Ethics of Artificial (Narrow) Intelligence

Nicholas Kalogirou, P.Eng | July 16 2020

"The real problem of humanity is the following: we have paleolithic emotions; medieval institutions; and god-like technology."
- E.O. Wilson, Biologist

Why does AI Ethics matter?

What are we talking about?

What are we talking about?

A nested systems model

What are we talking about?

A nested systems model

The current landscape

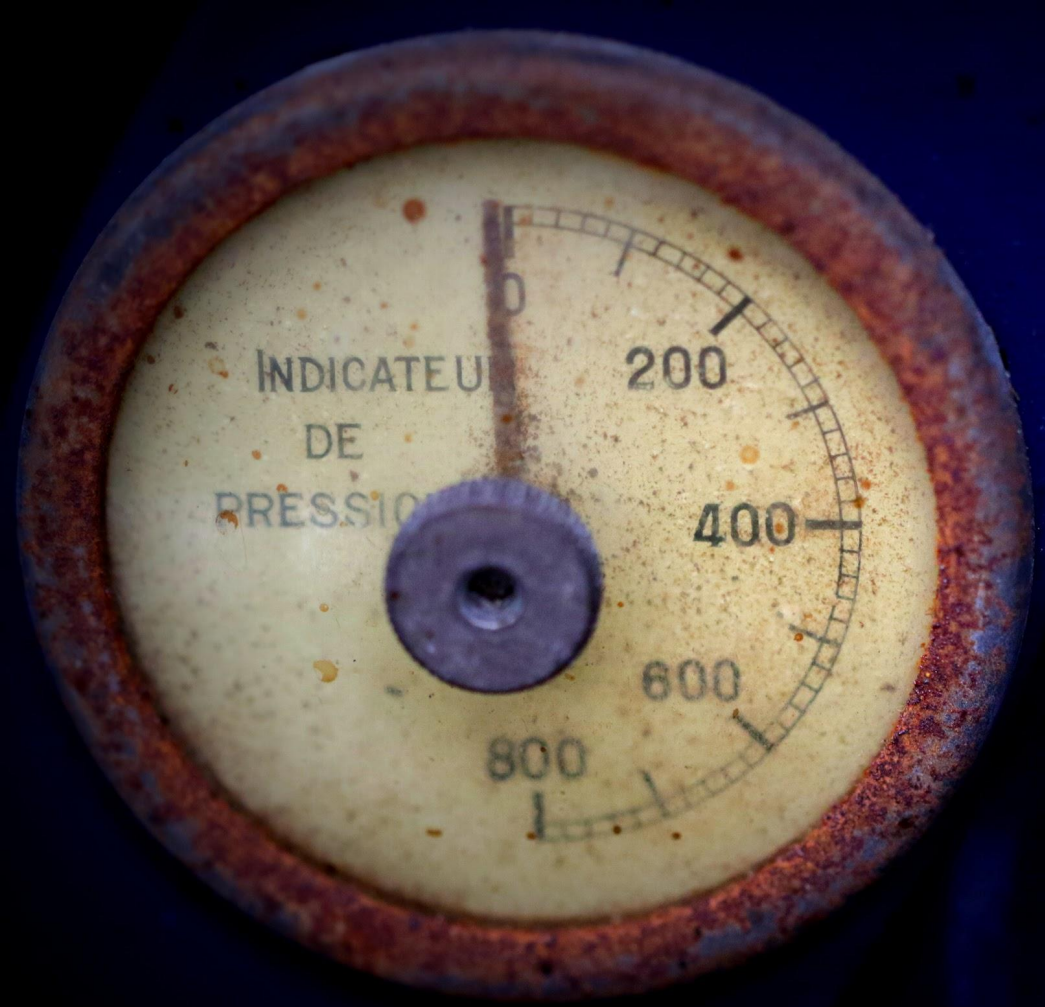
What are we talking about?

A nested systems model

The current landscape

What can we do?

PART 1
WHAT ARE WE TALKING ABOUT



"In their area of practice, engineers shall hold paramount the health, safety, and welfare of the public, and have regard for the environment."

Guideline for Ethical Practice v2.2

Association of Professional Engineers and Geoscientists of Alberta (APEGA)

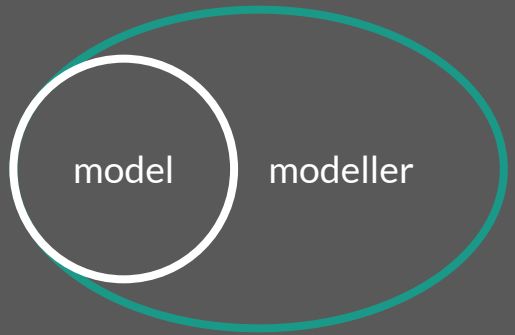
How do you know whether you are doing more good than harm?

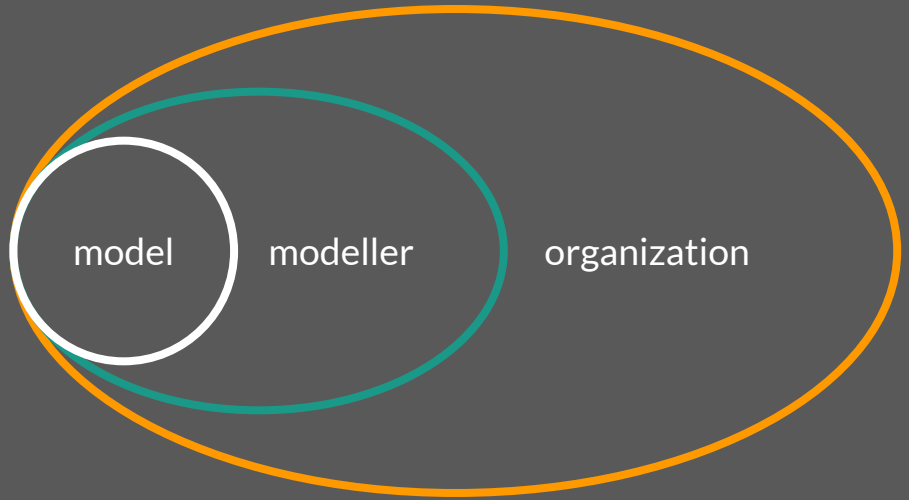
ethics is the *ongoing* study, development, and application of moral reasoning

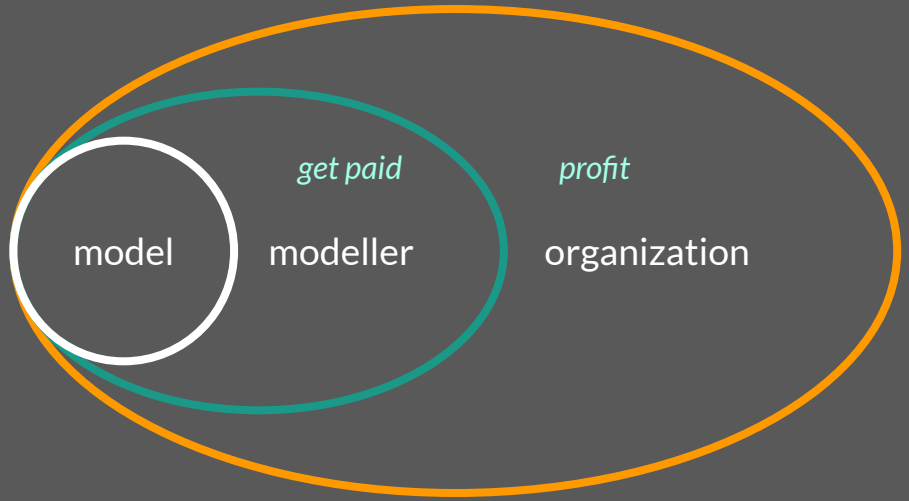
today’s talk: the ethics of artificial narrow intelligence

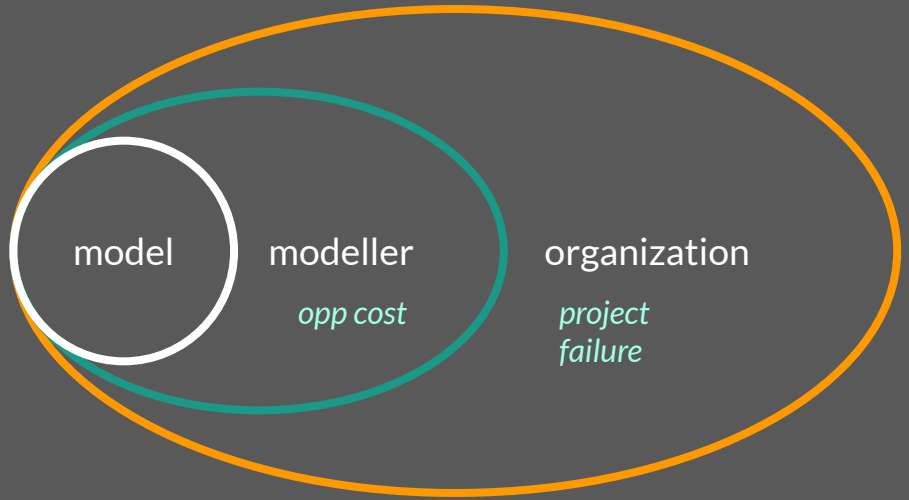
PART 2
NESTED SYSTEMS

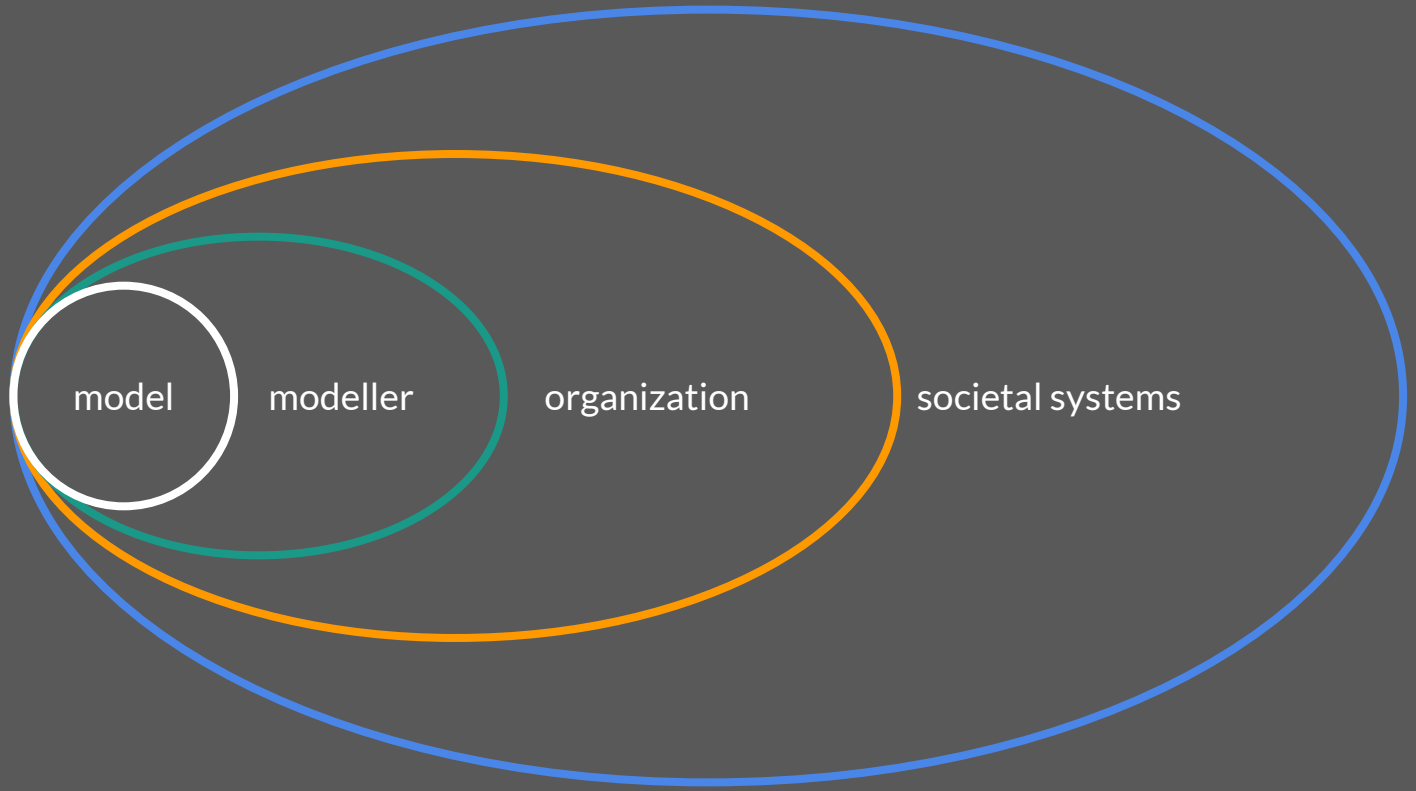
model

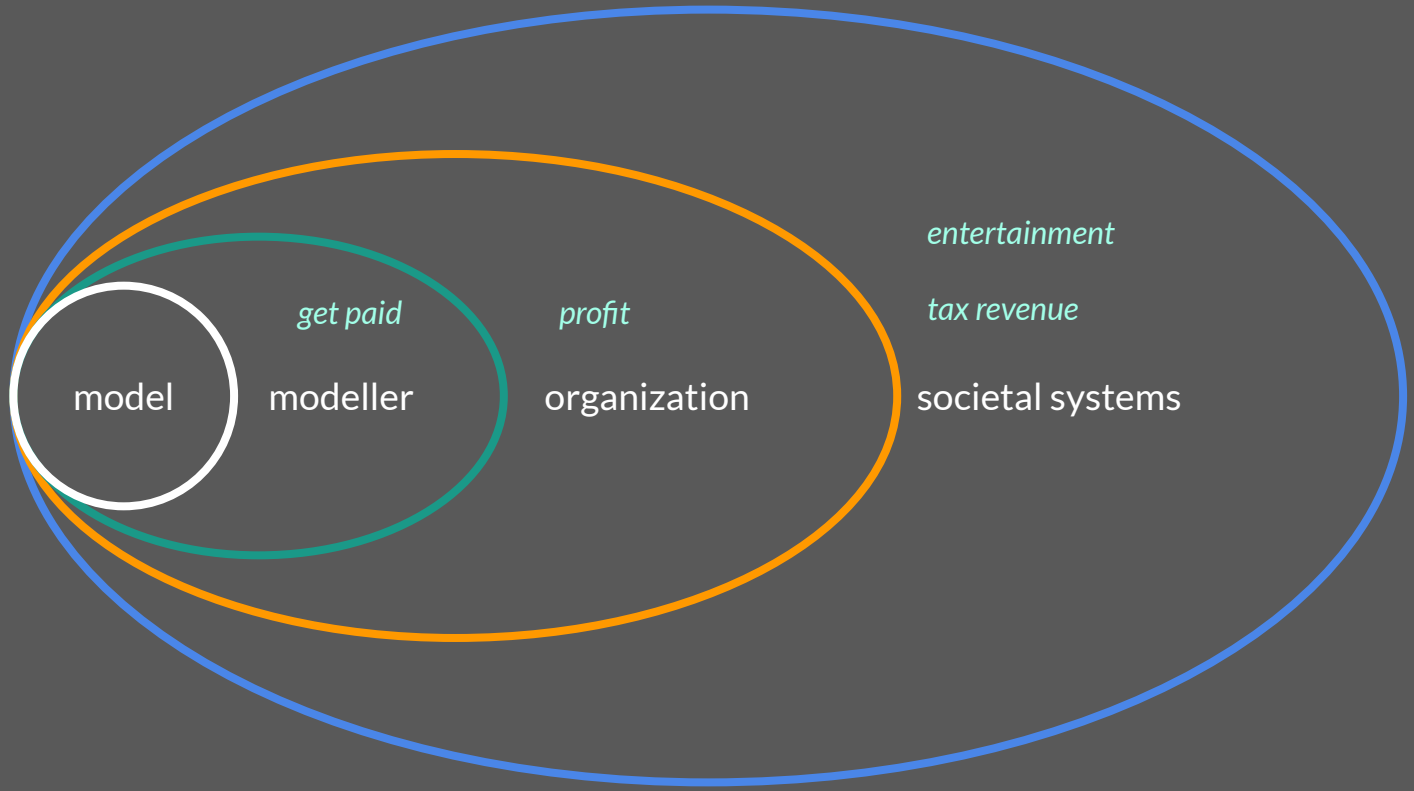

model
modeller

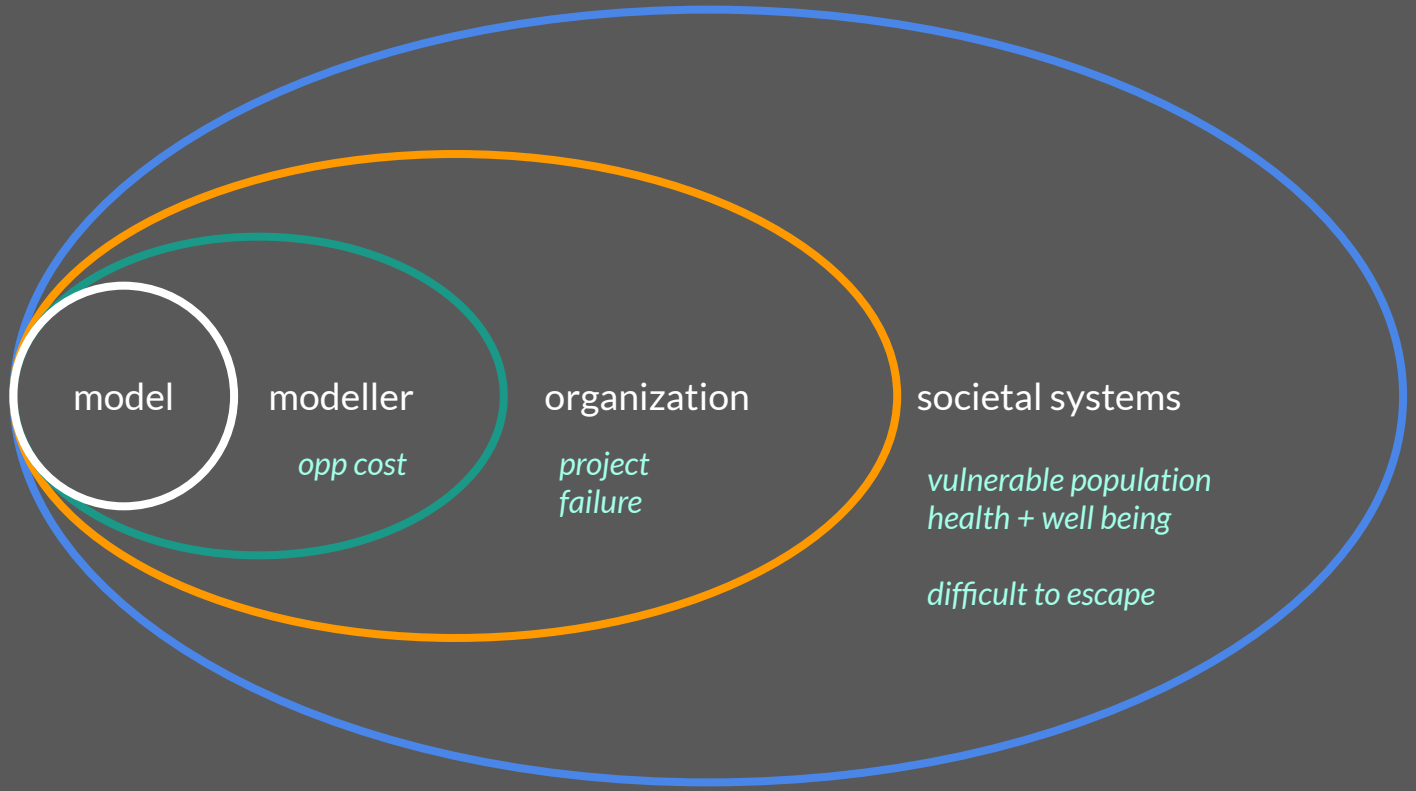

model
modeller
organization

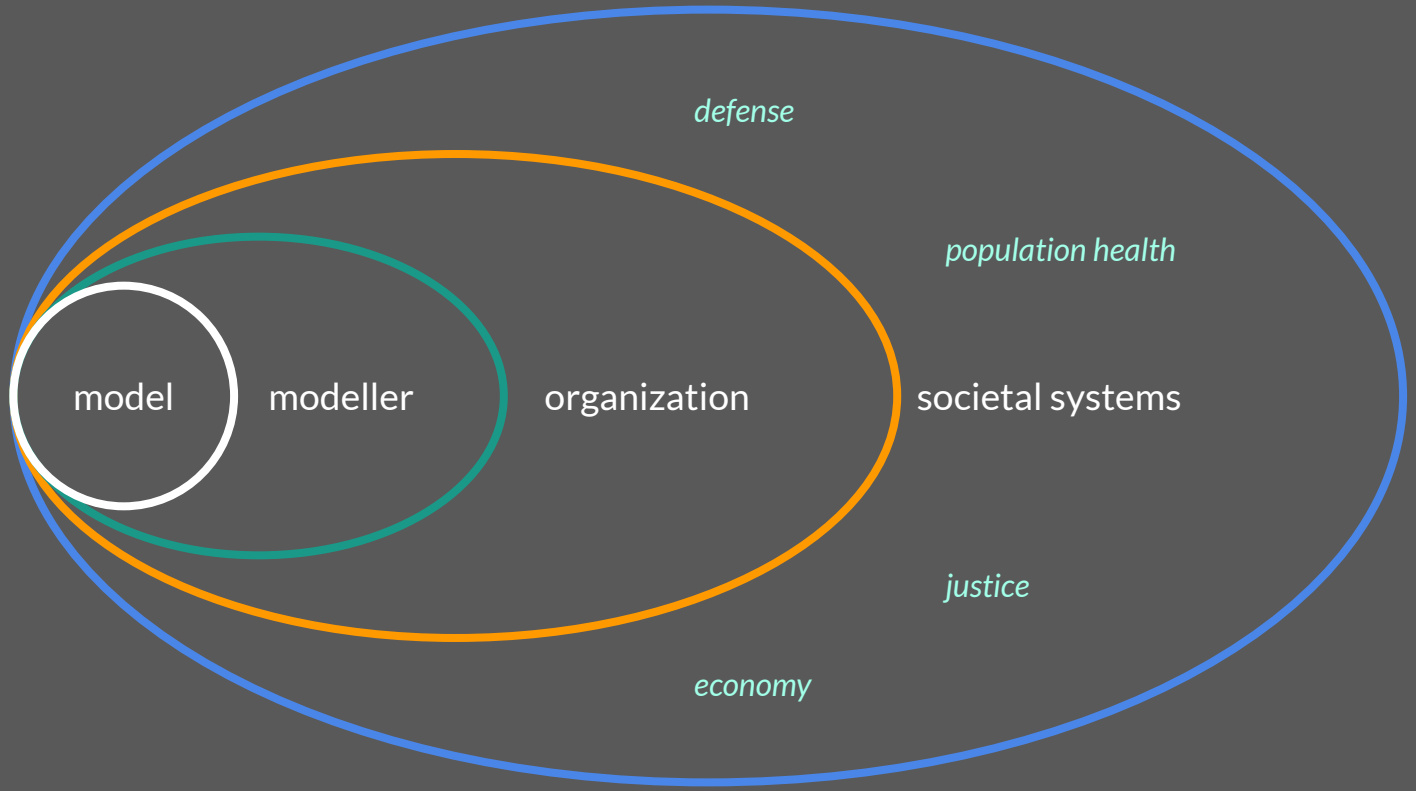

get paid
profit
model
modeller
organization

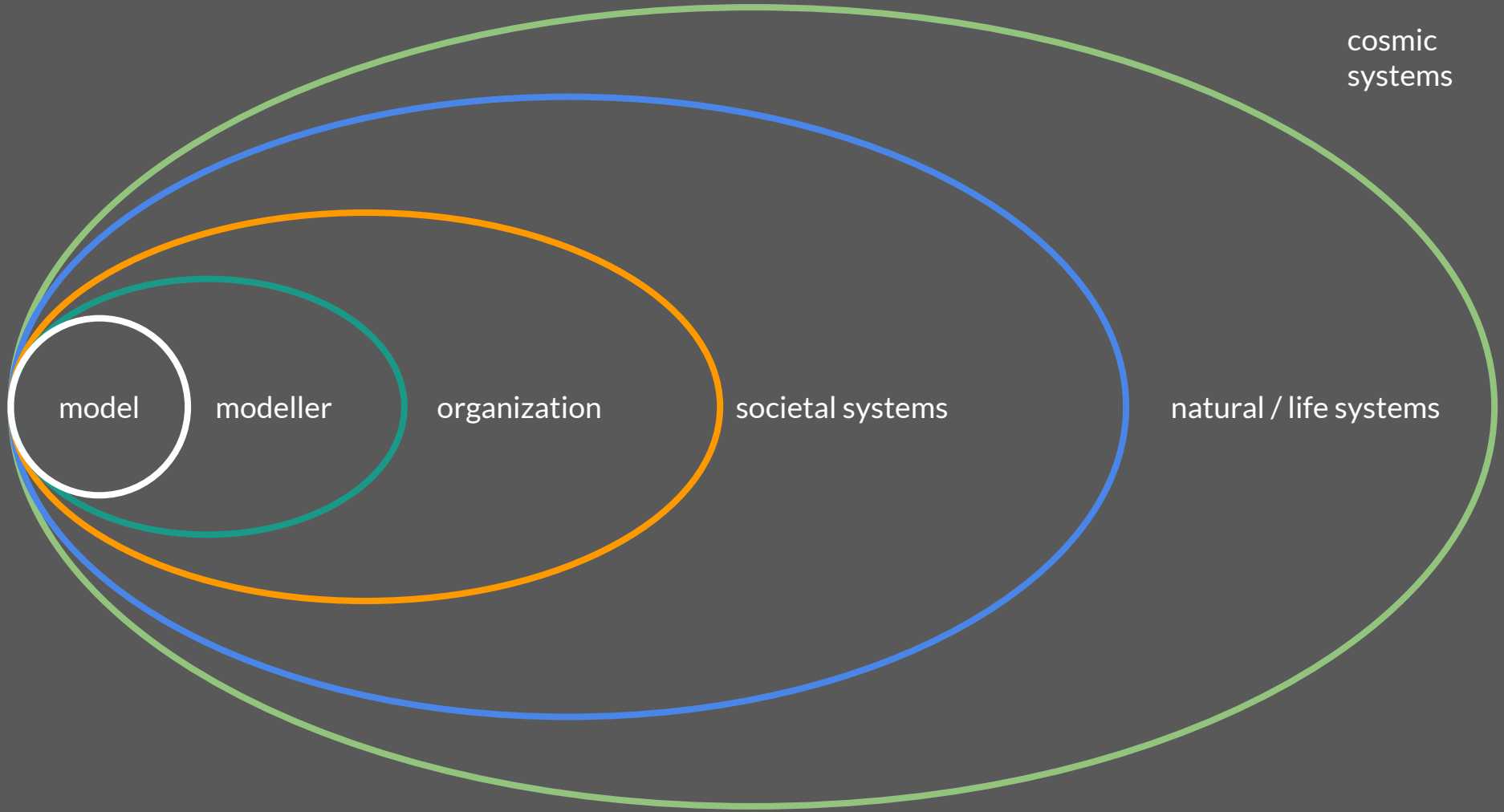

model
modeller
opp cost
organization
project
failure

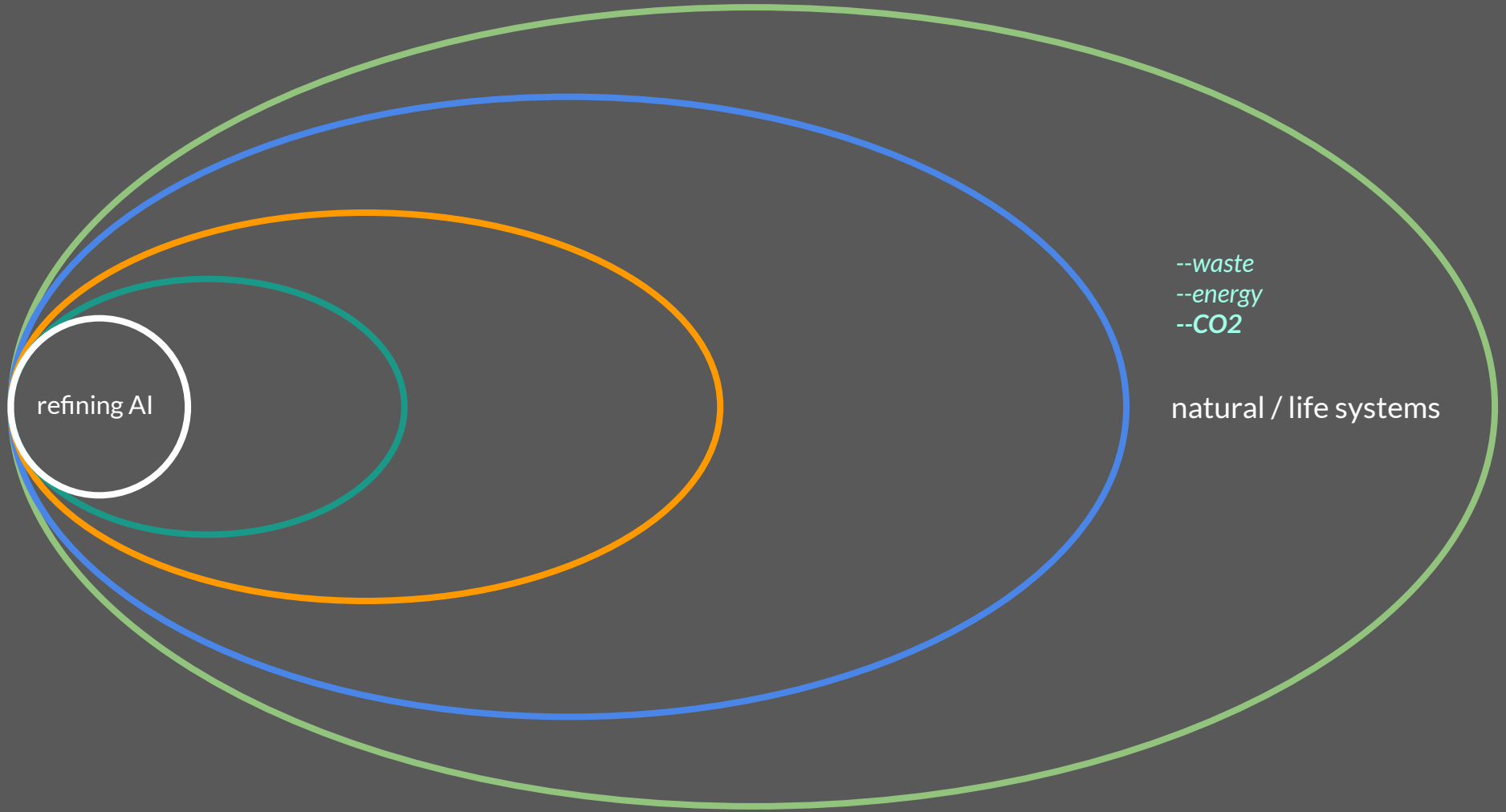

model
modeller
organization
societal systems

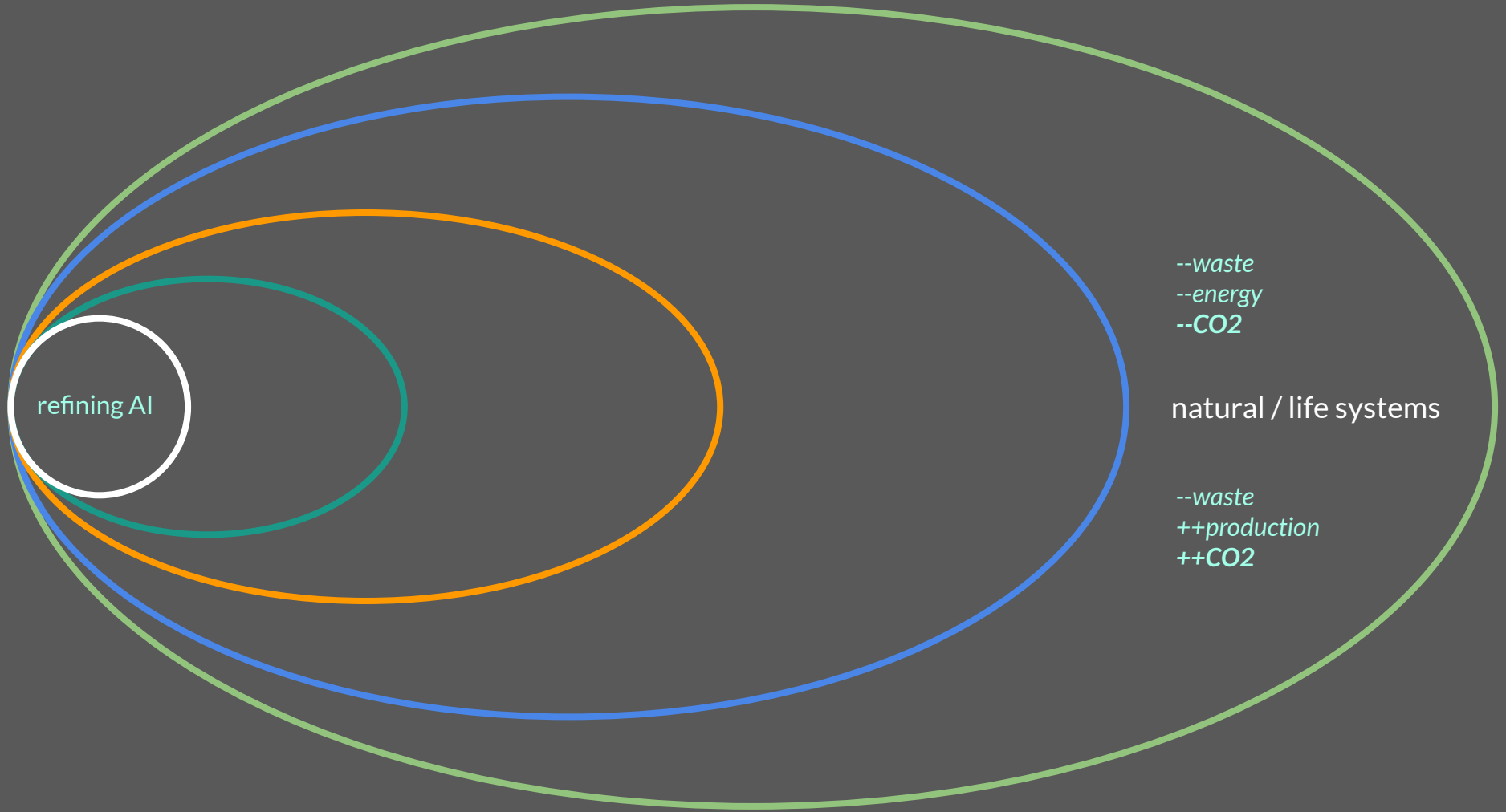

model
get paid
modeller
profit
organization
entertainment
tax revenue
societal systems

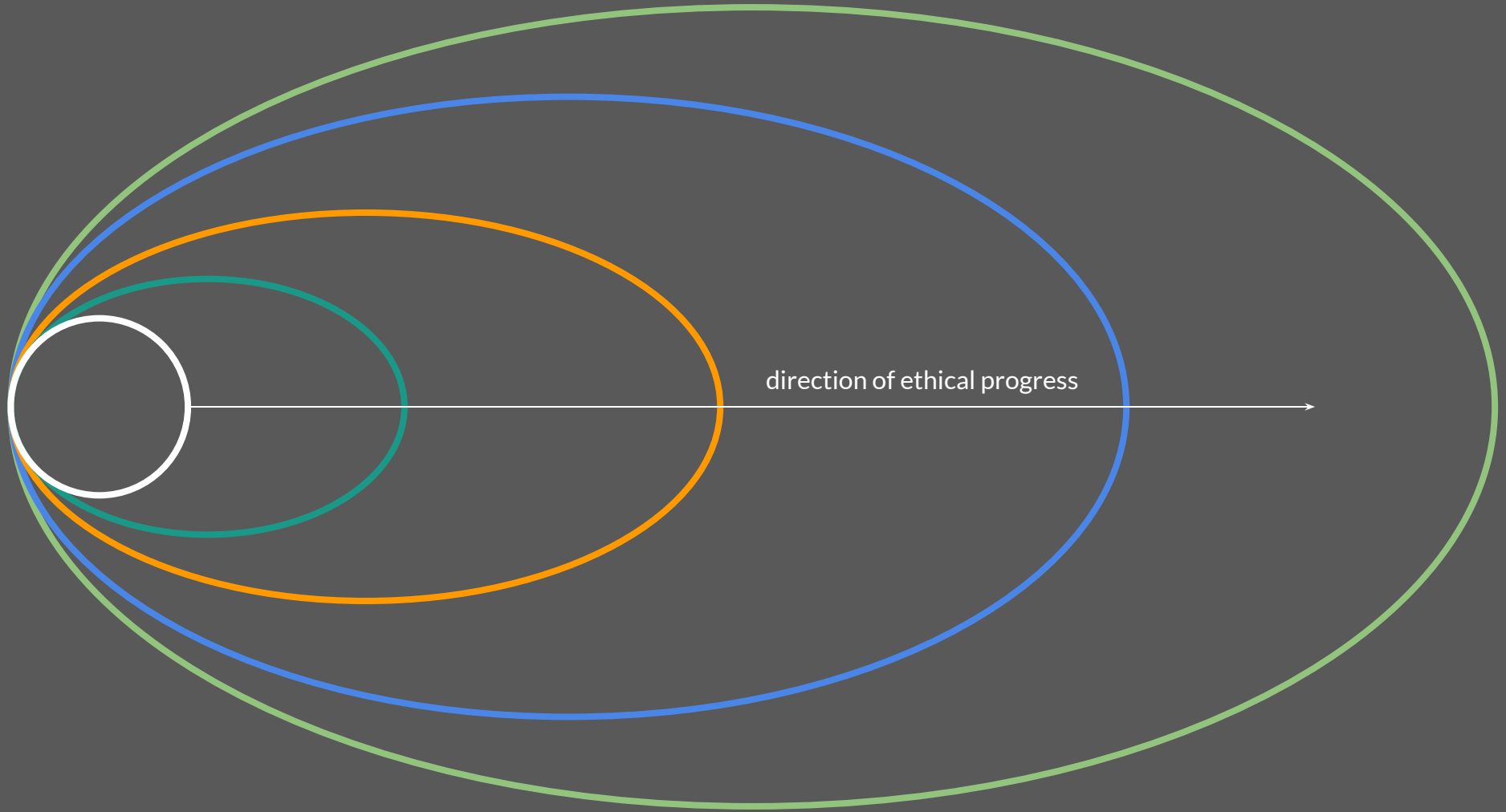

model
modeller
opp cost
organization
project
failure
societal systems
vulnerable population
health + well being
difficult to escape


defense
population health
model
modeller
organization
societal systems
justice
economy


cosmic
systems
model
modeller
organization
societal systems
natural / life systems

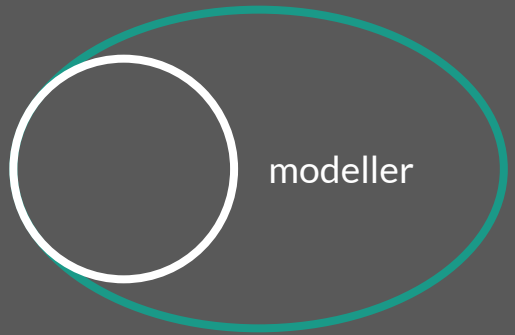

refining AI
--waste
--energy
--CO2
natural / life systems


refining AI
--waste
--energy
--CO2
natural / life systems
--waste
++production
++CO2

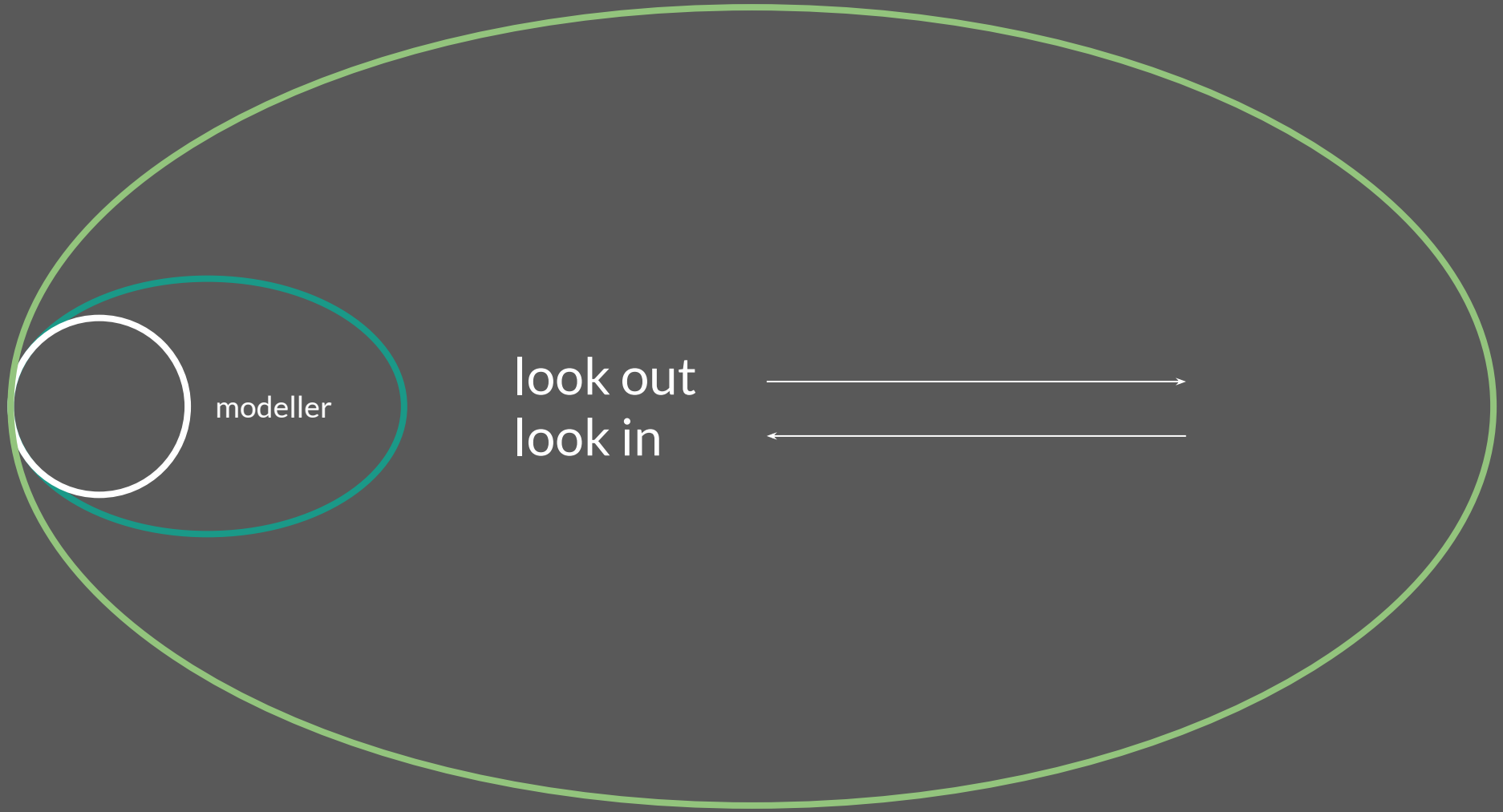

direction of ethical progress

"Models are opinions embedded in mathematics"

- Cathy O'Neill , “Weapons of Math Destruction”



What is the boundary of my caring?
What are my values?
What responsibility do I accept?
What do I have the courage to question?
How do I verify my own knowledge?


modeller
look out
look in

PART 3
THE CURRENT LANDSCAPE

ACADEMICS

DATA
PRACTITIONERS

TECHNOLOGISTS

GOVERNMENTS

ACADEMICS

NON-PROFITS

DATA
PRACTITIONERS

ACADEMIC
INSTITUTIONS

TECHNOLOGISTS

CORPORATIONS

ACADEMICS

DATA PRACTITIONERS

TECHNOLOGISTS

GOVERNMENTS

NON-PROFITS

ACADEMIC INSTITUTIONS

CORPORATIONS

frameworks
checklists

interdisciplinary research

technical tools

laws / regulation

audits / deployment

guidelines
best practices

ACADEMICS

DATA PRACTITIONERS

TECHNOLOGISTS

GOVERNMENTS

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ACADEMIC INSTITUTIONS

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frameworks
checklists

interdisciplinary research

technical tools

laws / regulation

audits / deployment

guidelines
best practices

Algorithmic Impact Assessment

information ethics

XAI

GDPR

governance

MILA Statement

ACADEMICS

DATA PRACTITIONERS

TECHNOLOGISTS

GOVERNMENTS

NON-PROFITS

ACADEMIC INSTITUTIONS

CORPORATIONS

frameworks
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interdisciplinary research

technical tools

laws / regulation

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guidelines
best practices

Algorithmic Impact Assessment

information ethics

XAI

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governance

MILA Montreal Declaration

a review of AI ethics guidelines

major themes

accountability

transparency

human oversight

privacy

safety and security

explainability

fairness

common good

inclusion social cohesion

80% of guidelines include...

accountability | **privacy** | **fairness**

significant technical efforts

Where are the gaps?

seeing ethical AI mainly as a technical problem

other approaches like collective action - self organization, right incentives, right public policy

Where are the gaps?

violating ethics standards and codes have no consequences

technology outpaces the law | no professional bodies or regulations to reinforce behavior

Where are the gaps?

vague guidelines and little focus on self development

reading guidelines tend to have no influence | developing our own self-responsibility and caring

Where are the gaps?

skipping ethics for profit and efficiency

lack of time and resources for broader questioning

Where are the gaps?

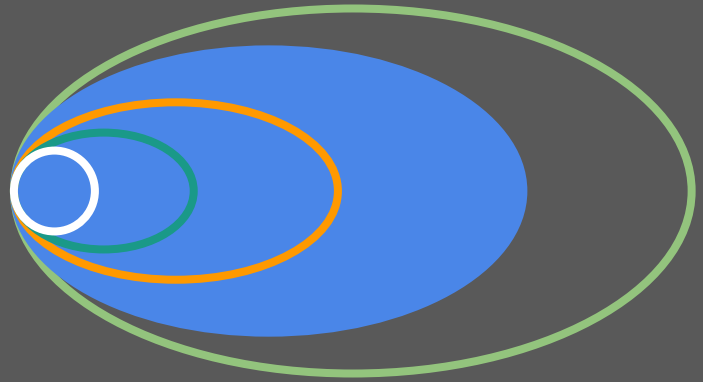
seeing ethical AI mainly as a technical problem

violating ethics standards and codes have no consequences

vague guidelines and little focus on self development

skipping ethics for profit and efficiency

harmful consequences of AI - social trends



INEQUALITY

Worker / Employer Inequality
Widening Socioeconomic Gaps
Political / Democratic Disruption

LOSS OF LIBERTY

Privacy IS Liberty
Increased control by corporations and government through surveillance

DECAY OF TRUTH

Bad actors manipulate AI systems to control the narrative for narrow gain
Intentional attacks on our shared understanding

PART 4
WHAT CAN WE DO

DEVELOP SELF

Widen your caring not just technicals!

WHAT CAN WE DO

DEVELOP SELF

Widen your caring not just technicals!

WHAT CAN WE DO

DISCUSS VALUES

Openly discuss gap between values + action

DEVELOP SELF

Widen your caring
not just technicals!

QUESTION BROADLY

Who / what are we empowering?
not just cost efficiency
Keep asking - write it down

WHAT CAN WE DO

DISCUSS VALUES

Openly discuss gap
between values + action

WHAT CAN WE DO

DEVELOP SELF

Widen your caring
not just technicals!

DISCUSS VALUES

Openly discuss gap
between values + action

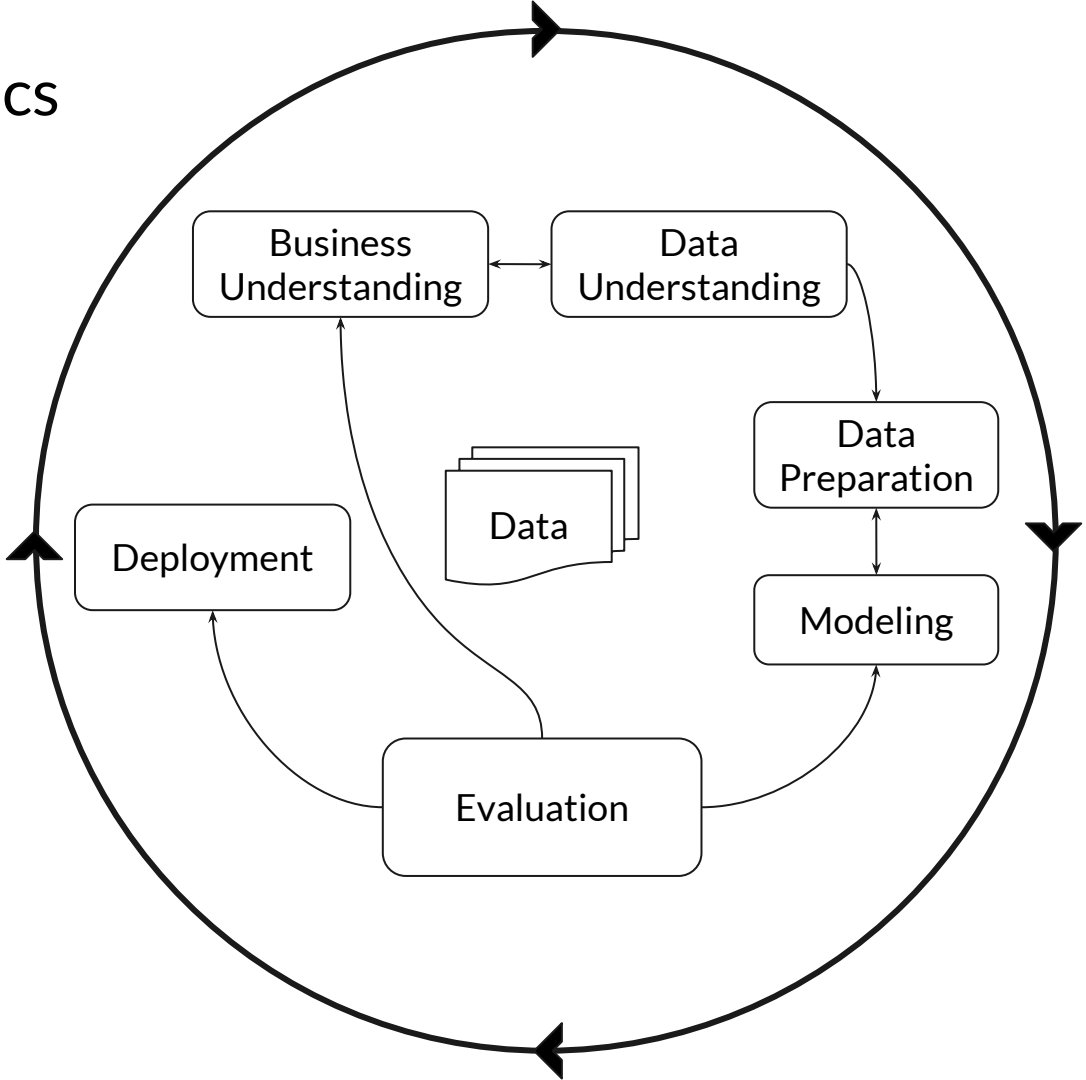
QUESTION BROADLY

Who / what are we empowering?
not just cost efficiency
Keep asking - write it down

PUBLIC PRESSURE

Be an active citizen
Change the system, not just the individual / organization

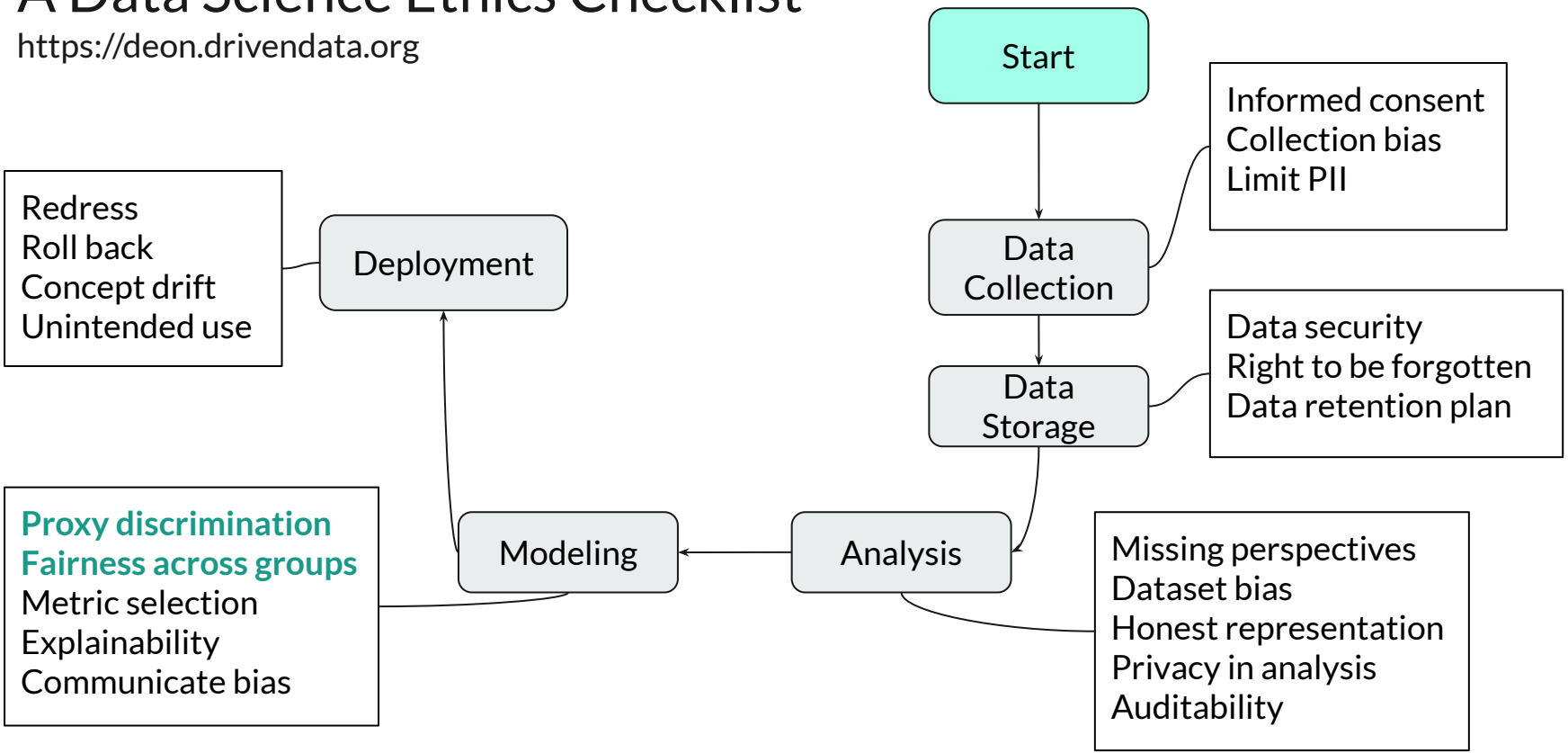
Data Analytics Lifecycle CRISP-DM



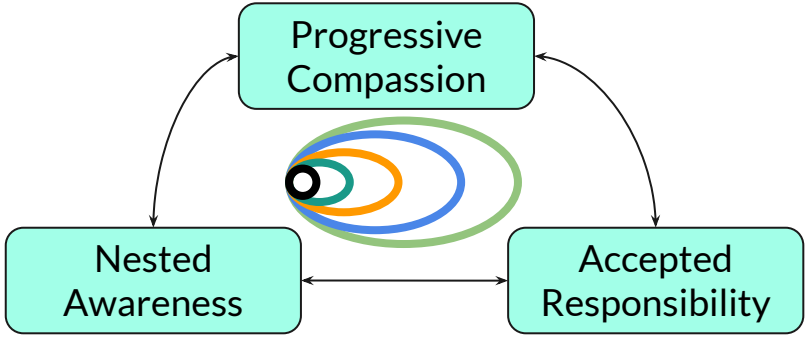
deon

A Data Science Ethics Checklist

https://deon.drivendata.org



Nick's Ethics Process v0.1

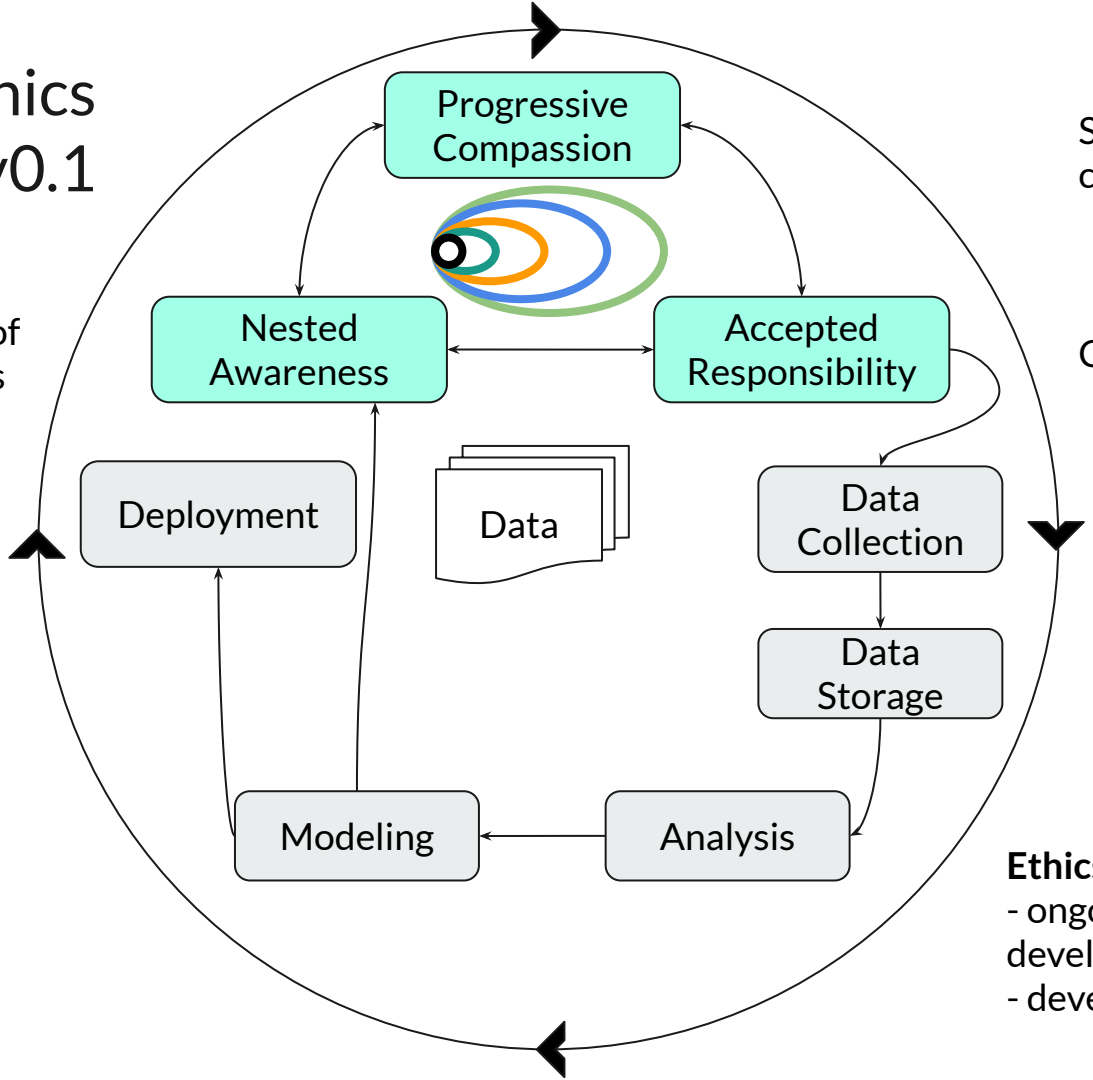


Set progressive caring objective

Explore impact of broader systems

Choose to act

Nick's Ethics Process v0.1



Set progressive caring objective

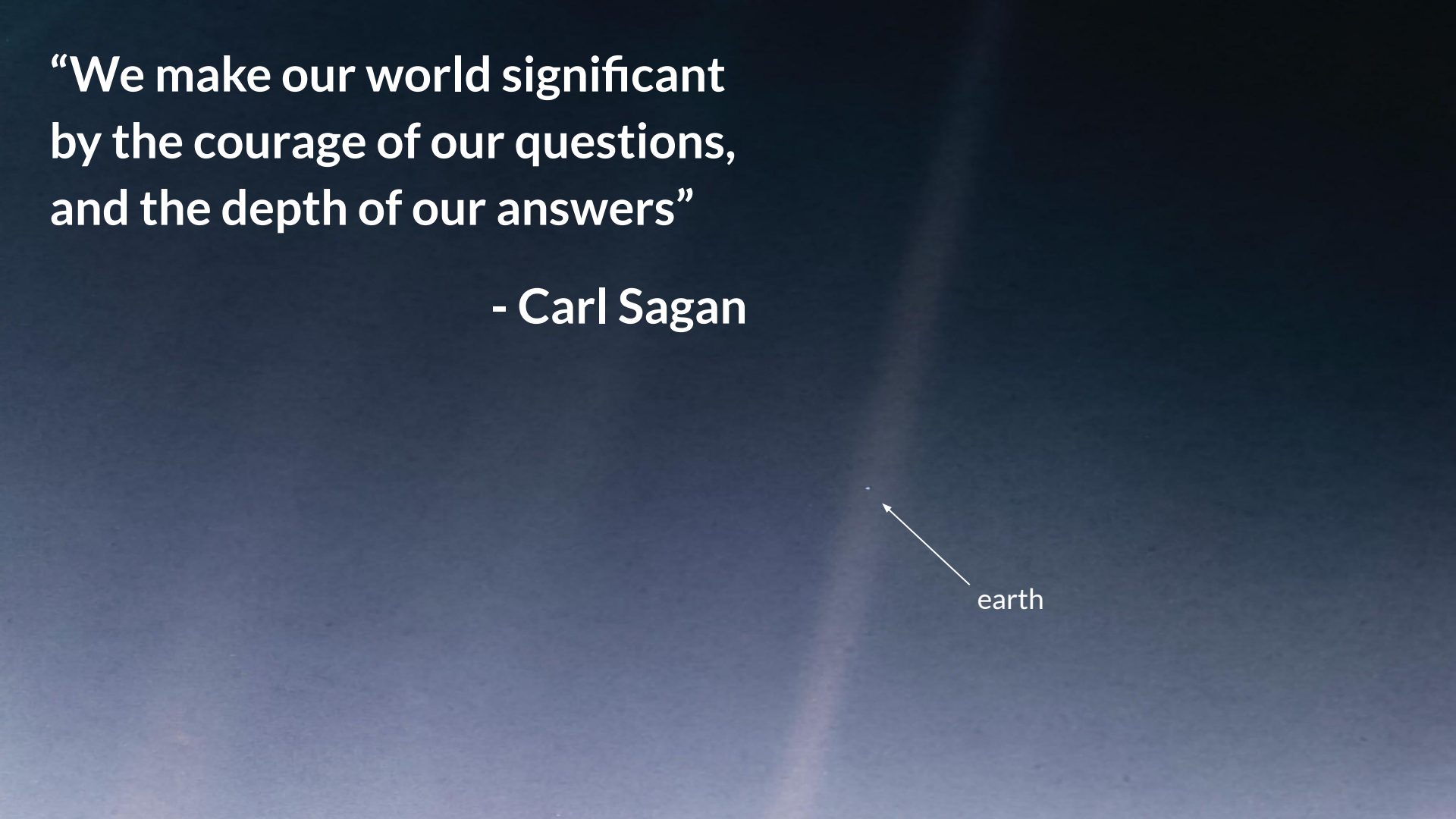
Choose to act

Explore impact of broader systems

Ethics Feedback Loop
- ongoing study, revision, development of moral reasoning
- develop oversight

“We make our world significant
by the courage of our questions,
and the depth of our answers”

- Carl Sagan



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Thanks.

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