

# **FORENSIC SCIENCE DISCIPLINE REVIEW DRAFT METHODOLOGY PRESENTATION TO THE NATIONAL COMMISSION ON FORENSIC SCIENCE**



Office of Legal Policy  
June 20, 2016

# Office of Legal Policy

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# Outline of Presentation

Part I: Forensic Science Discipline Review (FSDR) of  
Testimony Background

Part II: FSDR Draft Methodology

Part III: Additional Elements for Comment



# PART I: FSDR BACKGROUND



# FSDR Goal

- Advance the use of forensic science in the courtroom by understanding its use in recent cases and to facilitate any necessary steps to ensure that expert forensic testimony is consistent with scientific principles and just outcomes



# FSDR Proposal

- Review of forensic testimony by FBI examiners in several forensic disciplines in state and federal cases for a five-year period (2008-2012)
- Possible disciplines: fiber, firearms, footwear, glass, questioned documents, latent prints, paints, polymers, tire tread, and toolmarks
  - Choice of disciplines to be reviewed not based on specific concerns



# Objectives in FSDR Methodology Development

- Transparency
  - All elements of the methodology (save budget and resources) will be fully available for review and comment by the public
  - Posting draft methodology online
- Independence
  - FSDR development team has developed methodology proposal
  - NCFS review and consultation sought prior to any implementation



# FSDR Methodology Development Process (thus far)

- Framework introduction (03/21/2016)
  - Comment received through May 9 and informed development process
- Methodology development (03/2016-TBD)
  - Methodology outreach
- Draft methodology presentation with NCFS (06/20/2016)





# FSDR Methodology Development Process (next steps)

- Draft methodology posted (06/2016)
- Statistician roundtable (07/2016)
- Methodology revision (09/2016)
- Revised methodology review with NCFS (09/2016)
- Begin FSDR implementation (following finalized methodology)



# Uniform Language for Testimony & Reports

- Uniform Language for Testimony and Reports
  - Standard for prospective testimony
  - Based on FBI ASSTRs
- Proposed Uniform Language for 7 disciplines posted
  - Serology, general chemistry, fibers, foot prints/tire treads, glass, latent fingerprints, and toxicology
  - Comment closes on first group of Uniform Language documents on July 8
- More Uniform Language documents to be posted this summer



# FSDR Testimonial Standard Development Process

- FSDR standard needs to be flexible enough to apply retrospectively
  - Uniform Language documents will form the starting point
  - Use of historical standard can be problematic
- Expectation that at least one FSDR testimonial standard will be presented at September NCFS meeting



# PART II: DRAFT METHODOLOGY



# FSDR Methodology Development Team

- Office of Legal Policy
- National Institute of Justice
  - George Tillery, Office Director, Office of Science & Technology
  - Joel Hunt, Senior Computer Scientist
  - Linda Truitt, Senior Social Science Analyst
- Bureau of Justice Statistics
  - Matthew Durose, Statistician



# Research Question

- How closely do FBI examiner Statements of Relationship from 2008-2012 in select disciplines conform to FSDR adopted testimonial standards?



# FSDR Proposal

- FSDR will encompass all Statements of Relationship (statements of exclusion, inconclusive statements, and statements of association)
  - Consistent with the intent of the review to assess the language being used by examiners in their expert testimony



# Selection of Cases – Other Reviews

- FBI Microscopic Hair Comparison Analysis
- Texas Forensic Science Commission
- New York Commission on Forensic Science





# Selection of Cases – FSDR Proposal

- FBI examiner testimony (not reports)
- Statements of Relationship
- Any outcome (acquittal, conviction, hung jury)
- All cases 2008 to 2012



# Sampling Unnecessary

FBI Examiner Testimony 2008-2012  
Select Disciplines

Latent Prints	Firearms & Toolmarks	General Documents	Shoeprint & Tire Tread	Paints & Polymers
132	45	46	25	17

- FBI will provide information for all cases it has on file
- Crowdsourcing request forthcoming



# Review of Examiner Statements – Other Reviews

- Level of Review
  - Line by line (MHCA)
  - Entire testimony (Texas, NY)



# Review of Examiner Statements – FSDR Proposal

- Hybrid review of line-by-line and completely contextual review
  - Testimony “threads”
- Testimony thread: complete, even if not continuous, discussion of a piece (or pieces) of evidence that has at least one Statement of Relationship



13 Q. Okay. So as far as your examination goes -- well, strike  
14 that. Let me ask you then about the casings. You were  
15 provided with 32 casings for examination, right?

16 A. Yes, sir.

17 Q. And again, one of the things that you wanted to determine  
18 was whether the casings were associated with this particular  
19 rifle, right?

20 A. Yes, sir.

21 Q. And the examination there entails an analysis of the back  
22 of the casing, right, where the firing pin hits the casing?

23 A. That's part of the analysis, yes, sir.

24 Q. It's different from an analysis of the bullet fragments,  
25 right?

1 A. Yes, sir.

2 Q. And in that case, you were able to determine that 22 of  
3 them -- I'm sorry, 21 of them were in fact bore  
4 characteristics that they were fired from this particular  
5 rifle?

6 A. That's correct. 21 of the cartridge cases were fired in  
7 the submitted rifle.



8 Q. Okay. And there were nine which you put in a different  
9 category?

10 A. They had been -- those are the nine that had been loaded  
11 into and extracted, but I could not determine if they had been  
12 fired in that rifle.

13 Q. Okay. So that nine, you can't determine if they had been  
14 fired from that particular rifle?

15 A. That's correct.

16 Q. But they were fired from a rifle?

17 A. That is correct.

18 Q. Just you can't say it is this rifle?

19 A. No, sir.

20 Q. And there's two that you can't say either of those  
21 things, right?

22 A. Yes, sir.

23 Q. There's two that you cannot say they were loaded into  
24 this rifle and extracted or fired from this rifle -- and  
25 extracted?

1 A. That is correct.



# FSDR Implementation Process

- Personnel

- Trained raters thread testimony and remove identifiers
- Threads assigned to trained raters for review of statements
- Threads may be re-aggregated
- All steps permit assessment of inter-rater reliability and limit human bias

- Piloting

- Initial implementation may be through a pilot of a different discipline or of cases outside the FSDR time period in order to develop a training protocol and reliability in process



# **PART III: SPECIFIC ELEMENTS FOR COMMENT**





# Evaluating Statements of Relationship

- Statements of Relationship can be assessed on:
  - Frequency
  - Where it occurred (direct, cross, re-direct, re-cross)
  - Who spoke the words affirmed by the examiner (prosecutor, defense attorney, court, examiner)
  - Type (association, inconclusive, exclusion)
  - Bolstering
  - Qualification of an earlier statement



# Evaluating Threads and Testimonies

- Issues:
  - Threads will vary in the number of statements and the presence or absence of qualifications
  - Differing standards – a given statement may be permissible in one discipline but not in another discipline
  - Numerical value may not accurately convey the conformity of testimony with so few testimonies
- Proposal to review and code each Statement of Relationship against the FSDR testimonial standard, and once the data collection is complete, conduct exploratory analysis



# Nonconformities and Expansion

- Utility of a “secondary” review less clear when reviewing a population
- Possible outcomes where response may be necessary and expansion could be appropriate
  - Earlier testimony has less conformity
  - Particular discipline has less conformity
  - Particular examiner has less conformity



# Nonconformities and Notification

- Nonconformity triggering a legal or ethical obligation to notify individual defendants who were found guilty
  - There may be a certain threshold of nonconforming statements in multiple threads
  - There may also be individual Statements of Relationship that are sufficiently problematic that notice occurs
- Notification system should prioritize appropriate notification but be cognizant of applying standards retrospectively that could have unintended professional consequences



# CONCLUSION AND NEXT STEPS



# Comment Periods

- Comment on Uniform Language in 7 disciplines
  - Open through July 8
- Comment on additional Uniform Language documents
  - Anticipated to run July to August
- Comment on FSDR draft methodology
  - Will open shortly and run through July



# FSDR Methodology Development Process

- Framework introduction (03/21/2016) ✓
- Methodology development (03/2016-TBD) ✓
- Initial methodology presentation with NCFS (06/20/2016) ✓
- Draft methodology comment period opens (06/2016)
- Statistician roundtable (07/2016)
- Revised methodology review with NCFS (09/2016)
- Begin FSDR implementation (following finalized methodology)

