THE (EUROPEAN) ARTIFICIAL INTELLIGENCE (R)EVOLUTION: ARE TRUSTWORTHINESS, LAW, ETHICS, AND ROBUSTNESS ENOUGH FOR (RE)LIABILITY?

December 20, 2021
Anhui University, People's Republic of China
(Version 1 – RPF)

Prof. Dr. Viola Schmid, LL.M. (Harvard), Technical University Darmstadt, Germany

Agenda

A. Versions of Contribution at Anhui University

B. Content of Presentation at Anhui University

Part 1: Retrospection see also DDF

Part 2: New York Contribution (2020) published as "Video- & Audioformate & Slides"

Part 3: Follow Up on New York Contribution for Presentation at Anhui University (12/2021)

A. Two Versions of Contribution at Anhui University

Version 1: „Realtime Presentation Format (RPF)"
(author's terminology) for December 20, 2021

Version 2: „Dig Deeper Format (DDF)" (author's
terminology) encouraging further research
and scientific discourse

→ RPF following but see also DDF

B. Content of Presentation at Anhui University

Part 1: Retrospection see also DDF

Part 2: New York Contribution (2020) <u>published</u> as "Video-
& Audioformate & Slides"

Part 3: Follow Up on New York Contribution for
Presentation at Anhui University (12/2021)

B. Part 1:
Retrospection – Presentation & Abstract:
Internet Law Works-in-Progress 2020
- Extract and see also DDF -

THE (EUROPEAN) ARTIFICIAL INTELLIGENCE (R)EVOLUTION:
ARE TRUSTWORTHINESS, LAW, ETHICS, AND ROBUSTNESS ENOUGH FOR (RE)LIABILITY?

Internet Law Works-in-Progress
Saturday, March 14, 2020
New York Law School

Prof. Dr. Viola Schmid, LL.M. (Harvard)
Technical University Darmstadt, Germany

TO BE CONTINUED:

THE ARTIFICIAL INTELLIGENCE (R)EVOLUTION:
ARE TRUSTWORTHINESS, LAW, ETHICS, AND ROBUSTNESS ENOUGH FOR (RE)LIABILITY?

Prof. Dr. Georg Gesk

University of Osnabrueck, Germany,

for the Asian Legal Systems

B. Part 1 Retrospection - Presentation & Abstract: Internet Law Works-in-Progress 2020

"The (European) Artificial Intelligence (R)Evolution: Are Trustworthiness, Law, Ethics, and Robustness Enough for (Re)Liability?

The European Commission qualifies AI as a "game changer" and a European Independent High-Level Expert Group on AI (AI HLEG) witnesses an "AI driven world." Every "traditional lawyer and law professor" would expect that if the game and the world changes and a new "driver" appears on the scene (deus et dea et machina?) new law would evolve. […] We do not see a mutation, innovation, evolution or revolution of legal systems at present. However, it is necessary to create new legal settings in order to alleviate concerns of the public and of relevant industries alike when it comes to questions of liability for (un-)foreseen negative consequences caused by robots as well as AI systems. Defining robot and AI systems and designing a legal framework for liability are a prerequisite for reliability. […]

It is a matter of interpretation whether AI is revolutionary or evolutionary, which is why we chose the denomination "(R)Evolution". […]"

B. Part 2:
New York Contribution (2020)
as presented and published
- Extract and see also DDF -

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Agenda (I)

A. 2017 – 2020: A "European AI Hype" – The Ambition of Global Leadership

B. "European AI"

   I. GoCore! Agenda – Ten Sources & Two Publications

     1. "Core"

     2. AI-Framework-Graph as a Survival Guide for AI HLEG Deliverables

Agenda (II)

3. In a Nutshell:

   a. LER-Formula (Lawful, Ethical, "Robust")

   b. FRA-Formula (Foundations, Realisation, Assessment)

   c. A New Brand: "A Trustworthy AI for Europe"

   d. If the "AI process" is "Robust"

II. About "Robustness" (White Paper, 02/19/2020)

   1. Four Requirements

   2. Focus within LER-Formula: "Robustness"

Agenda (III)

C. (Re)Liability

  I.& II. [...] see also DDF

  III. Core Dogma for AI Liability Law?

D. Sources & Abbreviations (by the author)

  [...] see also DDF

A. 2017 – 2020: A "European AI Hype" – The Ambition of Global Leadership

White Paper

On Artificial Intelligence - A European approach to excellence and trust, COM(2020) 65 final, 02/19/2020

➢ Page 6:

"[…] the race for global leadership is ongoing, […]"

➢ Page 6:

"[…] the potential to become a global champion […]"

➢ Page 8:

"Europe is well positioned to exercise global leadership in building alliances around shared values and promoting the ethical use of AI."
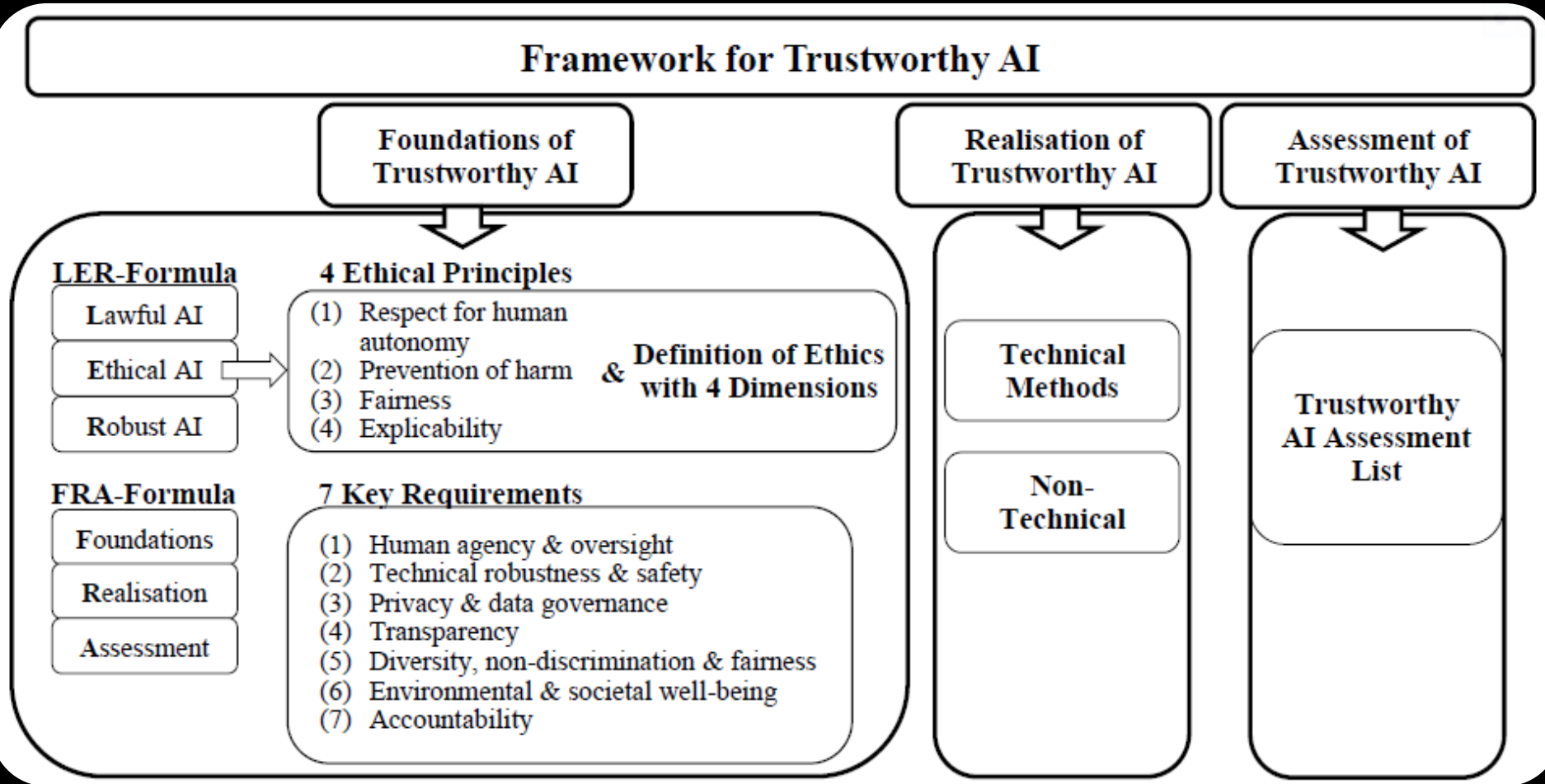
B. "European AI"
I. GoCore! Agenda

1. "Core" – Ten Sources from European "Expertgroups" and Communications as well as Reports as well as a White Paper of the European Commission as well as two publications in German

   → Not legally binding

   → Perhaps (un)lawful ?

   → But according to the authors:

   "(Legal) AI Governance Design that is noteworthy & has potential for sustainability"

B. "European AI"
2. AI-Framework-Graph* as a Survival Guide for AI HLEG Deliverables

Framework for Trustworthy AI

Foundations of Trustworthy AI

Realisation of Trustworthy AI

Assessment of Trustworthy AI

LER-Formula
- Lawful AI
- Ethical AI
- Robust AI

4 Ethical Principles
(1) Respect for human autonomy
(2) Prevention of harm
(3) Fairness
(4) Explicability

& Definition of Ethics with 4 Dimensions

FRA-Formula
- Foundations
- Realisation
- Assessment

7 Key Requirements
(1) Human agency & oversight
(2) Technical robustness & safety
(3) Privacy & data governance
(4) Transparency
(5) Diversity, non-discrimination & fairness
(6) Environmental & societal well-being
(7) Accountability

Technical Methods

Non-Technical

Trustworthy AI Assessment List

*Framework with Graph by the Author based on EGEGfTAI-I-2019 – Publication I, p. 32.

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B. "European AI"
3. In a Nutshell:

a. LER-Formula (Lawful, Ethical, "Robust")

b. FRA-Formula (Foundations, Realisation, Assessment)

→ c. A New Brand:

"A Trustworthy AI for Europe"

d. If the "AI process"* is "Robust"

*Author's terminology.

II. About "Robustness" (White Paper, 02/19/2020)
1. Four Requirements

"Robustness and Accuracy"

[…] see also DDF

2. Focus within LER-Formula: "Robustness"

➢ Law & Ethics → Core Competences of Humanities & (Cyber)Law

➢ "*Foresight Legal*"*: Differences in a Global Perspective with Different "Benchmarks"

→ "Robustness", however, "*Foresight Legal*"*:

Global "Yardsticks" → same Measurement Systems & Comparative (Legal) Analysis & Global Competition

"Robustness and Accuracy" as the Essentials of Liability (Law)

*Author's terminology.

C. (Re)Liability
I. Eleven Core Challenges for AI Liability Law*

[…] see also DDF

C. (Re)Liability
II. Ten Talking Points

The Expert Group Report on Liability for Emerging Digital Technologies – New Technologies Formation – set up by the European Commission consists of Sixteen Professors of Private/Civil Law

→ Ten Talking Points:

[…] see also DDF

C. (Re)Liability
III. Core Dogma for AI Liability Law?

"The new challenges in terms of safety create also new challenges in terms of liability. Those liability related challenges need to be addressed to ensure the same level of protection compared to victims of traditional technologies, while maintaining the balance with the needs of technological innovation."*

* SLAIIoTR-REP-I-2020, p. 16.

C. (Re)Liability
III. Core Dogma for AI Liability Law?

"This will help create trust in these new emerging digital technologies and create investment stability."*

→ Title of White Paper (2020/02/19)

   "On Artificial Intelligence –

   A European Approach to Excellence and Trust" ?

* SLAIIoTR-REP-I-2020, p. 16.

D. Sources & Abbreviations (by the author)
I. Documents from the European Commission

[…] see also DDF

B. Part 3:
Follow Up on New York Contribution 2020 for Presentation at Anhui University (12/2021) – The Selection

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Update 12/2021

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I.   „AI Act" – Law-Making in the European Union (EU)

II.   Follow Up on New York Presentation – "D. Sources"

III. AIA: New AI Definition

IV. AIA: Risk-Based Approach on Three Levels

B. Part 3. I. „AI Act" – Law-Making in the European Union (EU)

B. Part 3. I. „AI Act" – Law-Making in the European Union (EU)

(R)Evolution in April 2021? - AIA

Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on Artificial Intelligence (**A**rtificial **I**ntelligence **A**ct) and amending certain Union Legislative Acts, COM(2021) 206 final, 2021/04/21 and Annexes (**AIA** – author's abbreviation)

B. Part 3. I. „AI Act" – Law-Making in the European Union (EU)

AIA - „Provisions of the proposal"

TITLE I: SCOPE AND DEFINITIONS

TITLE II: PROHIBITED ARTIFICIAL INTELLIGENCE PRACTICES

TITLE III: HIGH-RISK AI SYSTEMS

TITLE IV: TRANSPARENCY OBLIGATIONS FOR CERTAIN AI SYSTEMS

TITLE V: MEASURES IN SUPPORT OF INNOVATION

TITLES VI, VII & VII: GOVERNANCE AND IMPLEMENTATION

TITLE IX: CODES OF CONDUCT

TITLES XI & XII: FINAL PROVISIONS

AIA, p. 12-16

B. Part 3. II.
Follow Up on New York Presentation – "D. Sources"

B. Part 3. II. Follow Up on New York Presentation – "D. Sources"

European Commission

➢ Proposal for a Regulation laying down Harmonised Rules on Artificial Intelligence (ARTIFICIAL INTELLIGENCE ACT) and amending certain Union Legislative Act, COM(2021) 206 final, 2021/04/21 and Annexes (AIA)

➢ Fostering a European approach to Artificial Intelligence, COM(2021)205 final, 2021/04/21

➢ Coordinated Plan on Artificial Intelligence 2021 Review – ANNEXES to the Communication Fostering a European approach to Artificial Intelligence, COM(2021)205 final, 2021/04/21

➢ The Polish Senate - Fostering a European approach to Artificial Intelligence: Opinion on the application of the Principles of Subsidiarity and Proportionality, doc. 8334/21 - COM(2021) 205 final, 2021/10/21

➢ The Senate of the Parliament of the Czech Republic - Fostering a European approach to Artificial Intelligence: Opinion on the application of the Principles of Subsidiarity and Proportionality, doc. 8334/21 - COM(2021) 205 final, 2021/12/21

B. Part 3. II. Follow Up on New York Presentation – "D. Sources"

European Parliament

Civil liability regime for artificial intelligence - Resolution of 20 October 2020 with recommendations to the Commission on a civil liability regime for artificial intelligence (2020/2014(INL)) – soft law

Independent High-Level Expert Group on AI (AI HLEG):

➢ „Assessment List For Trustworthy AI (AltAI) For Self Assessment", 2020/07/17

B. Part 3. III.
AIA: New AI Definition

B. Part 3. III. AIA: New AI Definition

Article 3 (1) AIA

"'artificial intelligence system' (AI system) means software that is developed with one or more of the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with;"

ANNEX I - ARTIFICIAL INTELLIGENCE TECHNIQUES AND APPROACHES

(a) Machine learning approaches, including supervised, unsupervised and reinforcement learning, using a wide variety of methods including deep learning;

(b) Logic- and knowledge-based approaches, including knowledge representation, inductive (logic) programming, knowledge bases, inference and deductive engines, (symbolic) reasoning and expert systems;

(c) Statistical approaches, Bayesian estimation, search and optimization methods.

B. Part 3. IV.
AIA: Risk-Based Approach on Three Levels

B. Part 3. IV. AIA: Risk-Based Approach on Three Levels

"The regulation follows a risk-based approach, differentiating between uses of AI that create (i) an unacceptable risk (URAI), (ii) a high risk (HRAI) and (iii) low or minimal risk (LMRAI)"
AIA, P. 12

*Highlighting and abbreviations by author.

AIA: Risk-Based Approach on Three Levels

Three Risk „levels" of AI	Author's abbreviation	"Pilot" (author's terminology)
(i) unacceptable risk	URAI	**TITLE II AIA: PROHIBITED ARTIFICIAL INTELLIGENCE PRACTICES Article 5 Nr. 1 lit. d AIA** "1. The following artificial intelligence practices shall be prohibited: (d) the use of 'real-time' remote biometric identification systems in publicly accessible spaces for the purpose of law enforcement, unless and in as far as such use is strictly necessary for one of the following objectives: (i) the targeted search for specific potential victims of crime, including missing children; (ii) the prevention of a specific, substantial and imminent threat to the life or physical safety of natural persons or of a terrorist attack; (iii) the detection, localisation, identification or prosecution of a perpetrator or suspect of a criminal offence referred to in Article 2(2) of Council Framework Decision 2002/584/JHA62 and punishable in the Member State concerned by a custodial sentence or a detention order for a maximum period of at least three years, as determined by the law of that Member State."
(ii) high risk	HRAI	**HIGH-RISK AI SYSTEMS REFERRED TO IN ARTICLE 6(2) in ANNEX III of AIA:** "Nr. 2 Management and operation of critical infrastructure: (a) AI systems intended to be used as safety components in the management and operation of road traffic and the supply of water, gas, heating and electricity."
(iii) low or minimal risk	LMRAI	**no definition in AIA**

Your critique
is input for me

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