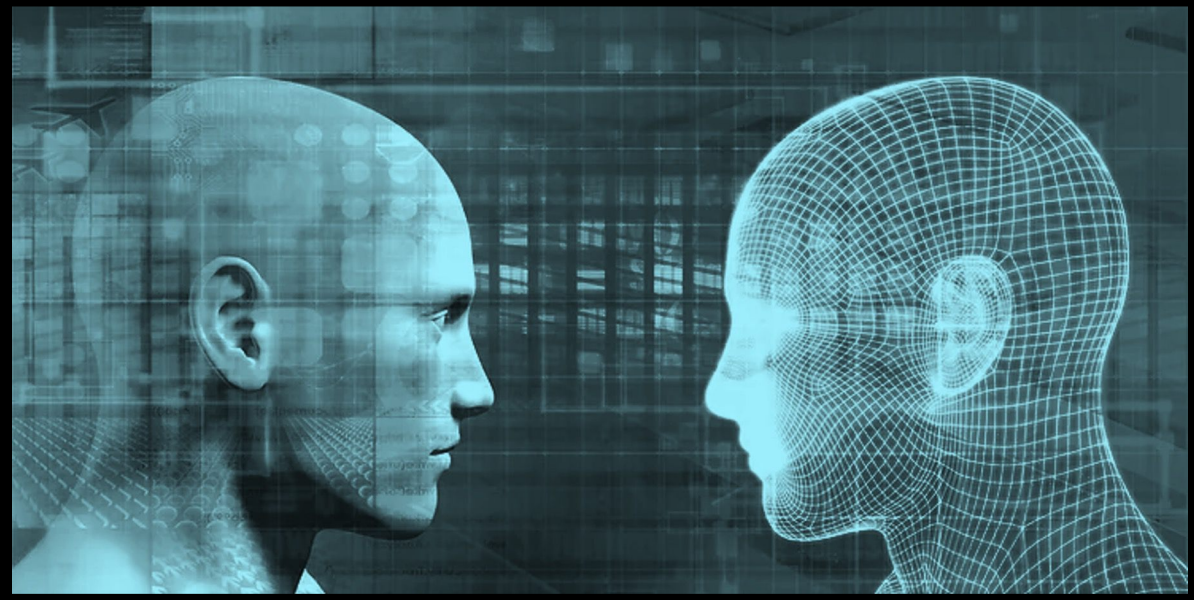
LEAN COMPLIANCE

AI ETHICS AND COMPLIANCE

ELEVATE COMPLIANCE WEBINARS

Raimund Laqua, PMP, P.Eng
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ABOUT LEAN COMPLIANCE

About the founder



Raimund Laqua, PMP, P.Eng. founded Lean Compliance Consulting in 2017 to help companies in highly-regulated, high-risk industries transform the way they do compliance to always stay between the lines and ahead of risk.

Mr. Laqua has consulted across North America for over 30 years and continues to apply his technical, strategic, and managerial knowledge and expertise to improve safety, security, sustainability, environmental, quality and regulatory outcomes across: oil & gas, energy, pharmaceutical, medical device, financial, technology and government sectors.

He is the author of weekly blog articles, and an upcoming book on Operational Compliance. He regularly speaks on topics of risk, compliance, lean, and organizational transformation.

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ABOUT LEAN COMPLIANCE

Who we are and what we do



We help compliance succeed.

Our clients are forward-looking, ethical organizations that strive to always stay between the lines and ahead of risk.

Lean Compliance provides knowledge, experience, and the means to elevate compliance above the reactive processes and behaviours that hold it back from meeting today's obligations across safety, security, sustainability, quality, environmental, regulatory, and other stakeholder commitments.

We accomplish this by harnessing Lean principles, along with proactive, integrative and holistic strategies to meet risk and compliance challenges.

Our network of experts, practitioners, and obligation owners elevate compliance across the world.

Join our Lean Compliance community and help raise compliance to higher standards.

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LEAN COMPLIANCE

ELEVATE COMPLIANCE WEBINARS

Something new starting in March



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BIG IDEA

Deciding to use AI involves more than just the benefits



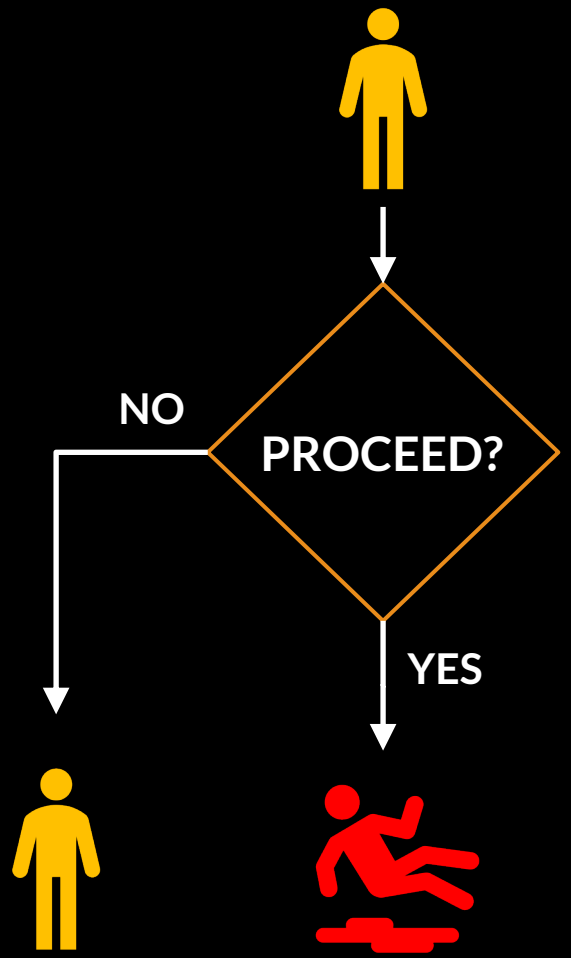
?



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BIG IDEA

The decision to proceed in the presence of uncertainty when there is the possibility of harm is an ethical choice.



"When faced with a set of uncertainties which cover a range of future states, some of which are unfavourable, then the uncertainties constitute a hazard.

When we form an intent to act within that hazardous situation we are faced with a risk.

The manner in which we deal with that risk will challenge us with an ethical dilemma. "

Cybernetics and Systems Theory in Management: Tools, Views, and Advancement

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BIG IDEA

All qualitative decisions are ethical choices – they all involve value judgments



- Are we safe enough?
- Is our risk low enough?
- Is our quality high enough?
- Is our performance good enough?
- Are we trustworthy?
- Are we protecting our assets enough?
- Are we supporting our staff enough?
- Are we stewarding the environment well enough?
- Are we good enough?

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BIG IDEA

AI cannot be ethical, so we must be.



It is impossible to design a system so perfect that no one needs to be good.

– T.S. Eliot

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OUTLINE

1. What is Artificial Intelligence?
2. What is Applied Ethics?
3. Can AI be Ethical?
4. The Practice of AI Ethics
5. Q & A

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1. WHAT IS ARTIFICIAL INTELLIGENCE?

How do we define artificial intelligence



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1. WHAT IS ARTIFICIAL INTELLIGENCE

What is human intelligence?

Intelligence:

- requires ability to sense the environment, to make decisions, and to control action (Albus 1991)
- is the ability to think, reason, and understand instead of doing things automatically or by instinct (Collins Dictionary)
- is the faculty of understanding; intellect. A mental manifestation of this faculty, a capacity to understand (Oxford Dictionary)
- is the ability to learn and understand or to deal with problems.



Intelligence is the application of knowledge in pursuit of an objective

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1. WHAT IS ARTIFICIAL INTELLIGENCE

What is human intelligence?



Intelligence manifests in multiple ways

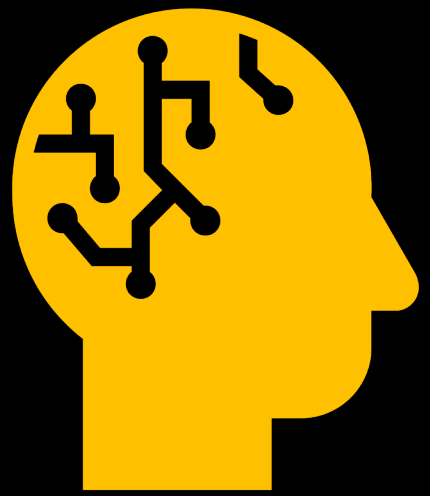
Gardner (1987)'s theory of multiple intelligences:

1. verbal/linguistic
2. logical/mathematical
3. visual/spatial
4. bodily/kinesthetic
5. musical
6. interpersonal
7. intrapersonal
8. naturalist
9. spiritual
10. existential (8-10 in Sternberg, 1999b)

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1. WHAT IS ARTIFICIAL INTELLIGENCE

What is artificial intelligence?



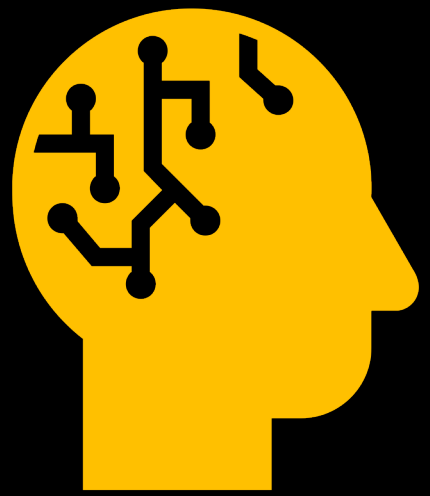
Artificial Intelligence is:

- the intelligence of machines or software, as opposed to the intelligence of other living beings, primarily humans (Wikipedia)
- a machine's ability to perform the cognitive functions we usually associate with human minds (McKinsey & Company)
- the science and engineering of making intelligent machines (McCarthy, 1955)
- also known as machine intelligence, is a branch of computer science that focuses on building and managing technology that can learn to autonomously make decisions and carry out actions on behalf of a human being. (Techopedia)
- the study of intelligent agents: any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. (Russell & Norvig, 2003)
- the field of developing intelligent agents, which are systems that can reason, learn, and act autonomously. (Ng, A.Y., 2014)
- concerned with the development of intelligent agents, which are systems that can reason, learn, and act autonomously (Murphy, K.P., 2012)

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1. WHAT IS ARTIFICIAL INTELLIGENCE

What is artificial intelligence?



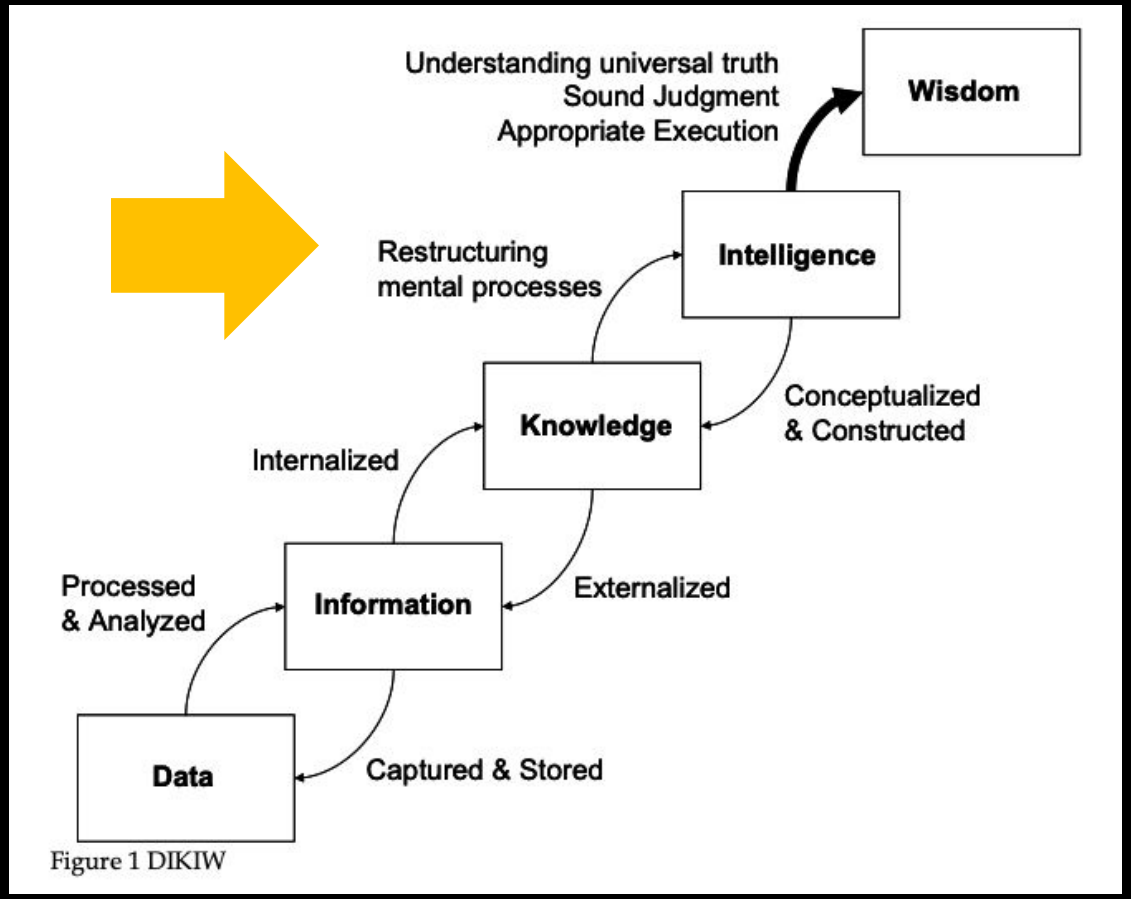


Figure 1 DIKIW

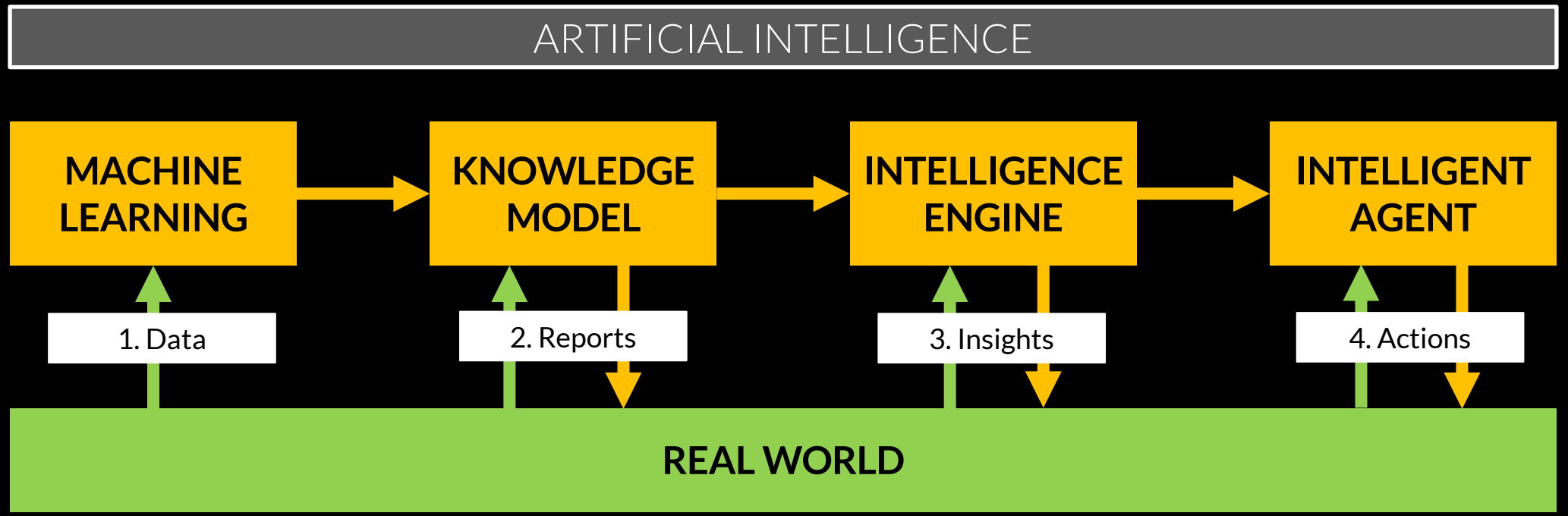
DIKIW: Data, Information, Knowledge, Intelligence, Wisdom and their Interrelationships, 2013, Anthony Liew

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1. WHAT IS ARTIFICIAL INTELLIGENCE

What is artificial intelligence?

Intelligence is the application of knowledge in pursuit of an objective



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1. WHAT IS ARTIFICIAL INTELLIGENCE

Uncertainty creates the opportunity for risk



DATA

- lack of truth
- lack of fairness
- presence of biases
- use of protected data
- presence of tampering
- violation of laws and user rights
- unethical acquisition



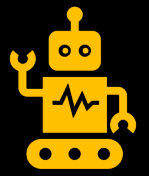
REPORTS

- lack of quality data
- inaccurate representation
- lack of fairness
- inaccurate knowledge models
- presence of tampering
- violation of laws and user rights
- unethical use



INSIGHTS

- Lack of knowledge
- lack of effective reasoning
- lack of relevancy
- lack of causation
- lack of decision integrity
- lack of explanation
- lack of transparency
- presence of tampering
- lack of appropriate safety precautions
- violation of laws and user rights
- unethical use



ACTIONS

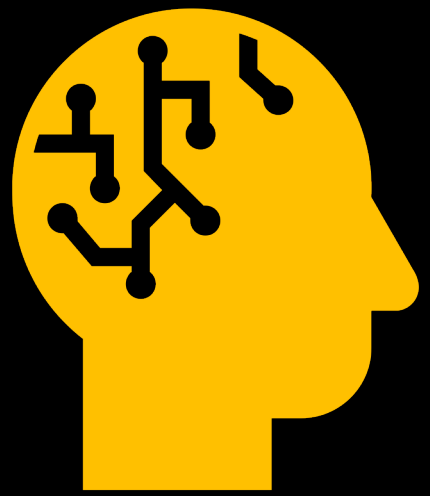
- lack of awareness
- inaccurate or insufficient data, knowledge or insights
- lack of agency
- lack of efficacy
- lack of control
- lack of oversight
- presence of tampering
- malicious intent
- lack of appropriate safety precautions
- violation of laws and user rights
- unethical use

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1. WHAT IS ARTIFICIAL INTELLIGENCE

What is artificial intelligence?

Intelligence is the application of knowledge in pursuit of an objective



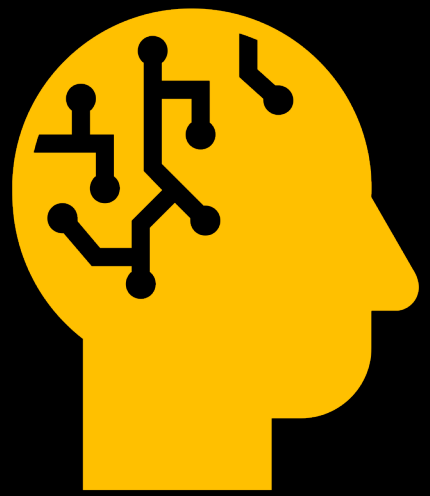
= **FIELD OF STUDY (SCIENCE)** + **INTELLIGENT MACHINES (ENGINEERING)**

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1. WHAT IS ARTIFICIAL INTELLIGENCE

What is artificial intelligence?

Intelligence is the application of knowledge in pursuit of an objective

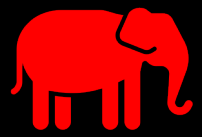


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FIELD OF STUDY (SCIENCE)

+

INTELLIGENT MACHINES (ENGINEERING)



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2. WHAT IS APPLIED ETHICS?

What does it mean to be ethical?



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2. WHAT IS APPLIED ETHICS

What is ethics?

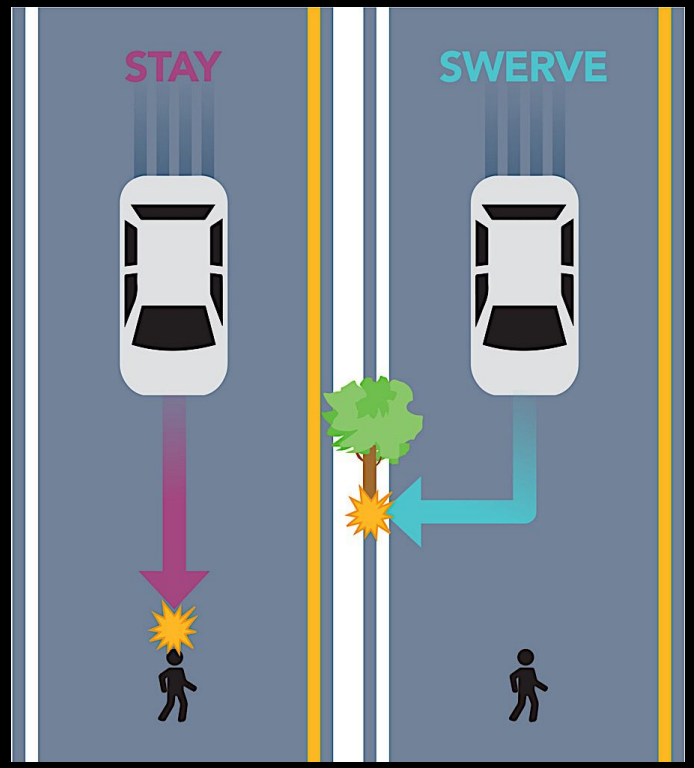
TERM	DEFINITION
Ethics	related to ethical theories, judgments, and behaviors
Morality	the principles we live by, code of conduct, the rules
Applied Ethics	the practical aspects of moral considerations (bioethics, medical ethics, engineering ethics, AI ethics, etc.)
Integrity	the state of being whole and undivided, the quality of being ethical

Ethics does not answer the question ***can*** we but rather ***should*** we.

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2. WHAT IS APPLIED ETHICS

What is an ethical decision?



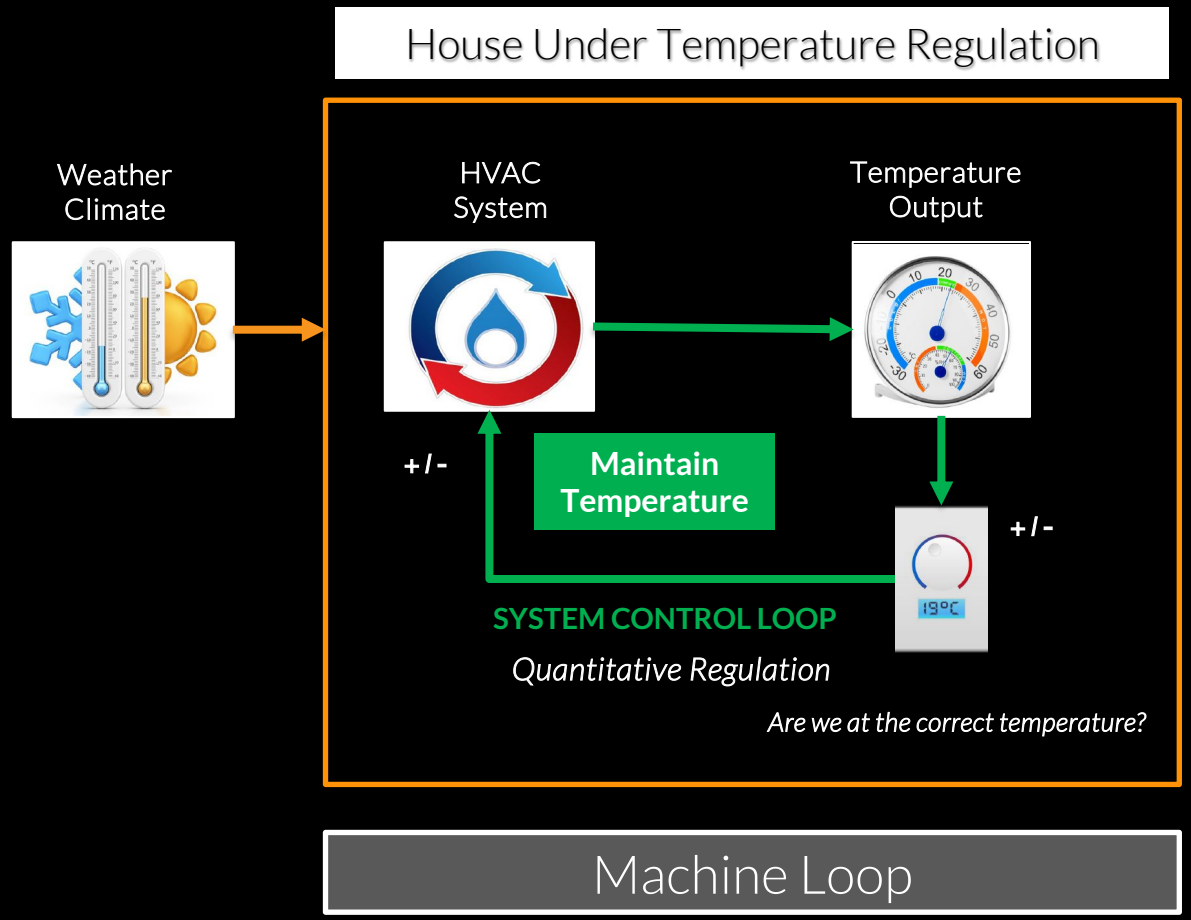
Do you stay or swerve?

- What would you choose?
- How would you decide?
- Should AI decide for you?
- Should AI use your ethical preference?
- Should AI follow someone else's ethical preferences (ex. government, manufacturer)?

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2. WHAT IS APPLIED ETHICS

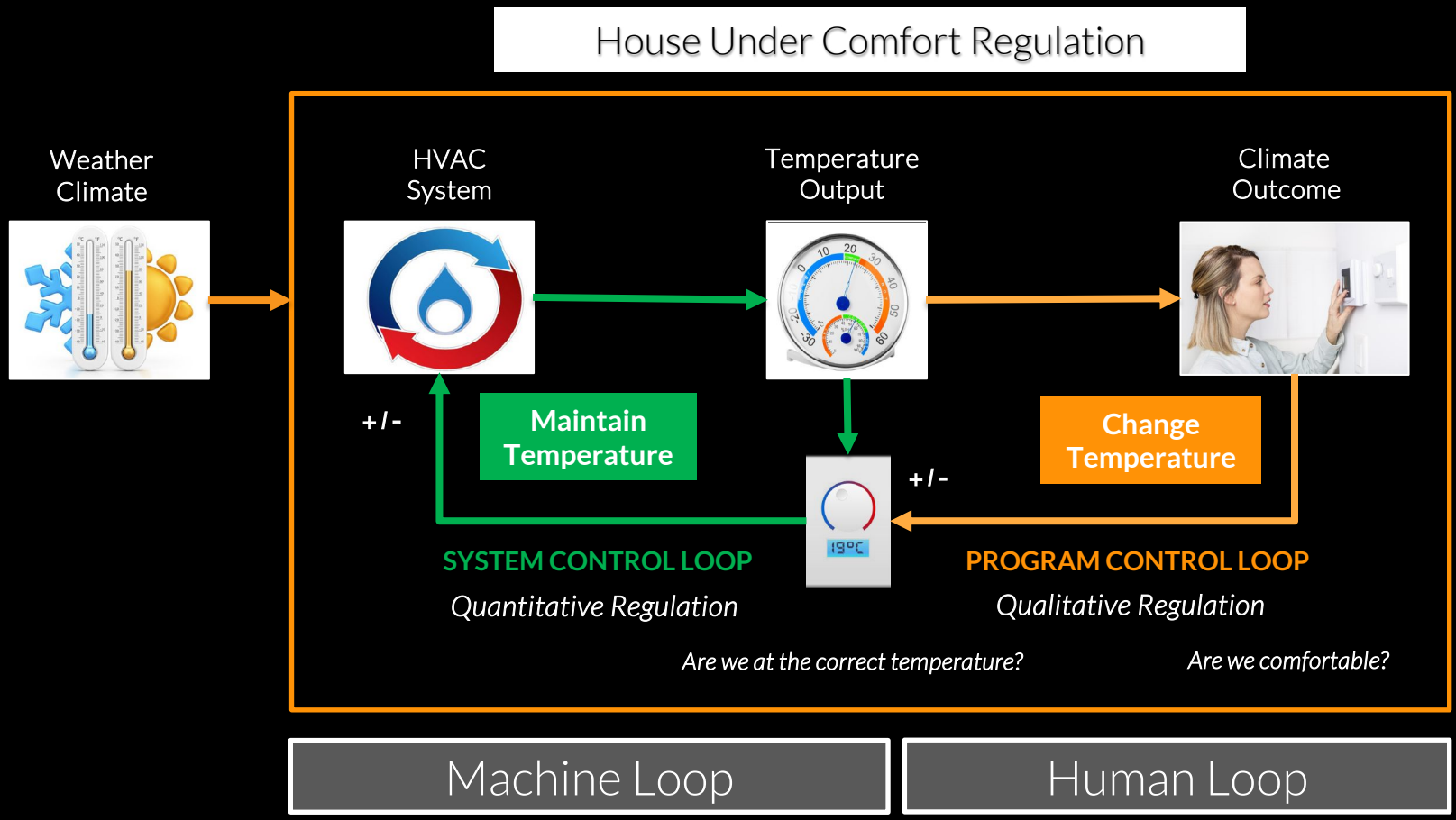
Quantitative Decisions



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2. WHAT IS APPLIED ETHICS

Qualitative Decisions



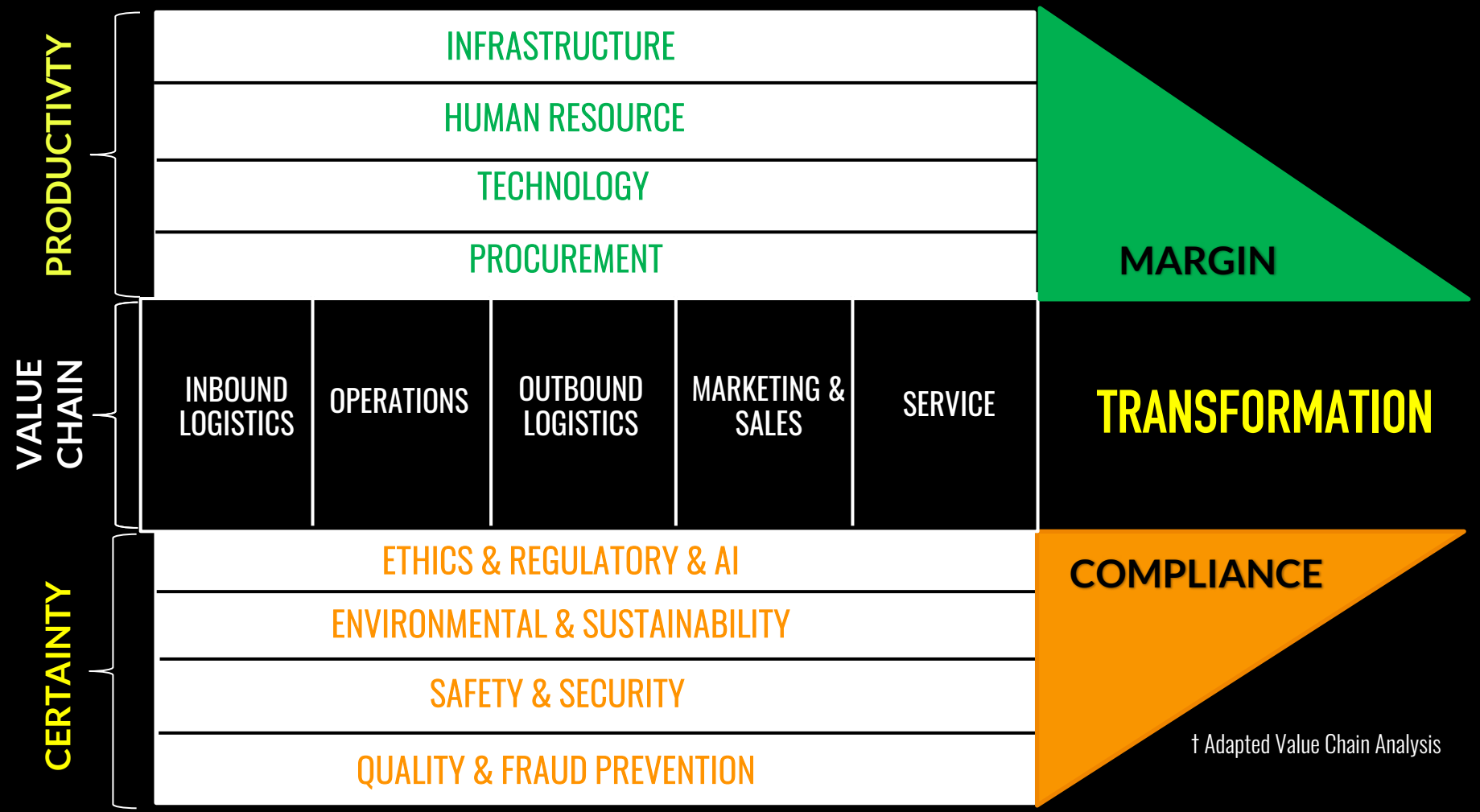
This is a value-based decision.

All qualitative decisions are ethical choices.

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2. WHAT IS APPLIED ETHICS

Where are ethical choices made within your organization?



† Adapted Value Chain Analysis

OUTCOMES

Sustainability
Reputation
Security
Integrity
Quality
Safety
Trust

Value in the eyes of all stakeholders

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2. WHAT IS APPLIED ETHICS

Negotiating the gap between matter and what matters, between money and meaning

UPPER MANAGEMENT


Accountable


Programs


Obligations


Ends


Benefits


Vision

ORGANIZATIONAL ETHICS — **QUALITATIVE / QUANTITATIVE BARRIER**

Responsible



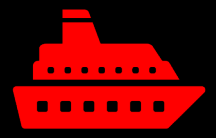
Systems



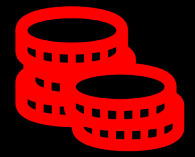
Promises



Means



Cost



Mission



LOWER MANAGEMENT

Without ethics you will always optimize towards financial goals
at the expense of all else that matters

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2. WHAT IS APPLIED ETHICS

How do we make ethical decisions?

Ethical Frameworks

Normative Principles

Virtue Ethics	Duty-based	Consequentialism	Utilitarianism	Rights-based	Judeo Christian
What is moral is what makes us the best person we could be.	What is moral is what follows from absolute moral duties.	What is moral is what maximizes overall good or happiness, even if it requires sacrificing individual rights or fairness.	What is morally right is what generates the best outcomes for the largest number of people.	What is moral is that which is in accord with everyone's rights.	What is moral is what is loving following the golden rule – treat others as you would like to be treated.

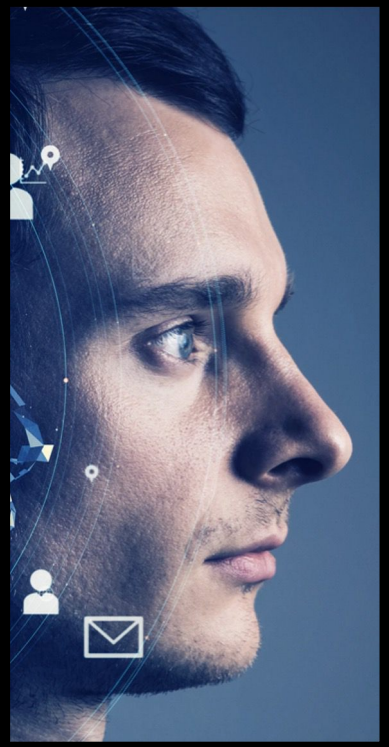
In cases of uncertainty

Prevention	Precaution	Vigilance	Polluter Pays	Gambler's	Pro-action
Prevention is better than a cure.	Prevent possible harms in the absence of cause and effect.	Proceed with potentially risk behavior while remaining vigilant of the risks.	Permits risk-taking behavior with clean-up for harms assigned to those taking the risk.	Counsels risk takers to avoid risking damages that if occurred would be unethical.	Innovation and technological progress should be made in earnest to escape the current risky state.

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2. WHAT IS APPLIED ETHICS

How do we make ethical decisions?



1. **Define the problem and identify ethical issues**: Clearly understand the situation and potential ethical concerns it raises. Consider things like fairness, transparency, privacy, safety, and societal impacts.
2. **Gather information and perspectives**: Collect relevant information and diverse perspectives on the issue. This might involve research, consultations, seeking stakeholder input, and considering different ethical frameworks.
3. **Identify potential solutions and consequences**: Brainstorm different options for addressing the problem. Analyze the potential consequences of each option, considering their impact on various stakeholders and ethical principles.
4. **Apply relevant ethical principles**: Use established ethical frameworks or your own moral compass to evaluate the options. Consider frameworks like utilitarianism (maximizing good), deontology (respecting rights and duties), or virtue ethics (developing good character).
5. **Make a decision and justify it:** Choose the option you believe best aligns with ethical principles and your values. Be prepared to explain your reasoning and justify your decision to others.
6. **Monitor and reflect:** Implement your chosen solution and monitor its outcomes. Reflect on the decision's impact and be open to adjusting your approach if necessary.

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3. CAN AI BE ETHICAL?

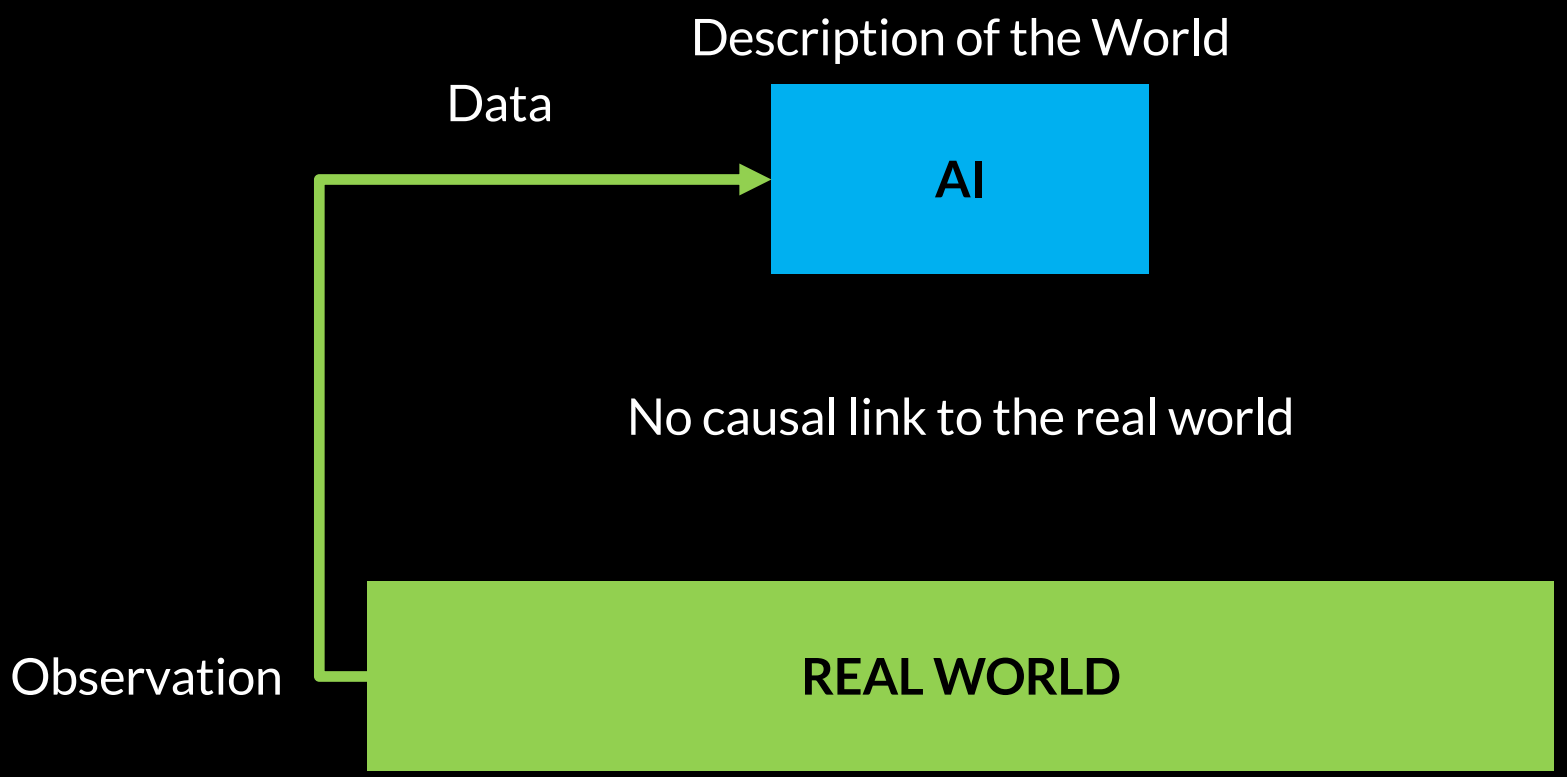
The inevitable ethical inadequacy of AI



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3. CAN AI BE ETHICAL

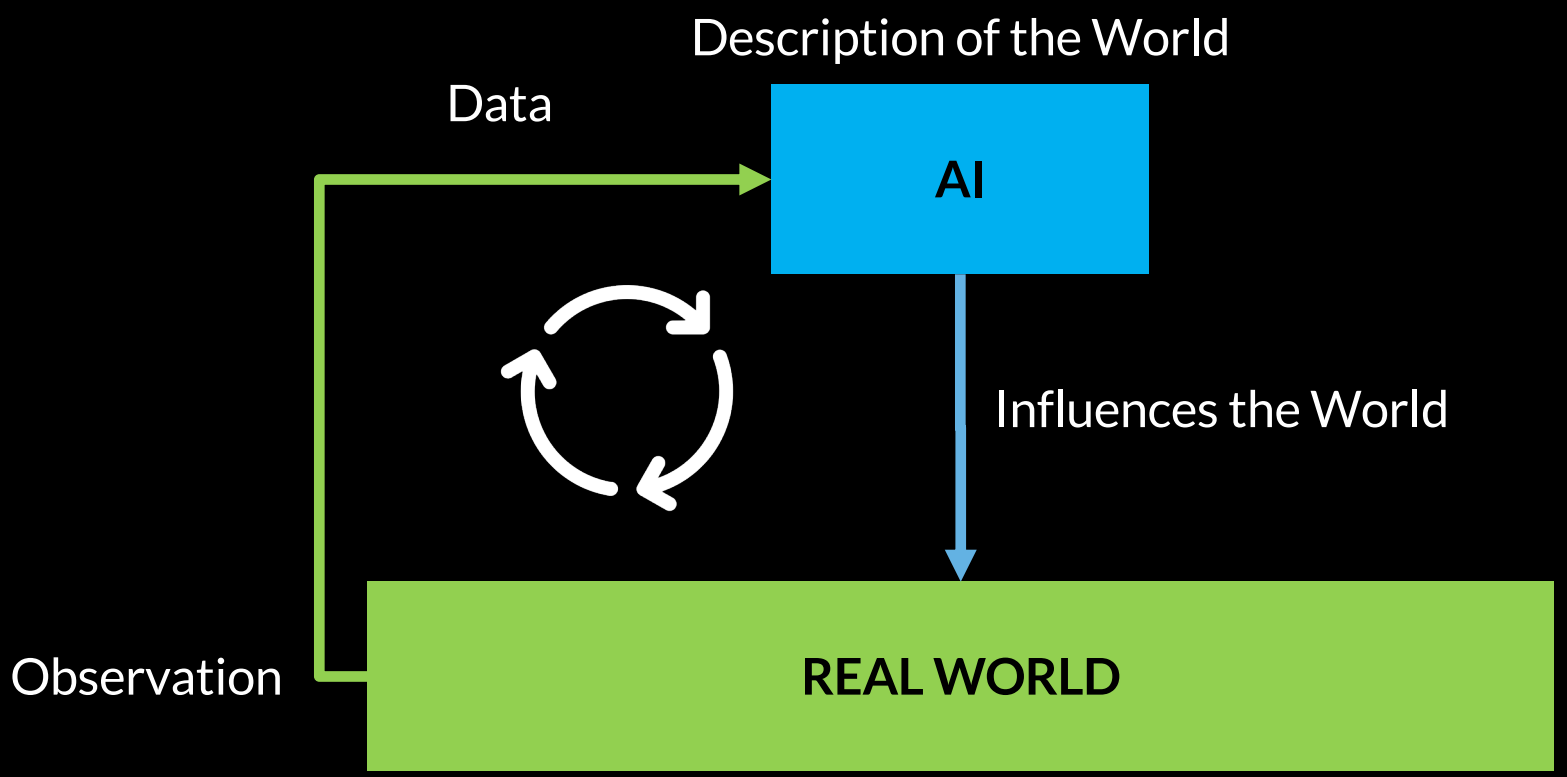
Is AI a neutral party?



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3. CAN AI BE ETHICAL

Is AI a neutral party?



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3. CAN AI BE ETHICAL?

Can AI behave ethically?

Ashby's Cybernetics Law of Inevitable Ethical Inadequacy

If you don't specify that you require a secure ethical system, what you get is an insecure unethical system.

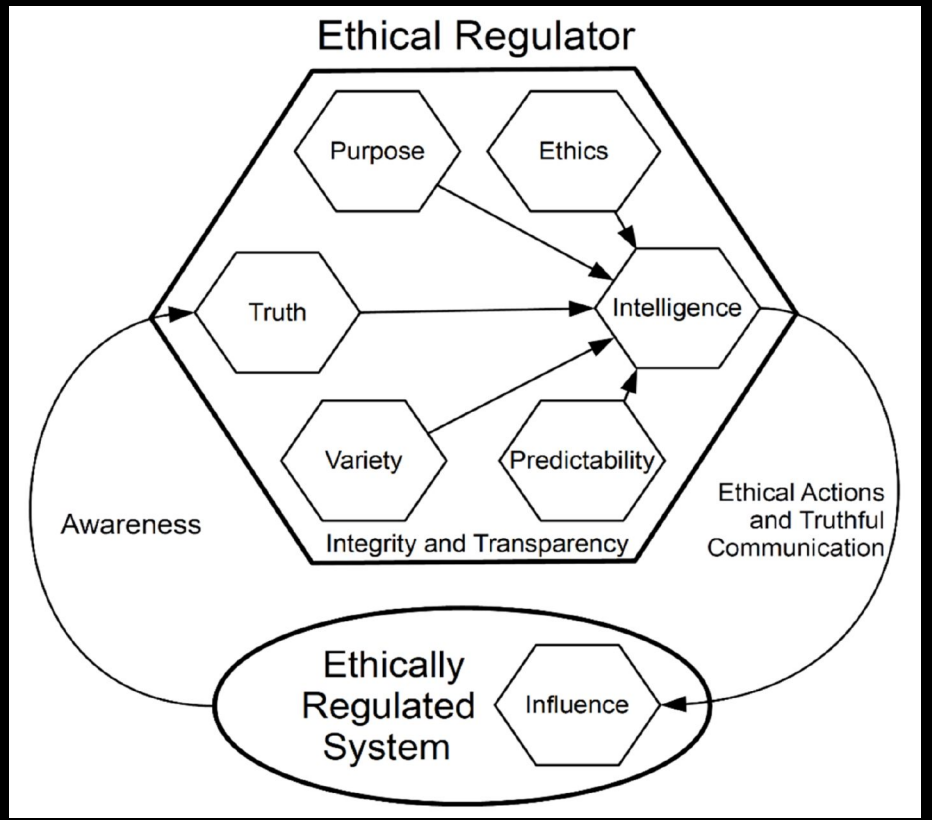
Unless a system specifies ethical goals,
it will regulate away from being ethical towards other goals.

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3. CAN AI BE ETHICAL

Can AI behave ethically?

Ashby's Cybernetics Ethical Regulator Theorem



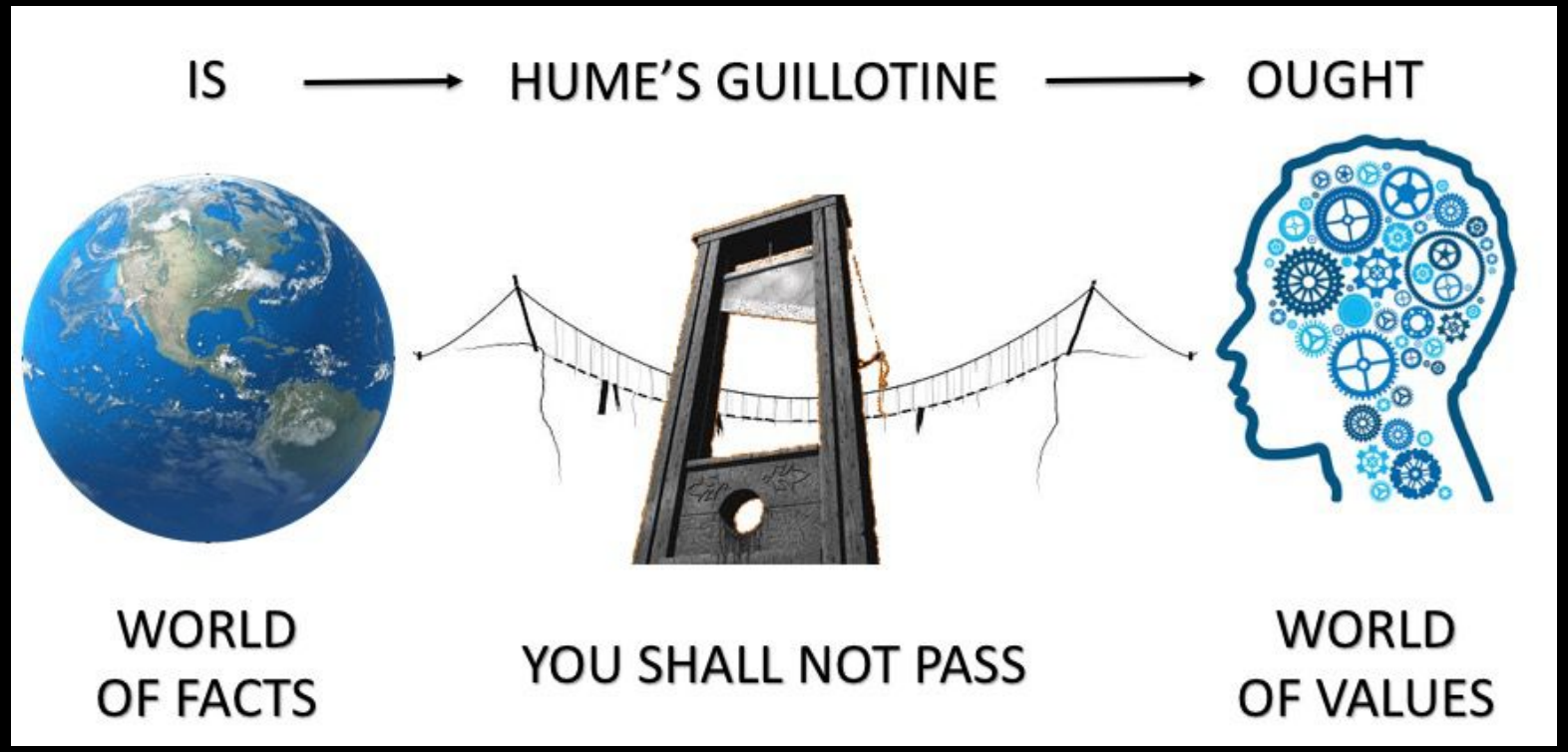
An ethical regulator must have:

1. Truth about the past and present.
2. Variety of possible actions (greater than or equal to the number of states of the system under regulation)
3. Predictability of the future effects of actions.
4. Purpose expressed as unambiguously prioritized goals.
5. **Ethics expressed as unambiguously prioritized rules.**
6. Intelligence to choose the best actions.
7. Influence on the system being regulated.
8. **Integrity of all subsystems.**
9. **Transparency of ethical behaviour (this includes retrospectively).**

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3. CAN AI BE ETHICAL?

Can AI learn to be moral?



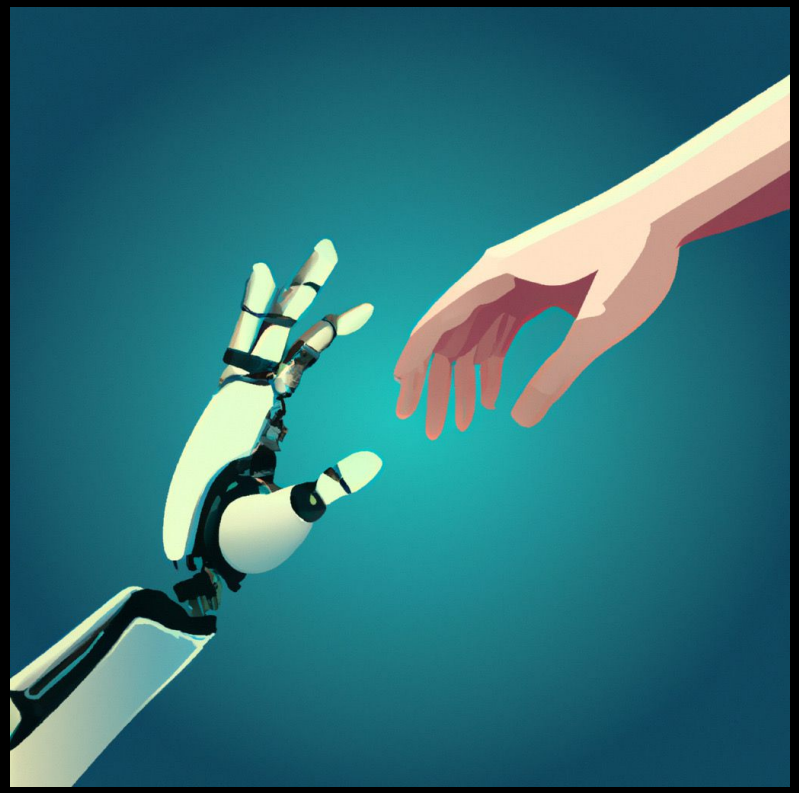
You cannot derive morality from observation

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3. CAN AI BE ETHICAL

AI cannot be ethical, so we must be.

MACHINES
Facts
What Is
Descriptive
Quantitative (Numbers)
Reductive (Parts)
Deterministic
Taxonomy (Structures)
Data
Physical
Matter
Certainty
Objects



HUMANS
Ideas
What Should Be
Relevance
Qualitative (Values)
Holistic (Relationships)
Agentic
Ontology (Semantics)
Wisdom
Transcendental
What Matters
Uncertainty
Ethics

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4. THE PRACTICE OF AI ETHICS

AI Code of Ethics, Responsible AI Program, and AI Safety Program



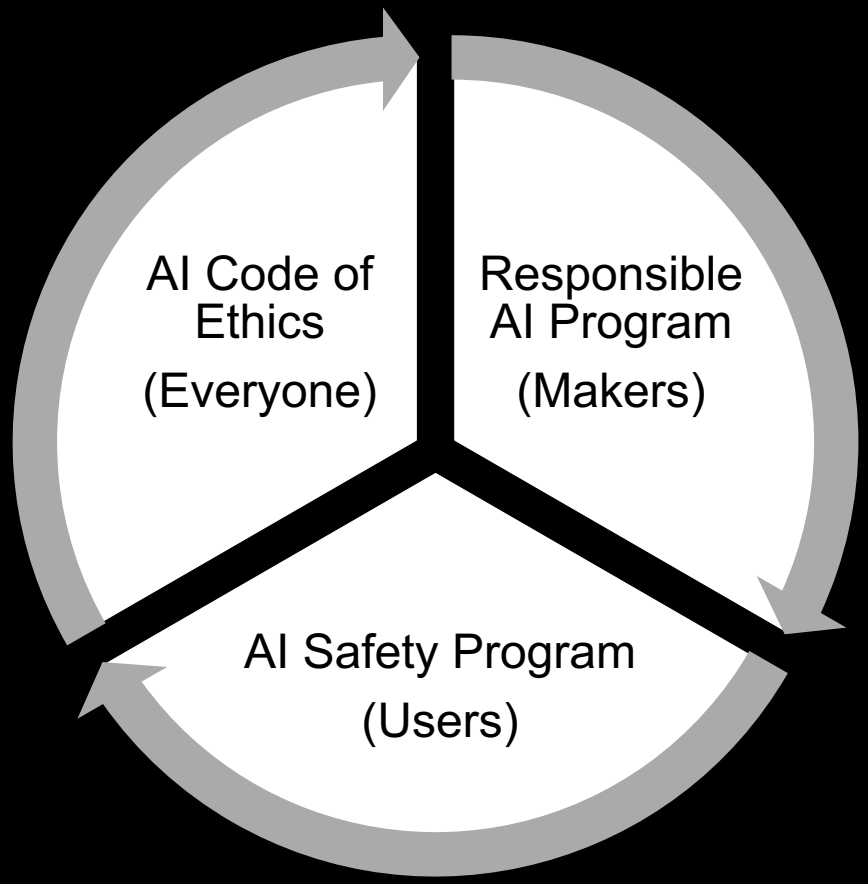
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4. THE PRACTICE OF AI ETHICS

AI Code of Ethics, Responsible AI, and AI Safety

Compliance when it's effective helps:

- **honest people stay honest,**
- **unaware people from unintentional wrongdoing, and**
- **limits exposure to those intent on willful misconduct.**



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4. THE PRACTICE OF AI ETHICS

AI Code of Ethics – Ethical Framework to Govern the MAKING and USE of AI Systems

For Organizations MAKING AI Systems:

I. Fairness and Non-discrimination:

- Develop and test AI systems with diverse datasets to avoid bias and discrimination based on protected characteristics.
- Implement procedures to detect and mitigate bias in algorithms and data.
- Ensure transparency in algorithms and data sources to enable scrutiny and accountability.

II. Privacy and Security:

- Collect and use personal data ethically and transparently, obtaining informed consent.
- Implement robust security measures to protect data from unauthorized access and misuse.
- Minimize data collection and retention to what is necessary for the intended purpose.

III. Accountability and Transparency:

- Develop clear and publicly available documentation outlining the AI system's purpose, limitations, and decision-making processes.
- Establish mechanisms for users to understand and challenge AI decisions.
- Be accountable for the impacts of the AI system and take responsibility for any harms it may cause.

IV. Sustainability and Environmental Impact:

- Consider the environmental impact of AI development and deployment, aiming to minimize energy consumption and resource use.
- Promote responsible use of AI for environmental sustainability, such as climate change mitigation and resource conservation.
- Be transparent about the environmental footprint of the AI system.

V. Human Oversight and Control:

- Design AI systems with human-in-the-loop controls to ensure human oversight and intervention when necessary.
- Avoid creating autonomous AI systems that can make life-or-death decisions without human intervention.
- Educate users about the limitations of AI and promote responsible human-machine collaboration.

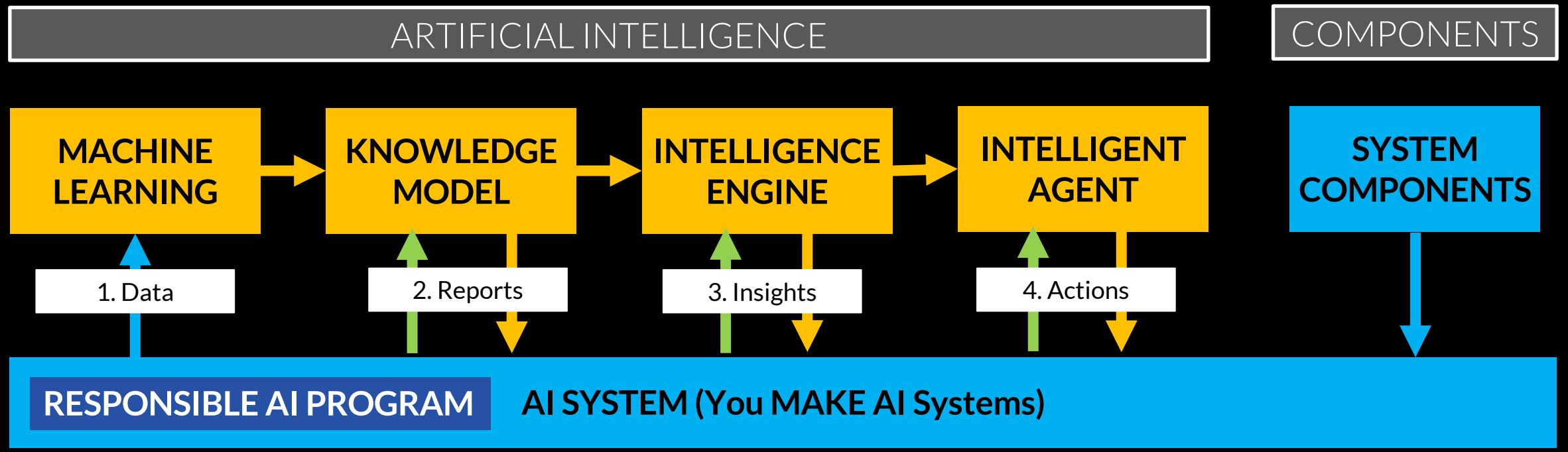
For Organizations USING AI Systems:

- Choose AI systems that align with your organization's values and ethical principles.
- Conduct due diligence to understand the potential risks and biases of the AI system before deployment.
- Implement safeguards to mitigate risks and ensure responsible use of the AI system.
- Monitor the AI system's performance and address any issues of bias or discrimination promptly.
- Train employees on the ethical use of AI and its potential impact on their work and decision-making.

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4. THE PRACTICE AI ETHICS

*If you MAKE AI Systems, you need a **Responsible AI Program***



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4. THE PRACTICE OF AI ETHICS

*If you MAKE AI Systems, you need a **Responsible AI Program***

RESPONSIBLE AI PROGRAM

- **Focus:** Ensure AI systems are developed and used ethically, fairly, and transparently. Considers the broader societal impact of AI and aim to mitigate potential harms while maximizing benefits.
- **Scope:** Include principles like fairness, accountability, transparency, privacy, and human oversight. Ensure you address issues like bias in algorithms, data privacy concerns, and the potential for job displacement.
- **Emphasis:** Take a proactive approach to designing and building AI systems with inherent ethical considerations.

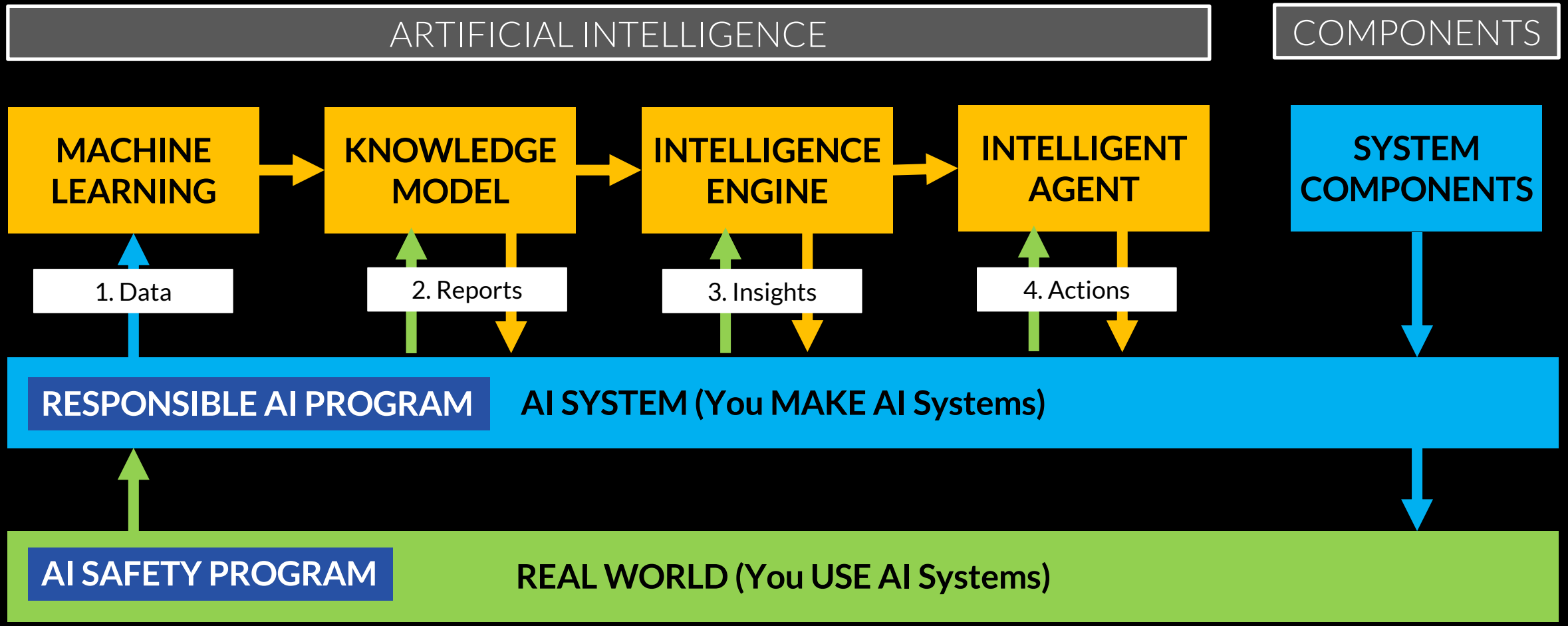


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4. THE PRACTICE AI ETHICS

*If you USE AI Systems, you need an **AI Safety Program***



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4. THE PRACTICE OF AI ETHICS

*If you USE AI Systems, you need an **AI Safety Program***

AI SAFETY PROGRAM

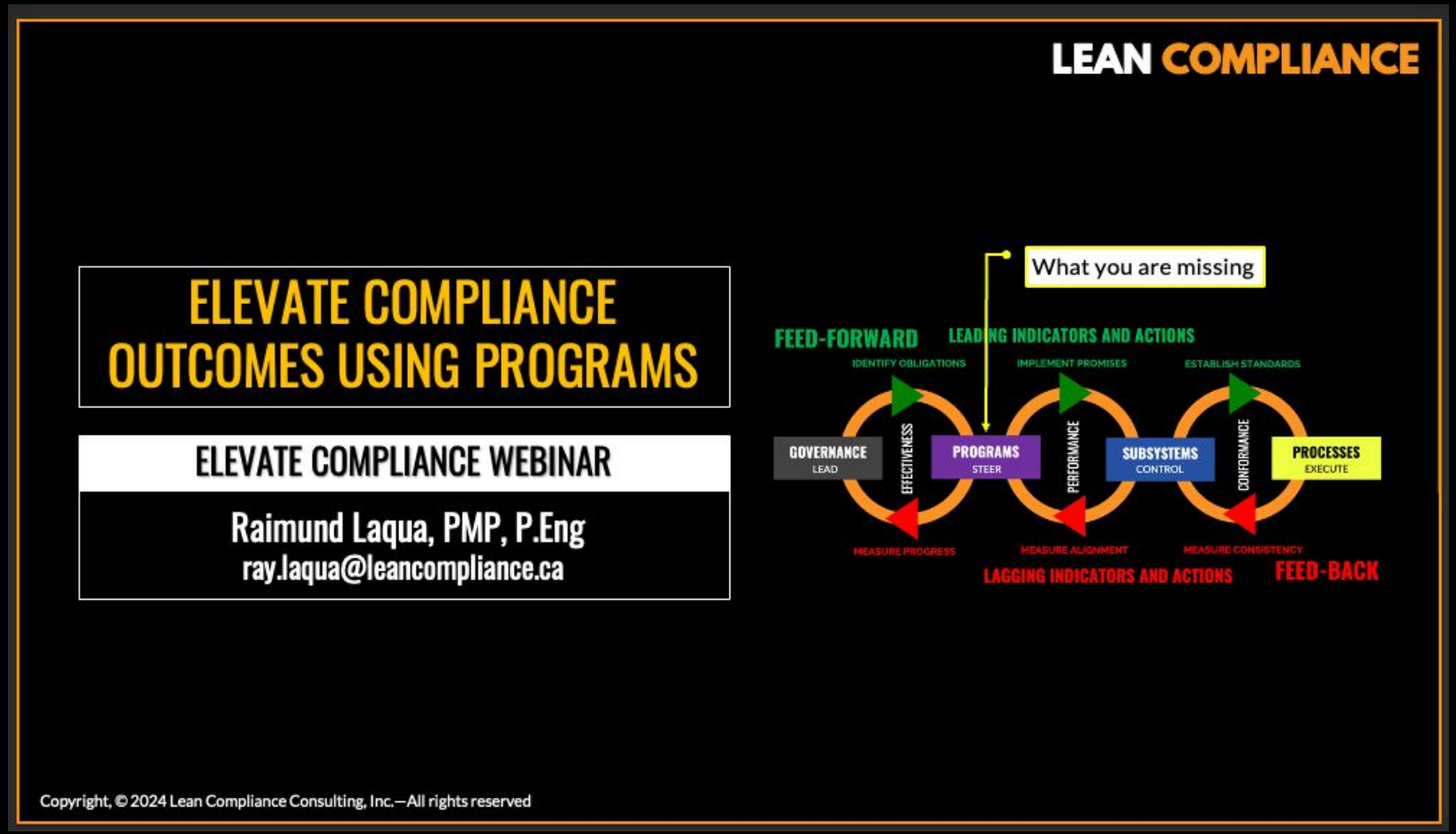
- **Focus:** Prevent AI systems from causing harm, often focusing on technical safeguards and preventing unintended consequences.
- **Scope:** Deal with issues like superintelligence, alignment with human values, and controllability of AI systems. Aim to ensure AI systems behave predictably and do not exceed their intended purpose.
- **Emphasis**: Consider technical solutions and safeguards to minimize risks associated with advanced AI capabilities.



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4. THE PRACTICE OF AI ETHICS

Join us next month as we explore how compliance programs work and how to use them to achieve better outcomes



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SUMMARY

1. What is Artificial Intelligence?
2. What is Applied Ethics?
3. Can AI be Ethical?
4. The Practice of AI Ethics
5. Q & A

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BIG IDEA

AI cannot be ethical, so we must be.



It is impossible to design a system so perfect that no one needs to be good.

– T.S. Eliot

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Q&A



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Elevate Compliance Outcomes Using Programs / Free Online Webinar

Register

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