OSAC 2022-S-0034 Standard for the Expression of Conclusions in Forensic Document Examination

Forensic Document Examination Subcommittee
Physics/Pattern Interpretation Scientific Area Committee
Organization of Scientific Area Committees (OSAC) for Forensic Science

Draft OSAC Proposed Standard

OSAC 2022-S-0034 Standard for the Expression of Conclusions in Forensic Document Examination

Prepared by
Forensic Document Examination Subcommittee
Version: 1.0 - OSAC Open Comment
August 2022

Disclaimer:

This OSAC Proposed Standard was written by the Organization of Scientific Area Committees (OSAC) for Forensic Science following a process that includes an open comment period. This Proposed Standard will be submitted to a standards developing organization and is subject to change.

There may be references in an OSAC Proposed Standard to other publications under development by OSAC. The information in the Proposed Standard, and underlying concepts and methodologies, may be used by the forensic-science community before the completion of such companion publications.

Any identification of commercial equipment, instruments, or materials in the Proposed Standard is not a recommendation or endorsement by the U.S. Government and does not imply that the equipment, instruments, or materials are necessarily the best available for the purpose.

To be placed on the OSAC Registry, certain types of standards first must be reviewed by a Scientific and Technical Review Panel (STRP). The STRP process is vital to OSAC's mission of generating and recognizing scientifically sound standards for producing and interpreting forensic science results. The STRP shall provide critical and knowledgeable reviews of draft standards or of proposed revisions of standards previously published by standards developing organizations (SDOs) to ensure that the published methods that practitioners employ are scientifically valid, and the resulting claims are trustworthy.

The STRP panel will consist of an independent and diverse panel, including subject matter experts, human factors scientists, quality assurance personnel, and legal experts, which will be tasked with evaluating the proposed standard based on a comprehensive list of science-based criteria.

For more information about this important process, please visit our website at: https://www.nist.gov/topics/organization-scientific-area-committees-forensic-science/scientific-technical-review-panels.

Foreword

The use of standardized terminology by Forensic Document Examiners (FDEs), like other forensic science service providers, promotes consistency across jurisdictions and relieves the judicial system of conflicting terms and definitions when an examiner is reporting written conclusions or testifying. Some terms and definitions in this document might vary from the usage of other forensic disciplines.

Table of Contents

1 Scope

This document provides standardized terms, definitions, and usage examples relevant to expressing the conclusions of FDEs. This standard may not cover all wording or conclusions given for unusual or uncommon examinations.

2 Normative References

None

3 Terms and Definitions

3.1 conclusion
A position reached after consideration of a set of facts or examination results.

3.2 proposition
statement or assertion that is either true or false. Propositions represent two or more competing explanations for the evidence in the case at hand. As such, they are mutually exclusive, meaning they cannot be true at the same time.

Example of two mutually exclusive propositions:
1: John Doe wrote the questioned item
2: Someone other than John Doe wrote the questioned item

3.3 intelligence conclusions or results
provide indicators (based on physical remnants of events) to link cases, events, and situations in the form of strategic intelligence. These conclusions address questions relating to phenomena and may be in the form of analytical products (such as crime pattern) or intelligence products (such as specific crime series to inform decisions on the prioritization of problems and targets).

3.4 investigative conclusions or results
provides possible explanations for technical findings. These types of conclusions are given when a pair of competing propositions have not been formulated. This happens when there is insufficient background (conditioning) information or when the submitter requests explanations for findings and there is no obvious alternative.

3.5 technical conclusions or results
descriptive account of findings. In certain situations, this may constitute the assignment of an item to a class (i.e., classification). A technical conclusion does not involve a formal evaluation, under a pair of competing propositions.

4 Requirements

4.1 Not Suitable Determination

4.1.1 When an item(s) is unsuitable for continued examination, language similar to the following should be used:

> "The submitted item(s) does not provide a sufficient basis for a meaningful comparison or evaluation to address the specific request."

5 Conclusions

Conclusions can be evaluative, meaning they address at least two propositions, or non-evaluative in nature. Expert conclusions are based on observations regarding characteristics or features of the item(s), evaluated using the knowledge, education, training, and experience of the examiner. A statement to this effect serves to clarify the bases of the conclusions stated below. These statements should be presented in the broader context of a comprehensive examination and report.

The conclusions are based upon the information and materials provided to the examiner, as well as the propositions used in the examination. If the information or materials change, or should different propositions be of interest, then the conclusion(s) may also change.

5.1 Evaluative Conclusions

5.1.1 Evaluative conclusions shall be expressed following a complete evaluation (1) within a framework of relevant contextual information, (2) by considering at least two competing propositions, and (3) with a focus on the evaluation of findings given each proposition.

5.1.2 Evaluative conclusions are intended to convey the degree of support provided by the findings for one proposition relative to one or more specified alternative propositions. The conclusion shall be worded as follows:

> "The findings provide <modifier> support for proposition X relative to proposition Y."
>
> As an alternative to "findings," "evidence" or "observed combination of characteristics" may be used.

5.1.3 The <modifier> conveys the magnitude of the degree of support the findings provide for proposition X relative to proposition Y. Either proposition can be first in the above statement according to whichever is favored. The modifier will be:

- Extremely strong
- Very strong
- Strong
- Moderate
- Limited
- Approximately equal

5.1.4 When the modifier is Limited and to avoid the "weak evidence effect," [1] the examiner's conclusion should be stated similarly to the following: "The findings provide more support for proposition X than for proposition Y, but the amount/level of that support is limited."

5.2 Modifier Meaning

5.2.1 A conclusion of equal support for proposition X relative to proposition Y means that the findings provide approximately the same degree of support for both propositions. This may be clarified as an indeterminable conclusion. Each progressive level ("limited," "moderate," "strong," "very strong," "extremely strong") represents an incremental increase in the degree of support. The modifiers used to differentiate the gradations of levels should not be considered as clearly defined categories.

Note: Examiners using the ENFSI or NIFS guidelines define this increase as approximately tenfold. This level of increase is similar to the Richter scale for earthquakes.

5.2.2 Acceptable alternative wording that may be used:

[1] Martire KA, Kemp RI, Watkins I, Sayle MA, Newell BR. The expression and interpretation of uncertain forensic science evidence: verbal equivalence, evidence strength, and the weak evidence effect. Law Hum Behav. 2013 Jun;37(3):197-207. doi: 10.1037/lhb0000027. PMID: 23750600.

"<modifier> support if X is true than if Y is true"
"<modifier> support given X than given Y"
"<modifier> support for X rather than Y"
"approximately equal support given both X and Y"

5.2.3 Examples for handwriting conclusions, given the following propositions:

Proposition 1: The writer of the K1 samples wrote the Q1 handwriting.
Proposition 2: Someone other than the writer of the K1 samples wrote the Q1 handwriting.

Example 1: "The findings provide moderate support for the Q1 and K1 samples having been written by the same writer relative to having been written by different writers."
Example 2: "The findings provide strong support for the Q1 and K1 samples having been written by different writers relative to having been written by the same writer."

5.2.4 Examples for non-handwriting conclusions, given the following propositions:

Proposition 1: The questioned document was produced by the submitted typewriter.
Proposition 2: The questioned document was produced by a typewriter other than the submitted typewriter.

Example 1: "The findings provide extremely strong support for the questioned document having been produced by the submitted typewriter relative to having been produced by a different typewriter.
Example 2: "The findings provide more support for the questioned document having been produced by the submitted typewriter relative to having been produced by a different typewriter, and the amount of that support is limited."

5.3 Non-evaluative conclusions and results

Non-evaluative conclusions or results are used to describe observations, assign an object to a class, provide guidance, or assess the findings under a single proposition. These are often distinguished as being technical, investigative, or intelligence conclusions.

5.3.1 Non-evaluative conclusions shall not be used for comparative handwriting examinations.

5.3.2 Examples

Example 1: The questioned document was printed by a toner device. The printed characteristics do not correspond to other known printing technologies.

Example 2: The following indented writing recovered on the questioned document reads "150 N. Los Angeles St."

Example 3: There are no writing impressions from page 2 of a medical record observed on the subsequent pages.

Example 4: A screening was conducted between the submitted known samples of 100 writers and the questioned document. It was determined that the writing from person A, B, and C best warranted a full evaluative comparison with the questioned document. This does not mean, at this stage, that the other 97 writers are excluded.

Annex A (informative) Bibliography

1) Martire KA, Kemp RI, Watkins I, Sayle MA, Newell BR. The expression and interpretation of uncertain forensic science evidence: verbal equivalence, evidence strength, and the weak evidence effect. Law Hum Behav. 2013 Jun;37(3):197-207. doi: 10.1037/lhb0000027. PMID: 23750600.

2) "ENFSI Guideline for Evaluative Reporting in Forensic Science," published March 2015, http://enfsi.eu/wp-content/uploads/2016/09/m1_guideline.pdf

3) National Institute of Forensic Sciences Australia-New Zealand, "An Introductory Guide to Evaluative Reporting," June 2017, http://www.anzpaa.org.au/forensic-science/our-work/projects/evaluative-reporting)