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Updating Expert Testimony? Learning from a Comparative Perspective

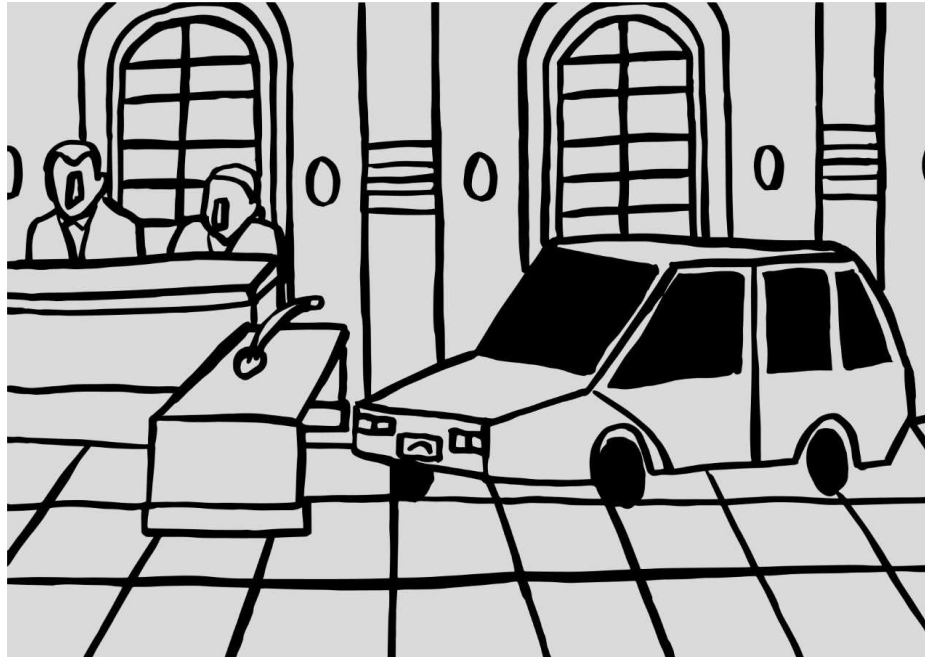
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Outline

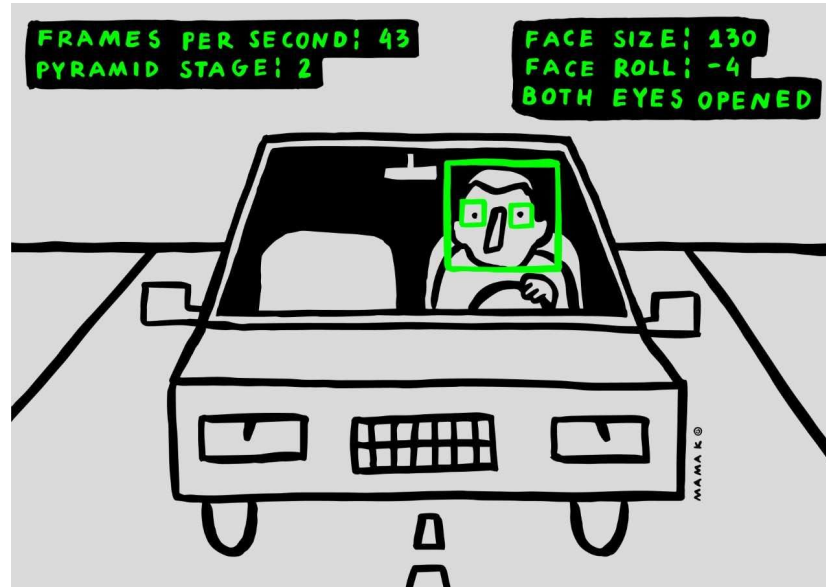
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- 1 Updating Expert Testimony – why?
 - 2 Terminology and Methodology
 - 3 Judges as Gatekeepers (Relevance, Admissibility, Reliability, Standards)
 - 4 Closing Legal Gaps when it comes to AI/“Device Evidence”
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1 Updating Expert Testimony – why?



Today, evidence enters courtrooms which could be “scientific” or could be “witch dunking”,
e.g. smart devices reporting observations of their own, like cars’ drowsiness alerts.

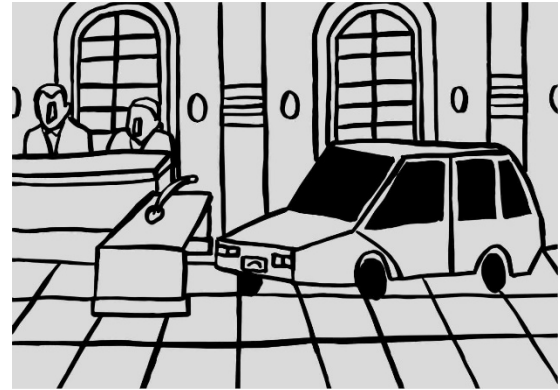
1 Updating Expert Testimony – why?



Driver drowsiness detection is based on a “smart mix” of

- steering pattern monitoring & vehicle position in lane monitoring; and
- driver eye/face monitoring as well as other physiological measurements like muscle activity, sitting positions, etc.

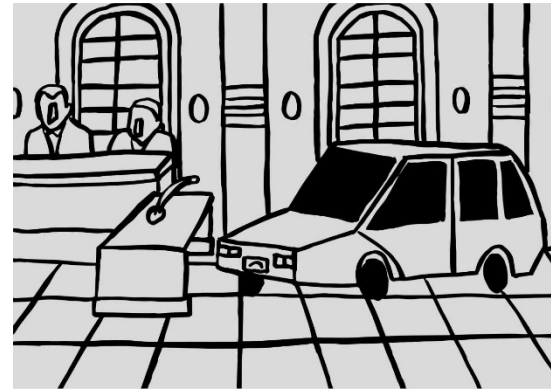
1 Updating Expert Testimony – why?



“Drowsiness alerts” cannot be meaningfully tested in court
(as cars cannot be called upon to give testimony and,
if AI is involved, expert testimony is limited for various reasons ...)

Yet, courts feel increasing pressure to accept such evidence;
cf. AI Dutch & UK Report Crim_AI. for Hansken, CATCH, ANRP.

2 Terminology and Methodology



“Machine evidence”, “Device evidence”, “AI evidence”,
i.e. autonomously generated observations by AI-systems

- either construed for forensic purposes
(like Hansken or CATCH [NL] or ANPR [UK]);
- or not
(like drowsiness alerts).

2 Terminology and Methodology

Crime_AI: Functional legal comparison

- (1) **legal systems face similar problems:** *AI evidence / devices becoming a sort of witness without a meaningful reliability test;*
- (2) **for the same problem, different legal systems take different legal measures, e.g.**
 - *regulate technology?*
 - Initiative for a “Justice in Forensic Algorithms Act”;
 - EU laws on “Trustworthy AI” or privacy protection
 - *re-interpret or modify procedural rules?*
 - (a) *re-inventing the confrontation clause for AI evidence;*
 - (b) *introduce new rules specifically tailored for scrutinizing AI evidence.*
- (3) **despite differing measures, legal systems reach similar results.**

3 Judges as Gatekeepers *in their structure* for (sufficiently reliable) evidence in courtrooms.

As a rule:

All relevant evidence is admissible.

Reliability is based on the weight of the evidence, not the admissibility.

Whether evidence is persuasive or not is a question for the trier of facts – which differ, in general, with *being the jury in the U.S. and bench judges in Europe*.

As an exception:

untrustworthy evidence is excluded, like, for instance, observations that cannot be discredited through confrontation/cross-examination.



3 Judges as Gatekeepers for (sufficiently reliable) evidence in courtrooms – *“admissibility” a proxy in comparative law.*

U.S. Federal Rules of Evidence, Rule 401 and 402

Relevant evidence is admissible unless any of the following provides otherwise:

- the United States Constitution;
- a federal statute;
- (.....)
- other rules prescribed by the Supreme Court.

Irrelevant evidence is not admissible.

Swiss Criminal Procedure, Art. 139

¹ In order to establish the truth, the criminal justice authorities shall use all the legally admissible evidence that is relevant in accordance with the latest scientific findings and experience.

3 Judges as Gatekeepers for (sufficiently reliable) evidence in courtrooms – *Jury vs. Bench Trials*

U.S. Federal Rules of Evidence, Rule 702

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

Swiss Criminal Procedure, Art. 139

¹ In order to establish the truth, the criminal justice authorities shall use all the legally admissible evidence that is relevant in accordance with the latest scientific findings and experience.

No such rule in Germany, as judges are expected to be “professionals”.
But in a verdict judges must explain the evidentiary basis of their findings in detail (open to appeal).

3 Judges as Gatekeepers for (sufficiently reliable) evidence in courtrooms

U.S. Federal Rules of Evidence, Rule 403

The court may exclude relevant evidence if its probative value is substantially outweighed by a danger of one or more of the following: unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence.

No such rule in German or Swiss Criminal Procedure (or NL)

as the bench is the trier of facts and judges are expected to be “professionals”.

4 Closing Legal Gaps when it comes to AI Evidence

Problems arise if it becomes more and more difficult to assess reliability without an expert;

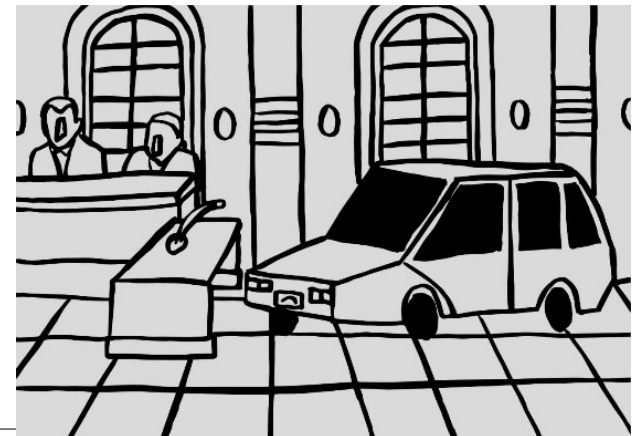
if for instance a defendant claims that a drowsiness detection system is biased: Is it trained solely on data generated during test drives with athletic Caucasian males, and thus might conclude that a relaxed female of Asian descent is “drowsy” simply because of her sitting position and eye shape?

Crim_AI

(a) re-interpretation of existing rules, e.g. adaption of the confrontation clause; revise admissibility of forensic evidence; ...

(b) introduction of new rules tailored for scrutinizing AI Evidence; e.g. data access rights;

(c) installation of technological solutions, e.g. “explainable AI”.



4 Lessons from a Comparative View

Updating expert evidence is an issue on both sides of the Atlantic, as

- All evidence is mostly presented by an expert witness to the fact-finder;
- criteria for admissibility of forensic evidence vary widely among jurisdictions;
but European jurisdictions in particular lack standardized tests.
- tendency in all jurisdictions to consider expert opinion overall as more reliable than not and admit it into evidence without too much scrutiny;
- adversarial systems malfunction with regard to due process and confrontation rights of (indigent) criminal defendants,
court appointed experts may have advantages here.

4 Lessons from a Comparative View

Learn from each other?

- (1) adopting a Rule 702 or Daubert approach in Europe** could open doors for establishing robust standards and for a more partisan testing of court-appointed experts;
- (2) strengthening the structure for court-appointed experts in the U.S.** could level the playing field for (indigent) criminal defendants, regarding due process and confrontation rights when AI evidence incriminates them.

Relevant Movies

My Cousin Vinny (1992)

Anatomy of a Fall (2023)

Relevant Literature (Selection)

Gless, Lederer & Weigend, *AI-Based Evidence in Criminal Trials?*
59 *Tulsa Law Review* 1 - 37 (2024)

Gless, Di & Silverman, *Ca(r)veat Emptor: Crowdsourcing Data to Challenge the Testimony of In-Car Technology*, 62 *Jurimetrics* 285 (2022)

Grimm, Grossman & Cormack, *Artificial Intelligence as Evidence*, 19 *Northwestern Journal of Technology and Intellectual Property* 9 (2021)

Kremens & Jasinski, *Admissibility of Evidence in Criminal Process*, 7 *Revista Brasileira de Direito Processual Penal* 15 (2021)

Završnik, *Algorithmic justice: algorithms and big data in criminal justice settings*.
18 *European Journal of Criminology* 623 (2021).

Gless, *AI in the Courtroom: A Comparative Analysis of Machine Evidence in Criminal Trials*, 51 *Georgetown Journal of International Law* 195 (2020)

Roth, *Machine Testimony*, 126 *Yale Law Journal* 1972 (2017)



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Thank you.

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