

Distortion versus Dissimilarity in Friction Skin Identification

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Introduction

For many years, a premise has been accepted in the field of friction skin identification that in order to have a valid identification, the print in question must be void of any dissimilarities. This information has been documented in a number of the classic texts on friction skin identification [1, 2]. However, this information only partially addresses the issue of dissimilarities. The other side of the coin is that dissimilarities will not be found in prints that are the same. This important fact is rarely addressed in literature on fingerprint identification.

The first question that needs to be explored is, what is a dissimilarity? *Webster's New World Dictionary* defines dissimilar as:

“Absence of similarity; not being the same; different”

This differs from distortion which is defined as:

“to modify so to produce an unfaithful reproduction; to change or misrepresent; to change the usual or normal shape, form, or appearance.”

Based upon these literal definitions, dissimilarities can only occur in prints that are not of the same origin. That is why during a latent print examiner's early training; he or she is taught that if dissimilarity is found during the comparison, there is not an identification.

Distortion, however, is commonly found in both latent and exemplar prints that have the same origin. Examples of distortion can be noted when occurring from any of the following conditions; overlaid prints, pressure reversals, background interference, slippage, or from any circumstance that would change or misrepresent the appearance or shape of one or both prints that are being compared. Dissimilarity and distortion are not interchangeable terms and the two concepts should not be confused.

The Problem

Because of the oversimplification as to how and when dissimilarity is possible as well as the confusion that exists with some traditional terminology, incorrect testimony concerning the identification of latent prints has resulted. For example, one confusing and ambiguous term sometimes used to describe distortion is the “explainable dissimilarity.”

In addition, dissimilarities are commonly referred to as ‘unexplainable dissimilarities.’

This terminology can and has caused confusion among both latent print examiners and lay persons.

I reviewed a court transcript from a murder trial where the attorneys and a latent print examiner repeatedly interchanged and confused the terms distortion, similarity, dissimilarity, unexplainable dissimilarity, and explainable dissimilarity. At one point, the defense attorney stated, “What you are saying by calling it an explainable dissimilarity is that the prints are different, but you have an excuse for it.” The examiner replied, “Yes, that's correct.” As a result, it became necessary to call in a latent print examiner from another agency to testify and support the identification [3].

In another case, the latent print examiner's failure to understand the concept of dissimilarities resulted in disaster during a homicide trial in California. The latent print examiner was asked if a dissimilarity were to be found in the latent print that had already been identified, would that cancel or invalidate the identification? The examiner responded that regardless of how many similarities are present, if there was an unexplainable dissimilarity, there would not be an identification. The defense then called in their own “expert witnesses,” two latent print examiners of questionable ethics, who pointed out areas of distortion in the prints referring to them as dissimilarities and testified that the prints were not the same.

The defendant was found not guilty. The latent print evidence, a palm latent found on a piece of duct tape that was used to cover the nose and mouth of an elderly female burglary/murder victim was the key evidence in the trial [4]. The identification has been reviewed by a number of I.A.I. Certified Latent Print Examiners and was found to be valid.

The incorrect concept that a dissimilarity is possible **regardless** of the number of similarities present has also been published in the text *Crime Scene Search and Physical Evidence Handbook*.

Discussion

I would suggest the correct answer to a question referring to the possibility of dissimilarities in a print that has been identified to an individual should be the following:

A dissimilarity would not and could not exist in this print because there is a sufficient number of matching characteristics to make an identification and dissimilarities only exist between two prints that are not the same.

The concept that a dissimilarity could exist regardless of how many similarities are found cannot be valid. If this were possible, then there would always be a possibility of a dissimilarity and a conclusive identification could never be made [6].

Cowger makes the statements “determination of identity is based on the presence of similarities, not the absence of dissimilarities” [7]. Clements also states that if a sufficient number of matching characteristics are found to make an identification, any dissimilarities would be explainable [8]. Both Cowger and Clements are using the term dissimilarities for distortion. However, they acknowledge that if there are sufficient matching characteristics to make an identification, the identification is valid regardless of distortion.

The Federal Bureau of Investigation said it best in their article, “Fingerprints Do Not Lie,” when they refuted a defense expert's claim that a latent print containing fourteen matching characteristics and three dissimilarities was not an identification. The article states, “FBI fingerprint experts state unequivocally that ***any two fingerprints possessing as many as 14 identical ridge characteristics, the number which the defense expert acknowledged when he testified concerning the fingerprint in question, would certainly contain no dissimilarities in the ridge formation.***”

It would be a most unusual occurrence to make a comparison where a latent print possessed all the ridge characteristics present in the exemplar. Because of this, it is common for defense attorneys to try and use this information as a defense strategy.

For example.

Question: Is the latent print the entire print as in the exemplars or is it just a partial?

Answer: It is a partial.

Question: So all the detail present in the exemplar is not present in the latent?

Answer: Yes, that's correct.

Question: So if a dissimilarity was present in the area outside the area depicted in the latent print, the area you cannot see, then you would not have an identification, would you?

*Answer: **This would not be possible.** A print containing this many matching characteristics is an identification and would not have any dissimilarities.*

Dissimilarities only occur in prints that are not the same.

If you were to answer yes, to this last question, then you should not have made an identification. When an identification is made, you are in fact saying that you found a sufficient number of matching characteristics present in the comparison to eliminate the possibility that anyone else could have been the donor of the latent print. To say it would

be possible to still have a dissimilarity is to say that there is insufficient detail to be certain of the identification.

Conclusion

Confusion exists among some latent print examiners who are interchanging the terms dissimilarities and distortion. Literature on friction skin identification rarely addresses the subject in any detail. The result of this confusion is a loss of credibility within the criminal justice system when latent print examiners cannot explain these concepts and defend their conclusions on the witness stand.

Similarities are used to establish identity, whereas dissimilarities establish that two prints are not the same. Once sufficient matching characteristics are found to establish identity, dissimilarities cannot and will not be found. Dissimilarities only occur in prints that are not the same.

Distortion alters the appearance of prints, sometimes interfering with the comparison. However, distortion is common in all prints regardless of whether or not they are one and the same. It is important that latent print examiners be trained and fully understand the concepts of similarities and dissimilarities and how dissimilarities differ from distortion prior to giving testimony as expert witnesses in the field of friction skin identification.

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9. *Federal Bureau of Investigation*, "Fingerprints Do Not Lie," *Law Enforcement Bulletin*, September 1969.

(Editor — I try to avoid overusing the JFI as a source of articles for reprinting. However, while retrieving the JFI technical report suggested by Kurt Kuhn, printed elsewhere in this issue, I stumbled on this article. I intended to reprint this article as soon as it was published in the JFI, but I simply forgot. My apologies to the readers of The Print, as I think this is a very significant piece of literature. The terminology and concepts should be essential learning requirements for all latent print examiners. This article is a comprehensive discussion of a topic the author first presented at the FBI's Latent Print Symposium in 1993. Thanks and congratulations to SCAFO's Past President, Bill Leo, for another outstanding educational presentation!)

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