You keep using that word...I do not think it means what you think it means:
Challenges in Communication Comprehension

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Roadmap

• What do factfinders hear?
• How do they hear it?
• Are they even listening?
• Why can’t we just speak in plain English?
• What about when others misrepresent our words?
• Where do we go from here?
What do factfinders hear?

“Our words matter. Language is a powerful weapon. It can be used to inform, but it can also be used to persuade or mislead. We must remember that many of the phrases we use as scientists are a kind of shorthand for larger concepts that other scientists understand. But juries do not have that level of understanding. Juries accept them at face value.”
What do factfinders hear?

Table 1
The articulation language used to convey “yes,” “no,” and “I don’t know” for various forensic disciplines. This list is not meant to be exhaustive but rather to demonstrate the potential variation of terms between and within forensic disciplines.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Yes</th>
<th>No</th>
<th>I don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seized drugs</td>
<td>Present, confirmation, or determined to contain</td>
<td>Not present or does not contain</td>
<td>Inconclusive</td>
</tr>
<tr>
<td>DNA analysis (multiple rows = variation across laboratories)</td>
<td>Included</td>
<td>Excluded</td>
<td>Inconclusive or uninformative</td>
</tr>
<tr>
<td>Firearms</td>
<td>Identified</td>
<td>Cannot be included</td>
<td>Excluded</td>
</tr>
<tr>
<td>Latent print (multiple rows = variation across laboratories)</td>
<td>Identified</td>
<td>Excluded</td>
<td>Inconclusive</td>
</tr>
<tr>
<td>Bloodstain pattern analysis/pattern classification</td>
<td>Yes (could be)</td>
<td>No (eliminated)</td>
<td>Undetermined</td>
</tr>
<tr>
<td>Fire investigation (ignition and source)</td>
<td>Included</td>
<td>Excluded</td>
<td>Undetermined</td>
</tr>
</tbody>
</table>

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ABSTRACT

During the investigation of a crime, evidence is collected, analyzed, interpreted, and discussed by various stakeholders. This article examines the communication that may occur between two of these stakeholder detectives and forensic analysts, and how their interaction influences the interpretation of evidence as the investigation proceeds and the theory of the case evolves. Such communication can be understood as sets of actions that are inter-dependent: for example, a request for a specific analysis by a detective leads to analysis and conclusions that the analyst shares with the detective, which leads to an assessment of those conclusions relative to the theory of the case, which leads to further analysis requests, and so forth. We present the Pebbles on a Scale metaphor, which describes how communication and the understanding of evidence takes place between the detective and analyst, and the different ways in which they consider the information as a function of their roles in the investigation. Using a hypothetical case for illustration, we discuss communication challenges, the evolving theory of the case, the language that is used by analysts to discuss “yes,” “no,” and “I don’t know” conclusions, and how these conclusions are used by detectives during the progression of the investigation.
What do factfinders hear?

https://zenodo.org/records/3734560
How do they hear it?

**REPORTS**
- Written
- Frequently used for decisions
- Freer format, but what is read?
- Limited to no research

**TESTIMONY**
- Oral
- Occasionally used for decisions
- Constrained format
- Much research but few solutions
Are they even listening?

**Central Processing**
- Engaged
- Focus on appropriate cues
  - Data
  - Explanations
  - Experience

**Peripheral Processing**
- Bored / zoned out
- Focus on inappropriate cues
  - Appearance
  - Likability
  - Background

*Not only must we be understandable, we must be engaging!*
Why can’t we just speak in plain English?

• Scientists value precision
• Clarity is *hard*
What about when others misrepresent our words?

• Interpretation Scales
  • 3-scale vs 5-scale
  • “I can’t say it’s him” (wink wink, nudge nudge)
• Pushing the envelope with ID
• Giving no useful information
• Subjectivity
• Fully continuous scale
• So...what’s the effect?
What about when others misrepresent our words?

- IDs of mated pairs $0.377 \rightarrow 0.266$
- Inc overall $0.569 \rightarrow 0.351$
- 17 ‘erroneous SSS’ but...
- 97 correct SSS

“[W]e view it as important that consumers of investigative leads understand that these are not firm conclusions”
What about when others misrepresent our words?

- Closing arguments
- Re-stating of our testimony
- Plea bargaining from reports
- Even judges on occasion...
Regina v Bornyk (2013, British Columbia)

• “Following a day of legal argument I reserved judgment. During reserve, I became aware of further materials…”

• “[m]ost of the well-known errors have occurred in cases involving a single, distorted impression.”

  --Eldridge, 2011

• Judge Funt acquitted because “While the usable portion of the latent fingerprint and the known fingerprint are quite similar, I have more than a reasonable doubt that there is a match [...]”
Where do we go from here?

• Focus on development of understandable language
  • Cognitive psychologists—Linguistics

• Focus on development of ways to quickly and effectively communicate complex concepts
  • Cognitive psychologists—Linguistics

• Focus on development of effective visual aids

• Standardization of interpretation scales

• Research into efficacy of all above
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