CLARUS

System Bias in the Interorganisational Environment of Digital Forensics

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The CLARUS project

Building clarity and preventing bias in digital forensic examination, interorganisational communication and interaction

- Co-funded by the European Union's Horizon Europe research and innovation programme and UK Research and Innovation

- Project duration: 2023-2026

- Six project partners:

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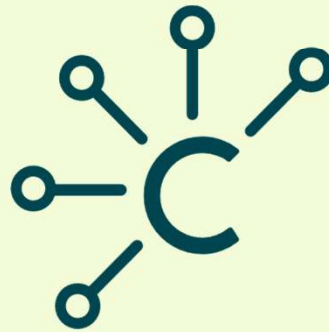
Cognitive bias and **bias mitigation**

Cognitive bias

- Refers to systematic deviations in judgement and decision-making

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──────────►[ Causes ]──────────►[ Effects ]──────────►
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- Cognitive architecture
  - Heuristics
  - Cognitive processes

- Cognitive biases

- Other influences that can interfere with forensic decision-making: irrelevant case information, tools used, organisational factors, …

Cognitive bias

Causes → Effects

Preventative measures

Measures to uncover error

UK Research and Innovation
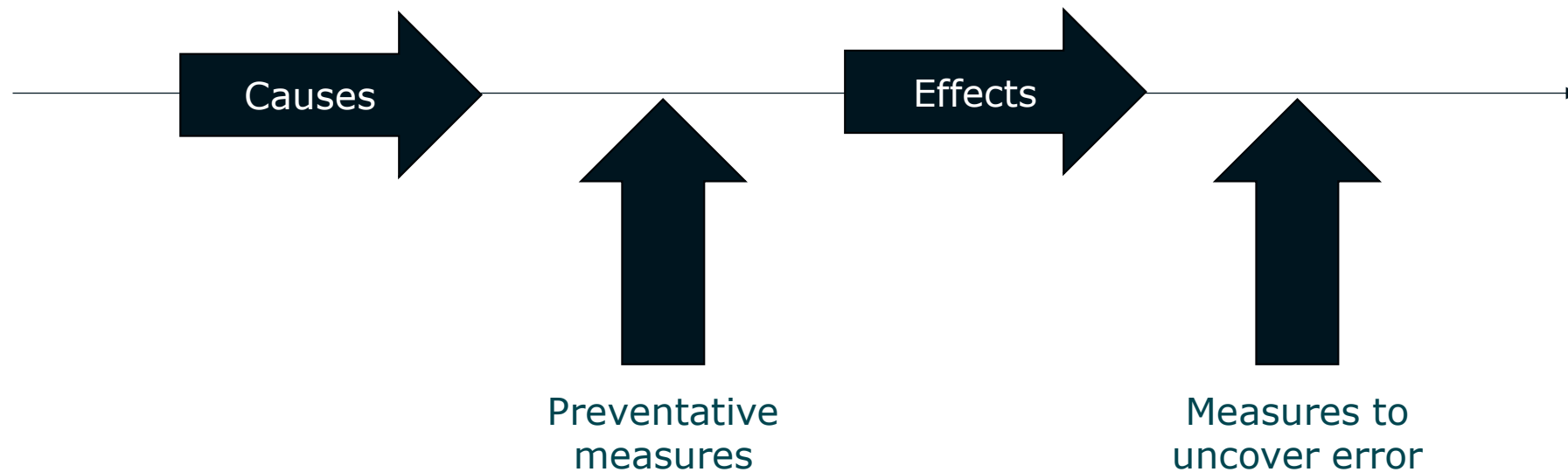
Bias mitigation

- I will outline preliminary findings of how the digital forensic systems of CLARUS partner countries try to prevent bias in practice
    - Are the systems designed to be vigilant against bias?
    - Are the systems conscious of the potential for bias?
    - Are routines in place to reduce the likelihood of bias?

Data and methods

- Official documents (laws, guidelines, quality manuals etc.)
- Research diaries
- Individual interviews
- Focus group interviews
- Survey data

- Document analysis & thematic analysis
- *No* comparative study

Bias mitigation measures

Relevant measures in digital forensic environments include:

- Raising awareness of cognitive bias
- Analysis guided by multiple competing hypotheses
- Compartmentalization
- Linear Sequential Unmasking-Expanded (Dror & Kukucka, 2021)
- Blind peer review / blind verification

Bias mitigation in practice

- Overarching finding
    - Low degree of formal regulations targeted at mitigating bias in digital forensics
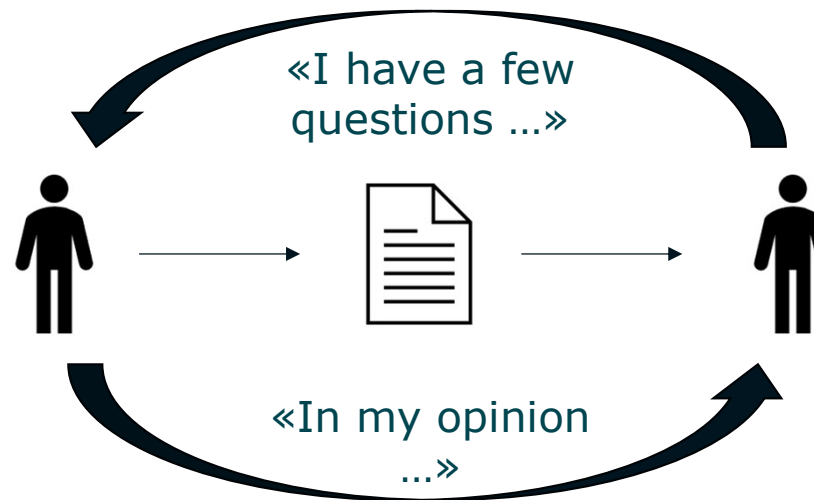   - Mainly indirect/implied

Bias mitigation in practice

- Specialist training
  - **BUT**: only relevant if curriculum encompasses cognitive factors and bias awareness

Bias mitigation in practice

- Attempts to regulate information flows
  - **BUT**: only effective if there is compliance

Bias mitigation in practice

- Peer review process
    - **BUT**: only effective if blinded

- Accreditation – e.g., ISO 17025
    - **BUT**: depends on their scope and whether their methods include bias mitigation

Preliminary findings

- Low degree of formal regulations targeted at mitigating bias in digital forensics in partner countries
- Few practical applications targeting cognitive bias

Thank You

Any Questions?