

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

Internet Law Works-in-Progress  
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New York Law School

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



# 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"

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

### 1. Four Requirements

### 2. Focus within LER-Formula: "Robustness"

# Agenda (III)

## C. (Re)Liability

- I. Ten Challenges for AI Liability Law
- II. Ten Talking Points
- III. Core Dogma for AI Liability Law?

## D. Sources & Abbreviations (by the author)

- I. Documents from the European Commission
- II. "Deliverables" from Expertgroups set up by the European Commission
- III. German Publications by Viola Schmid

## E. Abstract

# 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**."

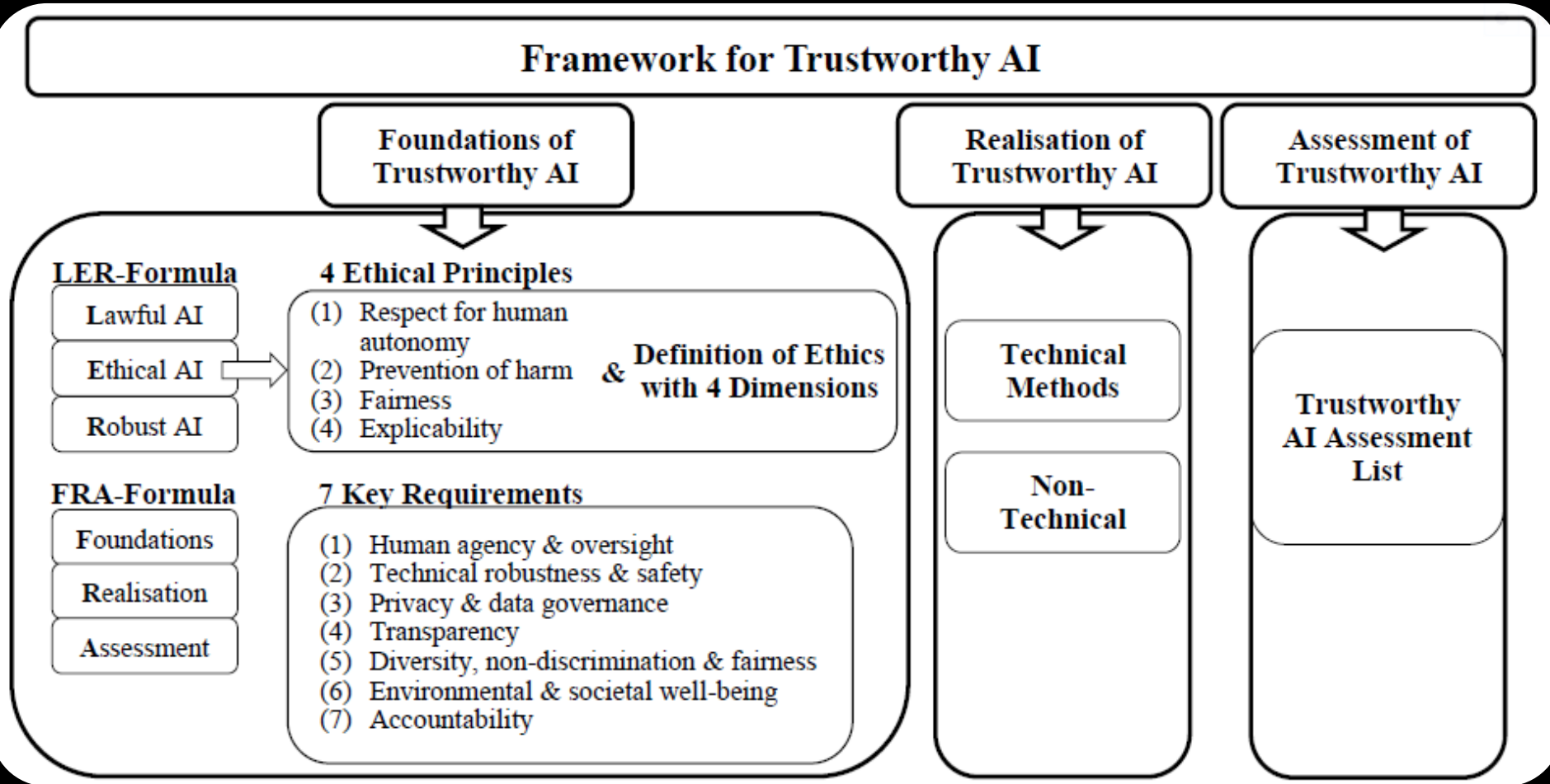
## B. "European AI"

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

## 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"\*

- "Requirements ensuring that the AI systems are robust and accurate, or at least correctly reflect their level of accuracy, during all life cycle phases" (Reflection of Level of Accuracy)
- "Requirements ensuring that outcomes are reproducible" (Reproducibility)
- "Requirements ensuring that AI systems can adequately deal with errors or inconsistencies during all life cycle phase" (AI Malfunction Management I – "Reporting Systems" )\*\*
- "Requirements ensuring that AI systems are resilient against both overt attacks and more subtle attempts to manipulate data or algorithms themselves, and that mitigating measures are taken in such cases" (AI Malfunction Management II - Resilience)\*\*

\*White Paper, 2020/02/19, p. 20.

\*\* Author's terminology.

## 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)

# C. (Re)Liability

## I. Eleven Core Challenges for AI Liability Law\*

1. Differentiation of Software Types (embedded and stand-alone)\*\*
2. Data-drivenness & Data-dependency
3. Complexity of Environment
  - Internet of Things
  - Products, Services and the Value-chain
4. Connectivity

\*Derived from the Report from the European Commission "Report on the safety and liability implications of Artificial Intelligence, the Internet of Things and robotics" COM(2020) 64 final, 2020/02/19 (SLAIoTR-REP-I-2020 ) and referring to "Liability for Artificial Intelligence and other emerging digital technologies", 2019/11/21 ("EGNTF-LAIDT-I-2019"), p. 32.

\*\* Sequence in presentation does not reflect ranking.

# C. (Re)Liability

## I. Eleven Core Challenges for AI Liability Law\*

5. Openness

6. Vulnerability

7. Autonomy of AI (from Humans)

8. Lack of Predictability?

9. Opacity of AI (for Humans)

10. Physical Harm for Humans?

11. Mental Harm for Humans?

\*Derived from the Report from the European Commission on the safety and liability implications of Artificial Intelligence, the Internet of Things and robotics" COM(2020) 64 final, 2020/02/19 (SLAIoTR-REP-I-2020 ) and referring to Liability for Artificial Intelligence and other emerging digital technologies, 2019/11/21 ("EGNTF-LAIDT-I-2019"), p. 32.

\*\* Sequence in presentation does not reflect ranking.

# 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:

1. Damage
2. Causation
3. Wrongfulness and fault
4. Vicarious liability
5. Strict liability
6. Product liability
7. Contributory conduct
8. Prescription
9. Procedural challenges
10. Insurance

## 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.**"\*

\* SLAIIoT-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" ?

\* SLAIIoT-REP-I-2020, p. 16.

**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





# D. Sources & Abbreviations (by the author)

## I. Documents from the European Commission

### Communication

- "Building a European Data Economy" COM(2017) 9 final, 2017/01/10 ("EDE-COM-I-2017")
- "Artificial Intelligence for Europe" COM(2018)237 final, 2018 /04/25 ("AIFE-COM-I-2018")
- "Coordinated Plan on Artificial Intelligence" COM(2018)795 final, 2018/12/07("CPAI-COM-II-2018")
- "Building Trust in Human-Centric Artificial Intelligence" COM(2019)168 final, 2019/04/08("HCAI-COM-I-2019")

### Report

- "Report on the safety and liability implications of Artificial Intelligence, the Internet of Things and robotics" COM(2020) 64 final, 2020/02/19 ("SLAIIoT-REP-I-2020")

### White Paper

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

# D. Sources & Abbreviations (by the author)

## II. "Deliverables" from Expertgroups set up by the European Commission

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

- "Ethics Guidelines for Trustworthy AI", 2019/04/08 („EGEGfTAI-I-2019“)
- "A Definition of AI: Main capabilities and disciplines", 2019/04/08 (“EGDoAI-I-2019“)
- "Policy and Investment Recommendations for Trustworthy AI", 2019/06/26 (“EGPaIRfTAI-I-2019“)

### Expert Group on Liability and New Technologies – New Technologies Formation (NTF)

- "Liability for Artificial Intelligence and other emerging digital technologies", 2019/11/21 (“EGNTF-LAIDT-I-2019“)

# D. Sources & Abbreviations (by the author)

## III. German Publications by Viola Schmid

### **Publication I: IRIS 2020 – "Responsible Digitalisation"**

- "Künstliche & «Natürliche» Intelligenz: Was ich schon immer (vor 2020) über Recht, Ethik und «Robustheit» wissen wollte"  
in: Schweighofer/Kummer/Saarenpää (Hrsg.), Verantwortungsbewusste Digitalisierung - Tagungsband des 23. Internationalen Rechtsinformatik Symposiums (IRIS 2020), p. 31 – 40
- Unauthorized english translation: ARTIFICIAL & "NATURAL" INTELLIGENCE: WHAT I HAVE ALWAYS WANTED TO KNOW ABOUT LAW, ETHICS AND "ROBUSTNESS" (BEFORE 2020)

### **Publication II: HKA-Formula**

- "Zu den Voraussetzungen für die erfolgreiche Realisierung informationstechnologischer Projekte: die „HKA-Formel“ (Haftung – Kommunikation – Akzeptanz) und andere Herausforderungen"  
in: Heribert M. Anzinger/Kay Hamacher/Stefan Katzenbeisser (Hrsg.), Schutz genetischer, medizinischer und sozialer Daten als multidisziplinäre Aufgabe, Springer Verlag, 2013, p. 219-237
- Unauthorized english translation: "ON THE PREREQUISITES FOR THE SUCCESSFUL REALIZATION OF INFORMATION TECHNOLOGY PROJECTS: THE "LCA-FORMULA" (LIABILITY - COMMUNICATION - ACCEPTANCE) AND OTHER CHALLENGES"

# E. 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. Hence, especially (primary) law (on the European Union level) would change as well. However, as we all know, constitutional amendments or an adaption of European Union (primary) law for an AI augmented world (own terminology) or a “robot world” have not materialized yet.

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. A lack of legal certainty threatens to stymie users as well as innovators in the design, production, distribution, merchandising and maintenance sector. Concerns regarding (un-)foreseeable risks (liabilities) and attempts at limiting liability are obvious as well as understandable.

Hence, new and holistic approaches to qualify and evaluate AI systems and robots are of highest importance. The AI world concept of the AI HLEG tackles this innovation barrier in 2019 by establishing the here so called “LER and FRA Formulas.” “FRA” is an acronym for “Foundations,” “Realization,” and “Assessment.” The lawful, ethical and “robust” quality of AI systems (“LER Formula”) gets the meaning of a “Foundation” for a future brand called “Trustworthy AI for Europe.” Not only does this lay the AI Foundation, moreover, it also establishes that technical and non-technical measures have to be used to fulfill these fundamental requirements. Last but not least, the design of a “check-list” for AI is groundbreaking not only for AI systems but also for robots (e.g. autonomous vehicles). This “Assessment List” is currently in the process of interactive governance and feedback. Even in its first version, it might plaster the path towards a new “liability, accountability, responsibility law” for AI as well as for robots (“EGEGfTAI-I-2019”, p. 26 continuing). Summing up: Creating “ethical” (not legal) rules at the forefront of developments and attempts at escaping traditional legal liability does not suffice if revolution and technophobia are the consequence in the aftermath of (possibly high) risk applications in industry and society. Consequently, the first priority of law (as part of LER) is the development of a liability regime, especially in procedural law (such as administrative and civil procedure). The European Union and the Member States have to face the challenge dealing with “rogue” systems (AI systems that have no connection with a liable subject or that operate outside of causality principles linking a liable human subject [developer, producer, owner etc.] to a harmful outcome due to autonomous choices / behavior).

It is a matter of interpretation whether AI is revolutionary or evolutionary, which is why we chose the denomination “(R)Evolution”.

The authors have competencies in German and European Union law and Georg Gesk has excelled in Chinese law as well. For the audience of the Internet Law Works-in-Progress conference, the authors selected nine European Union documents: (1) “Building a European Data Economy” COM(2017) 9 final, 2017/01/10 (EDE-COM-I-2017); (2) “Artificial Intelligence for Europe” COM(2018)237 final, 2018/04/25 (AlfE-COM-I-2018); (3) “Coordinated Plan on Artificial Intelligence” COM(2018)795 final, 2018/12/07 (CPAI-COM-II-2018); (4) “Building Trust in Human-Centric Artificial Intelligence” COM(2019)168 final 2019/04/08 (HCAI-COM-I-2019); (5) “Ethics Guidelines for Trustworthy AI” 2019/04/08 (EGEGfTAI-I-2019); (6) “Definition of AI: Main capabilities and disciplines” 2019/04/08 (EGDoAI-I-2019); (7) “Policy and Investment Recommendations for Trustworthy AI” 2019/06/26 (EGPaIRfTAI-I-2019). (8) Report with recommendations to the Commission Civil Law Rules on Robotics, 2015/2103(INL), European Parliament, Rapporteur: Mady Delvaux (S&D, Luxembourg) (2016/05/31)] (9) European Parliamentary Research Service, Study, A common EU approach to liability rules and insurance for connected and autonomous vehicles, Author: Tatjana Evas, PE 615.635 February 2018.

Georg Gesk, University of Osnabrueck (Germany), Professor, ggesk@uni-osnabrueck.de

Viola Schmid, Technical University Darmstadt (Germany), Law Professor,  
schmid@cylaw.tu-darmstadt.de

**Your critique  
is input for me**

[schmid@cylaw.tu-darmstadt.de](mailto:schmid@cylaw.tu-darmstadt.de)