

What is the Basis for a Handwriting Elimination?

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This paper reviews the basic elements necessary to eliminate an individual as having written a questioned body of writing based on that person's handwriting characteristics. In addition, a review of the pertinent literature and foundational basis necessary to reach such definitive opinions will be thoroughly discussed.

The essence of this paper is to research the literature regarding the elimination of a person as the author of handwriting by means of a handwriting examination, to delve into what may be the cause for an forensic document examiner's (FDE's) opinions relating to eliminations that are in error, and to delineate the criteria necessary to eliminate a writer based on established principles. The authors have observed over the years that some FDEs have either lacked sufficient training in what constitutes the basis for elimination or have not fully understood the criteria necessary to make that determination.

It has become apparent to the authors through their own case work, discussions at technical meetings, and general feedback from other qualified FDEs that elimination-type opinions are too frequently offered without a sound demonstrative basis for such opinions. In some instances we have observed that the eliminations are a product of insufficient training by the FDE offering the opinion; a poor understanding of the criteria necessary for an elimination; or, in some matters where training is proper, an improper application of the principle that the FDE had learned in training.

Although the determination of identification and elimination are on opposite ends of the opinion scale, the criteria needed to reach these opinions are considerably different. However, both are based on a writer's skill level; the characteristics, qualities, and features of the writing; the quantity and complexity of the examined writing; the full range of variation of the writer; and the occurrence of outside or accidental factors that can influence a writer and subsequently the writing.

To conclude that a known writer did not write a questioned handwriting, the FDE must determine that the known writer could not and did not write the questioned writing under any circumstances, including, but not limited to, intentional or accidental distortion, more than one writing style, writing position, drugs, or other transitory or permanent factors, etc.

In most instances involving signatures and short writings, the evidence in the writing is insufficient to make such a determination. The key element to eliminating a writer is for the FDE to fully understand that it is the combination of differences, taken collectively, that determines the truly significant differences that provide the basis for the elimination. The authors have noted that even minor variations in writing characteristics, qualities, and features have been deemed so significant and individualistic by some FDEs that they have maintained that these superficial differences are sufficient to eliminate a writer.

Background

What is the basis for eliminating a writer as a result of an examination of his/her writing characteristics? There appears to be some disagreement among forensic document examiners (FDEs) concerning what are the foundation and basic elements needed for the elimination of a writer based on "differences." The misunderstanding is not due to a difference in thinking among the

authors of the literature. When the vast majority of authors' writings on the subject are read in their entirety, and words or phrases are not taken out of context, there is no significant difference among the major authors in the forensic document field.

At the conclusion of the examination and comparison of the questioned and known writing, if the FDE concludes that the 2 bodies of writing are written by the same writer, their

report contains unequivocal language to express that conclusion. Words such as "identification," "wrote," and "genuine," etc. are used to express that conclusion.

The actual wording of the conclusion may vary from examiner to examiner; however, the common thread among whatever wording is used is that the FDE is saying he has no doubt or reservation that the same writer wrote both. Thomas V. McAlexander¹ went so far as to say that "...as far as he (the FDE) is concerned, it is a fact..., although the FDE is prohibited from using the word 'fact.'"

Why is he so certain? What is the basis for such a categorical statement? The FDE is so certain because the combination of all the characteristics, qualities, and features of the 2 writings are in complete agreement and there is no other explanation for that agreement. Any differences that might be present between the 2 bodies of writing are attributable to the normal variation of the writer, and the combination of those differences is not significant enough to indicate that the writing was written by more than 1 writer.

Frequently in practice the question is asked, "Can a conclusion of non-identity ever be reached in handwriting comparisons?" The fact that this question is presented for contemplation indicates that there may be barriers to such an opinion. Under certain circumstances, it is possible to reach such a conclusion; but extreme diligence is necessary, and the evidence must be *precise, obvious, and demonstrable*. Subtle features of handwriting can be very important for both identification and elimination of a writer. Notwithstanding their importance, they are NOT necessarily the single most important deciding factor for either ultimate conclusions. Like every characteristic, quality, and feature of the writing, they must be considered and their collective relative importance determined in that particular examination and comparison. Line quality is 1 such feature that is often cited as being significantly different, but it is a characteristic that can be dramatically affected by writing conditions and therefore should be considered with that fact in mind.

Many FDEs accept the proposition that the identification of a writer is less difficult than the elimination of a writer. This proposition is based on the long-accepted premise that to identify a writer there must be complete agreement between the examined questioned and known writing in all of the class and individual characteristics,

qualities, and features of the writing important for identification purposes, with no significant differences. Any differences present between the questioned and known writings examined must be the result of normal variation and within the writer's full range of variation; they must be attributable to a specific cause or reasonably explained. Of course, if the FDE finds himself having to explain or justify the presence of a number of differences between the questioned and known writing, then a qualified conclusion is warranted.

When the FDE reaches a conclusion that 2 writings are **not** by the same writer, he is saying the writer of the known **did not at any time** write the questioned writing. McAlexander said it best, "The most difficult determination a document examiner makes in handwriting cases is that of a positive elimination."² There is no equivocation in this opinion. When the FDE reaches this conclusion, he is absolutely certain that the writer of the known **could not and did not** write the questioned writing.

Some hold that the literature says only 1 "significant difference," "significant dissimilarity," or "fundamental difference," etc. between the questioned and known writing is necessary to reach a conclusion of non-identification. Additionally, a number of FDEs state that the term "non-identification" is the same as "eliminating" a writer. However, a complete reading of the literature with all of these phrases in their intended context does not support either of these positions.

A Look at the Literature

What does the literature say is necessary for the FDE to eliminate a writer? Many writers have addressed this issue, and yet it remains one of the most misunderstood issues of our profession. Some of those writers are Albert S. Osborn³, James R. Dibowski⁴, Ronald M. Dick⁵, Thomas V. McAlexander⁶, Wilson R. Harrison⁷, James V. P. Conway⁸, Bryan Found and Doug Rogers⁹, Ordway Hilton¹⁰, Roy A. Huber and A.M. Headrick¹¹, Irby Todd¹², A. Crane¹³, and many others. Because the referenced writings on the subject are so extensive, they are compiled in the Appendix accompanying this paper. The purpose of this consolidation is to provide a single source and avoid any chance of misinterpreting the authors' intent and position by putting the material into the authors' original context.

In addition to the numerous authors who have written on this subject, the language of the ASTM standard for a negative conclusion, E 1658-04¹⁴,

is unequivocal: "...By using this expression the examiner denotes **no doubt** in his opinion that the questioned and known writings **were not written** by the same individual."¹⁵ (emphases added)

"Fundamental difference" and "significant difference" are terms that are not to be used without considerable caution when proclaimed by a document examiner. This is because their accepted use among some FDEs seems to denote the presence of someone other than the one purported to have made the writing. Therefore, before it is used in handwriting examinations, there must be clarity on what constitutes the meaning of these terms. Following are 2 definitions with which most document examiners should be familiar, since the definitions are quoted from source entities recognized throughout the field.

1. Fundamental difference: "In a comparison of questioned and known writings, a fundamental difference in a (questioned) writing is a disparity in one of its discriminating elements, within the elements of style." (Source: *Handwriting Identification: Facts and Fundamentals*, Roy A. Huber and A. M. Headrick, p. 49)
2. Significant difference: "n – an individualizing characteristic that is structurally divergent between handwritten items, that is outside the range of variation of the writer, and that cannot be reasonably explained." (Source – ASTM Designation E2290-07a)

Given these 2 definitions, does the combination of the words "fundamental difference" or "significant difference" automatically mean 2 different writers? **Absolutely not!**

In all the references in the Appendix, it is clearly stated that it is the collective characteristics present that are controlling and not a single or isolated occurrence that is sufficient to support an elimination. Hilton¹⁶ notes the necessity, "...all characteristics of both the known and unknown specimens must be considered." Mr. Hilton goes on to talk about the necessity to have "...several repeated, fundamental dissimilarities..." before one can positively conclude that 2 writings are by different writers.

Huber and Headrick¹⁷ offer some new terms in defining what differences are and how they should be thought of; however, they are very consistent with the previous writer's. They note, "Differences found in writing studies cannot be underestimated. On the other hand, the contention that a single or a few basic differences are controlling and can offset the weight of several similarities may be an overestimation of their

role. Although basic differences are frequently considered to constitute adequate grounds for the 'elimination of a writer' or a conclusion of 'non-identity,' such findings may be more complicated than the simple tabulation of a few disparities between 2 sets of writings." "...a conclusion of elimination may be more difficult, more complex, or have greater risks than that of identification." "It must be emphasized that the apparent differences in 2 sets of writings that might be indicative of writings originating from different sources (writers), are seldom found in isolation. If one is present, a thorough examination will likely reveal others." "The position taken by most authorities is that to properly support a conclusion of non-identity or elimination, differences must be fundamental and repeated. Accordingly, such conclusions can seldom be justified respecting limited textual material as the opportunity for differences to be repeated may not be provided. Disparities in writing can occur for numerous reasons, and the consideration of all of those reasons is what makes eliminations a more complex matter than identifications may be." "When differences are numerous and persistent, and the standards in which they are present are adequate quantitatively and qualitatively, such differences must be entertained as evidence in support of the elimination of the writer."

Mr. James R. Dibowski¹⁸, in his paper, "Proving Negative Conclusions," offered many words of wisdom on the subject, and a standard that should be applied throughout the profession. He said, "...proving a negative opinion puts the examiner in a position of attempting to prove that under no circumstances could the subject have written the questioned writing."

The presence of even a single difference deemed to be significant by the FDE can have many possible causes, among which a different writer must certainly be considered. However, the presence of a single significant difference is not now, and never has been sufficient, in and of itself, to establish with certainty that 2 writings are absolutely written by different writers.

This statement begs the question, "Who is qualified to say that a single characteristic, quality, or feature is so significant that he knows with absolute certainty that the writer of the known did not and never could have, written the questioned writing?" It should be apparent that the answer to this question is that no single FDE is in possession of such unlimited knowledge or ability.

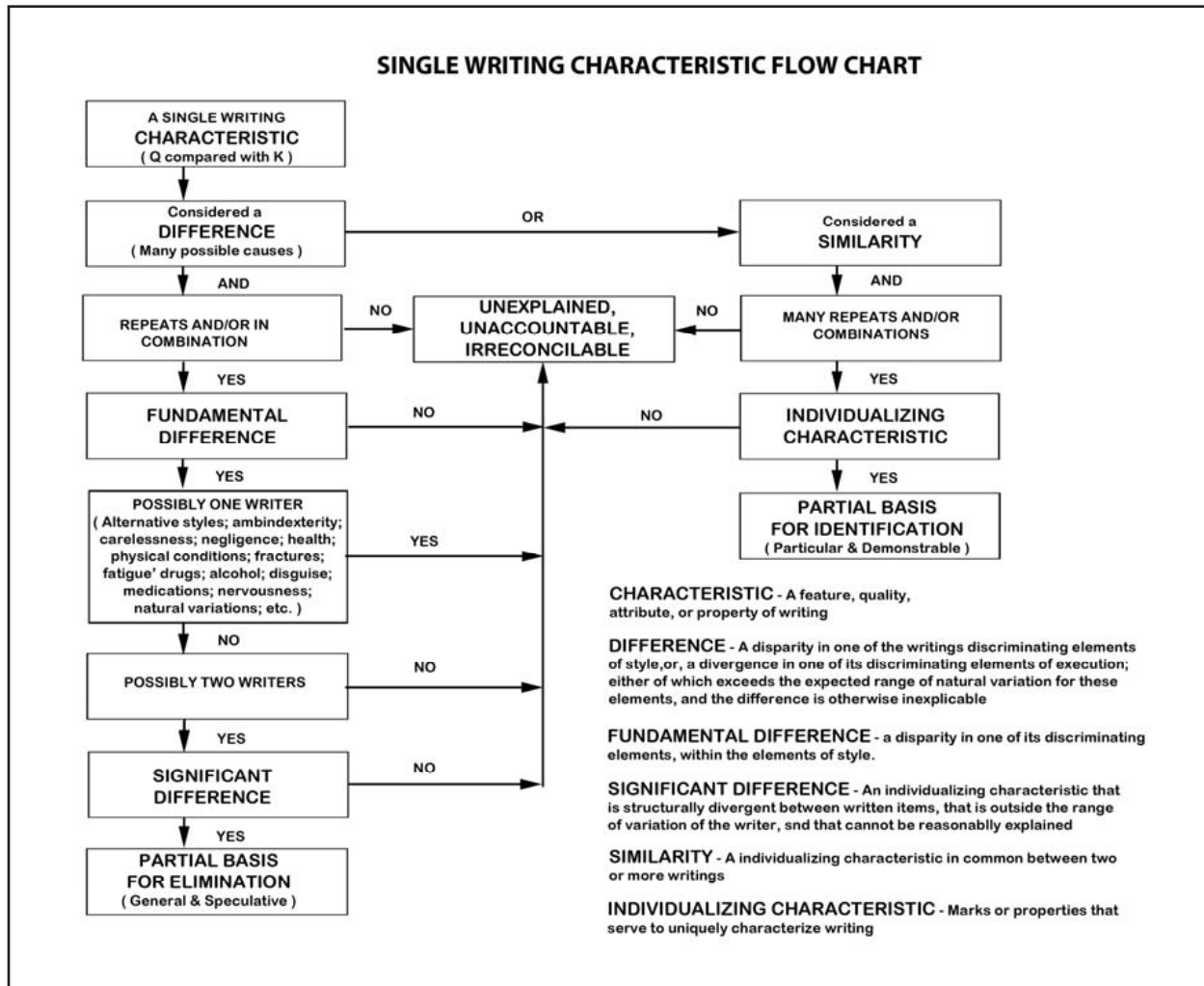


Figure 1 Single Writing Characteristic Flow Chart

The complete agreement between the examined questioned and known writing is based on the collective consideration of all the characteristics, qualities, and features of the writing. It is not based on just the pictorial similarity that may or may not exist between geometrical forms called letters, connectors, marks, or other properties that characterize writing.

The single-significant-difference standard, supported by some FDEs, requires that the characteristic, quality, or feature declared as a significant difference has no other possible explanation for its existence than that it was written by another writer. When read in its totality, the literature does not support the single-significant-difference standard as a working principle or premise and is very clear about what is the basis for an elimination. The single-significant-difference standard premise is false because of the number of variables that can affect a person's writing at any moment in time or the writer's actual skill level and the resulting range of variation in the writing. Multiple explanations for the presence of a single significant difference can certainly exist, and each one has to be considered and satisfactorily explained by the FDE.

The FDE who applies the single-significant-difference standard must believe that it is easier to eliminate than to identify a writer. He must also believe that all that is necessary for an elimination is the presence of this single writing characteristic, quality, or feature in the structure of the writing of the material that is not present in the available known writing. If this is indeed what the FDE thinks, his position is based on a misunderstanding or incomplete reading of all the material in the Appendix.

The full range of variation in a person's writing is not the same for every writer. Some writers have a narrow range, while others have a wide range of variation. As a result, at the time of a particular examination and comparison, it is unreasonable to expect that a sufficient quantity of known writing that accurately reflects the known writer's full range of variation will always be available.

Knowing a writer's full range of variation is important if the FDE is going to conclude that 2 writings are not by the same writer. This statement is beyond dispute, although 1 exception to this undisputed fact is found in the following illustration.

In considering a case such as this, it may be possible to eliminate a potential writer if there

is sufficient confirmable evidence that he could not have written the questioned writing at that moment in time. For example, a person with advanced Parkinson's disease could not write or simulate a skillfully written signature or extended text. Additionally, there is evidence that this possible writer was in this condition for a substantial time before the questioned writing was written. In this situation, the FDE would have a basis for, and be correct in, concluding that the known writer did not have, nor could he have had, the skill and ability to write the questioned writing. The reason for the elimination in this case is not based on handwriting comparison as such; it is based on the person's ability to write.

The Single Writing Characteristic Flow Chart (Figure 1) was developed to provide a visual work flow of the general process used when an FDE observes a single characteristic in 1 writing and then compares it to a 2nd writing. It graphically illustrates that there are several more decisions necessary that lead to a elimination, as opposed to an identification. Hopefully, this chart summarizes many of the concepts and ideas brought forth in this paper. Much of the wording is taken directly from the excerpts in the Appendix.

Summary

Those who base eliminations on the lesser standard of a single significant difference appear to base their opinions in large part on speculation. They may do so for 1 or more of the following:

1. They fail to properly apply the scientific method or skeptical approach to the examination of handwriting and hand printing. The scientific method or skeptical approach is based on, and deals with, the process of reasoning in explaining the presence or absence of all of the significant distinguishing characteristics in the examined evidence. The application of this approach to handwriting examination and comparison has 3 major elements:
 - a. First, there must be sufficient evidence within the examined writing on which to base a conclusion, qualified or unqualified. In most cases when the evidence is going in the direction of eliminating a writer, the evidence may be limited and not representative of the full range of variation of the known writer. The typical handwriting and hand printing examination usually involves a finite amount of known writing that may or may not be contemporary with

the questioned. To absolutely eliminate a writer based on such a limited sample of writing is speculative and cannot be justified as a proper procedure or a recognized standard of examination.

- b. Second, there are times when the evidence in the writing has, or may have, more than 1 explanation for its existence. The opinion based on the examination and comparison process must include consideration of, and a satisfactory explanation for, all anomalies or other factors that could have resulted in the presence or absence of 1 or more characteristics in the writing. This applies equally to an identification or an elimination. Additionally, no opinion based on the examination of 1 document or set of documents can be extrapolated to a document or documents that were not part of the examination and comparison process on which the opinion is based.
- c. Third, 2 significant factors must always be considered: The quantity and quality of the writing or, to put it another way, the sample size of questioned and known writing plus its simplicity or complexity. The question that must always be asked is, "Is the nature of the writing sufficient to support an absolute conclusion of elimination of the known writer?" If the quantity and quality of the questioned and known writing are not sufficient to support an absolute conclusion, then basing a decision on the presence of 1 isolated, or what is classified by the FDE as a significant, difference, even if properly determined, will usually result in the wrong conclusion.
2. The FDE is not familiar with the principle that proving a negative is more difficult than proving a positive. To prove a negative and eliminate a writer, the only acceptable standard is that at no time could or did the writer of the known write the same combination of characteristics found in the questioned writing. This standard requires the FDE to know the full range of variation of the known writer.
3. It appears that many FDEs have a misreading, incomplete reading, or misunderstanding of the text and technical papers on the standard of proof necessary to eliminate a writer. This misreading or misunderstanding may be part of the reason why those who hold the view that it is easier to eliminate do so routinely

without thinking about the standard that such an opinion must meet. In this case, these FDE's either never knew or have forgotten the conservative application of the basic principles of handwriting and hand printing identification espoused by the leading authorities. They have taken concepts out of context and developed a flawed reasoning process to justify their opinions.

4. The failure to apply proper significance to the combination of characteristics that form the basis for a correct conclusion has not been based on the evidence. It is possible that an accidental or other transitory characteristic, or the presence of a single characteristic, can be misinterpreted and assigned too much weight either for or against an identification.

When an FDE is **not** able to support the elimination of a known writer based on the evidence in the writing, he should **not** eliminate that writer. When this occurs, the effect on the profession can be just as devastating as if the wrong writer is identified.

Endnotes

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2. McAlexander, Thomas V. "Handwriting Opinion Terminology / A Layman's Guide," a paper prepared for presentation at the American Society of Questioned Document Examiners meeting, 1977.
3. Osborn, Albert S. *The Problem of Proof*, 2nd edition, Nelson-Hall, Inc., 1975, pp. 57-58 & 61-62. This is a reprint of the same book published by Essex Press, Newark, NJ.
4. Dibowski, James R. Proving Negative Conclusions. To the best of our knowledge this is a unpublished paper. The date of authorship is unknown.
5. Dick, Ronald. "Handwriting Identification vs. Elimination," paper presented at the 1966 Conference of the American Society of Questioned Document Examiners at New York.
6. McAlexander, Thomas V.
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- "Individual Characteristics and Other Myths," International Journal of Forensic Document Examiners, Vol. 5, Jan/Dec 1999, pp. 22-23.
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- 8. Conway, James V. P. *Evidential Documents*, Charles C. Thomas, 1959.
- 9. Found, Bryan and Doug Rogers, International Journal of Forensic Document Examiners, Vol. 4, No. 2, Apr/June 1998.
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- 12. Todd, I. "The Myth of Demonstration," paper presented at the 28th Annual Meeting of the American Academy of Forensic Sciences, Washington, DC, 1976
- 13. Crane, A. "Does the Amount of Handwriting on a Cheque Constitute a "Reasonable Amount of Sample?" Canadian Society of Forensic Science Journal, Vol. 32, No. 1, (1999) pp. 39-45.
- 14. ASTM Standard, E 1658-04, Terminology, 4.1.
- 15. ASTM, *ibid*, p. 2.
- 16. Hilton, Ordway. *Scientific Examination of Questioned Documents*, Revised edition, pp. 153, Elsevier North Holland, Inc., New York. 1982.
- 17. Huber, Roy A., and Headrick, A.M. *Handwriting Identification: Facts and Fundamentals*, pp.56-57, CRC Press, New York,. 1999.
- 18. Dibowski, James R. "Proving Negative Conclusion," undated paper.

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3. ASTM Standard, E 2290 – 03, Terminology, 3.3.7.1.
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 - b. "Proprieties and Pitfalls of Language in Expressing Handwriting Opinions," *International Journal of Forensic Document Examiners*, Vol. 5, Jan/Dec 1999, pp. 17-19.
 - c. "Assigning Weight to Handwriting Differences for Elimination Purposes," *International Journal of Forensic Document Examiners*, Vol. 3, No. 1, Jan/Mar 1997, pp. 4-7.
 - d. "Individual Characteristics and Other Myths," *International Journal of Forensic Document Examiners*, Vol. 5, Jan/Dec 1999, pp. 23-24.
 - e. "The Meaning of Handwriting Opinions," presented at the American Academy of Forensic Sciences, 1974.

- f. "Eliminating Ill-founded Eliminations in Handwriting Comparison Cases," *Journal of the Forensic Science Society*, 31(3), pp. 331-336. (Co-authored with Kathleen B. Maguire)
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 - b. Questioned Documents, 2nd edition, Nelson-Hall, Inc. This is a reprint of the same book published by Boyd Print. Co., 1929.
 - c. The Problem of Proof, 2nd edition, Nelson-Hall, Inc., 1975.
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Appendix

1. ASTM Designation E 2290-03 – Standard Guide for the Examination of Handwriting Items.

- A. "... By using this expression the examiner denotes no doubt in his opinion that the questioned and known writings were not written by the same individual."
- B. *significant difference*, n – **an individualizing characteristic that is structurally divergent between handwritten items, that is outside the range of variation of the writer, and that cannot be reasonably explained.** (Source – ASTM Designation E2290-03)
- C. *significant dissimilarity* – **a repeated individualizing characteristic which is different between two or more handwritten items and which is outside the demonstrated range of variation of the writer.** (ASTM Standard Guide for the Examination of Handwritten Items; written under the Jurisdiction of ASTM Committee E-30. Note: This definition may be in an earlier version of the standard cited in A.
- D. "Both class characteristics (marks or properties that associate individuals as members of a group) and individual characteristics (marks or properties that differentiate the individual members in a group) are individualizing characteristics." (ASTM Standard, E 2290 – 03, Terminology, 3.3.7.1)
- E. When the FDE identifies a writer, he "...has no reservations whatever, ..." and is "...certain, based on evidence contained in the handwriting, ..." that the two writings are written by the same person. When the FDE eliminates a writer, "... this, like the *definite conclusion of identity*, is the highest degree of confidence expressed by the document examiner in handwriting comparisons. By using this expression, the examiner denotes no doubt in his opinion that the questioned and known writings were not written by the same individual. (ASTM Standard, E 1658-04, Terminology, 4.1)

2. Conway, James V.P. "Negative Opinions," paper presented at Conference of Post Office Department Questioned-Document Examiners, June 22, 1944.

- A. "...the conclusion that a questioned writing was not written by Mr. X is only properly reached when the questioned writing contains *divergencies* in amount and quality beyond the range of variation in Mr. X's writing, which *divergencies* cannot reasonably be accounted for by changed conditions in surrounding Mr. X." (Page 1)
- B. "Let us consider a case in which we have found sufficient individualities in a questioned writing, and in which the quantity of standard writings of Mr. X is adequate. *Divergencies* exist in a comparison of the questioned and Mr. X's writings. We must decide whether these *divergencies* should be interpreted as indicating that Mr. X did not write the questioned writing." (Page 3)
- C. "...It must be recognized that there are cases involving questioned writing the merits of which must be determined from circumstances outside of the writings themselves. These are the cases in which only a very small amount of writing is in dispute, or in which the standards supplied are either of an unsuitable character or too few in number. Respecting negative opinions, we cannot unqualifiedly eliminate a suspect on even obvious differences in writings if the production of these differences is entirely within the writing capabilities of the suspected writer. I believe it is vital and indispensable to our individual and collective professional success that we ever keep before us our own limitations, that is – the things which we cannot do. We cannot properly, in my opinion, render opinions of seeming expediency which are not based on technical considerations. (Page 4)

3. Conway, James V. P. *Evidential Documents*, Charles C. Thomas, 1959

- A. "The significance of a similarity or difference flows from the singularity, the rarity, the individuality of the particular characteristic which is similar or different." (Page 52)
- B. "A *series of fundamental agreements in identifying individualities* is requisite to the conclusion that two writings were authored by the same person, whereas a *single fundamental difference in an identifying individuality* between two writings precludes the conclusion that they were executed by the same person." (Page 65-66)
- C. "Variations are within the range of each writer. Differences exist between the writings of different writers. Variations which have been produced purposefully to conceal identity, or variations which

are the result of accident or outside influence, clearly do not constitute 'differences.' Interpretations of variation versus difference are frequently critical and require the services of the skilled document examiner. The investigator's task will be illumined by a thoughtful, orderly effort to: (1) separate normal, transitional, and distorted letters and letter combinations and (2) compare normalcy with normalcy, transition with transition, and distortion with distortion. (Page 67)

4. Crane, A., Does The Amount Of Handwriting On a Cheque Constitute A "Reasonable Amount Of Sample?" Canadian Society Forensic Science Journal, Vol. 32. No. 1 (1999), pp. 39-45.

- A. "The results of this part of the study confirm that the Document Examiner should be careful when dealing with small amounts of questioned handwriting, because a *reasonable* amount is not a set amount. It is already recognized, but bears repeating, that the amount of handwriting that could be used to discriminate in one case may not be the amount required to discriminate in another case. The criteria vary according to the number of letters available for comparison combined with the degree of individuality noted in the letters. However, in all instances, the Document Examiner must rely on his training and experience to evaluate when a questioned text is a "reasonable amount." (Page 44)

5. Dibowski, James R. – Proving Negative Conclusions. To the best of our knowledge this is a unpublished paper and the date of authorship is unknown.

- A. "... On the other hand, proving a negative opinion puts the examiner in a position of attempting to prove that under no circumstances could the subject have written the questioned writing." (Page 1)
- B. "In every book on handwriting which is available the authors mention that several repeated fundamental dissimilarities establish without a doubt that two writings are by different persons. This rule is applicable, however, to just those instances where you have an adequate quantity of both questioned and known writing which is normally written." (Page 1)
- C. "In cases where other than normal writing is involved the reaching of a definite negative conclusion is difficult and in some cases not possible. ... Conversely, it could be stated that no negative opinion could be given unless the writing, again, was truly representative of its source. Is disguised questioned writing truly representative of its source? The answer is probably not." (Page 1)
- D. "The cautious experienced examiner should not immediately conclude because of 'several dissimilarities' that the signature was not written by the payee." (Page 2)
- E. "... Definite findings should not be given, either negative or affirmative, until proper standard writings can be examined and compared." (Page 2)

6. Dick, Ron - "Handwriting Identification vs. Elimination," paper presented at the 1966 Conference of the American Society of Questioned Document Examiners at NY, NY.

- A. "Experience has shown that we can safely state a positive opinion that two writings were not written by the same person if we have sufficient quantities of freely executed material that shows the presence of consistent dissimilarities that are fundamental to the structure of the writing. ... This statement does not hold true when we are dealing with limited quantities of writing." (Page 2)
- B. "... on occasions we may collect what we feel are adequate comparable specimens, and differences still persist. It is at this stage that very careful reasoning and logic must be applied rather than blindly following the general rule that we can eliminate if there is one difference that is fundamental to the structure of the writing. (Page 2)
- C. "Thus, in cases such as this, the mere fact that the signature in question differs in some fundamental way from the specimen signatures that were provided does not always justify an opinion of non-identity. It is only after aspects such as those suggested have been given careful consideration that one should consider expressing an opinion that the author of the specimen signatures did not execute the signature in question." (Page 4)
- D. "...the mere presence of differences between the questioned and known material does not necessarily justify eliminating the suspected author. It is imperative that the nature and extent of the difference, together with the nature and extent of the similarities, be carefully evaluated." (Page 5)

- E. "If two writings contain the necessary ingredients for an identification, we are safe in expressing a positive opinion of identity regardless of the different conditions which may have surrounded the production of the questioned and known material. However, if they do not meet the requirements for an identification, we cannot always eliminate. Instead, all possible causes of the differences that are present must be fully explored. Thus the road to a positive opinion of non-identity is often a harder one to travel than that to identity, and the dangers are greater." (Page 5)
7. **Ellen, D. M., The Expression Of Conclusions In Handwriting Examination, paper by the author, no date, page 5. (This paper was published in the Canadian Society of Forensic Science Journal, Vol. 12, No 3, 1979. The paper used for this reference was the unpublished version.)**
- A. "The fifth and final category is a negative finding. When there are sufficient differences there is no reason to suppose the two writings were made by one person. A possible way to express this position is to say that two different writers were involved. This can, however, be dangerous as one cannot be sure that one person cannot write in two different ways. There are, of course, situations where this is more likely than others, especially if the differences are between two different styles of writing such as normal and italic. But even in one general style one cannot be so sure that consistent differences are not the result of a change of habit, especially if there is a limited amount of writing. The conclusion that there is no evidence or no reason to believe that two writings were made by one person with added proviso that they are likely to be made by different people is the preferred method of reporting." (Page 6)
8. **Found, Bryan and Doug Rogers, A Consideration Of The Theoretical Basis Of Forensic Handwriting Examination, International Journal of Forensic Document Examiners, Vol. 4, No. 2, April/June 1998**
- A. "...The dissimilarities can be observed in terms of one or combinations of the way the strokes are concatenated in letter, letter combination, word formations and the features that are able to be described. **The criteria for features to be described as different are that they are fundamental to the pictorial or structural character of the writing and are not shared between the bodies of questioned and standard writings. Examples of differences that are well known to forensic handwriting examiners are where a character is consistently constructed in a different way between the questioned and standard images etc.**" "Clearly these definitions do not address issues of authorship." (Page 112) (emphasis added)
- ...If a 'single significant contradiction' is encountered then we would agree that the opinion would be that the bodies of writing are different: not that the writers of the bodies of writing are different as is stated." (Page 116) (emphasis added)
9. **Harrison, Wilson R. Suspect Documents – Their scientific examination, 2nd edition, pages 343-345, Sweet & Maxwell Limited, London, 1966**
- A. "No expert can express a stronger opinion than is justified by the nature of the standard of comparative material with which he has been supplied." (Page 3)
- B. "The rule is simple—whatever features two specimens of handwriting may have in common, they cannot be considered to be of common authorship if they display but a single consistent dissimilarity in any feature which is fundamental to the structure of the handwriting, and whose presence is not capable of reasonable explanation." (Page 343)
- C. "This rule must not be applied blindly. For example, the dissimilarity must be truly present in some feature which is known to the examiner to be fundamental to the structure of the handwriting." (Page 343)
- D. "Again, the dissimilarity must be truly consistent; the presence of a few accidentals should never be interpreted as denoting the existence of a consistent dissimilarity not capable of reasonable explanation. The dissimilarity must clearly be shown to be a natural feature of the writing." (Pages 343-344)
- E. "...The type of dissimilarity which is regarded as most significant is that which has to be sought for in the *structure* of the hand writing... There is little chance of such inconspicuous dissimilarities having been deliberately introduced as disguise." (Page 345)

- F. "...The evidence on which any exclusion is based must be concrete; it is never sufficient merely to assume that variation or deliberate disguise is responsible. (Page 345)
 - G. "The rule that a single consistent dissimilarity, irrespective of the number and nature of the similarities which are demonstrable must exclude any possibility of common authorship may seem harsh, but in practice, it is exceptional for handwriting by different authors to be found to differ in but one material particular." (Page 345)
- 10. Hilton, Ordway, Proper Evaluation of Dissimilarities in Handwriting, International Criminal Police Review, #105, February 1957, pp. 48-51.**
- A. "...If there are one or more significant or fundamental dissimilarities (differences) between the known and unknown material which have no logical explanation, then the known writer could not have prepared the unknown material (Page 48)
 - B. "Actually, in practical problems it would be extremely rare, if not almost unheard of, for two specimens of writing by different persons to contain only one significant difference. For practically all cases there are a number of these differences. (Page 49)
 - C. "2) This axiom, furthermore, does not say that the differences must be large or prominent. It is a well known fact that repeated small differences between two specimens of writing are extremely strong evidence that there are two writers." (Page 49)
 - D. "Accurate handwriting identification, however, requires careful differentiation between variations and differences. It also involves distinguishing between basic, fundamental differences and dissimilarities brought about by writing conditions, disguise, or other factors. ..." (Page 50)
 - E. "A variation in handwriting can be described as a dissimilarity found in a characteristic upon repeated writing by the same person. For the most part variations are slight divergencies although under this definition variant letter forms can be classed as variations. Such forms may be very markedly dissimilar, but since both alternatives are part of the writer's habits, they must be classed as variations." (Page 50)
 - F. "A difference, on the other hand, is a dissimilarity between two writing, one of which is outside the normal writing habits of one of the writers and cannot be explained by unusual writing conditions or attempted disguise. Thus, a difference as defined here would be a significant, unexplained dissimilarity and play an important part in the identification problem." (Page 50)
 - G. "...if it is basic and fundamental, it establishes that the questioned writing was not prepared by the suspect but by some other writer. It is conceivable that one difference could establish that there were two different writers even though all of the other characteristics are alike, but this would be a most unusual situation. In most problems there are a number of differences, some prominent, some slight, which in combination, and despite even a preponderance of similarities, established that we have two different writers." (Page 50)
 - H. "In this discussion of differences we are speaking of basic, fundamental, or significant dissimilarities, differences opposed to dissimilarities brought about by one specimen of writing being in a disguised hand or having been prepared during illness, drunkenness, with undue haste and lack of care, or under extremely adverse writing conditions.." (Page 50)
 - I. "Thus, it is necessary to evaluate independently each apparent difference to determine whether it is basic and controlling or whether it results from some outside influence. ..." (Page 50)
 - J. "In connection with the analysis of dissimilarities in handwriting one of the most important classes are those differences found in small, inconspicuous details of the writing. If these differences are repeated time and again in an extended specimen of writing, even though there are prominent writing habits which are alike, the writings must have been prepared by two different writers. These small details when recurring over and over become a fundamental part of a person's writing and one of which he is seldom conscious. Many times they persist throughout a superficial disguise and serve as an excellent means of identifying the writer of these specimens. ..." (Page 51)
- 11. Hilton, Ordway, Scientific Examination of Questioned Documents, Revised edition, Elsevier Science Publishers, New York, NY, 1982.**
- A. "To establish that the known and disputed material have different sources requires that there is at

- least one basic, significant difference between them—one fundamental identifying characteristic that does not occur in the same way in both sets of specimens. Such a determination presumes extended writing specimens including extensive broad-based standards that reveal a full picture of the known writer's habits and ability. Actually, in virtually all problems of nonidentity there are a number of differences, but a single one, if fundamental in nature and not due merely to chance, would be sufficient for the proof. It is a basic axiom of identification in document problems that a limited number of basic differences, even in the face of numerous strong similarities, are controlling and accurately establish nonidentity." (Page 10)
- B. "It is a summation of details woven together systematically into a whole so that one logical and obvious conclusion alone is possible. All the facts disclosed in the course of the examination are valueless unless they are properly compiled and evaluated ..." (Page 11)
 - C. "In a problem involving the authorship of handwriting, all characteristics of both the known and unknown specimens must be considered. Basic writing habits common to both must agree if all are the work of the same writer. A single significant difference between the two is a strong indication of two writers, unless this divergency can be logically accounted for by the fact surrounding the preparation of the specimen. Several repeated fundamental dissimilarities establish without a doubt that two writing are not the work of a single person. Under no circumstances, however, can identity be established by one, two, or even several "unusual" characteristics. Rather, if two writing have been produced by one individual, there must always be a combination of a sufficient number of points of agreement without any fundamental dissimilarities that all chance of accidental coincidence is excluded. Identification rests therefore not alone on a similar combination of identifying attributes—a condition that always must be fulfilled—but also on a coexistent lack of basic divergencies between the questioned and standard writings." (Page 153-154)
 - D. "Writings of two different persons may be entirely dissimilar, or they may be very much alike but not identical. Although many writers have certain habits in common, each has developed personal peculiarities that mark his writing. These individualities, many of them in inconspicuous details, distinguish the writing of two persons who write very much alike." (Page 161)
 - E. "Repeated small differences establish clearly that two specimens are the work of two individuals despite a great number of general similarities.... Everyone seems to appreciate that two writings are not by the same individual when there are a vast number of differences, but a few fundamental dissimilarities may not seem to lead to so positive a conclusion. Nevertheless, they do. If two writings are by a single person, then no fundamental differences should exist. Conversely, if there are any basic dissimilarities that cannot be accounted for by a logical, common sense explanation, then the two writings must have been prepared by different writers." (Page 161-162)
 - F. "...If, on the other hand, significant differences exist between the known and unknown signatures, they must be the work of two writers, but the differences between them have to be of a fundamental nature and not just the minor variations normally found between two signatures of any writer." (Page 174)
 - G. "...However, another class of variation can be encountered, although rather infrequently. It may be termed an accidental or rare variation, applied to a divergency that occurs only in this signature, or if rare, then possibly in something like once in 100 or 200 specimens. A variation of this nature is most troublesome in signature problems, although it may also be encountered in general handwriting as well. There normally is no logical explanation for it, especially since the conditions under which virtually all signatures are made are at best only partially known. If only this divergency exists between a questioned signature and the known specimens, one may be justified in concluding that all are the work of one person, but at the same time one may be hard pressed to persuade someone who believes that the signature is a forgery that it is not. Nevertheless, under proper circumstances a single accidental variation does not of itself prove forgery." (Pages 175-176)
 - H. "...It is of primary importance, therefore, to ascertain whether the variations between the known and unknown signatures are common to the normal writing habits of this person or point toward forgery...." (Page 185)
 - I. "Determination of nongenuineness normally may not be difficult, especially with reliable standards. Careful study should reveal differences even with two writers whose signatures are not highly

- individualized and who have had their writing training in the same school system. Short names, similar writing, and some attempt to imitate again and again a prominent element or two leads to rather similar signatures in the eyes of layman. With such, the inconspicuous differences play a major role in establishing the authentic and nongenuine.” (Page 192)
- J. “...By the same token, fundamental differences, especially consistently repeated ones, establish that the two set of lettering are by different writers.” (Page 214)
12. Huber, Roy A., and A. M. Headrick, *Handwriting Identification: Facts and Fundamentals*, pages 56-57, CRC Press, NY, NY, 1999
- A. “Definition: Accidentals are isolated, brief, or temporary digressions from normal writing practices.” (Page 46)
- B. “...If opportunities are present and the occurrence is not repeated, the occurrence may be considered to be an accidental. If opportunities are present and the occurrence is repeated, it must be considered to be behaving as a writing habit, and thus, constitutes a dissimilarity.” (Page 47)
- C. “Differences in writing are one of two kinds. There are what we may call **lucid** differences: those that are markedly distinct in quality or character. They are obvious. Among other things they include differences in allographs (i.e., letter designs), dimensions, slant or letter construction. There are also **elusive** differences: those that are much less pronounced, more subtle, that do not reflect basic changes in design or structure.” (Page 48) (NOTE: **The authors refer to lucid differences as disparities and elusive differences as divergences.**)
- D. “Elements of style are those aspects of writing that are usually subject to direction in the learning or vocational process. Consequently, they are the aspects that may change with location, change with the school or the teacher, or change with the occupation of the writer. Elements of execution, on the other hand, are those aspects of writing in which personal idiosyncrasies usually develop as a result of personal preferences, personal circumstances, and/or personal skills.” (Page 48)
- E. “Disparities, when they occur, are more often attributable to a difference in writers. They are the distinctive and usually observable dissimilarities that emanate from different teachings, different backgrounds, or different practices.’ ...divergences, when they occur, are often the products of variation in the same writer, that may be either natural variation or variation due to some special cause.’ ...They are the subtle mutations observed in the graphs within writers or between writers. It might be said that disparities are differences that discriminate between groups, whereas divergences are differences that discriminate between members of a group.” (Pages 48-49)
- F. “**Definition:** In a comparison of questioned and known writings, a difference in a (questioned) writing is (1) a disparity in one of its discriminating elements of style or (2) a divergence in one of its discriminating elements of execution; either of which exceeds the expected range of natural variation for these elements within the writings with which it is being compared. In either case, the difference is otherwise inexplicable.” (Page 49)
- G. “...Differences that are found must be studied and considered with respect to possible causes. They may be due to causes that tend to affect the elements of execution, such as those (1) due to writing conditions or other external factors, or those (2) due to internal factors such as age, illness, drugs, or medications, or they may be (3) due to some attempt to disguise or to deliberately alter normal writing habits. They may, on the other hand, be true differences that are attributable to some fundamental discrepancy emanating from a different writing hand, more often observable in the elements of style.” (Page 49)
- H. “...fundamental difference...” ‘**Definition:** In a comparison of questioned and known writing, a fundamental difference in a (questioned) writing is a disparity in one of its discriminating elements, within the elements of style.” (Page 49)
- I. “...what then is a significant difference?’ ‘...Significance, then, is a function of its rarity or uniqueness.” (Page 49)
- J. “What Circumstances or Conditions Might Contribute to the Production of Apparent Differences in Handwriting?” “...some generalities that can be stated. Adequacy of standards. Accidental occurrence. Alternative styles. Ambidexterity. Carelessness or negligence. Changes in health condition of writer. Changes in physical condition of writer – fractures, fatigue, and weakness. Changes in the

mental condition or state of the writer. Concentration on the act of writing. Disguise or deliberate change. Drugs or alcohol. Influence of medications. Intentional change for later denial. Nervous tension. Natural variations – beyond those of standards. Writing conditions – place or circumstance (moving vehicles). Writing instrument. Writing position – including stance. Writing surface. Writing under stress. (Pages 51-55)

- K. “The term *nonidentity* is often used interchangeably with *elimination*. Differentiation, however, is also a matter of nonidentity. Thus, while elimination may be a matter of nonidentity, nonidentity is not solely a matter of elimination. Accordingly, it is more fitting to say that nonidentity is the all-inclusive parent of both elimination and of differentiation.” (Page 55)
 - L. “Eliminations are broad and all-inclusive statements, that a given writer could not, under any circumstances, have executed a given writing. Identifications are particular and demonstrable. Eliminations are general and speculative.” (Page 55)
 - M. “Differences found in writing studies cannot be underestimated. On the other hand, the contention that a single or a few basic differences are controlling and can offset the weight of several similarities may be an overestimation of their role. Although basic differences are frequently considered to constitute adequate grounds for the “elimination of a writer” or a conclusion of “nonidentity,” such findings may be more complicated than the simple tabulation of a few disparities between two sets of writings.” “...a conclusion of elimination may be more difficult, more complex, or have greater risks than that of identification.” (Page 56)
 - N. “It must be emphasized that the apparent differences in two sets of writings that might be indicative of writings originating from different sources (writers), are seldom found in isolation. If one is present, a thorough examination will likely reveal others.” (Page 56)
 - O. “The position taken by most authorities is that to properly support a conclusion of nonidentity or elimination, differences must be fundamental and repeated. Accordingly, such conclusions can seldom be justified respecting limited textual material as the opportunity for differences to be repeated may not be provided. Disparities in writing can occur for numerous reasons, and the consideration of all of those reasons is what makes eliminations a more complex matter than identifications may be.” (Page 56)
 - P. “When differences are numerous and persistent, and the standards in which they are present are adequate quantitatively and qualitatively, such difference must be entertained as evidence in support of the elimination of the writer.” (Pages 56-57)
- 13. McAlexander, Thomas V. and Kathleen B. Maguire, “Eliminating ill-founded eliminations in handwriting comparison cases.” *Journal of Forensic Sciences*, 1991; 31(3): (Pages 331-336)**
- A. “...There is always that extremely remote possibility that, for example, two persons’ writings are so similar that they cannot be distinguished from each other. The fact that we may never have seen instances of this phenomenon does not mean that it is impossible. That possibility is so remote that, for our purposes, it can be ignored and we are often able to safely identify a writer. Likewise, we can sometimes safely eliminate a writer with only a theoretical possibility of being wrong. In fact, there are times when differences in skill level (writing ability) alone is sufficient to safely eliminate a poor writer from having written a skillfully-executed body of writing.” (Pages 331–332)
 - B. “We must remember that it often takes much more evidence to eliminate than to identify, and the likelihood that some examiners are in error when they eliminate a writer has become much more than a theoretical possibility. When we identify, we are saying that there is sufficient quantity and quality of evidence to say safely that two bodies of writing were written by one individual. When we eliminate, we are not only saying that there is no evidence that a person wrote a body of writing and that differences present in the writing are truly significant, but are also ruling out the possibility of multiple styles, consistent disguise, ambidexterity, et cetera.” (Page 332)
 - C. The problem of erroneous elimination often stems from misinterpretation of differences and their significance. Hilton states, “Variations must be distinguished from basic differences in order to avoid an inaccurate conclusion.” [Hilton O. *Scientific Examination of Questioned Documents*, revised edition. New York: Elsevier Science Publishing Co, Inc, 1992] There are several possible causes of differences in the writing of one individual, including variation. The need to evaluate these causes

- properly must be recognized before we stop erroneously eliminating writers. Some examiners, in their thoughts concerning differences, seem to equate unaccountable with *significant*. The word "significant" should be used only when there are a *number* of *consistent* differences. The significance of a difference is much dependent upon the number of differences present and the weight that can be attributed to each difference. The authors believe that there cannot be only one significant difference. It is the cumulative effect of consistent differences that gives them their significance." (Page 332)
- D. "...However, there are more "categories" of difference than of similarity, they are harder to identify and define specifically, and it is frequently impossible to determine their significance, especially in limited writing. If we cannot properly evaluate the significance of differences in writing, then we must not eliminate, unless the combined effect of other truly significant differences is sufficient within itself to warrant the elimination. (Pages 332-333)
 - E. Mr. McAlexander uses the following terms to describe the, "Factors that may cause erroneous elimination." "*Natural variation*", "*Accidental features*", "*Two or more styles*", "*Ambidexterity*", "*Gradual change in habit*", "*Nervousness*", "*Disguise*", "*Concentrating on the writing act*", "*Writing conditions*", "*Writing instrument*", "*Writing surface*", "*Health or age of writer*", "*Influence of alcohol or other drugs*." (Pages 333-334)
- 14. McAlexander, Thomas V., "Handwriting Opinion Terminology / A Layman's Guide," paper presented at the American Society Of Questioned Document Examiners, 1977.**
- A. Definitions of terms in the papers glossary:
 - a. "CONCLUSIVE (Absolute) – Evidence warrants a positive determination that two bodies of writing were or were not prepared by the same person." (Page 2).
 - b. "DIFFERENCES – Characteristics in one body of writing which have no counterparts in another body of writing. The nature and extent of these differences may be indicative of another writer, and they are termed SIGNIFICANT differences. Or the evidence may indicate that they could be due to disguise, variation, inadequate specimens, or other factors, and they are then termed UNACCOUNTABLE, UNEXPLAINED or IRRECONCILABLE differences." Page 2.
 - c. "SIMILARITIES – Characteristics in one body of writing which have counterparts in another body of writing. The nature and extent of these similarities may be indicative of common authorship, and they are termed SIGNIFICANT similarities. Or they may exhibit a general overall appearance of agreement but lack individuality and significance, and they are then termed GENERAL or PICTORIAL similarities." (Page 3).
 - B. "The most difficult determination a document examiner makes in handwriting cases is that of a positive elimination. This is true for a number of reasons, the most common being the fact that often it is not possible to determine whether the writings, questioned and/or known, are truly representative of the author's ability and range of variation, especially in law enforcement laboratories where usually the only specimens available are request specimens. However, there are times when the evidence warrants an elimination; and the opinion carries the same degree of certainty as a positive identification. A common way of reporting is, "It has been concluded that John Doe did not write the questioned material." (Page 6)
- 16. McAlexander, Thomas V., "Assigning Weight To Handwriting Differences For Elimination Purposes," International Journal of Forensic Document Examiners, Vol. 3, No. 1 Jan/Mar 1997, pp 4-7.**
- A. "We frequently hear document examiners speak of *significant* differences when the are obviously speaking of differences of unknown origin." (Page 5)
 - B. "... Our purpose, however, is to identify *or eliminate* (or to arrive at an intermediate conclusion that may lead to an identification or an elimination), so the criteria for assigning significance are much more difficult to determine and apply. If similarities are present, we can see them; we can compare them; we can evaluate them. But if there are no significant characteristics in common between two writing, it is necessary not only to determine that they are not present, but we must also make a judgment as to *why* they are not present, for without sound reasoning we cannot adjudge something to be impossible simply because it does not exist. The "why" of that statement is related to the

- significance that can be attributed to differences between two bodies of writing, because in similar texts the lack of similarities is always accompanied by the presence of differences. It is essential that we be fully aware of the steps necessary to make that evaluation. If we do not know how much weight to assign to similarities, we simply do not call them significant. Nevertheless, the lack of knowledge regarding the weight that can be attributed to differences does not always stop us from calling them significant.” (Page 5)
- C. “The most important consideration in assigning weight to differences is that they must be reasonably *judged* to be fundamental in nature, If we dealt with facts per se, then all fundamental differences would be significant. However, since we deal in judgments about facts, only those differences that we reasonably judge to be fundamental actually meet the “significance” test. A fundamental difference and a natural variation have one thing in common: until additional evidence in the handwriting puts them into their respective categories, each is simply an explained difference. There is no shame in classifying a fundamental difference as unexplained rather than significant when there is insufficient evidence present to make a reasoned judgment. The shame is in not being willing to admit that judgment cannot be made or in ignoring the necessity for making the judgment.” (Page 5)
 - D. “Assigning weight to differences is often much more difficult, and there are several factors that must be considered, including the following: **(a) The difference must be repeated and/or must be in combination with other differences, some of which similarly must be repeated.** There cannot be only one significant difference between two bodies of writing. It is the cumulative effect of consistent differences that gives them their greatest degree of significance. Only when they are found in combination can a reasoned judgment be made that the differences are fundamental in nature and are truly significant. **(b) Differences in features that are unusual carry more weight than those that are not.** **(c) There must be a judgment of naturalness in the writings.** **(d) There must be a judgment ruling out such permanent or transitory factors as disguise, change in habit, multiple styles, accidentals, and normal variation.**” (Pages 5-6)
 - E. “If good, sound reasoning is used in the evaluation process, it should not be difficult to determine which point differences should be called “significant.” The significance of differences increases on a continuum that is directly related to the confidence scale used by document examiners to express qualified opinions, and a difference should not be called “significant” until it reaches the point that it can be judged to be, at a minimum, *probably fundamental to the structure of the writing*. The number of differences that must be present before they can be judged to be truly significant is dependent upon the weight that can be assigned to them individually and collectively because of the frequency of occurrence in random writing of the features in which the differences occur.” (Page 6)
 - F. “It is the judgment factors listed under **C** and **D** that often make eliminations more difficult than identifications.” (Page 6)
17. **McAlexander, Thomas V., “The Meaning Of Handwriting Opinions,” Paper presented at the AAFS, 1974.**
- A. “If the document examiner makes the absolute statement that “In my opinion John Doe did not write the questioned signature,” that is the same degree of certainty, in a negative way, that is contained in the statement “In my opinion John Doe wrote the questioned signature.” (Page 7)
 - B. “This negative summary is applicable when there are fundamental differences in most of the elements of the writing that are important for identification; any similarity is severely limited, non-existent, or is contained in a few elements that have minimal value for identification; and the writings are contemporary and are freely executed.” (Page 7)
 - C. “In addition, a categorical negative opinion is possible when the questioned signature shows an extremely high level of writing skill and the known writing is that of a person who can barely write.” (Page 7)
18. **Osborn, Albert S., *The Problem of Proof*, (First edition) Matthew Bender & Company, Albany, NY, 1922**
- A. “A disputed writing sometimes contains a general fundamental divergent quality of design or execution, which alone is very significant as indicating that the writing is not genuine, but as a rule,

- an opinion must be based upon a number of divergent qualities in combination so that it is unreasonable to conclude they would all accidentally combine in one genuine writing. When even a few qualities are distinctly foreign to the genuine writing, or are violations of fixed habits shown in the genuine writing, and cannot be explained in any reasonable manner, then the conclusion based upon these divergencies must be that the writing is not genuine.” (Pages 129-130)
- B. “As suggested above, the most common error in the identification of handwriting is undoubtedly due to the fact that evidence of actual forgery is excused on the ground that there is variation in genuine writing. No correct reasoning is applied to the problem and all variation is construed as of the same significance. Forgery is thus excused in some legal opinions with no attempt to interpret variation.” (Page 131)
- C. “The principal causes of error in determining whether handwriting is genuine or forged, or in deciding whether a particular handwriting was or was not written by a certain writer, may be arranged in three general classes. The first class of errors is due to incompetence in the observer, either because of lack of ability or lack of experience. The second class of errors results from the conditions of the problem presented, in which internal matters in the problem itself lead to error. Errors of the third class arise from external matters or influences outside of the document or writing itself.” (Page 379)
- D. Mr. Osborn then expands on these three classes of errors and list them as: “... those which result from *Incompetence in the Observer*,” those “...that arise from the nature of the inquiry, or *Internal Matters in the Document*,” and those “...from *External Matters or Influences*,” For the purpose of this paper, only the second group is quoted here. The first and third class are certainly of equal importance and the reader should read and take heed of them, because they too are the cause of many errors. The second class is: “Errors that arise from the nature of the inquiry, or *Internal Matters in the Document*, are:
- (i) Basing conclusion upon too limited amount of disputed writing, or upon too limited amount of standard writing;
 - (ii) Basing conclusion on too few characteristics or characteristics of uncertain, or of unknown, value;
 - (iii) reaching conclusion without considering date of writing under examination, or date of standard writing;
 - (iv) giving definite opinion on mere marks or illegible scrawls which contain insufficient writing individuality;
 - (v) basing conclusion entirely on poor or inaccurate photographs;
 - (vi) reaching conclusion in the absence of necessary observing, measuring, or testing instruments;
 - (vii) reaching conclusion in certain unusual cases before helpful enlarged or special photographs are made.” (Page 380)
- E. “There are two main questions, or difficulties, that confront the examiner of an alleged forgery. The first of these is to determine how much and to what extent genuine writing will diverge from a certain type, and the second is how and to what extent will a more or less skilful forgery be likely to succeed and be likely to fail in embodying the essential characteristics of a genuine writing. Here we have the very heart of the problem, for, at least in some measure, a forgery will be like the genuine writing, and there is also always bound to be some variation in the different examples of genuine writing by the same writer. Incorrect reasoning infers forgery from any variation or infers genuineness from any resemblance.” (Page 382)
- F. “The problem then, briefly stated, is an analysis of the standard writing with a detailed and thorough recognition and an accurate estimation of the value of all of its qualities, attributes, and characteristics, and a similar examination of the disputed writing. Then a detailed rational comparison of the writings must be made and the value of all the evidence must be interpreted and weighed.’
- ‘A study of the standard writing should determine what is to be expected in any writing by the same writer, and a detailed study of the disputed writing must answer the question as to whether it does contain what is to be expected in a writing by the alleged writer, or whether it contains qualities foreign to the writing of the alleged writer. A writing that is not genuine will be likely to fail in both

- particulars, as not containing that which it should contain and having in it what it ought not to have in it." (Page 384)
- G. "It is apparent that a disputed writing may contain a fundamental divergent characteristic, of design or execution, which alone is very significant as indicating that the writing is not genuine, but as a rule, an opinion must be based upon a sufficient number of divergences in combination so that it is unreasonable to conclude that they all would accidentally combine. If even a few qualities are distinctly foreign to the genuine writing, or are violations of fixed individual habits in the genuine writing, and cannot be explained in any reasonable manner, then the conclusion must be that the writing is not genuine." (Page 385)
 - H. "Certain comparatively trivial and unimportant divergencies can be pointed out when any two genuine writings or signatures by the same writers are compared with each other. These signatures will differ in size, and will differ also in certain minor particulars in design and execution, due to the fact that the human writing mechanism is not an accurate reproducing instrument like a copper plate, but produces an inevitable variation within a certain field. The degree of this variation varies with different writers and its degree is to be determined, not by any general rule, but by an examination of the genuine writing in the particular case. (Pages 385-386)
 - I. "Because genuine writing varies it is of course not proper to assume that all variation is thus explained. It is necessary carefully to determine the amount, extent, and exact quality or character of the variation. A scientific comparison of handwriting thus becomes, in large measure, a distinctly rational process and not merely the visual examination of the writing under investigation. Trivial or expected variation in a handwriting should, of course, not be construed as an indication of a lack of genuineness and will not be if the question is properly considered. If this natural variation of an unlimited and fundamental character it would then be impossible to identify any handwriting. Divergence in handwriting is analogous to divergence in speech. A man does not always speak in just the same way, but one who talks with an Irish tongue does not all at once break off into a German accent, and habit firmly controls the hand as well as the tongue." (Page 386-387)
 - J. "Because of the conflicting evidence in the writing itself, or because of its limited quantity, there are conditions under which it is impossible to reach any positive conclusion as to the genuineness, or falsity, or identity, of a disputed writing." (Page 387)
 - K. "Judgment on the subject must finally be based upon a study of similarities and differences as compared with each other, for to some extent there must be both in any two specimens of handwriting in the same language." (Page 389)
 - L. "The difficulty is that a disputed writing may be either a clever imitation or the writing of another, or a more or less skilful disguise or one's own writing, and in either case superficial knowledge of a handwriting, limited to the recognition of only its ordinary, conspicuous, or surface, features may easily lead to error. Under these conditions the very least similarity is often taken as proof of genuineness, or, on the other hand, the slightest divergence from normal may be construed as proof of forgery. The error may go in either direction." (Page 390)
19. **Osborn, Albert S., *Questioned Documents*, 2nd Edition, Nelson-Hall Company reprint of the 1929 edition published by Boyd Print Company.**
- A. "...in order to reach the conclusion that two writings are by the same hand there must not only be present class characteristics but also individual characteristics or "dents and scratches", in sufficient quantity to exclude the theory of accidental coincidence; to reach the conclusion that writings are by different hands we may find numerous likenesses in class characteristics but divergences in individual characteristics, or we may find divergences in both, but the divergence must be something more than mere superficial differences." (Page 244)
 - B. "Many writers have more than one form of certain letters under command and make any one of two or even three normal styles under different circumstances and conditions, and divergences of this kind will not, of course, differentiate two writings.It is important also to understand that an entirely different design of letter often does not so conclusively point to a different writer as a persistent but slight modification of a minor part of the same general type of letter." (Page 265)
 - C. "In any comparison allowance must always be made for certain coincidences in writings by differ-

ent writers which may even extend to certain modifications of system. Developed handwriting by different writers has certain habits of abbreviation and also some modification of proportions and size and other changes common to many writers, while other qualities in developed writing are rare or actually unique." (Page 381)

- D. "...When all the varying qualities of a writer are considered it at once forcibly appears how improbable, or practically impossible, it is for two developed handwriting to be identical. The illustration shows the danger of basing an opinion on a single characteristic even if alone and unsupported it appears to be quite significant." (Page 381)
- E. "...It often is absurd to conclude that a writer did not disguise the main features of his handwriting but successfully adopted and maintained a delicate, consistent, inconspicuous disguise through a considerable quantity of writing." (Page 386)
- F. "If two writings show repeated and inconspicuous differences that it is unreasonable to conclude were purposely put into the writing, then the conclusion must be reached that these differences are the unconscious characteristics of two different writers." (Page 386)
- G. "...Identity is not proved by the presence of only a few common or conventional forms. / Identity is not proved by the presence of only system or national qualities or characteristics. / Identity is not proved by the presence of a few common abbreviated or developed forms and qualities." (Page 388)