Article Title: Oregon State vs Stephen ANGUS (Motion to Exclude FP Evidence+ Judge Ruling)

Origin: State of Oregon Circuit Court for Lane County

Date Published: 2010-07-02

Author: Judge ZENNACHE

Article's Subject Matter:

Two articles were submitted for review, one being the application by ANGUS Legal Defence citing ACE-V as being non-scientific, no error rates available, and that ACE-V was relatively novel in origin.

Judge rules that ACE-V was a valid scientific method used for past 30 years, that there was widespread acceptance of ACE-V and fingerprint evidence in general. And that no court (after appeal) has ever thrown out fingerprint evidence admissibility.

Key Points in Article

- Defence Application for Daubert Hearing centered around ACE-V not being Scientific
- Method not Scientific Enough to qualify as a Validated Method
- Error rate not available
- No clear case law in Oregon stating ACE-V method is admissible
- ACE-V not validated by Scientists
- FP examiner not certified by IAI
- Fingerprint Evidence is entirely subjective
- Reviewer or Verifier may know the prior analysts conclusions (bias)

- Judge ruled ACE-V is an acceptable scientific method
- Citied wide-spread acceptance of method for at least last 30 years
- Stated ACE-V method is a very subjective method
- ACE-V had built in checks such as verification, and defense opportunity to self examine
- Error rate (Landenberg Study) cited false positives low values …Cole stated 0.5% in a quoted article
- IAI Swgfast group have established training guidelines for examiners
- Oregon courts have long allowed and relied upon fingerprint evidence
-

Fallacies and Issues

- Judge stated "*ACE-V is a very broad framework that relies heavily on the experience, training and skill of the examiner. It is therefore a very subjective process.*

This statement obviously opens a host of questions regarding the subjective nature of the opinion of the examiner. This has already been seen in some cases where the examiner has not been allowed to present "absolute" evidence in the form of the individualization statement, but must rely on presenting the scientific process, and agreement between the unknown and the known, so that the court layperson may make his/her own opinion.

<<Application to Exclude Follows this Page>>

<<Judge's ruling Follows the Motion to Exclude>>

Rosalind M. Lee (OSB 055566)
Middleton & Lee, P.C.
245 East 4th Ave.
Eugene, OR 97401
Tel: (541) 683-2506
Fax: (541) 683-3149
rlee@middletonlee.net

Of Attorneys for Defendant
Stephen Angius

IN THE CIRCUIT COURT FOR THE STATE OF OREGON

FOR LANE COUNTY

STATE OF OREGON,

Plaintiff,

vs.

STEPHEN ANGIUS,

Defendant.

Case No. 200924231

MOTION IN LIMINE TO EXCLUDE FINGERPRINT EVIDENCE

OEC 104 Hearing Requested

COMES NOW DEFENDANT Stephen Angius, by and through counsel Middleton & Lee, P.C. and Rosalind M. Lee, asking this court for an Order excluding evidence of any fingerprints offered by the government on the grounds that the fingerprint method employed in this case, ACE-V, is not generally accepted in the scientific community, not validated by scientific research, and on the further grounds that there is no generally accepted method for reporting and testifying as to the results of an ACE-V analysis.

In the alternative, the defense moves to exclude any evidence or testimony, opinion or otherwise, that evidence of fingerprints offered by the government in this case are a 100% match

to Mr. Angius; that fingerprint analysis has a zero error rate; and that fingerprints offered by the government can be identified as Mr. Angius's to the exclusion of all others.

This motion is made on the further grounds as set forth in the Memorandum of Points and Authorities in Support of Defendant's Motion in Limine to Exclude Fingerprint Evidence, filed with this motion and incorporated by reference herein.

References
OEC 104
OEC 401
OEC 403
OEC 702
State v. Brown, 297 Or 404 (1984)
State v. O'Key, 321 Or 285 (1995)
Daubert v. Merrell Dow Pharmaceuticals, 509 US 579 (1993)

DATED: May 3, 2010

Respectfully Submitted,

Middleton & Lee, P.C.

Rosalind M. Lee
Of Attorneys for Defendant Angius

//
//
//
//
//
//
//

Rosalind M. Lee (OSB 055566)
Middleton & Lee, P.C.
245 East 4th Ave.
Eugene, OR 97401
Tel: (541) 683-2506
Fax: (541) 683-3149
rlee@middletonlee.net

Of Attorneys for Defendant
Stephen Angius

IN THE CIRCUIT COURT FOR THE STATE OF OREGON

FOR LANE COUNTY

STATE OF OREGON, Plaintiff, vs. STEPHEN ANGIUS, Defendant.	Case No. 200924231 MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT OF MOTION IN LIMINE TO EXCLUDE FINGERPRINT EVIDENCE OEC 104 Hearing Requested

//

//

//

//

//

//

//

I. Introduction

> "No particular reason of logic or good sense exists to immunize particular areas or principles simply on the basis of longevity or the fact that their introduction antedated imposition of [a] new standard. Supposedly valid 'science' has not infrequently been unmasked."

State v. O'Key, 321 Or 285, 293 (1995).

To the astonishment of many in the forensic science community, in August of 2009 the National Academy of Sciences [hereinafter "NAS"] issued a report calling into question the validity of how fingerprint evidence is analyzed using the ACE-V method, how the results are reported, and how forensic examiners testify as to their conclusions in court.[1] In short, NAS effectively pulled the rug out from under decades of legal reliance on the validity and strength of fingerprint evidence.

As to fingerprints, the bottom line of the NAS report was this: after an exhaustive review of the relevant scientific literature, there is no scientific evidence that supports the validity of the ACE-V method of fingerprint analysis, the method used in this case. The report went on to identify further failings the ACE-V method: that the "method is not specific enough to qualify as a validated method…[it] does not guard against bias; is too broad to ensure repeatability and transparency; and does not guarantee that two analysts following it will obtain the same results." NAS Report at 142.

One implication of the NAS Report is that the scientific community recognizes that there is no scientific justification for the testimony given by analysts when reporting their results. Specifically, analysts may no longer testify that fingerprints have a zero error rate; that the analyst is 100% certain of his or her conclusions; and that a known and unknown fingerprint match. Heidi Eldridge, *Perspectives from the NAS Report Conference at ASU*, IDentification

---

[1] *See* National Academy of Sciences, *Strengthening Forensic Science in the United States: A Path Forward*, http://www.nap.edu/openbook.php?record_id=12589&page=1 (last visited April 26, 2010) [hereinafter NAS Report]. The report discusses multiple topics in forensic science. The relevant portion of the NAS Report regarding fingerprints is attached hereto as Exhibit A, and incorporated by reference herein.

News at 8 (June-July 2009). A copy of that article is attached hereto as Exhibit B and incorporated by reference herein. As noted by Ms. Eldridge in response to the NAS findings: "[w]e can't say what we used to say and we can't yet say what we will say. What do we say in the meantime? What do we do? How do we achieve consistency when everyone is feeling their way alone in the dark?" *Id.*

Defendant Stephen Angius is charged with burglary and theft. The defense expects the state to offer at the trial in the above matter evidence that two fingerprints found on items in the complainant's apartment belong to Mr. Angius. For the reasons stated below, the defense objects to the introduction of this evidence.

II. Law and Argument

A. The Court Should Exclude the Fingerprint Evidence in this Case because there is No Scientifically Valid, Generally Accepted Method for Analyzing Fingerprint Evidence and Testifying about the Results of the Analysis

To be admissible scientific evidence must be relevant, helpful to the jury, and the probative value of the evidence must not be substantially outweighed by its prejudicial effect. *O'Key*, *supra*, 321 Or at 298-99 *citing* OEC §§ 401, 402, 702. The court must evaluate the probative value of the offered evidence, determine whether the evidence will assist or impair the trier of fact, and assess whether justice is best served by admitting or excluding the evidence. *State v. Brown*, 297 Or 404, 409 (1984). To make these determinations courts consider multiple overlapping factors when determining whether to admit scientific evidence. *O'Key*, *supra*, 321 Or at 299 *citing Brown*, 297 Or at 409.

1. As the Proponent of the Evidence, the State Has the Burden of Proving the Fingerprint Evidence in this Case is Admissible

The state has the burden of proof to show that the fingerprint evidence in this case is admissible. Kirkpatrick, *Oregon Evidence* (5th ed.) at 609. An exception to the general rule that

the proponent of scientific evidence has the burden to show that the evidence is admissible is if there exists a previous judicial ruling or statute announcing the admissibility of a particular type of scientific evidence. *Id.* However, "in the absence of a clear case, a case for judicial notice, or a case of *prima facie* legislative recognition, trial courts have an obligation to ensure that proffered expert testimony that a court finds possesses significantly increased potential to influence the trier of fact as 'scientific' assertions is scientifically valid." *O'Key, supra*, 321 Or at 293. There is no clear case or rule in Oregon holding that the ACE-V method of fingerprint analysis is admissible.

According Kirkpatrick's *Oregon Evidence* (5th ed.), the court in *State v. Smith*, 128 Or 515, 526 (1929) "approved" fingerprint evidence as scientific evidence. Kirkpatrick, *Oregon Evidence* (5th ed.) at 612. Uncharacteristically, Kirkpatrick overstates the holding of *Smith*. The opinion in *Smith* is an analysis of the Habitual Criminal Act, Chapter 334, General Laws of Oregon, 1927. The entire discussion by the court about fingerprint evidence is as follows: "[n]either is there merit in the assignment relating to the finger-prints admitted into the record as evidence, for the purpose of identifying the accused: Underhill's Crim. Ev. (3 ed.) p.1133." *Smith*, 128 Or at 526. Nothing in the opinion indicates the basis of the defendant's objection regarding the fingerprint evidence; whether any evidence was heard by the trial court on the issue of fingerprints, what legal standard the court applied when admitting the fingerprint evidence; and whether the Supreme Court was basing its decision on scientific validity of fingerprint evidence.

Furthermore, there is no way to tell from the opinion whether the method used to analyze the fingerprints in *Smith* was the same method as used in this case. Indeed, the method used in this case, ACE-V, came into use in the late 1950's, so it is most likely the evidence in *Smith* was analyzed using a different method. *See* NAS Report at 137.

Finally, a reasonable inference from the opinion in *Smith* is that the fingerprint evidence in that case was used to compare two known fingerprint standards taken from the defendant. The

state would rely on this evidence to show that the defendant was the same person who suffered the prior conviction used to increase the sentence for the instant offense. The fingerprint evidence in the instant case compares fingerprints from known and unknown sources.

The holding in *Smith* cannot be used for the proposition that fingerprint evidence has been approved. As a result, because the particular type of scientific evidence in this case has not been approved either by statute or by a prior appellate decision, the government has the burden of proof to show that the fingerprint evidence in this case is admissible.

2. Fingerprint Evidence is Inadmissible under the Standards of *Brown* and *O'Key*

The Oregon Supreme Court has identified no fewer than twenty-one factors for trial court to consider when determining whether to admit scientific evidence. *See O'Key*, *supra*, 321 Or at 299-300 *citing State v. Brown*, 297 Or 404, 409 (1984). These factors overlap and are neither exclusive nor mandatory. *Id.* at 300 (citation omitted). Rather, these factors provide a framework for the trial court in determining the admissibility of scientific evidence.

As detailed below, applying these factors to the ACE-V method of fingerprint analysis shows that this method is not generally accepted in the scientific community, is based entirely on the subjective judgment of the analyst, has no known error rate—even though errors are committed, has no standards for uniform application of the method, and has no safeguards to prevent errors. The Court should exclude the fingerprint evidence in this case.

a) The ACE-V Method of Fingerprint Analysis is Not Generally Accepted in the Relevant Scientific Community

This factor is described in *Brown* as whether the technique is generally accepted in the field. *Brown*, *supra*, at 409 While those who conduct fingerprint analysis accepted the ACE-V method of fingerprint comparison, the relevant field does not include just those people who use the technique. Indeed, the relevant scientific community is the greater group of forensic scientists who evaluate scientific techniques to determine their validity. The NAS report was

drafted by a committee of scientists, judges, law professors and an attorney. *See* NAS report at v. This group, the Committee on Identifying the Needs of the Forensic Science Community (hereinafter "NAS Committee"), included forensic scientists from law enforcement agencies, professors of forensic science, and academics in related scientific fields such as statistics, chemistry, physics, and chemical engineering. *Id.*

The NAS Committee is not the first to express doubts about the scientific validity of fingerprint evidence. Fissures in the scientific community have been appearing for at least a decade. In 1999 the National Institute of Justice recognized that there was no validation for many of the underlying assumptions of fingerprint analysis. *See* National Institute of Justice, *Forensic Sciences: Review of Status and Needs*, http://www.ncjrs.gov/pdffiles1/173412.pdf at 29 (last visited April 30, 2010)(noting that the theoretical basis for assuming that fingerprints are unique to an individual "has had limited study and needs a great deal more work..."). *See also*, Simon A. Cole, *More than Zero: Accounting for Error in Latent Fingerprint Identification*, 95 J. Crim L. & Criminology (2005); Robert Epstein, *Fingerprints Meet Daubert: The Myth of Fingerprint "Science" Is Revealed*, 75 S. Cal. L.R. 605, 656 (2002).

Even prior to the NAS Report courts around the country have excluded testimony regarding fingerprint evidence because of the lack of validation for the method. *See, e.g.*, *Maryland v. Rose*, Baltimore Cty. Case No. K06-0545 (2008) *citing New Hampshire v. Langil*, No. 05-5-1129 (Sup. Ct. Rockingham Jan. 19, 2007); *Jacobs v. Virgin Islands*, 53 F Appx 652, 652 (3d Cir 2002); *U.S. v. Parks*, No. CR-91-358-JSL (CD Cal Dec. 10, 1991).

The ACE-V method of fingerprint analysis is not generally accepted in the scientific community as a validated, verifiable method of identifying a person from a latent print. From the NAS report one could reasonably infer is that the scientific community believes that fingerprint evidence can be salvaged, but not before scientist complete a great deal of peer-reviewed research and develop standardized methodology that is uniformly accepted and used. *See* Eldridge, *supra*, at 12.

b) Whether the Theory or Technique Can be and Has Been Tested

This factor asks the court to consider whether the scientific technique has been validated. The court in *O'Key* equates this factor with the factor from the *Brown* opinion that asks "whether there are other experts to test and evaluate the technique." *O'Key*, 321 Or at 303.

The ACE-V method has not been validated by scientists. NAS at 143. Because there is no uniform method of applying the ACE-V method, it cannot be tested. *See* NAS Report at 143. First, scientists must create a uniform method for applying the ACE-V method, then that method could be tested.

c) The Expert's Qualification and Stature

EPD Forensic Analyst Heidi Eldridge conducted the fingerprint analysis in this case. According to her CV, Ms. Eldridge has been trained to conduct fingerprint comparisons by various law enforcement sources. Her most recent training in analyzing fingerprints was in February, 2009. According to her CV, Ms. Eldridge is not a certified fingerprint examiner.

Ms. Eldridge's results were reviewed by Analyst Pope. The defense has requested the CV of this analyst, but at the time of filing this motion, the defense has yet to receive it.

d) The Use Which has been Made of the Technique

The ACE-V method of fingerprint analysis has been in use since the late 1950s. Fingerprint examiners have used this technique, for better and for worse, for decades in forensic applications.

e) The Potential Rate of Error

A hallmark of admissible scientific evidence is a known error rate. Although for years fingerprint analysts have testified that fingerprint analysis has a "zero" error rate, there is no support for that claim.

A Portland resident, Brandon Mayfield, was accused of participating in a bombing in Madrid based on a fingerprint the FBI "matched" to one of his. He was arrested on a material witness warrant, interrogated, and detained. After multiple reviews of the known and unknown

fingerprints, Mr. Mayfield was fully exonerated. *See* Jennifer L. Mnookin, *The Achilles' Heel of Fingerprints*, Washington Post, at A27 (May 29, 2004). A copy of the article is attached as Exhibit C hereto and incorporated by reference herein.

Without question, fingerprint examinations can result in errors. Indeed, to become certified as a latent print examiner by the International Association for Identification an applicant must correctly compare only 12 out of 15 latent prints as part of the certification testing. The Latent Print Certification requirements are attached hereto as Exhibit D and incorporated by reference herein. That an individual examiner need not have a "zero error rate" before becoming a certified fingerprint examiner belies any assertion that fingerprint analysis has a zero error rate.

Finally, the NAS report concludes "[e]rrors can occur with any judgment-based method, especially when the factors that lead to the ultimate judgment are not documented." NAS Report at 143. The report then characterizes assertions of a zero error rate by trained fingerprint analysts as "unrealistic."

People make errors when conducting fingerprint analysis. There is no research that provides a generally accepted rate that illustrates just how often these errors are made.

f) The Existence of Specialized Literature

This factor is further defined as whether the theory or technique has been subject to peer review and publication. *O'Key*, 321 Or at 304. Peer reviewed articles appear in journals where the assertions and results reported in the article are first reviewed by a panel of experts in the field to assess the validity of the author's methods and results.

While there have been hundreds, if not thousands of articles devoted to the subject of the ACE-V methodology, the defense is aware of no peer-reviewed published article that validates the ACE-V method, the assertion that fingerprint analysis has a zero error rate, or that a person can be uniquely identified from latent prints.

g) The Novelty of the Invention

The ACE-V method has been used since at least 1959. NAS Report at 137.

h) The Extent to Which the Technique Relies on the Subjective Interpretation of the Expert

Fingerprint analysis is entirely subjective. NAS Report at 141. There are no standards for where a person should look on a fingerprint, or how many places one should look on a fingerprint, or even how frequently certain characteristics appear in fingerprints. The conclusion by the analyst is based entirely on her or his subjective assessment. NAS Report at 140.

i) The Existence and Maintenance of Standards Governing Its Use

There are no uniform standards for analyzing fingerprints. According to the NAS report, "the ACE-V method does not specify particular measurements or a standard test protocol..." NAS Report at 139. Several professional organizations have proffered standards, but none of these standards have been validated, nor are they mandatory. NAS Report at 136-37.

j) Presence of Safeguards in the Characteristics of the Technique

The only safeguard in the ACE-V analysis is in the final step where the examiner's results are reviewed by another person. However, there are no standards for how the review is conducted. For example, the reviewer may know the prior analyst's conclusions, *see* NAS Report at 138, and may know the details of the investigation. There are no standards for documenting the steps the reviewer took. The single safeguard in the ACE-V method is cold comfort.

k) Analogy to Other Scientific Techniques whose Results are Admissible

Another forensic science that relies on individual characteristics is forensic DNA analysis. Like fingerprints, a basic presumption in forensic DNA analysis is that the make-up of a DNA molecule is unique to each individual. Also like fingerprints, DNA analysis relies on comparing certain parts of the DNA molecule and looking for similarities. *See* NAS Report at 139. The similarities to DNA evidence ends there.

//

//

DNA analysis looks at the same 13 parts of the DNA molecule every time. There is no such requirement with fingerprint analysis. NAS Report at 139. Furthermore, DNA analysis is reported in probabilities: *i.e.*, what is the likelihood that someone other than the suspect is the source of the DNA. The probabilities calculated in DNA analysis are based on population frequencies. Fingerprint examiners call a "match" based on their subjective judgment, not because of any known frequency of a fingerprint characteristic.

DNA evidence is widely admissible because the underlying science has been validated; because there are standard protocols; and there is a known error rate testified to by expert witnesses. Fingerprint evidence has none of those hallmarks.

l) The Extent to Which the Basic Data are Verifiable by the Court and Jury

Nothing in the Oregon cases describes what this factor means. Because the ACE-V method is a subjective call, theoretically anyone can look at two fingerprints and decide for themselves whether they think there is a match or not.

m) The Probative Significance of the Evidence in the Circumstances of the Case; and

Mr. Angius is charged with burglarizing an apartment. Eugene Police Officer Pope lifted nine latent fingerprints from the scene. Of the nine prints, EPD identified two as belonging to Mr. Angius: one on a disc for a video game; and another on a plastic holder for video games. Both of these items were found in the burglarized apartment. Although the state will argue that Mr. Angius subsequently sold DVDs and games that were stolen from the apartment, the defense is aware no other evidence that places Mr. Angius in that apartment.

The fingerprint evidence in this case is certainly probative in that without the evidence, the state cannot meet their burden of proof on the burglary. However, just because the evidence is necessary to the state, that reason is not enough to overlook the current scientific status of fingerprint analysis.

n) The Care With Which the Technique was Employed in this Case.

The defense has requested the manual used by EPD when conducting the ACE-V method. At the time of filing , the defense has not received the manual. The defense has no further evidence of how Ms. Eldridge conducted the analysis in this case.

3. The Court Must Exclude Evidence of Fingerprints in this Case Because of the Highly Persuasive Power of Fingerprint Evidence

When jurors are presented with scientific evidence, that evidence has an "unusually high degree of persuasive power." *"O'Key, supra*, 321 Or at 292. The popular understanding of fingerprints is that fingerprints are unique and if someone says fingerprints match, then they match. What we now know is that none of those conclusions have been validated, and such testimony is not based on science. Because the scientific community is essentially in a holding pattern researching and developing standardized methods for fingerprint analysis, any testimony to a jury about the fingerprint evidence in this case would improperly "enjoy the persuasive appeal of science without subjecting its propositions to the verification processes of science." *Id.* The ACE-V method is not validated science. The court must exclude the fingerprint evidence in this case.

III. Conclusion

For the above-stated reasons, the defense respectfully requests that the fingerprint evidence in this case be excluded.

DATED: May 3, 2010

Respectfully Submitted,

Middleton & Lee, P.C.

Rosalind M. Lee
Of Attorneys for Defendant Stephen Angius

IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR LANE COUNTY

THE STATE OF OREGON

Plaintiff,

vs.

STEPHEN ANGIUS,

Defendant.

Case No. 200924231

OPINION RE: DEFENDANT'S MOTION TO EXCLUDE FINGERPRINT EVIDENCE

Introduction:

The issue before this court is whether to allow a fingerprint examiner employed by the Eugene Police Department (EPD) to testify that two latent fingerprints found in a victim's apartment are the same as the Defendant's. In particular, the Defendant asserts that such testimony is not scientifically valid and therefore is inadmissible under the standards established in *State v. O'Key*, 321 Or 285 (1995).

In years past, and perhaps in the future, some might think such a challenge frivolous. The use of fingerprints as a means of identifying individuals has been part of the judicial system for over one-hundred years. Prior to the development of DNA testing in its current form, fingerprint identification was considered by many to be the "gold standard" in forensic sciences.

To the astonishment of many, in August of 2009 the National Academy of Sciences (NAS) issued a report which found that the ACE-V method[1] of fingerprint identification - the predominant methodology used throughout the world - had not been scientifically validated in any study. NAS, *Strengthening Forensic Science in the United States: A Path Forward* (2009) [hereinafter NAS Report]. The NAS Report sent tremors though the fingerprint examiner community and has caused a great deal of examination of the techniques and claims of fingerprint examiners. In addition, it caused other forensic scientists, lawyers and courts to take a more rigorous look at the testimony of fingerprint examiners.

[1] ACE-V is an acronym which stands for Analysis, Comparison, Evaluation and Verification.

Analysis:

A. Is this scientific evidence?

As a threshold issue, the court must determine whether the testimony of a fingerprint examiner is scientific evidence. Oregon courts have avoided creating a precise definition of what is scientific evidence. *O'Key*, 321 Or at 290. Rather, they have chosen to state that scientific evidence is evidence that draws its convincing force from some principle of science, mathematics, and the like. *State v. Brown*, 297 Or 408 (1984). In this case, both parties agree that the proffered evidence is scientific evidence as that term is used above.

B. The Court's gate-keeping role:

Courts recognize that evidence perceived by lay jurors to be scientific in nature possesses significant increased potential to influence the trier of fact, and therefore should be supported by scientific validation. Thus, in the absence of a clear case, a case for judicial notice, or a case of *prima facie* legislative recognition, a trial court's job is to ensure that persuasive appeal is legitimate. The value of the proffered expert's testimony depends on the scientific validity of the general propositions utilized by the expert. The court must identify and evaluate the probative value of the proffered scientific evidence, consider how the evidence might impair rather than help the trier of fact, and decide whether truth finding is better served by exclusion or admission.

C. Proponent's burden

The party offering scientific evidence has the burden to establish is it admissible. They must establish admissibility by a preponderance of the evidence. To be admissible, scientific evidence must: (1) be relevant (Oregon Evidence Code 401 (OEC)); (2) possess sufficient indicia of scientific reliability and be helpful to the jury (OEC 702); and (3) have its probative value not substantially outweighed by its prejudicial value (OEC 403).

D. Relevancy:

Evidence is relevant if it has "any tendency to make the existence of any fact that is of consequence . . . more probable or less probable than it would be without the evidence. OEC 401; *see also State v. Cox*, 337 Or 477 (2004). In the case at hand, Defendant is charged with several burglaries and thefts from several residences. The State plans to offer testimony of an EPD fingerprint examiner that two (of nine) fingerprints found on items in one of the burglarized apartments matched Defendant's fingerprints. The state offers the evidence to prove that the defendant was at least being present in the one of the residences. Thus the evidence is clearly relevant, a fact both parties seem to agree upon.

F. Is the fingerprint evidence scientifically reliable and likely to be helpful to the jury:

In *State v. Brown*, the Oregon Supreme Court set forth list of factors that courts were to consider when deciding whether to allows the admission of scientific evidence. 297 Or 404 (1984). In *State v. O'Key*, 321 Or 285 (1995), the Oregon Supreme Court further refined that list, incorporating some of the factors adopted by the United States Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals*, 509 US 579 (1993). The *O'Key* Court noted that the list was "not intended to be taken as a mechanical checklist of foundational requirements." *O'Key*, 321 Or at 300. Rather, what is important is an analysis of each factor. *Id.* (citing *Brown*).

My consideration of the factors is as follows:

1. Testability of Falsifiability: The underlying theory in making identifications of individuals via friction ridge impressions is that each person has a unique and permanent set of friction ridges, that under certain circumstances when a person touches something an image of those ridges is left behind (latent prints) and that a trained observer can, by comparing latent prints to a known sample of an individual's print, determine whether the latent print matches the known print source.

There is wide spread understanding that friction ridges are formed on the hands and feet of human beings in utero. There is also widespread acceptance of the idea that absent scaring, the patterns of those ridges do not change during a person's life. There also seems to be wide spread acceptance of the notion that each person has a unique set of fingerprints. While these understandings are based on scientific principles, there is only a small amount of scientific studies that support these beliefs. *See* NAS Report, 144 & 144 n.34. However, in the over one hundred years that fingerprints have been used as a method to identify individuals, no two people have been found to have the same fingerprints. This is true despite numerous studies of identical twins (and others) studies looking for the same prints. Finally, even critics of the method seem to acknowledge that it is capable of correctly identifying a person. NAS Report, 142; *see also* Dr. Cole's testimony acknowledging such evidence may have probative value. However, even if uniqueness and permanence are presumed, that does not guarantee that prints from two different people are sufficiently different that they cannot be confused. NAS Report, 142.

The technique used to make latent print indentification is this case is referred to by the acronym ACE-V, which stands for Analysis, Comparison, Evaluation, and Verification. A detailed explanation of the process is set forth in Heidi Eldridge's affidavit and that description is incorporated herein by this reference. (Eldridge Aff. 2:20-5:11). ACE-V is a very broad framework that

relies heavily on the experience, training and skill of the examiner. It therefore is a very subjective process.

On the other hand, the technique has a built-in check, namely the verification where a "second opinion" is taken from a different examiner. Generally that examiner works through the ACE-V process himself to determine whether they agree with the conclusion of the first examiner. Further, unlike some other methods of testing, no part of the sample is destroyed, so the original latent prints are available for review by other examiners, including those hired by the defense. This method has been used extensively since the 1970s and presumably the results of individual examinations have been subject to the scrutiny of the litigation process tens of thousands of times. It is the framework used worldwide to make hundreds of thousands of comparisons every day.

2. Peer review and publication (the existence of specialized literature).

Both parties agree that there has been extensive literature about the use of fingerprints to identify people and about the use of the ACE-V technique in particular. The International Association for Identification (IAI) publishes the Journal of Forensic Identification which is dedicated to friction ridge identification. In addition to this specialized journal, there are numerous articles about fingerprinting in various law journals, forensic science journals, magazines and newspapers.

Unfortunately, not a lot of that literature has been has been directed at examining the scientific validity of the ACE-V technique. That may be the result of the fact that people generally considered fingerprint identification the "gold standard" of the forensic sciences. The only study addressing the accuracy of the ACE-V method that has been published after the NAS Report, was the Landenburg Performance Study.

3. The known or potential rate of error

It is true that there is not an agreed upon error rate for misidentification of fingerprints. And to be sure, any method so dependent on the subjective interpretations of the examiner is bound to have errors, and claims to the contrary are inaccurate. NAS Report, 143. However, 100% accuracy is not required for the evidence to be admissible.

The NAS Report also highlighted the fact that there were no adequate validation studies on the ACE-V methodology. NAS Report, 143. There are, however, numerous studies looking at errors and the likelihood of erroneous

associations. (*See* Amici Brief filed in *State of Maryland v. Bryan Keith Rose*, Case No. 03k06000545, 7 n.10-8 n.12 & 12 n.20 [hereinafter Amici Brief]). These studies support a conclusion that while the error rate has not been quantified, it is extremely low. Likewise the Landenberg study, while not technically a validation study, found fingerprint identifications made using the ACE-V methodology to be accurate and reliable. Dr. Simon Cole, defendant's expert witness and a leading critic of fingerprint identification, has estimated the false positive rate of .5%. Ms. Eldridge testified that some structured research and analysis of examiner testing (aka proficiency testing) have shown error rates of .2 to.4%. (*See also* AMCI Brief, 8 n.12).

Anecdotal evidence likewise suggests that the false positive rate is very low. Dr. Cole was able to indentify only 23 cases (22 prior to the Mayfield case) of false identifications using the fingerprints during the last decade. All but one of those cases involved an identification that was made based on a single latent print which had been distorted in some manner (the one case that did not involve a distorted single print involved fraud). Further, he testified that of the 155 Innocence Project cases he reviewed, only one involved some sort of fingerprint evidence that had been used originally against the accused.

4. Existence and maintenance of standards governing the use of fingerprint identification

The International Association for Identification (IAI) and the Scientific Working Group on Friction Ridge Analysis, Study and Technology (SWGFAST) both have established training guidelines for examiners. Both organizations also maintain standards for certification as a latent print examiner. Finally the ACE-V technique has been widely published. *See* NAS Report, 137 n.19. Further, SWGFAST has published documents detailing the "Standard for Conclusions and Standards for Documentation of ACE-V." Ms. Eldridge indicated that her agency follows the SWGFAST standards. Her agency also has its own procedural manual and has made changes to that manual in light of the NAS report (i.e. increasing the amount of documentation the examiner does showing her analysis).

5. The degree of the test's acceptance in the relevant scientific community.

What is the relevant scientific community? Is it just fingerprint analysts? Is it fingerprint analysts and other forensic scientists? Or is it fingerprint examiners, forensic scientists and social scientists? I believe that the relevant scientific community in regards to fingerprint or friction ridge skin identification is not limited to fingerprint analysts, but includes forensic scientists generally.

Having made that determination, I find that within the relevant scientific community, the ACE-V method enjoys general acceptance as leading to accurate results. To be sure, there are those in the community to have questions. (Defendant's Memorandum, 8:6-15 (discussing the NAS Report, National Institute of Justice (NIJ) Report and other articles)). While it is true that more can be done to sure up the scientific basis of the ACE-V methodology, even its harshest critics have acknowledged that correct matching of latent and known fingerprints is possible using the methodology.

6. The expert's qualifications and stature.

The qualifications of the State's expert witness, Ms. Heidi Eldridge, are set forth in her affidavit and supplemented slightly during the course of her testimony. (Eldridge Aff. 1:25-2:18). She is a self-described "fingerprint nerd" and I was impressed with her depth of knowledge of the field. I find that she is qualified based upon her training and experience to make fingerprint identifications using the ACE-V methodology.

7. The use that has been made of the test (including non-judicial uses)

The ACE-V methodology for identification of persons though latent fingerprints has been in use since the late 1970s. It has been used extensively by forensic scientists, law enforcement, and the courts. It is used throughout the world on a daily basis.

Moreover, fingerprints are used as a method of identification/ investigation in a wide variety of settings, including but not limited to professional licensing, getting concealed handgun permits, background checks for those wishing to coach children, identifying bodies, and in programs designed to ensure the recovery of children who are kidnapped.

8. The extent to which other courts admit the test into evidence.

Oregon courts have long allowed and relied upon fingerprint evidence. Over 80 yrs ago the Oregon Supreme Court summarily rejected a contention that it was error to allow such evidence to be used in a criminal case. *State v. Smith*, 128 Or 515 (1929). Grand Juries are allowed to consider reports from finger print technicians concerning the results of a fingerprint examination. ORS 132.320 (2). Courts are required to ensure that every person convicted of a Class A misdemeanor or felony has had his or her fingerprints taken. ORS 137.074. People on probation are generally required to submit to fingerprinting if asked by a probation officer. ORS 137.540 (1)(h). Fingerprint evidence is admissible to establish that a defendant has been previously convicted for purposes of imposing

a dangerous offender sentence. ORS 161.735(7). Finally, people requesting the expungement of their criminal charges are required to submit fingerprints. ORS 137.225 (2).

Even Oregon's leading evidence scholar, Dr. Laird Kirkpatrick, believes that the testimony of fingerprint analysis is admissible in Oregon Courts. LAIRD C. KIRKPATRICK, OREGON EVIDENCE 612 (5th ed. 2007).

Nationally, all but one court has allowed the admission of fingerprint evidence in a series of challenges that have arisen since 1999. (State's Mem. 8-9). In the one case where a trial court did not allow the admission of such evidence, *Maryland v. Bryan Rose*, the case was removed to Federal District Court and that court concluded the evidence was admissible. K06 0545 (Cir. Ct. Balt. Co. 2008); *U.S v. Rose*, 672 F. Supp. 723 (D. Md. 2009). The State also points out that the Maryland Court of Special Appeals (the appellate court that would have reviewed the state court decision in *Rose*) recently ruled in a different case that fingerprint evidence could be admitted into evidence. *Markum v. State of Maryland*, 189 Md. App. 140 (2009).

9. The novelty of the test

There is nothing new or novel about latent fingerprint identification. The first article regarding the use of fingerprints as a means of personal identification was written in 1880. It has been used widely in the United States since the turn of the century and, as mentioned earlier, has been generally accepted in Oregon Courts since 1929. And, also as mentioned above, the ACE-V methodology for identification of latent fingerprints has been widely used since the 1970s while some have suggested that essentially the same methodology (although not known as the ACE-V) had been in use since 1948. All the methods of latent fingerprint identification used relied on the skill and experience of the examiner to make comparisons of two sets of prints to decide whether or not they come from the same source.

10. The extent to which the test relies on the subjective interpretation of the examiner.

This test relies heavily on a number of subjective judgments of the examiner. During the Analysis phase, the examiner must make subjective decisions about a verity of things, including the clarity of the latent print, distortions and the reasons therefore, and methods for developing the prints. During the Comparison stage, the examiner must make subjective decision about what is or is not similar in the two fingerprints. Finally, during the Evaluation phase, the examiner must make the subjective decisions about whether, based on

his or her experience and review of the two prints, he or she is willing to "stake my professional reputation" on which of three conclusion he or she has drawn: identification, exclusion, or inconclusive. All of these subjective decisions are made by a second examiner during the Verification phase.

11. Presence of safeguards in the procedure

There are several significant safeguards in the process. First, and this is relatively new, examiners document their thinking as they go through each of the stages. Second, every examiner conclusion is reviewed by a second examiner during the validation portion of the procedure to see if that second examiner reaches the same conclusions as did the first examiner. Third, as mentioned above, the latent fingerprint and the print to which it was compared are available for review and independent evaluation by experts hired by the defense. Finally, the degree of similarity or dissimilarity between the two prints can be viewed by the jury – they can look at the two prints and make their own visual comparison of the prints.

12. Other factors.

The State's witness in this case, Ms. Eldridge, did a very good job of explaining the ACE-V technique in a manner that I expect the jury will be able to understand. The technique relies heavily on one of the oldest and most time honored methods of scientific study: visual observation and side by side comparison. The methodology utilizes portions of what is generally accepted as the "Scientific method" - namely the experiment, conclusion and replication steps. I was also impressed by how forthright Ms. Eldridge was in her testimony and expect that she will not overstate her conclusions and will answer all questions put to her honestly.

Having considered the factors set forth above, I find that testimony by Ms. Eldridge that the fingerprints found in the residence of one of the victims matches the Defendant's fingerprint based on her comparison pursuant to the ACE-V methodology of the latent prints with a known standard from the Defendant meets the helpfulness requirement of OEC 702.

G. Should the fingerprint evidence be excluded under OES 403?

Relevant evidence may be excluded under OEC 403 only if its persuasive force is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or because it is cumulative. This required the probative value of the evidence to be compared to the articulated reasons for exclusion and permits exclusion only if one or more of those factors substantially outweigh the probative value. *State v. Johanesen*, 319 Or 128 (1994).

The rule generally favors admission of evidence and places the burden on the party seeking exclusion of the evidence. *O'Key*, 321 Or at 320.

Defendant in this case argues that the testimony by Ms. Eldridge regarding her analysis and the fact that she believes that the fingerprint found in the apartment matches that of the Defendant is unfairly prejudicial. In essence, the Defendant's argument is that given the highly persuasive nature of fingerprint evidence, the fact that the defense will be able to point out the various perceived shortcomings of the ACE-V method of fingerprint analysis still will not be able to overcome the prejudicial effect. I reject the argument for several reasons. First, as set forth above, the evidence has enough validity that the jury can and should be able to consider it. Secondly, the jury will be able to consider the concerns that the defense has raised regarding the evidence and decide what effect, if any, those concerns have on the validity of Ms. Eldridge's testimony. Third, while I agree the evidence will be prejudicial to the defendant – i.e. harmful to his position that he is innocent – I do not believe that it is unfairly prejudicial. Evidence is unfairly prejudicial when it has an undue tendency to suggest a decision on an improper basis – commonly, although not always, an emotional one. *State v. Pinnell*, 311 Or 98 (1991). Evidence that prints matching Defendant's fingerprints were found in one of the victims' apartments is prejudicial because it derives its persuasive power from the ability to establish a fact of consequence and not from the suggestion of an improper basis for deciding the issues.

Conclusion:

Having considered all the above factors, I find that the state's proffered evidence regarding fingerprints may be presented to the jury for its consideration. I trust that the jury will be able to understand some of the limitations of the testimony and will be able to weigh the evidence appropriately.

Dated this 2nd day of July, 2010.

Judge Charles M. Zennaché
Circuit Court Judge