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MISSOURI IAI

WINTER NEWSLETTER

The Forensic Science and Standards Act of 2013

Editors Note: This article taken from the IAI website at www.theiai.org/current_affairs.

The criminal justice system relies on forensic science to identify and prosecute criminals and exonerate the falsely accused. But in a path breaking 2009 report to Congress, the National Academy of Sciences found that the interpretation of forensic evidence is severely compromised by the lack of supporting science and standards. They concluded, "The bottom line is simple: In a number of forensic science disciplines, forensic science professionals have yet to establish either the validity of their approach or the accuracy of their conclusions, and the courts have been utterly ineffective in addressing this problem."

In a series of recent articles, the Washington Post reported on flawed forensic work that may be responsible for the wrongful convictions in thousands of criminal cases. An April Post editorial urged the Justice Department to conduct a full review of all cases that ended in conviction, and a July 11th story reports that the Justice Department and the FBI

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Special points of interest:

- **The Forensic Science and Standards Act of 2013**
- **To the Exclusion of All Others**
- **Make Your Own Crime Scene Tools**

To the Exclusion of All Others

By Michele Triplett

FOR THE PAST FEW YEARS, there has been ongoing debate about whether pattern evidence identifications are "to the exclusion of all other sources". The concern is about overstating conclusions, and using the phrase to the exclusion of all others implies that a conclusion is irrefutable with no possibility of error. The same concern has been stated regarding the use of words like definite, absolute, conclusive, 100-percent confidence, or 100-percent certainty.

2008 Hull Frye-Mack Hearing

Prior to the Frye-Mack hearing for State of Minnesota v Jeremy Jason Hull, conclusions of identity for finger-print impressions were considered by most practitioners to be

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"to the exclusion of all others". The Frye-Mack testimony stated a fingerprint impression could be identified to a source but not individualized. This distinction was made because the analysts felt that the word individualize presented the conclusion as a fact while the word identify left the door open for the remote possibility that someone else possessed a similar arrangement of friction ridge detail.

The effort to make this distinction was not a matter of questioning the principle of uniqueness; instead, it was highlighting the amount of information needed to determine that uniqueness had not been established. At some point, the information under consideration may be so minimal or ambiguous that it becomes plausible that another source could have produced a similar pattern.

An additional reason for using the term identify over individualize was to specify that the unknown impression was not compared to every possible source.

SWGFAST Modification

In September 2008, based on the ideas presented in the Hull case, the Scientific Working Group on Friction Ridge Analysis, Study and Technology (SWGFAST) started the process of removing the phrase "to the exclusion of all others" from their definition of individualization. However, SWGFAST did not differentiate between the meaning of identification and individualization as the Hull Frye-Mack testimony did.

The IAI

On February 19, 2009, in a response to the National Academy of Sciences report Strengthening Forensic Science in the United States: A Path Forward, the president of the International Association for Identification (IAI), Robert Garrett, wrote a letter to IAI members stating: "Although the IAI does not, at this time, endorse the use of probabilistic models when stating conclusions of identification, members are advised to avoid stating their conclusions in absolute terms when dealing with population issues."

Practitioners' Views

Many practitioners put these events together and claimed they could no longer exclude all others when making a comparison. Others disagreed and felt there was nothing to forbid them from making a determination "to the exclusion of all others".

SWGFAST had removed the phrase from their terminology but they had not specified that it could not be stated. Similarly, the IAI letter was not a formal resolution nor did it specifically say "to the exclusion of all others".

Those opposed to the phrase claim it is a statement of fact, where no possibility exists that the impression could have come from another source. Others think of it as a statement indicating the range of those under consideration, acknowledging that conclusions are never absolute.

Everyone would agree that physically comparing an impression to all individuals is unrealistic. Nevertheless, some maintain their conclusions are to the exclusion of all others regardless of whether it is stated. Those people reason that if all fingerprints are accepted as unique, and they have concluded that a fingerprint impression was made by a certain source, then they are excluding everyone else—not physically, but theoretically. The possibility of an alternative conclusion is so remote that it can be disregarded as implausible. If another source could have plausibly made an impression, then the analyst would have given a conclusion of inconclusive.

The argument that a person would have to compare a fingerprint impression to every person in order to exclude all others may apply to exact sciences, but fingerprint comparisons are not an exact science. Fingerprint comparisons are logical deductions where appropriate rules of inference are permitted; viewing all possibilities is unnecessary.

Regardless of which view a person holds, clearly articulating the strength of a conclusion is essential. Stating that a conclusion is "to the exclusion of all others" may be an overstatement.

Differentiating between the words identify and individualize may be one solution, but attorneys and jurors may hear the same message regardless of the term used and perceive the conclusion as a fact instead of a deduction. This misrepresentation may inject a debate between opposing court counsel and undermine the credibility of otherwise accurate testimony.

Another suggestion has been to state that conclusions are the opinion of the analyst. Labeling conclusions as opinions helps avoid overstating results but it may severely undermine a conclusion if it is perceived as being the personal opinion of the analyst and not a scientific opinion that would be corroborated by others as clearly beyond debate.

Perhaps a better way to state any positive pattern evidence conclusion is to use a statement instead of simplifying the conclusion down to a single word that can be easily misconstrued.

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have now launched such a review. The National Academy of Sciences, the Washington Post, and a broad array of stakeholders in the criminal justice community have all called for strengthened forensic science and standards.

The Forensic Science and Standards Act of 2012 responds to this call by:

Promoting Research. The bill would establish a National Forensic Science Coordinating Office, housed at the National Science Foundation (NSF), to develop a research strategy and roadmap and to support the implementation of that roadmap across relevant Federal agencies.

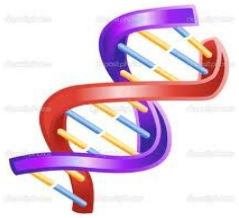
NSF would establish a forensic science grant program to award funding in areas specifically identified by the research strategy. NSF would be directed to award two grants to create forensic science research centers to con-

duct research, build relationships with forensic practitioners, and educate students. All agencies with equities in forensic science would be encouraged to use prizes and challenges to stimulate innovative and creative solutions to satisfy the research needs and priorities identified in the research strategy.

Requiring Standards Development. The National Institute of Standards and Technology (NIST) would be directed to develop forensic science standards, in consultation with standards development organizations and other stakeholders. NIST could establish and solicit advice from discipline-specific expert working groups to identify standards development priorities and opportunities.

Implementing Uniform Standards. To advise on the application of the new standards, a Forensic Science Advisory

"The National Institute of Standards and Technology (NIST) would be directed to develop forensic science standards"



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Some possibilities may be:

"The information between the impressions (latent prints, tire tracks, toolmarks, etc.) indicates that the impression was deposited by the given source." Or…

"After analyzing the data, the only plausible conclusion I can arrive at is that this impression was made by this source." Or…

"I have thoroughly examined the data between the impressions and I would attribute impression A as coming from source B."

Using a statement in lieu of using a single word for conclusions may be beneficial because the weight of the conclusion can be indicated along with the conclusion itself. Phrases such as these present a belief grounded in reasoning while one-word answers present a conclusion as absolute fact.

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Make Your Own Crime Scene Tools
By Dick Warrington

The "CSI Effect" has profoundly affected the way we perform our jobs. Juries everywhere expect a higher level of professionalism. We have to step up to the plate and perform to the best of our abilities.

Even as we continue to use DNA testing and other sophisticated technologies, however, we also need to take advantage of some of the low-tech products out there that can enhance the quality of our work. Here are three simple products that can increase your professionalism and are available to you at little or no cost.

The first two products are types of evidence markers. You can photograph evedince by having someone point to the item with their finger, but it would certainly be more professional to use an arrow or pointer. Also, if you use arrows, you can place several—either numbered or plain—to indicate each bullet hole or other item of interest. You can download a free set of arrows by going to my web page and following the instructions: http://www.csigizmos.com/products/evidencemarkers/arrows.html. The arrows are already formatted to print on Avery address labels; if you use removable labels, you can reuse the arrows.

Another type of evidence marker that you need for your crime scenes is photo evidence numbers to indicate the location of each piece of evidence. These are typically large, plastic markers that must be properly decontaminated if there is blood at the scene, and then they must be stored between cases. Because of the large, rigid "A" shape, they are often unsuitable for use in a confined area or an area with several small items of evidence that need to be photographed. Often, a better solution is to create your own small, medium, and large disposable "A" frame markers. Then, when they become contaminated, you simply dispose of them. If you look under "Evidence Markers" on my website, you'll find instructions and templates that will allow you to create disposable "A" frame markers with and without a scale: http://www.csigizmos.com/products/evidencemarkers.html. All you need to supply is your computer and heavy paper or card stock.

The final tool is a magnetic ruler which you can place on the surface of a vehicle to take photos of bullet holes, prints, etc. To make the magnetic rulers, first purchase an adhesive surface magnetic sheet of 5" x 8" (about $1.99 at most discount or craft centers). Next, get a set of four rulers: one white 6" rule, one black 6" rule, one gray 6" rule, and one ABFO #2 scale. Peel off the adhesive cover from the magnetic sheet and place your rulers and scale on the adhesive side. Rub them down to make a good bond. Cut the rulers and scale out with either a pair of scissors or an Exacto knife. You now have a set of magnetic rulers. Remember that some vehicles are not made of metal, so these rulers will not work on them. You will need to use an adhesive ruler instead.