARCH)

#### EARLY EDITION (/CONTENT/EARLY/RECENT)

#### Proceedings of the National Academy of Sciences

www.pnas.org A (/) > Current Issue (/content/108/19.toc) > vol. 108 no. 19

> Bradford T. Ulery, 7733–7738, doi: 10.1073/pnas.1018707108

CrossMark enck for opsilates

# Accuracy and reliability of forensic latent fingerprint decisions

Bradford T. Ulery (/search?author1=Bradford+T.+Ulery&sortspec=date&submit=Submit)<sup>a</sup>, R. Austin Hicklin (/search?author1=R.+Austin+Hicklin&sortspec=date&submit=Submit)<sup>a</sup>,

JoAnn Buscaglia (/search?author1=JoAnn+Buscaglia&sortspec=date&submit=Submit)<sup>b,1</sup>, and Maria Antonia Roberts (/search?author1=Maria+Antonia+Roberts&sortspec=date&submit=Submit)

#### Author Affiliations

Edited by Stephen E. Fienberg, Carnegie Mellon University, Pittsburgh, PA, and approved March 31, 2011 (received for review December 16, 2010)

Abstract (/content/108/19/7733.abstract) | Full Text | Authors & Info

Figures (/content/108/19/7733.figures-only) SI (/content/108/19/7733/suppl/DCSupplemental)

Metrics Related Content (/content/108/19/7733.full/?tab=related)

PDF (/content/108/19/7733.full.pdf) PDF + SI (/content/108/19/7733.full.pdf?with-ds=yes)

### Abstract

The interpretation of forensic fingerprint evidence relies on the expertise of latent print examiners. The National Research Council of the National Academies and the legal and forensic sciences communities have called for research to measure the accuracy and reliability of latent print examiners' decisions, a challenging and complex problem in need of systematic analysis. Our research is focused on the development of empirical approaches to studying this problem. Here, we report on the first large-scale study of the accuracy and reliability of latent print examiners' decisions, in which 169 latent print examiners each compared approximately 100 pairs of latent and exemplar fingerprints from a pool of 744 pairs. The fingerprints were selected to include a range of attributes and quality encountered in forensic casework, and to be comparable to searches of an automated fingerprint identification system containing more than 58 million subjects. This study evaluated examiners on key decision points in the fingerprint examination process; procedures used operationally include additional safeguards designed to minimize errors. Five examiners made false positive errors for an overall false positive rate of 0.1%. Eighty-five percent of examiners made at least one false negative error for an overall false negative rate of 7.5%. Independent examination of the same comparisons by different participants (analogous to blind verification) was found to detect all false positive errors and the majority of false negative errors in this study. Examiners frequently differed on whether fingerprints were suitable for reaching a conclusion.

biometrics (/search?fulltext=biometrics&sortspec=date&submit=Submit&andorexactfulltext=phrase) error analysis (/search?fulltext=error+analysis&sortspec=date&submit=Submit&andorexactfulltext=phrase)

The interpretation of forensic fingerprint evidence relies on the expertise of latent print examiners. The accuracy of decisions made by latent print examiners has not been ascertained in a large-scale study, despite over one hundred years of the forensic use of fingerprints. Previous studies (1–4) are surveyed in ref. 5. Recently, there has been increased scrutiny of the discipline resulting from publicized errors (6) and a series of court admissibility challenges to the scientific basis of fingerprint evidence (e.g., 7–9). In response to the misidentification of a latent print in the 2004 Madrid bombing (10), a Federal Bureau of Investigation (FBI) Laboratory review committee evaluated the scientific basis of friction ridge examination. That committee recommended research, including the study described in this report: a test of the performance of latent print examiners (11). The need for evaluations of the accuracy of fingerprint examination decisions has also been underscored in critiques of the forensic sciences by the National Research Council (NRC, ref. 12) and others (e.g., refs. 13–16).

## Background

Latent prints ("latents") are friction ridge impressions (fingerprints, palmprints, or footprints) left unintentionally on items such as those found at crime scenes (*SI Appendix, Glossary* (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Exemplar prints This Issue



(/content/108/19.toc) May 10, 2011 vol. 108 no. 19 Masthead (PDF) (/content/108/19/local/masthead.pdf) Table of Contents (/content/108/19.toc)

PREV ARTICLE NEXT ARTICLE (/CONTENT/108/19/7020/STEMIT)08/19/7739.SHORT)

> View this article with LENS beta (/lens/pnas/108/19/7733)

#### Don't Miss

PNAS Simplifies Online Submission (http://www.pnascentral.org/) Authors can now submit to PNAS using the fast and easy "Express Submission."

#### Navigate This Article

- ▲ Тор
- O Abstract
- O Background
- O Study Description
- O Results
- O False Positives
- O False Negatives
- O Posterior Probabilities
- O Consensus
- O Examiner Skill
- O Conclusions
- O Acknowledgments
- O Footnotes
- O References

#### Article Tools

- Article Alerts
- Export Citation
- Save for Later
- © Request Permission (/site/aboutpnas/rightperm.xhtml)

#### Share

("exemplars"), generally of higher quality, are collected under controlled conditions from a known subject using ink on paper or digitally with a livescan device (17). Latent print examiners compare latents to exemplars, using their expertise rather than a quantitative standard to determine if the information content is sufficient to make a decision. Latent print examination can be complex because latents are often small, unclear, distorted, smudged, or contain few features; can overlap with other prints or appear on complex backgrounds; and can contain artifacts from the collection process. Because of this complexity, experts must be trained in working with the various difficult attributes of latents.

During examination, a latent is compared against one or more exemplars. These are generally collected from persons of interest in a particular case, persons with legitimate access to a crime scene, or obtained by searching the latent against an Automated Fingerprint Identification System (AFIS), which is designed to select from a large database those exemplars that are most similar to the latent being searched. For latent searches, an AFIS only provides a list of candidate exemplars; comparison decisions must be made by a latent print examiner. Exemplars selected by an AFIS are far more likely to be similar to the latent than exemplars selected by other means, potentially increasing the risk of examiner error (18).

The prevailing method for latent print examination is known as analysis, comparison, evaluation, and verification (ACE-V) (19, 20). The ACE portion of the process results in one of four decisions: the analysis decision of no value (unsuitable for comparison); or the comparison/evaluation decisions of individualization (from the same source), exclusion (from different sources), or inconclusive. The Scientific Working Group on Friction Ridge Analysis, Study and Technology guidelines for operational procedures (21) require verification for individualization decisions, but verification is optional for exclusion or inconclusive decisions. Verification may be blind to the initial examiner's decision, in which case all types of decisions would need to be verified. ACE-V has come under criticism by some as being a general approach that is underspecified (e.g., refs. 14 and 15).

Latent-exemplar image pairs collected under controlled conditions for research are known to be mated (from the same source) or nonmated (from different sources). An individualization decision based on mated prints is a true positive, but if based on nonmated prints, it is a false positive (error); an exclusion decision based on mated prints is a false negative (error), but is a true negative if based on nonmated prints. The term "error" is used in this paper only in reference to false positive and false negative conclusions when they contradict known ground truth. No such absolute criteria exist for judging whether the evidence is sufficient to reach a conclusion as opposed to making an inconclusive or no-value decision. The best information we have to evaluate the appropriateness of reaching a conclusion is the collective judgments of the experts. Various approaches have been proposed to define sufficiency in terms of objective minimum criteria (e.g., ref. 22), and research is ongoing in this area (e.g., ref. 23). Our study is based on a black box approach, evaluating the examiners' accuracy and consensus in making decisions rather than attempting to determine or dictate how those decisions are made (11, 24).

## **Study Description**

This study is part of a larger research effort to understand the accuracy of examiner conclusions, the level of consensus among examiners on decisions, and how the quantity and quality of image features relate to these outcomes. Key objectives of this study were to determine the frequency of false positive and false negative errors, the extent of consensus among examiners, and factors contributing to variability in results. We designed the study to enable additional exploratory analyses and gain insight in support of the larger research effort.

There is substantial variability in the attributes of latent prints, in the capabilities of latent print examiners, in the types of casework received by agencies, and the procedures used among agencies. Average measures of performance across this heterogeneous population are of limited value (25)—but do provide insight necessary to understand the problem and scope future work. Furthermore, there are currently no means by which all latent print examiners in the United States could be enumerated or used as the basis for sampling: A representative sample of latent print examiners or casework is impracticable.

To reduce the problem of heterogeneity, we limited our scope to a study of performance under a single, operationally common scenario that would yield relevant results. This study evaluated examiners at the key decision points during analysis and evaluation. Operational latent print examination processes may include additional steps, such as examination of original evidence or paper fingerprint cards, review of multiple exemplars from a subject, consultation with other examiners, revisiting difficult comparisons, verification by another examiner, and quality assurance review. These steps are implemented to reduce the possibility of error.

Ideally, a study would be conducted in which participants were not aware that they were being tested. The practicality of such an approach even within a single organization would depend on the type of casework. Fully electronic casework could allow insertion of test data into actual casework, but this may be complex to the point of infeasibility for agencies in which most examinations involve physical evidence, especially when chain-of-custody issues are considered. Combining results among multiple agencies with heterogeneous procedures and types of casework would be problematic.

In order to get a broad cross-section of the latent print examiner community, participation was open to practicing latent print examiners from across the fingerprint community. A total of 169 latent print examiners participated; most were volunteers, while the others were encouraged or required to participate by their employers. Participants were diverse with respect to organization, training history, and other factors. The

#### f (/external-ref?

tag\_url=http://www.pnas.org/cgi/content/shor -+Ulery%20et%20al.%20108%20%2819%29%3

#### (/external-ref?

tag\_url=http://www.pnas.org/cgi/content/long -+Ulery%20et%20al.%20108%20%2819%29%3

#### 10

#### 🗃 (/external-ref?

tag\_url=http://www.pnas.org/cgi/content/long -+Ulery%20et%20al.%20108%20%2819%29%3

#### (/external-ref?

tag\_url=http://www.pnas.org/cgi/content/long -+Ulery%20et%20al.%20108%20%2819%29%3

#### (/external-ref?

tag\_url=http://www.pnas.org/cgi/content/long -+Ulery%20et%20al.%20108%20%2819%29%3

#### 🖸 (/external-ref?

tag\_url=http://www.pnas.org/cgi/content/long -+Ulery%20et%20al.%20108%20%2819%29%3

#### Published online before print

April 25, 2011, doi: 10.1073/pnas.1018707108 PNAS (Proceedings of the National Academy of Sciences) May 10, 2011 vol. 108 no. 19 7733-7738

#### Classifications

Biological Sciences Applied Biological Sciences (/search? tocsectionid=Applied+Biological+Sciences&sortspec=d

#### Other Articles

Citing This Article Google Scholar PubMed Similar to This Article

> SUBMIT AN ARTICLE (HTTP://WWW.PNASCENTRAL.ORG)

latent print examiners were generally highly experienced: Median experience was 10 y, and 83% were certified as latent print examiners. More detailed descriptions of participants, fingerprint data, and study procedures are included in *SI Appendix*, *Materials and Methods* (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf).

The fingerprint data included 356 latents, from 165 distinct fingers from 21 people, and 484 exemplars. These were combined to form 744 distinct latent-exemplar image pairs. There were 520 mated and 224 nonmated pairs. The number of fingerprint pairs used in the study, and the number of examiners assigned to each pair, were selected as a balance between competing research priorities: Measuring consensus and variability among examiners required multiple examiners for each image pair, while incorporating a broad range of fingerprints for measuring image-specific effects required a large number of images.

We sought diversity in fingerprint data, within a range typical of casework. Subject matter experts selected the latents and mated exemplars from a much larger pool of images to include a broad range of attributes and quality. Latents of low quality were included in the study to evaluate the consensus among examiners in making value decisions about difficult latents. The exemplar data included a larger proportion of poor-quality exemplars than would be representative of exemplars from the FBI's Integrated AFIS (IAFIS) (*SI Appendix*, Table S4 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Image pairs were selected to be challenging: Mated pairs were randomly selected from the multiple latents and exemplars available for each finger position; nonmated pairs were based on difficult comparisons resulting from searches of IAFIS, which includes exemplars from over 58 million persons with criminal records, or 580 million distinct fingers (*SI Appendix*, section 1.3 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Participants were surveyed, and a large majority of the respondents agreed that the data were representative of casework (*SI Appendix*, Table S3 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix, pdf)).

Noblis developed custom software for this study in consultation with latent print examiners, who also assessed the software and test procedures in a pilot study. The software presented latent and exemplar images to the participants, allowed a limited amount of image processing, and recorded their decisions, as indicated in Fig. 1 (*SI Appendix*, section 1.2 (*I*lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix,pdf)). Each of the examiners was randomly assigned approximately 100 image pairs out of the total pool of 744 image pairs (*SI Appendix*, section 1.3 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix, pdf)). The image pairs were presented in a preassigned order; examiners could not revisit previous comparisons. They were given several weeks to complete the test. Examiners were instructed to use the same diligence that they would use in performing casework. Participants were assured that their results would remain anonymous; a coding system was used to ensure anonymity during analysis and in reporting.



In a new window (7733/F1.expansion.html) Download PPT (/powerpoint/108/19/7733/F1) Fig. 1.

Software workflow. Each examiner was assigned a distinct, randomized sequence of image pairs. For each pair, the latent was presented first for a value decision; if it was determined to be no value, the test proceeded directly to the latent from the next image pair; otherwise, an exemplar was presented for comparison and evaluation (*SI Appendix*, section 1.5

(/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)).

A summary of examiner decisions is shown in Fig. 2. We emphasize that individual examiner decisions are only a part of an overall operational process, which may include verification, quality assurance, and reporting. Our results do not necessarily reflect the performance of this overall operational process.



In a new window (7733/F2.expansion.html) Download PPT (/powerpoint/108/19/7733/F2) Fig. 2.

Distribution of 17,121 decisions. 23% of all decisions resulted in no-value decisions (no comparison was performed); comparison decisions were based on latents of VID and of VEO; 7.5% of comparisons of mated pairs resulted in exclusion decisions (false negatives); 0.1% of comparisons of nonmated pairs resulted in individualization decisions (false positives—too few to be visible) (*SI Appendix*, Table S5 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)).

The true negative rate was greater than the true positive rate. Much of this difference may be explained by three factors: The amount of information necessary for an exclusion decision is typically less than for an individualization decision, examiners operate within a culture where false positives are seen as more serious errors than false negatives (5), and the mated pairs included a greater proportion of poor-quality prints than the nonmated pairs (*SI Appendix*, section 1.3 (/lookup/suppl/doi:10.1073/pnas.1018707108//DCSupplemental/Appendix.pdf)). Whereas poor-quality latents result in the no-value decisions in Fig. 2, the poor-quality exemplars contribute to an increase in the proportion of inconclusive decisions.

Rates of comparison decisions can be calculated as a percentage of all presentations (PRES), including latents of no value; of comparisons where the latent was of value for individualization (VID); or of all comparisons (CMP), which includes comparisons where the latent was of value for exclusion only (VEO) as well as VID. Because standard operating procedures typically include only VID comparisons, this is our default basis for reporting these rates.

## **False Positives**

Six false positives occurred among 4,083 VID comparisons of nonmated pairs (false positive rate, FPRvID = 0.1%) (*SI Appendix*, Tables S5 and S8 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf); confidence intervals are discussed in *SI Appendix*, section 2.1 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). The image pairs that resulted in two of the false positives are shown in Fig. 3. Two of the false positive errors involved a single latent, but with exemplars from different subjects. Four of the five distinct latents on which false positives occurred (vs. 18% of nonmated latents) were deposited on a galvanized metal substrate, which was processed with cyanoacrylate and light gray powder. These images were often partially or fully tonally reversed (light ridges instead of dark), on a complex background (Fig. 3, image pair C). It is not known if other complex backgrounds or processing artifacts would have a similar increased potential for error.



In a new window (7733/F3.expansion.html) Download PPT (/powerpoint/108/19/7733/F3) Fig. 3.

Examples of fingerprint pairs used in the study that resulted in examiner errors. Pairs B and C resulted in false positive errors: 1 of 30 examiners made an individualization decision on B (24 exclusions); 1 of 26 examiners made an individualization decision on C (22 exclusions). The processing of the latent in C (cyanoacrylate with light gray powder) tonally reversed the image so that portions of ridges were light rather than dark. Pairs X and Y resulted in false negative errors, with no true positives made by any examiner: X was excluded by 13 of 29 examiners, presumably because the latent was deposited with a twisting motion that resulted in misleading ridge flow; Y was excluded by 15 of 18 examiners; the exemplar was particularly distorted. For use in this figure, these images were cropped to reduce background area.

The six errors were committed by five examiners, three of whom were certified (including one examiner who made two errors); one was not certified; one did not respond to our background survey. These correspond to the overall proportions of certifications among participants (*SI Appendix*, section 1.4 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). In no case did two examiners make the same false positive error: Five errors occurred on image pairs where a large majority of examiners correctly excluded; one occurred on a pair where the majority of examiners made inconclusive decisions. This suggests that these erroneous individualizations would have been detected if blind verification were routinely performed. For verification to be truly blind, examiners must not know that they are verifying individualizations; this can be ensured by performing verifications on a mix of conclusion types, not merely individualizations. The general consensus among examiners did not indicate that these were difficult comparisons, and only for two of the six false positives did the examiner making the error indicate that these were difficult (*SI Appendix*, Table S8 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)).

There has been discussion (24, 26, 27) regarding the appropriateness of using qualified conclusions in investigation or testimony. The effects of qualified conclusions could be assessed in this study, as with corresponding features" (SI "inconclusive Appendix. section 1.5 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Qualified conclusions potentially yield many additional "leads": 36.5% of VID comparisons resulted in individualization decisions, and an additional 6.2% resulted in qualified conclusions. However, 99.8% of individualization decisions were mated, as opposed to only 80.6% of qualified conclusions (SI Appendix, section 2 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Only one of the six image pairs that resulted in false positives had a plurality of inconclusive decisions, and none had a plurality "with corresponding features."

### **False Negatives**

False negatives were much more prevalent than false positives (false negative rate: FNRviD = 7.5%) (*SI* Appendix, Table S5 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Including VEO comparisons had no substantial effect: FNRCMP = 7.5%. Eighty-five percent of examiners made at least one false negative error, despite the fact that 65% of participants said that they were unaware of ever having made an erroneous exclusion after training (*SI* Appendix, section 1.4, no. 25 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)); awareness of previous errors was not correlated with false negative errors on this test. False negatives were distributed across half of the image pairs that were compared. The likelihood of false negatives varied significantly by examiner (discussed further under *Examiner Skill*, below), and by image pair (*SI* Appendix, Figs. S3 and S5 *C* and *D* (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Of the image pairs that were most frequently associated with false negatives, most had distorted latents and/or exemplars that gave an appearance of a different ridge flow pattern.

Verification of exclusions (especially blind verification) is not standard practice in many organizations, in part due to the large number encountered in casework. To investigate the potential benefits of blind verification, we posed the following question: Given a mated image pair, what is the probability, pv, that two examiners would both reach exclusion decisions? If exclusions were equally likely for all image pairs (independence

assumption), we would estimate that exclusions by two examiners would occur at the rate  $p_{\rm r} = {\rm FNR}_{\rm PRES}^2 = 5.3\% \times 5.3\% = 0.3\%$ (SI Appendix, Table **S**5 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). However, the data show that the independence assumption is not valid: Some mated pairs are more likely to be excluded than others. Because the outcomes of blind verifications are not statistically independent but depend on the estimate = (SI imade pairs. we 0.85% Appendix. section 11 Dv (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). This suggests that blind verification of exclusions could greatly reduce false negative errors; agency policy would have to balance this benefit with the impact on limited resources.

For exclusions where the latent was VID, examiner assessment of comparison difficulty was a good predictor of accuracy, but even "Very Easy/Obvious" exclusions were sometimes incorrect: Among 450 false negatives where the latent was VID, 13 were rated "Very Easy/Obvious" by 11 distinct examiners (*S/ Appendix*, Fig. S8 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Latent value (VEO vs. VID) had no predictive value for false negative errors; however, exclusions were more likely to be true negatives when the latent was VID than when it was VEO. This counterintuitive result is due to the fact that VEO determinations were more often inconclusive, hence most exclusion decisions were associated with VID latents (*SI Appendix*, Fig. S7 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)).

## **Posterior Probabilities**

False positive and false negative rates are important accuracy measures, but assume a priori knowledge of true mating relationships, which of course are not known in forensic casework. In practice, knowledge of mating relationships is based solely on examiners' decisions: It is important to know the likelihood that these decisions are correct. Positive predictive value (PPV) is the percentage of individualization decisions that are true positives; negative predictive value (NPV) is the percentage of exclusion decisions that are true negatives. Fig. 4 depicts PPV and NPV as functions of the prior prevalence of mated pairs among the examinations performed: As the proportion of mated pairs increases, PPV increases and NPV decreases (*S/Appendix*, section 9 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). The prior prevalence of mated pair comparisons varies substantially among organizations, by case type, and by how candidates are selected. Mated comparisons are far more prevalent in cases where the candidates are suspects determined by nonfingerprint means than in cases where candidates were selected by an AFIS.



In a new window (7733/F4.expansion.html) Download PPT (/powerpoint/108/19/7733/F4) Fig. 4.

PPV and NPV as a function of mate prevalence in workload. The observed predictive values (PPVviD,59% = 99.8% and NPVviD,59% = 88.9% for VID comparisons) correspond to the actual test mix (indicated) where 59% of VID comparisons were mated pairs; other predictive values are calculated as a function of mate prevalence. Sixty-two percent of all comparisons (VEO and VID) were performed on mated pairs, and PPVcMP,62% = 99.8% and NPVcMP,62% = 86.6%.

## Consensus

Each image pair was examined by an average of 23 participants. Their decisions can be regarded as votes in a decision space (Fig. 5). Consensus was limited on both mated and nonmated pairs: VID decisions were unanimous on 48% of mated pairs and 33% of nonmated pairs. Votes by latent print examiners also provide a basis for assessing sufficiency for value decisions, as shown in Fig. 6; consensus on individualization and exclusion decisions is shown in *SI Appendix*, Fig. S6 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf).



In a new window (7733/F5.expansion.html) Download PPT (/powerpoint/108/19/7733/F5) Fig. 5.

Decision rates on each image pair. Percentage of examiners making an individualization decision (x axis) vs. exclusion decision (y axis) on each image pair; mean 23 presentations per pair. VEO and novalue decisions are treated as inconclusive. Marginal distributions are shown as histograms. Of mated pair decisions, 10% were unanimous true positives, 38% unanimous inconclusives. Of nonmated pair decisions, 25% were unanimous true negatives, 9% were unanimous inconclusives. Points along diagonal represent pairs on which all examiners reached conclusions. The prevalence of false negatives is evident in the vertical spread of mated pairs; the few false positives are evident in the limited horizontal spread of the nonmated pairs.





Examiner consensus on VID decisions, showing the percentage of examiners reaching consensus (*y* axis) on each latent (*x* axis). Areas of unanimous (100%), decile (10%, 90%), and quartile (25%, 75%) consensus are marked. For example, at a 90% level of consensus (*y* axes), examiners agreed that 40% of the latents were VID (interval from 60% to 100% indicated by a horizontal line in upper right) (*SI Appendix*, Table S11 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Such measures of consensus may be useful in developing quantity and quality metrics.

Lack of consensus among examiners can be attributed to several factors. For unanimous decisions, the images were clearly the driving factor: Unusable or pristine prints resulted in unanimous decisions, and therefore different data selection would have affected the extent of consensus. When there was a lack of consensus, much of the variation could be explained by examiner differences: Examiners showed varying tendencies toward no-value or inconclusive decisions, or toward conclusions (*SI Appendix*, Fig. S4 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Examiners differed significantly in conclusion rates, and we see this effect as secondary to image characteristics in explaining lack of consensus. Other factors accounting for lack of consensus include intraexaminer inconsistency and (presumably) test environment (*SI Appendix*, Fig. S3 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)).

It was not unusual for one examiner to render an inconclusive decision while another made an individualization decision on the same comparison. This result is consistent with previous observations (1, 5, 28). Among all decisions based on mated pairs, 23.0% resulted in decisions other than individualization even though at least one other examiner made a true positive on the same image pair; 4.8% were not individualization decisions even though the majority of other examiners made true positives. This has operational implications in that some potential individualizations are not being made, and contradictory decisions are to be expected.

When examiners reached contradictory conclusions (exclusion and individualization) on a single comparison, the exclusion decision was more frequently in error: 7.7% of independent examinations of conclusions on mates were contradictory, vs. 0.23% on nonmates. Which of the contradictory decisions is more likely to be erroneous depends on the prior prevalence of mated vs. nonmated pairs: Exclusion decisions are more likely to be erroneous except in situations where the prior prevalence of nonmated pairs is very high.

## **Examiner Skill**

The criminal justice system relies on the skill of latent print examiners as expert witnesses. Currently, there is no generally accepted objective measure to assess the skill of latent print examiners. Skill is multidimensional and is not limited to error rates (FPR and FNR), but also includes TPR, true negative rate (TNR), VID and VEO rates, and conclusion rate (CR—the percentage of individualization or exclusion conclusions as opposed to no-value or inconclusive decisions). Any assessment of skill must consider these dimensions. Although most discussions of examiner skill focus on error rates (e.g., ref. 13), the other aspects of examiner skill are important not just to the examiner's organization, but to the criminal justice system as well; e.g., an examiner who is frequently inconclusive is ineffective and thereby fails to serve justice. Both individual examiners and organizations must strike a proper balance between the societal costs of errors and inappropriate decisions, and the operational costs of detection. Contradictory verification decisions, whether involving erroneous conclusions or inappropriate inconclusive decisions, should be internally documented and addressed through an organization's continual improvement processes.

We found that examiners differed substantially along these dimensions of skill, and that these dimensions were largely independent. Our study measured all of these dimensions with the exception of FPRs for individual examiners, which were too low to measure with precision (*SI Appendix*, section 3 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Fig. 7 shows that examiners' conclusion rates (CRPREs) varied from 15 to 64% (mean 37%, SD 10%) on mated pairs, and from 7 to 96% (mean 71%, SD 14%) on nonmated pairs. The observed range in CRs may be explained by a higher level of skill (ability to reach more conclusions at the same level of accuracy), or it may imply a higher risk tolerance (more conclusions reached at the expense of making more errors).





Decision rates by examiner. Proportions of decisions for all 169 examiners on (*A*) nonmated and (*B*) mated image pairs. Examiners in each chart are sorted on CR. Each examiner was randomly assigned 51 to 74 mated image pairs (mean 69, SD 5) and 26 to 53 nonmated image pairs (mean 33, SD 7). In both, errors are shown in red. Column width indicates the number of image pairs. Examiners who made false positive errors are indicated with black dots (*SI Appendix*, Table S7 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)).

Fig. 7 shows substantial variability in CR among examiners. These measured rates were based on an average of 69 mated presentations and 33 nonmated presentations. The limited number of presentations resulted in a wide margin of measurement error when evaluating the performance of an individual examiner (*SI Appendix*, Fig. S5 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Although the estimates for each examiner are statistically unbiased, the sampling error in these estimates contributed substantially to the observed variability among examiners. The observed variability is a biased estimate that overstates the true variability (*SI Appendix*, Figs. S3*B* and S4 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)).

Fig. 8 shows the relations between three of the skill dimensions measured for each examiner. Blue squares near the lower right of the chart represent highly skilled examiners: accurate (making few or no errors) and effective (high TNR and TPR, and therefore high CR). The red cross at the bottom left denotes an accurate (0% FNRviD), but ineffective (5% TNRviD, 16% TPRPRES) examiner. The examiner denoted by the red cross at the top right is inaccurate (34% FNRviD), and has mixed effectiveness (100% TNRviD, 23% TPRPRES). Attempting to compare the skill of any two examiners is a multidimensional problem. A combination of multiple dimensions into a single hypothetical measure of skill would require a weighting function to trade off the relative value of each dimension; such weighting might be driven by policy, based on the relative cost/benefit of each dimension for operational needs.



In a new window (7733/F8.expansion.html) Download PPT (/powerpoint/108/19/7733/F8) Flg. 8.

Examiner skill. Each of the 169 examiners is plotted on three skill dimensions: TNRviD (mean 88%, SD 13.6%), FNRviD (mean 7.5%, SD 7.3%), and TPRPRES (shown in color, with red crosses denoting the lowest quartile and blue squares the highest quartile; mean 32%, SD 9.4%). The five examiners who made false positive errors are indicated with bold filled circles.

Tests could be designed to measure examiner skill along the multiple dimensions discussed here. Such tests could be valuable not just as traditional proficiency tests with pass/fail thresholds, but as a means for examiners or their organizations to understand skills for specific training, or for tasking based on skills (such as selecting examiners for verification based on complementary skill sets).

Certified examiners had higher conclusion rates than noncertified examiners without a significant change in accuracy (significantly higher TPRviD and TNRviD; FNRviD did not vary significantly) (*SI Appendix*, section 6 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)). Length of experience as a latent print examiner did not show a significant correlation with TPRviD, TNRviD, or FNRviD (*SI Appendix*, Table S9 and Fig. S2 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)).

Examiners with a lower TPRVID tended also to have a lower TNRVID. Examiners with a higher FNRVID tended to have a lower TPRVID. Examiners with a higher TNRVID tended also to have a higher FNRVID (*S/ Appendix*, Table S9 and Fig. S2 (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental/Appendix.pdf)).

## Conclusions

Assessing the accuracy and reliability of latent print examiners is of great concern to the legal and forensic science communities. We evaluated the accuracy of decisions made by latent print examiners on difficult fingerprint comparisons in a computer-based test corresponding to one stage in AFIS casework. The rates measured in this study provide useful reference estimates that can inform decision making and guide future research; the results are not representative of all situations, and do not account for operational context and safeguards. False positive errors (erroneous individualizations) were made at the rate of 0.1% and never by two examiners on the same comparison. Five of the six errors occurred on image pairs where a large majority of examiners made true negatives. These results indicate that blind verification should be highly effective at detecting this type of error. Five of the 169 examiners (3%) committed false positive errors, out of an average of 33 nonmated pairs per examiner.

False negative errors (erroneous exclusions) were much more frequent (7.5% of mated comparisons). The majority of examiners (85%) committed at least one false negative error, with individual examiner error rates varying substantially, out of an average of 69 mated pairs per examiner. Blind verification would have detected the majority of the false negative errors; however, verification of exclusion decisions is not generally practiced in operational procedures, and blind verification is even less frequent. Policymakers will need to consider tradeoffs between the financial and societal costs and benefits of additional verifications.

Most of the false positive errors involved latents on the most complex combination of processing and substrate included in the study. The likelihood of false negatives also varied by image. Further research is necessary to identify the attributes of prints associated with false positive or false negative errors, such as quality, quantity of features, distortion, background, substrate, and processing method.

Examiners reached varied levels of consensus on value and comparison decisions. Although there is currently no objective basis for determining the sufficiency of information necessary to reach a fingerprint examination decision, further analysis of the data from this study will assist in defining quality and quantity metrics for sufficiency. This lack of consensus for comparison decisions has a potential impact on verification: Two examiners will sometimes reach different conclusions on a comparison.

Examiner skill is multidimensional and is not limited to error rates. Examiner skill varied substantially. We measured various dimensions of skill and found them to be largely independent.

This study is part of a larger ongoing research effort. To further our understanding of the accuracy and reliability of latent print examiner decisions, we are developing fingerprint quality and quantity metrics and analyzing their relationship to value and comparison decisions; extending our analyses to include detailed examiner markup of feature correspondence; collecting fingerprints specifically to explore how complexity of background, substrate and processing are related to comparison decisions; and measuring intraexaminer repeatability over time.

This study addresses in part NRC Recommendation 3 (12), developing and quantifying measures of accuracy and reliability for forensic analyses, and will assist in supporting the scientific basis of forensic fingerprint examination. The results of this study will provide insight into developing operational procedures and training of latent print examiners and will aid in the experimental design of future proficiency tests of latent print examiners.

## Acknowledgments

We thank the latent print examiners who participated in this study, as well as William Fellner, Jill McCracken, Keith Ward, Stephen Meagher, Calvin Yeung, Ted Unnikumaran, Erik Stanford, and William Chapman. This is publication number 10-19 of the FBI Laboratory Division. This work was funded in part under a contract award to Noblis, Inc. from the FBI Biometric Center of Excellence and in part by the FBI Laboratory Division. The views expressed are those of the authors and do not necessarily reflect the official policy or position of the FBI or the US government.

## Footnotes

<sup>1</sup>To whom correspondence should be addressed. E-mail: joann.buscaglia@ic.fbi.gov (mailto.joann.buscaglia@ic.fbi.gov).

Author contributions: B,T,U., R,A.H., J,B., and M,A.R. designed research; B,T,U., R,A.H., J,B., and M,A.R. performed research; B,T,U. and R,A.H. contributed new analytic tools; B,T,U., R,A.H., J,B., and M,A.R. analyzed data; and B,T,U., R,A.H., J,B., and M,A.R. wrote the paper.

The authors declare no conflict of interest.

This article is a PNAS Direct Submission.

This article contains supporting information online at www.pnas.org/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental (/lookup/suppl/doi:10.1073/pnas.1018707108/-/DCSupplemental).

Freely available online through the PNAS open access option.

### References

- Evett IW, Williams RL (1995) A review of the 16 point fingerprint standard in England and Wales. *Fingerprint Whorld* 21. <u>Google Scholar (http://scholar.google.com/scholar\_lookup?</u> <u>title=A%20review%200f%20the%2016%20point%20fingerprint%20standard%20in%20England%20and%20Wales&author=IW%20Evett&author=RL%20Williams&publicati</u>
   Wertheim K, Langenburg G, Moenssens A (2006) A report of latent print examiner accuracy during
- 2. Wertheim N. Langenburg G. Moenssens A (2000) A report of raterit print examiner accuracy during comparison training exercises. J Forensic Identification 56:55–93. <u>Google Scholar (http://scholar.google.com/scholar\_lookup?</u>
  - <u>utile=%20report%20of%20latent%20print%20examiner%20accuracy%20during%20comparison%20training%20exercises&author=K%20Wertheim&author=G%20Lange 93)</u>
- Gutowski S (2006) Error rates in fingerprint examination: The view in 2006. Forensic Bulletin 2006;18–19, Autumn.
  - Google Scholar (http://scholar.google.com/scholar\_bokup? title=Error%20rates%20in%20fingerprint%20examination%3A%20The%20view%20in%202006&author=S%20Gutowski&publication\_year=2006&journa=Forensic%20Buj 19)
- Langenburg G, Champod P, Wertheim P (2009) Testing for potential contextual bias effects during the verification stage of the ACE-V methodology when conducting fingerprint comparisons. *J Forensic Sci* 54:571–582. <u>CrossRef (/external-ref?access\_num=10.1111/j.1556-4029.2009.01025.x&link\_type=DOI)</u> <u>Medline (/external-ref?access\_num=19432737&link\_type=MED)</u>
  - Web of Science (/external-ref?access\_num=000265410100012&link\_type=ISI) Google Scholar (http://scholar.google.com/scholar.jookup?ttile=Testing%20for%20potential%20contextual%20bias%20effects%20during%20the%20veri%C3%AF%C2% V%20methodology%20when%20conducting%20fingerprint%20comparisons&author=G%20Langenburg&author=P%20Champod&author=P%20Wertheim&publication\_ 582)
- Langenburg G (2009) A performance study of the ACE-V process. J Forensic Identification 59:219–257.
   <u>Google Scholar (http://scholar.google.com/scholar\_bokup?title=A%20performance%20study%200f%20the%20ACE-</u> 2009/ 2010 - 20
  - V%20process&author=G%20Langenburg&publication\_year=2009&journa⊨J%20Forensic%20jdentification&volume=59&pages=219-257)
- Cole SA (2005) More than zero: Accounting for error in latent fingerprint identification. J Crim Law Criminol 95:985–1078. <u>Web of Science (lexternal-ref?access\_num=000237534500010&link\_type=ISI)</u> Google Scholar (http://scholar.google.com/scholar\_bokup?
  - Googe Scholar (http://scholar.googe.com/scholar\_wokupr\_ title=More%20than%20zero%3A%20Accounting%20for%20error%20in%20latent%20fingerprint%20identification&author=SA%20Cob&publication\_year=2005&journal=J 1078)
- 7. United States v Mitchell , No. 96-407 (ED PA 1999).
- 8. United States v Llera Plaza , Cr. No. 98-362-10, 11, 12 (ED PA 2002).

- 9. Maryland v Rose, No. K06-0545 (MD Cir 2007).
- Office of the Inspector General (2006) A Review of the FBI's Handling of the Brandon Mayfield Case (US Department of Justice, Washington, DC).
- Budowle B, Buscaglia J, Perlman RS (2006) Review of the scientific basis for friction ridge comparisons as a means of identification: Committee findings and recommendations. *Forensic Sci Commun* 8:1. Google Scholar (http://scholar.google.com/scholar lookup?
- title=Review%20of%20the%20scientific%20basis%20for%20friction%20ridge%20comparisons%20as%20a%20means%20of%20identification%3A%20Committee%20findi
- National Research Council (2009) Strengthening Forensic Science in the United States: A Path Forward (National Academies Press, Washington, DC).
- 13. Koehler JJ (2008) Fingerprint error rates and proficiency tests: What they are and why they matter.
  - Hastings Law J 59: 1077–1110. Web of Science (/external-ref?access\_num=000207570600005&[ink\_type=|S]) Google Scholar (http://scholar.google.com/scholar\_lookup? title=Fingerprint%20error%20rates%20and%20proficiency%20tests%3A%20What%20they%20are%20and%20why%20they%20matter&author=JJ%20Koehler&publicatio 1110)
- Mnookin JL (2008) The validity of latent fingerprint identification: Confessions of a fingerprinting moderate. Law Probability and Risk 7:127–141.
  - FREE Full Text (/cgi/ijlink?linkType=PDF&journalCode=lawprj&resid=7/2/127)
- Haber L, Haber RN (2008) Scientific validation of fingerprint evidence under Daubert. Law Probability and Risk 7:87–109.

#### Abstract/FREE Full Text (/cgi/ijlink?linkType=ABST&journalCode=lawprj&resid=7/2/87)

- Cole S (2006) Is fingerprint identification valid? Rhetorics of reliability in fingerprint proponents' discourse. Law Policy 28:109–135.
  - CrossRef (/external-ref?access\_num=10.1111/j.1467-9930.2005.00219.x&link\_type=DOl) Google Scholar (http://scholar.google.com/scholar\_bokup? title=is%20fingerprint%20identification%20valid%3F%20Rhetorics%20of%20reliability%20in%20fingerprint%20proponents%C3%A2%C2%80%C2%99%20discourse&aut 135)
- Scientific Working Group on Friction Ridge Analysis, Study and Technology (2011) Standard terminology of friction ridge examination, Version 3. Available at http://www.swgfast.org/documents/terminology/110323\_Standard-Terminology\_3.0.pdf (http://www.swgfast.org/documents/terminology/110323\_Standard-Terminology\_3.0.pdf).
- Dror I, Mnookin J (2010) The use of technology in human expert domains: Challenges and risks arising from the use of automated fingerprint identification systems in forensic science. Law Probability and Risk 9:47-67. <u>Abstract/FREE Full Text (/cgi/ijink?jinkType=ABST&journalCode=lawpri&resid=9/1/47)</u>
- Huber RA (1959) Expert witness. Criminal Law Quarterly 2:276–296. <u>Google Scholar (http://scholar.google.com/scholar\_lookup?</u> <u>title=Expert%20witness&author=RA%20Huber&publication\_year=1959&journa=Criminal%20Law%20Quarterly&volume=2&pages=276-296)</u>
- Ashbaugh D (1999) Quantitative-Qualitative Friction Ridge Analysis: An Introduction to Basic and Advanced Ridgeology (CRC Press, New York). <u>Google Scholar (http://scholar.google.com/scholar\_bokup?title=Quantitative-</u> <u>Qualitative%20Friction%20Ridge%20Analysis%3A%20An%20Introduction%20to%20Basic%20and%20Advanced%20Ridgeology&author=D%20Ashbaugh&publication</u>
- Scientific Working Group on Friction Ridge Analysis, Study and Technology (2002) Friction ridge examination methodology for latent print examiners, Version 1.01. Available at http://www.swgfast.org/documents/methodology/100506-Methodology-Reformatted-1.01.pdf (http://www.swgfast.org/documents/methodology/100506-Methodology-Reformatted-1.01.pdf).
- Champod C (1995) Edmond Locard—Numerical standards and "probable" identifications. J Forensic Identification 45:136–155.
   <u>Google Scholar (http://scholar.google.com/scholar\_bokup?</u> <u>ttle=Edmond%20Locard%C3%A2%C2%80%C2%94Numerical%20standards%20and%20%C3%A2%C2%80%C2%9Cprobable%C3%A2%C2%80%C2%9D%20Identification 155)
  </u>
- Neumann C, et al. (2007) Computation of likelihood ratios in fingerprint identification for configurations of any number of minutiae. J Forensic Sci 52:54–64.
  - CrossRef //external-ref?access\_num=10.1111/i.1556-4029.2006.00327.x&link\_type=DOI) Medine //external-ref?access\_num=17209910&link\_type=MED) Web\_of Science (/external-ref?access\_num=000242993800010&link\_type=ISI) Google Scholar (http://scholar.google.com/scholar\_bokup? title=Computation%20of%20likelihood%20ratios%20in%20fingerprint%20identification%20for%20configurations%20of%20any%20number%20of%20minutiae&author=C 64)
- 24. Mnookin JL (2008) Of black boxes, instruments, and experts: Testing the validity of forensic science. Episteme 5:343-358. <u>CrossRef (/external-ref?access\_num=10.3366/E1742360008000440&link\_type=DOI)</u> <u>Google Scholar (http://scholar.google.com/scholar\_bokup?</u> <u>tttle=Off/20black%20boxes%2C%20Instruments%2C%20and%20experts%3A%20Testing%20the%20validity%20off%20forensic%20science&author=JL%20Mnookin&put 358)</u>
  25. Budowle B, et al. (2009) A perspective on errors, bias, and interpretation in the forensic sciences and direction for continuing advancement. *J Forensic Sci* 54:798-809. <u>CrossRef (/external-ref?access\_num=10.1111/j.1556-4029.2009.01081.x&jink\_type=DOI)</u> Mediline (/external-ref?access\_num=19486241&link\_type=MED) Web of Science (/external-ref?access\_num=000267321100009&link\_type=ISI) <u>Google Scholar (http://scholar.google.com/scholar\_bokup?</u> <u>tttje=A%20perspective%20on%20errors%2C%20bias%2C%20and%20interpretation%20in%20the%20forensic%20sciences%20and%20direction%20for%20continuing%;</u> 809)
- Saks M, Koehler J (2005) The coming paradigm shift in forensic identification science. Science 309:892–895. <u>Abstract/FREE Full Text (/cgl/ijlink?linkType=ABST&journalCode=sci&resid=309/5736/892)</u>
- Stoney DA (1991) What made us ever think we could individualize using statistics? J Forensic Sci Soc 31:197–199. Medline (lexternal-ref?access\_num=1940832&link\_type=MED) Web of Science (lexternal-ref?access\_num=A1991GA94800014&link\_type=ISI)

<u>Google Scholar (http://scholar.google.com/scholar\_bokup?</u> title=What%20made%20us%20ever%20think%20we%20could%20individualize%20using%20statistics%3F&author=DA%20Stoney&publication\_year=1991&journal=J%2( 199)

28. Grieve DL (1996) Possession of truth. J Forensic Identification 46:521–528. Google Scholar (http://scholar.google.com/scholar\_bokup? <u>title=Possession%20of%20truth&author=DL%20Grieve&publication\_vear=1996&journa=J%20Forensic%20Identification&volume=46&pages=521-528)</u>

## HighWire Press-hosted articles citing this article

#### Fingerprint identification: advances since the 2009 National Research Council report

Phil Trans R Soc B (Philosophical Transactions of the Royal Society B: Biological Sciences) 2015 370 (1674) 20140259

 Abstract (http://rstb.royalsocietypublishing.org/cgi/content/abstract/370/1674/20140259)
 Full Text (HTML)

 (http://rstb.royalsocietypublishing.org/cgi/content/full/370/1674/20140259)
 Full Text (HTML)

(http://rstb.royalsocietypublishing.org/cgi/reprint/370/1674/20140259)

LAW ENFORCEMENT STANDARDS OFFICE

NIST Home > OLES > Experts Recommend Measures to Reduce Human Error in Fingerprint Analysis

#### Experts Recommend Measures to Reduce Human Error in Fingerprint Analysis

From NIST Tech Beat: February 21, 2012

Select Language Powered by Go. glc Translate SHARE **G** \* 🖸 \_

Search

Contact: Michael E. Newman 301-975-3025

A new report by the National Institute of Standards and Technology (NIST) and the Department of Justice's National Institute of Justice (NIJ) has documented 149 potential sources of human error in the analysis of crime scene fingerprints. The study by a working group of 34 experts recommends a series of improvements to significantly reduce or eliminate the errors, based on the findings from its three-year scientific assessment of the effects of human factors on forensic latent print analysis. The working group consisted of experts from various forensic disciplines, statisticians, psychologists, engineers and other scientific experts, as well as legal scholars and representatives of professional organizations.

For more than a century, the most reliable and legally accepted method for identifying the perpetrator of a crime has been to compare latent fingerprints-those left by chance or accident at a crime scene-to known (or exemplar) prints on file. However, several high-profile cases in the United States and abroad during the past 20 years have shown that forensic examiners can sometimes make mistakes when analyzing or comparing prints, or even in communicating findings to law enforcement officials or juries. Such errors can be devastating, resulting in missed opportunities to identify the guilty or wrongful convictions of the innocent.

As with any laboratory procedure, there are a multitude of human factors that can influence the results of latent print analysis-examples include inadequate training, poor judgment, vision limitations, lack of sleep and stress. The chances of error increase if the examiner also must deal with organizational factors such as a lack of standards or quality control, poor management, insufficient resources or substandard working conditions (such as bad lighting). The Expert Working Group on Human Factors in Latent Print Analysis was convened in December 2008 to study these factors for the first time using an evidence-based, scientific review of literature, case studies and previous analyses; and then draw on the knowledge gained to estimate the incidence, severity and costs of errors; evaluate approaches to reducing errors and identify the most effective; and promote best practices through a national agenda for error reduction.



Law enforcement officers locating latent fingerprints on the side of a

Credit: FBI View hi-resolution image

Much of the report provides a comprehensive discussion of these factors and how they relate to all aspects of latent print examinations, from acquisition of evidence through communicating results in documents and testimony. Based on what it learned, the working group outlined 34 recommendations addressing the problems resulting from human error. Among the proposed improvements:

- Urging management at forensic service provider facilities to foster a culture in which it is understood that some human error is inevitable and that openness about errors leads to improvements in practice;
- Documenting latent print examinations at a detail level that would permit another examiner to assess the accuracy and validity of the work;
- Requiring agencies that employ latent print examiners to establish requirements and guidelines for reporting, documentation and testimony that are reviewed for each examiner at least annually; and
- Intensely preparing print examiners and other forensic experts to give credible and accurate testimony in trials, stressing skills such as using lay language, creating visuals that can easily be understood, and thinking clearly under cross-examination.

The working group also identified a number of future steps that should be taken to advance the error reduction effort, including: prerequisite educational and skill standards for examiner training; continuing education, mentoring and accreditation/certification programs; research to integrate automated systems into the early stages of print analysis; and a comprehensive testing program for ensuring examiner competency and proficiency.

The report, Latent Print Examination and Human Factors: Improving the Practice through a Systems Approach (NIST Interagency Report 7842) is available at http://www.nist.gov/manuscript-publication-search.cfm?pub\_id=910745.

The National Institute of Standards and Technology (NIST) is an agency of the U.S. Department of Commerce.

Privacy Policy / Security Notice / Accessibility Statement / Disclaimer / Freedom of Information Act (FOIA) / Environmental Policy Statement / No Fear Act Policy / NIST Information Quality Standards / Scientific Integrity Summary

Date created: February 21, 2012 | Last updated: September 25, 2013 Contact: Webmaster



# APPENDIX #2



## National Press Releases

Home · News · Press Room · Press Releases · Statement on Brandon Mayfield Case

#### **Statement on Brandon Mayfield Case**

Washington, D.C.	FBI National Press Office
May 24, 2004	(202) 324-3691

After the March terrorist attacks on commuter trains in Madrid, digital images of partial latent fingerprints obtained from plastic bags that contained detonator caps were submitted by Spanish authorities to the FBI for analysis. The submitted images were searched through the Integrated Automated Fingerprint Identification System (IAFIS). An IAFIS search compares an unknown print to a database of millions of known prints. The result of an IAFIS search produces a short list of potential matches. A trained fingerprint examiner then takes the short list of possible matches and performs an examination to determine whether the unknown print matches a known print in the database.

Using standard protocols and methodologies, FBI fingerprint examiners determined that the latent fingerprint was of value for identification purposes. This print was subsequently linked to Brandon Mayfield. That association was independently analyzed and the results were confirmed by an outside experienced fingerprint expert.

Soon after the submitted fingerprint was associated with Mr. Mayfield, Spanish authorities alerted the FBI to additional information that cast doubt on our findings. As a result, the FBI sent two fingerprint examiners to Madrid, who compared the image the FBI had been provided to the image the Spanish authorities had.

Upon review it was determined that the FBI identification was based on an image of substandard quality, which was particularly problematic because of the remarkable number of points of similarity between Mr. Mayfield's prints and the print details in the images submitted to the FBI.

The FBI's Latent Fingerprint Unit will be reviewing its current practices and will give consideration to adopting new guidelines for all examiners receiving latent print images when the original evidence is not included.

The FBI also plans to ask an international panel of fingerprint experts to review our examination in this case.

The FBI apologizes to Mr. Mayfield and his family for the hardships that this matter has caused.

Accessibility | eRulemaking | Freedom of Information Act | Legal Notices | Legal Policies and Disclaimers | Links | Privacy Policy | USA.gov | White House FBL.gov is an official site of the U.S. government, U.S. Department of Justice

Close

#### **Recent National Press Releases**

- 07.23.15 FBI Announces Economic Espionage Awareness Campaign
- 07 16.15 FBI Statement on Shootings at Military Facilities in Chattanooga, Tennessee
- 07.10.15 Statement by FBI Director James Comey Regarding Dylann Roof Gun Purchase
- 07.07.15 FBI Seeking Information to Identify Victims in International Sextortion Case
- 06 30.15 Department of Justice Seeks Forfeiture of \$34 Million in Bribe Payments to the Republic of Chad's Former Ambassador to the U.S. and Canada
- 06.29.15 David J. LeValley Named Special Agent in Charge of Criminal Division of the Washington Field Office
- 06.18.15 National Medicare Fraud Takedown Results in Charges Against 243 Individuals for Approximately \$712 Million in False Billing
- 06.04.15 FBI Aviation Program: Purpose and Scope
- 06.04.15 FBI Statement on OPM Cyber Intrusion
- 05.11.15 FBI Releases 2014 Preliminary Statistics for Law Enforcement Officers Killed in the Line of Duty

#### More National Press Releases

# APPENDIX #3

## FILED 2005 JUL II AHID: IL KING COUNTY SUFERING COUNTY SEATTLE, WA

Via 21 2005

## COMMITMENT ISSUED

### SUPERIOR COURT OF WASHINGTON FOR KING COUNTY

)

Plaintiff.

Defendant,

STATE OF WASHINGTON,

Vs.

CHAD WAYNE HURN

No. 05-1-07332-9 SEA

JUDGMENT AND SENTENCE FELONY

#### I. HEARING

1.1 The defendant, the defendant's lawyer, TIMOTHY R JOHNSON, and the deputy prosecuting attorney were present at the sentencing hearing conducted today. Others present were:

#### **II. FINDINGS**

There being no reason why judgment should not be pronounced, the court finds: 2.1 CURRENT OFFENSE(S): The defendant was found guilty on 6/27/2005 by plea of:

Count No.: I Crime: BURGLARY IN THE SECOND DEGREE			
RCW 9A.52.030	Crime Code: 02316		
Date of Crime: 03/31/2005	Incident No.		
Count No.: Crime:			
RCW	Crime Code:		
Date of Crime:	Incident No.		
Count No.: Crime:			
RCW	Crime Code:		
Date of Crime:	Incident No.		
Count No.: Crime:			
RCW	Crime Code:		
Date of Crime:	Incident No.		

[ ] Additional current offenses are attached in Appendix A

#### SPECIAL VERDICT or FINDING(S):

- (a) [ ] While armed with a firearm in count(s) \_\_\_\_\_\_ RCW 9.94A.510(3).
- (b) [ ] While armed with a deadly weapon other than a firearm in count(s) \_\_\_\_\_\_ RCW 9.94A.510(4).
- (c) [] With a sexual motivation in count(s) \_\_\_\_\_\_ RCW 9.94A.835.
- (d) [] A V.U.C.S.A offense committed in a protected zone in count(s) \_\_\_\_\_\_ RCW 69.50.435.
- (e) [ ] Vehicular homicide [ ]Violent traffic offense [ ]DUI [ ] Reckless [ ]Disregard.
- (f) [] Vehicular homicide by DUI with \_\_\_\_\_ prior conviction(s) for offense(s) defined in RCW 41.61.5055, RCW 9.94A.510(7).
- (g) [] Non-parental kidnapping or unlawful imprisonment with a minor victim. RCW 9A.44.130.
- (h) [ ] Domestic violence offense as defined in RCW 10.99.020 for count(s)
- (i) [ ] Current offenses encompassing the same criminal conduct in this cause are count(s) \_\_\_\_\_ RCW 9.94A.589(1)(a).

2.2 OTHER CURRENT CONVICTION(S): Other current convictions listed under different cause numbers used in calculating the offender score are (list offense and cause number):

2.3 CRIMINAL HISTORY: Prior convictions constituting criminal history for purposes of calculating the offender score are (RCW 9.94A.525):

[ ] Criminal history is attached in Appendix B.

[] One point added for offense(s) committed while under community placement for count(s) \_\_\_\_

#### 2.4 SENTENCING DATA:

Sentencing Data	Offender Score	Seriousness Level	Standard Range	Enhancement	Total Standard Range	Maximum Term
Count I	0	Ш	1 TO 3 MONTHS		1 TO 3 MONTHS	10 YRS AND/OR \$20,000
Count						
Count						
Count						

[ ] Additional current offense sentencing data is attached in Appendix C.

#### 2.5 EXCEPTIONAL SENTENCE (RCW 9.94A.535):

[ ] Substantial and compelling reasons exist which justify a sentence above/below the standard range for Count(s) \_\_\_\_\_\_. Findings of Fact and Conclusions of Law are attached in Appendix D. The State [ ] did [ ] did not recommend a similar sentence.

#### **III. JUDGMENT**

#### IV. ORDER

IT IS ORDERED that the defendant serve the determinate sentence and abide by the other terms set forth below.

#### 4.1 RESTITUTION AND VICTIM ASSESSMENT:

- [ ] Defendant shall pay restitution to the Clerk of this Court as set forth in attached Appendix E.
- [ ] Defendant shall not pay restitution because the Court finds that extraordinary circumstances exist, and the court, pursuant to RCW 9.94A.753(2), sets forth those circumstances in attached Appendix E.
- [X] Restitution to be determined at future restitution hearing on (Date) \_\_\_\_\_\_ at \_\_\_\_\_m. [X] Date to be set.
  - Defendant waives presence at future restitution hearing(s).
  - ] Restitution is not ordered.

Defendant shall pay Victim Penalty Assessment pursuant to RCW 7.68.035 in the amount of \$500

- 4.2 OTHER FINANCIAL OBLIGATIONS: Having considered the defendant's present and likely future financial resources, the Court concludes that the defendant has the present or likely future ability to pay the financial obligations imposed. The Court waives financial obligation(s) that are checked below because the defendant lacks the present and future ability to pay them. Defendant shall pay the following to the Clerk of this Court:
  - (a) [ ] \$\_\_\_\_\_, Court costs; [ ] Court costs are waived; (RCW 9.94A.030, 10.01.160)
  - (b) [ ] \$100 DNA collection fee; [ ] DNA fee waived (RCW 43.43.754)(crimes committed after 7/1/02);
  - (c) [ ] \$\_\_\_\_\_, Recoupment for attorney's fees to King County Public Defense Programs; [\_\_\_]Recoupment is waived (RCW 9.94A.030);
  - (d) [ ] \$\_\_\_\_\_, Fine; [ ]\$1,000, Fine for VUCSA; [ ]\$2,000, Fine for subsequent VUCSA; [ ]VUCSA fine waived (RCW 69.50.430);
  - (e) [ ] \$\_\_\_\_\_, King County Interlocal Drug Fund; \_\_\_\_Drug Fund payment is waived; (RCW 9.94A.030)
  - (f) []\$\_\_\_\_\_, State Crime Laboratory Fee; [] Laboratory fee waived (RCW 43.43.690);
  - (g) [] \$\_\_\_\_\_, Incarceration costs; [] Incarceration costs waived (RCW 9.94A.760(2));
  - (h) [ ] \$\_\_\_\_\_, Other costs for: \_\_\_\_\_
- 4.3 PAYMENT SCHEDULE: Defendant's TOTAL FINANCIAL OBLIGATION is: \$ \_\_\_\_\_\_\_. The payments shall be made to the King County Superior Court Clerk according to the rules of the Clerk and the following terms: []Not less than \$\_\_\_\_\_\_ per month; [] On a schedule established by the defendant's Community Corrections Officer or Department of Judicial Administration (DJA) Collections Officer. Financial obligations shall bear interest pursuant to RCW 10.82.090. The Defendant shall remain under the Court's jurisdiction to assure payment of financial obligations: for crimes committed before 7/1/2000, for up to ten years from the date of sentence or release from total confinement, whichever is later; for crimes committed on or after 7/1/2000, until the obligation is completely satisfied. Pursuant to RCW 9.94A.7602, if the defendant is more than 30 days past due in payments, a notice of payroll deduction may be issued without further notice to the offender. Pursuant to RCW 9.94A.760(7)(b), the defendant shall report as directed by DJA and provide financial information as requested.
  - [] Court Clerk's trust fees are waived.
  - $[\times]$  Interest is waived except with respect to restitution.

З (months) days on count 1 : months/ days on count ; months/ days on count This term shall be served: in the King County Jail or if applicable under RCW 9.94A.190(3) in the Department of Corrections. [ ] in King County Work/Education Release subject to conditions of conduct ordered this date. [ ] in King County Electronic Home Detention subject to conditions of conduct ordered this date. For burglary or residential burglary offense, before entering Electronic Home Detention, 21 days Г must be successfully completed in Work/Education Release. [ ] The terms in Count(s) No. are consecutive/ concurrent. This sentence shall run [ ]CONSECUTIVE 🔀 CONCURRENT to the sentence(s) in cause 05-1-06886-4 SEA The sentence(s) herein shall run [ ]CONSECUTIVE [ ]CONCURRENT to any other term previously imposed and not referenced in this order. Credit is given for X 45 day(s) served [ ] days determined by the King County Jail solely for confinement under this cause number pursuant to RCW 9.94A.505(6). [ ] Jail term is satisfied; defendant shall be released under this cause. ALTERNATIVE CONVERSION PURSUANT TO RCW 9.94A.680: days of confinement are hereby converted to: days/ hours community service under the supervision of the Department of Corrections to [] be completed: [ ] on a schedule established by the defendant's Community Corrections Officer; or [ ] as follows: [ ] Alternative conversion was not used because: [ ] Defendant's criminal history, [ ] Defendant's failure to appear, [ ] Other: 4.5 COMMUNITY [ ]SUPERVISION, for crimes committed before 7-1-2000, [ ]CUSTODY, for crimes committed on or after 7-1-2000, is ordered pursuant to RCW 9.94A.545 for a period of 12 months. The defendant shall report to the Department of Corrections within 72 hours of this date or of his/her release if now in custody; shall comply with all the rules, regulations and conditions of the Department for supervision of offenders (RCW 9.94A.720); shall comply with all affirmative acts required to monitor compliance; shall not possess any firearms or ammunition; and shall otherwise comply with terms set forth in this sentence. [ ] The court finds that chemical dependency contributed to this offense justifying treatment conditions imposed herein (RCW 9.94A.607). [ ] Appendix F, Additional Conditions is attached and incorporated. 4.6 NO CONTACT: For the maximum term of 3 years, defendant shall have no contact with 15400 15 Av. 3. # C-24 (Burniew) 4.7 DNA TESTING. The defendant shall have a biological sample collected for purposes of DNA identification analysis and the defendant shall fully cooperate in the testing, as ordered in Appendix G. [ ] HIV TESTING: For sex offense, prostitution offense, drug offense associated with the use of hypodermic needles, the defendant shall submit to HIV testing as ordered in Appendix G. 4.8 [ ] OFF-LIMITS ORDER: (known drug trafficker) Appendix I is an off limits order that is part of and incorporated by reference into this Judgment and Sentence. 4.9 [ ] SEX OFFENDER REGISTRATION: (sex offense conviction) Appendix J covering sex offender registration, is attached and incorporated by reference into this Judgment and Sentence. Jul 8, 2005 Date: TUDGI FRLICK Print Name: Approved as to form: Presented by: <sup>#</sup> 29940 Deputy Prosecuting Attorney, WSBA# Attorney for Defendant, WSBA# 2/259 Print Name: SCOTT LES Print Name:

4.4 CONFINEMENT ONE YEAR OR LESS: Defendant shall serve a term of confinement as follows,

\_by\_

a.m./p.m.:

commencing: 🔀 immediately; [ ] (Date): \_

# BEST AVAILABLE IMAGE POSSIBLE

DEFENDANT'S SIGNATURE RIGHT HAND DEFENDANT'S ADDRESS: FINGERPRINTS OF: Not CHAD WAYNE HURN JUL\_0 8 2005 ATTESTED BY: BARBARA MINER, DATED UDERIOR COURT CLERK BY COUNTY SUPERIOR COURT JUDGI ING DEPUTY CLERK CERTIFICATE OFFENDER IDENTIFICATION S.I.D. NO. WA16205493 I, CLERK OF THIS COURT, CERTIFY THAT THE ABOVE IS A TRUE COPY OF THE DOB: APRIL 6, 1977 JUDGEMENT AND SENTENCE IN THIS ACTION ON RECORD IN MY OFFICE. SEX: M DATED : RACE: W CLERK

BY:

DEPUTY CLERK

### SUPERIOR COURT OF WASHINGTON FOR KING COUNTY

)

STATE OF WASHINGTON,

Plaintiff,

V\$.

CHAD WAYNE HURN

Defendant,

No. 05-1-07332-9 SEA

APPENDIX G ORDER FOR BIOLOGICAL TESTING AND COUNSELING

#### (1) DNA IDENTIFICATION (RCW 43.43.754):

The Court orders the defendant to cooperate with the King County Department of Adult Detention, King County Sheriff's Office, and/or the State Department of Corrections in providing a biological sample for DNA identification analysis. The defendant, if out of custody, shall promptly call the King County Jail at 296-1226 between 8:00 a.m. and 1:00 p.m., to make arrangements for the test to be conducted within 15 days.

#### (2) I HIV TESTING AND COUNSELING (RCW 70.24.340):

(Required for defendant convicted of sexual offense, drug offense associated with the use of hypodermic needles, or prostitution related offense.)

The Court orders the defendant contact the Seattle-King County Health Department and participate in human immunodeficiency virus (HIV) testing and counseling in accordance with Chapter 70.24 RCW. The defendant, if out of custody, shall promptly call Seattle-King County Health Department at 205-7837 to make arrangements for the test to be conducted within 30 days.

If (2) is checked, two independent biological samples shall be taken.

Date: July K, 2005

JUDGE, King County Superior Court

# IN THE COURT OF APPEALS FOR THE STATE OF WASHINGTON DIVISION I

)
) ntiff, )
)
)
)
ndant )

NO. 71813-4-I

AFFIDAVIT OF SERVICE

On July 30, 2015, the undersigned for Defendant, Chad Hurn, delivered, served, sent and otherwise transmitted a copy of the, Cause No. 73097-5-I (Court of Appeals, Division I, for the State of Washington), by depositing in the mail of the United States of America, postage prepaid, the *Appellate Brief* relating to the above referenced case number, and/or by e-mail, personal delivery, <u>attorneys' messenger</u> <u>services</u>, addressed to the following: Jennifer Joseph King County Prosecutor's Office 516 3rd Ave Ste W554

Seattle WA 98104-2362 I certify under penalty of perjury under the laws of the State of Washington that the above statements are true and correct and that I am eighteen years of age and a resident of the State of Washington.

DATED this <u>30</u> day of <u>July</u>, 2015.

/ARCI SM