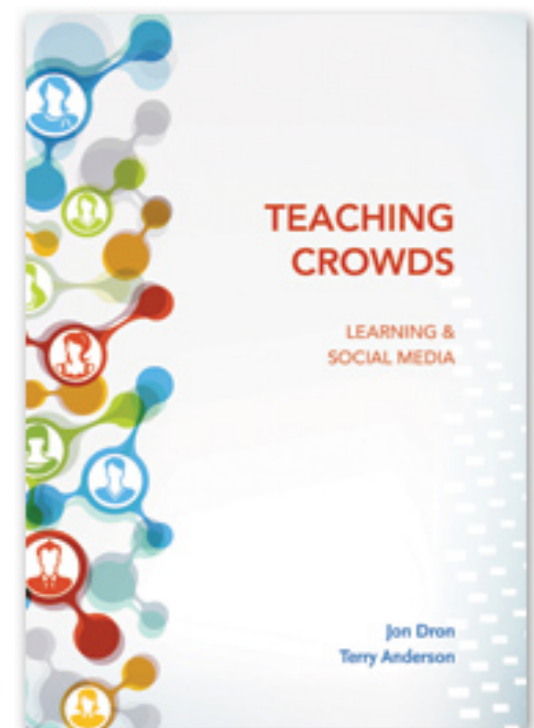


Sets, nets, groups, and collectives

An update for the age of generative AI

Jon Dron, Terry Anderson, July 2024



no one learns alone



**We swim in seas of
teachers**



Many, many, many teachers

**designated
teachers**

kitchens

cafes and bars

regulations

corridors

admin processes

songs

pedagogical models

Wikipedia

ChatGPT

pubs

computers

**other
learners**



The Learner

professional bodies

Stack Exchange

classrooms

door handles

timetables

textbooks

web sites

architecture

Google Search

TV shows

email servers

professional bodies

quizzes

fundlers

boards of governors

instruction manuals

graffiti

conversations

bookshelves

news stories

rituals

interaction designs

trains

essays

buttons

papers

radios and radio shows

exams

editors

learning designers

aircon

syllabi

pens

cleaners

legislation

arguments

curricula

printers

notebooks

clothing

libraries

support staff

common rooms

whiteboards

past teaching

letters

lighting designers

gardens

signs and notices

chairs

desks

caterers

windows

LMSs

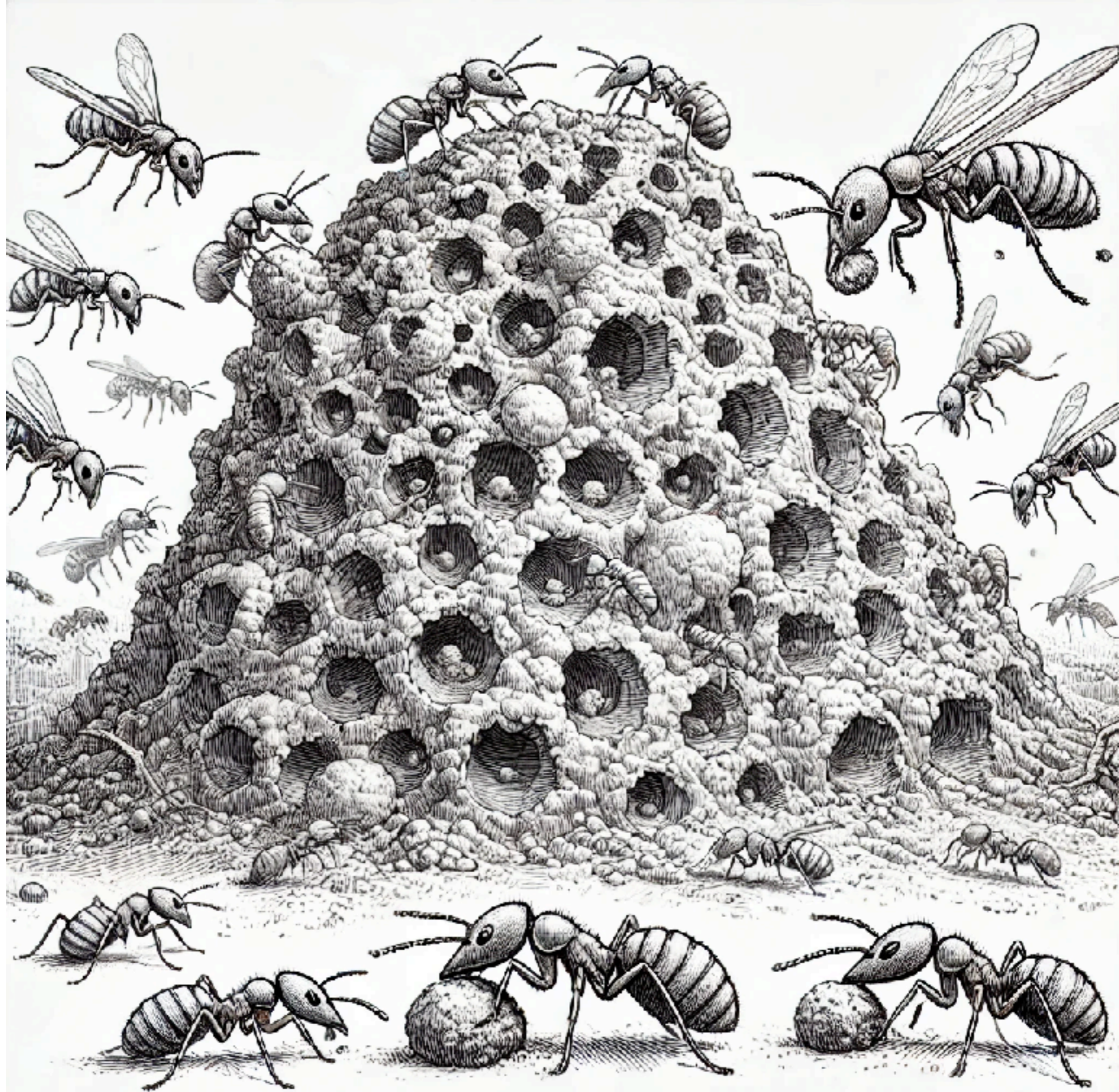
Collective cognition and extended minds



Through technologies*, we participate in the minds of others.

Every new technology we enact makes new adjacent possible empty niches for ourselves and others.

***technology** (*noun and verb*): the organization of stuff to do stuff



Social forms

- **The group**

Hierarchies, membership, intentionality, collaboration, hard boundaries, norms, structure. Groups are technologies that utilize phenomena including sets and nets.

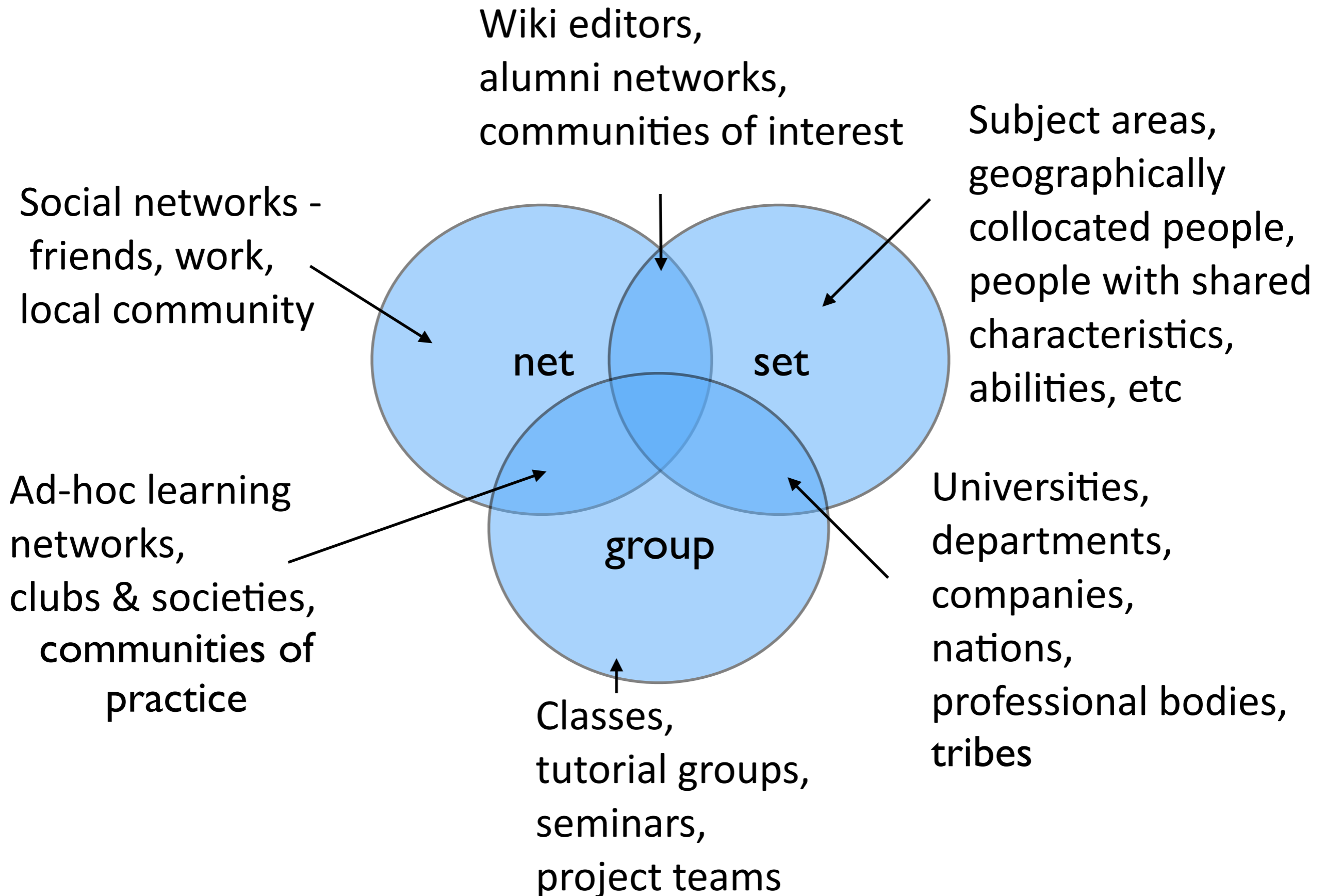
- **The set**

Publication, aggregation, anonymity, cooperation. Structured by topic or shared attributes. Sets are phenomena that can be used by or engendered by technologies.

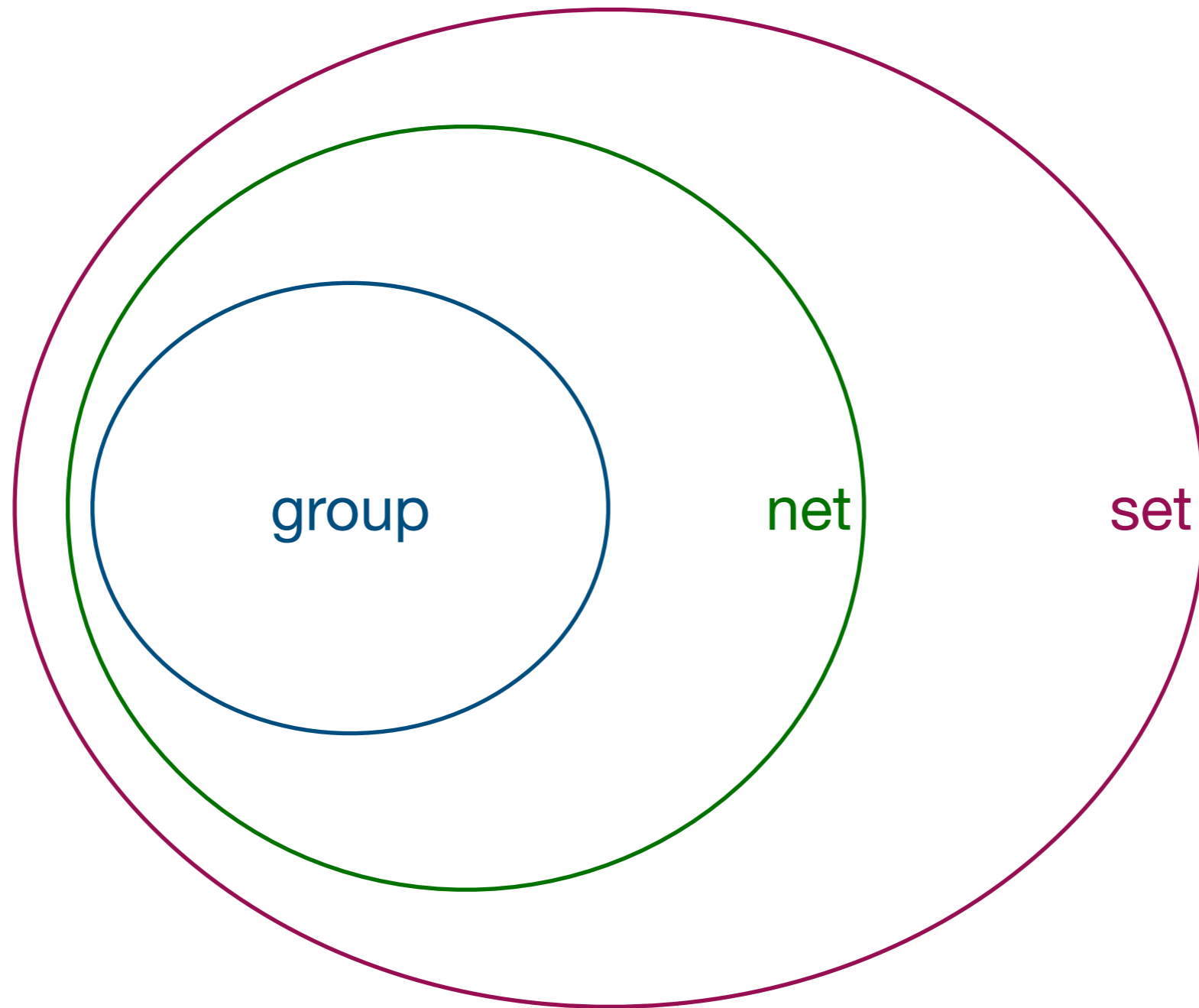
- **The net**

Personal connections, fuzzy boundaries, emergent structure. Nets are phenomena that can be used by or engendered by technologies.

Blendable social forms



An alternative view



duration identity purposes rituals

names leaders pace rules

sequence processes

exclusion norms

Groups

are

**technologies that utilize
and form sets and nets**

collaboration and contest

hierarchies structure power relationships

membership joining and leaving

lack of process

inefficient paths

lack of direction/control

ownership

preferential attachment intentional manipulation

network problems that groups solve

connection trumps wisdom

lack of structure

context collapse

distraction

echo chambers

Matthew Effect

narcissism

reliability

bad people

stupid people

trolls

blind leading the blind

anonymity

lack of process

Set problems that groups solve

cultural conflict

lack of caring

lack of structure

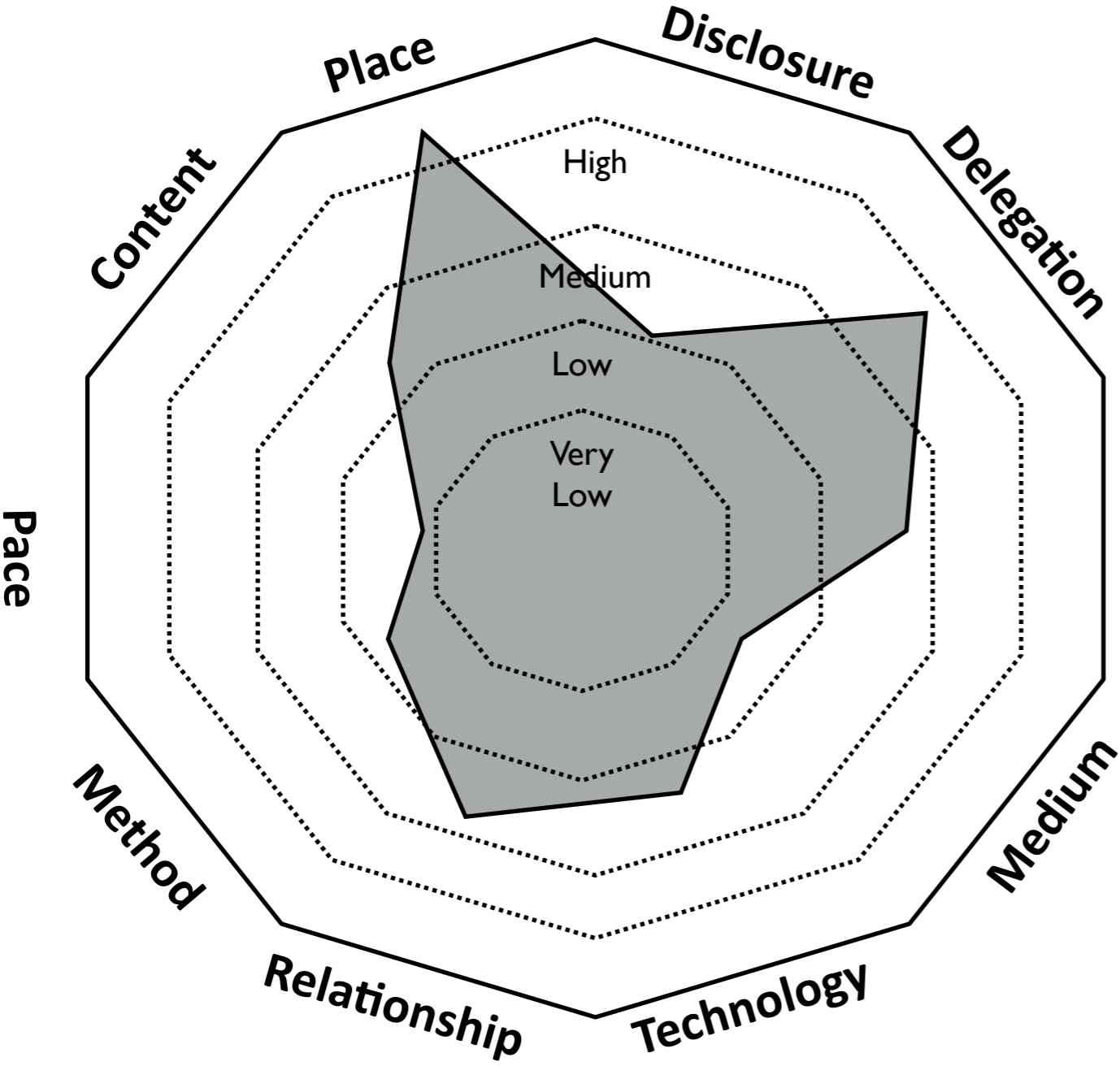
disputes

lack of trust

context collapse

weak social ties

But groups are a Faustian Bargain



Groupthink

Exclusion

Scalability

Restricted pace, time, tools, etc

Constraints

Embedded power imbalances

Freeloading

Coordination complexity

There are other
ways to use and
give structure to
nets and sets

Non-group solutions:

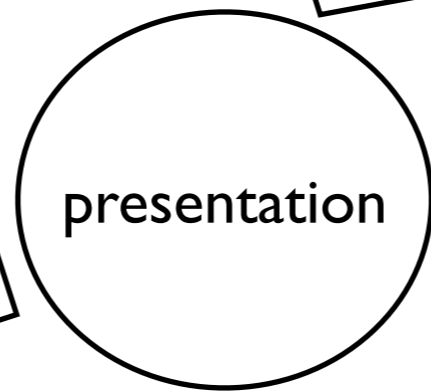
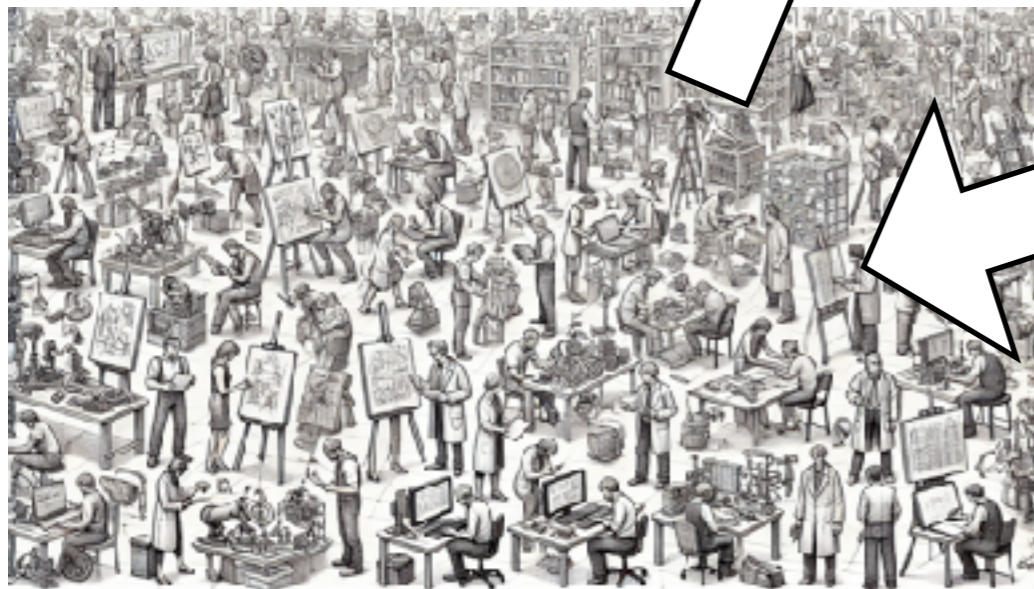
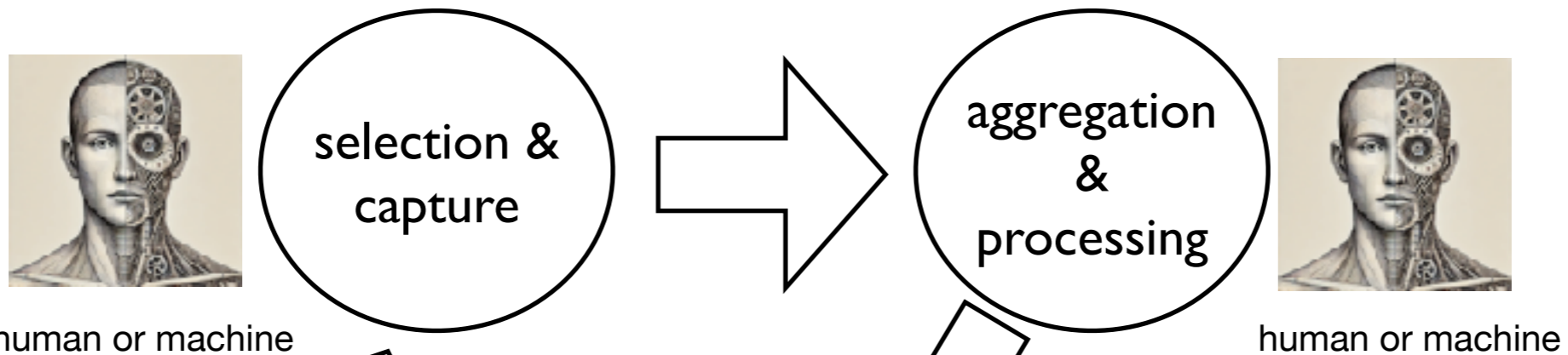
- 1. Designed manipulation**
- 2. Emergent collectives**
- 3. Hybrids**

Designed manipulation and conflicting agendas.

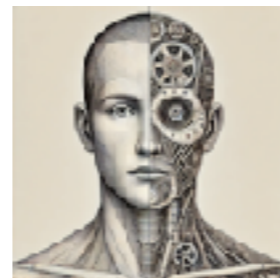
The owner's purpose is rarely
only to support learning.
Or it may be more sinister.



Collectives



The crowd as a first class entity

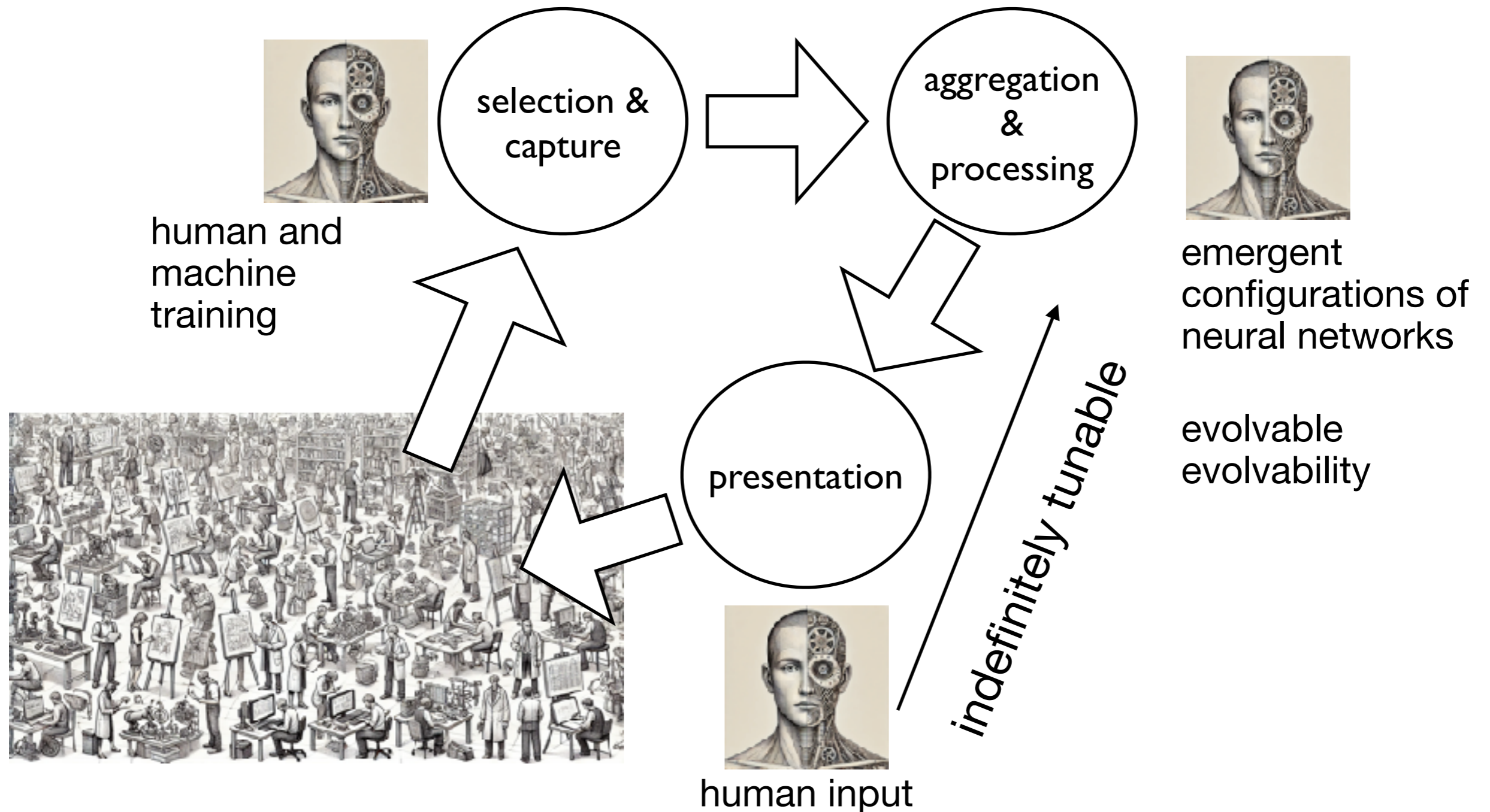


human or machine

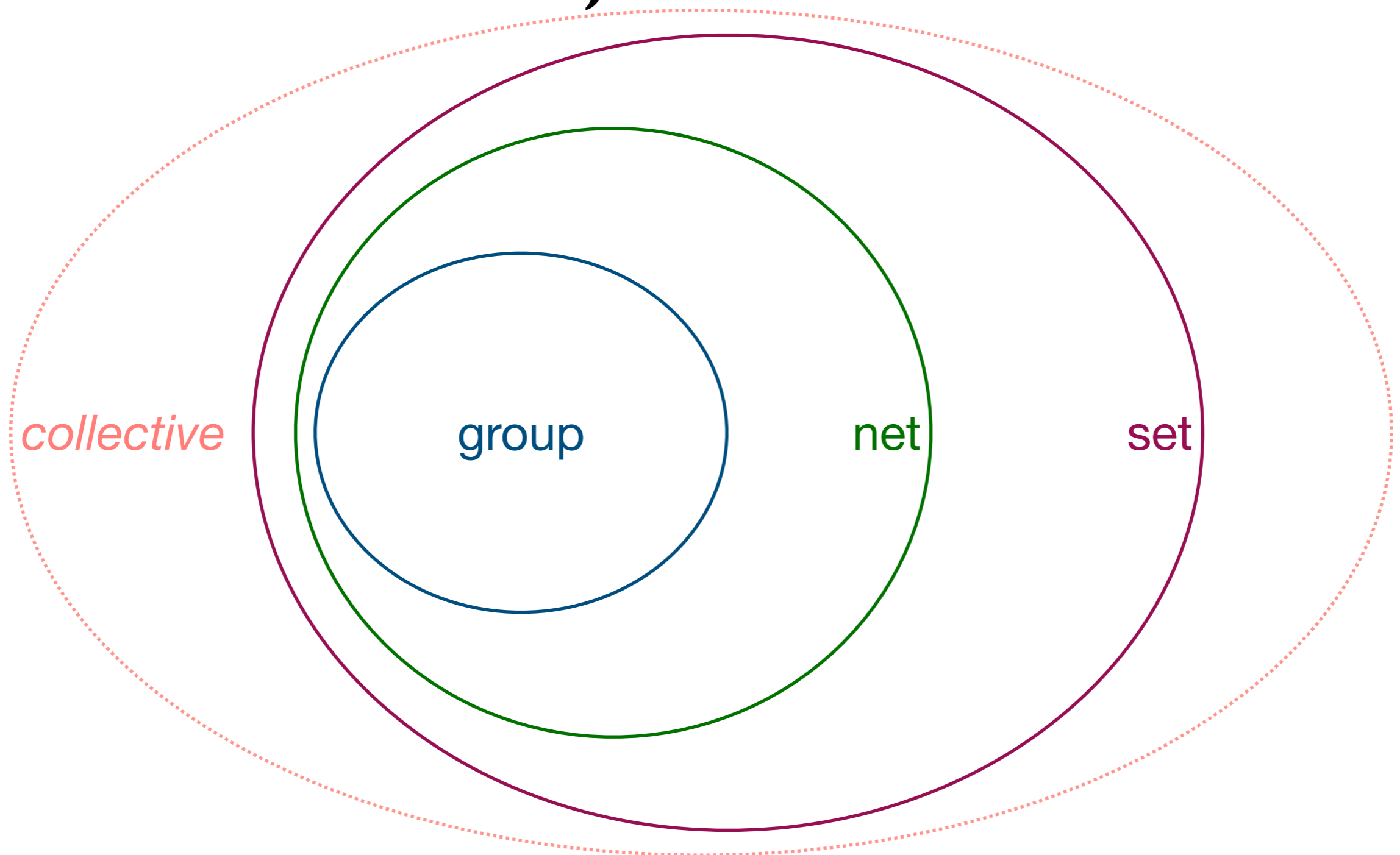
The dwellings/tools that we shape and that shape us

DEEPLY INTERTWINGLED AND RECURSIVE

LLMs as general-purpose collectives



Collectives, groups, nets, and sets

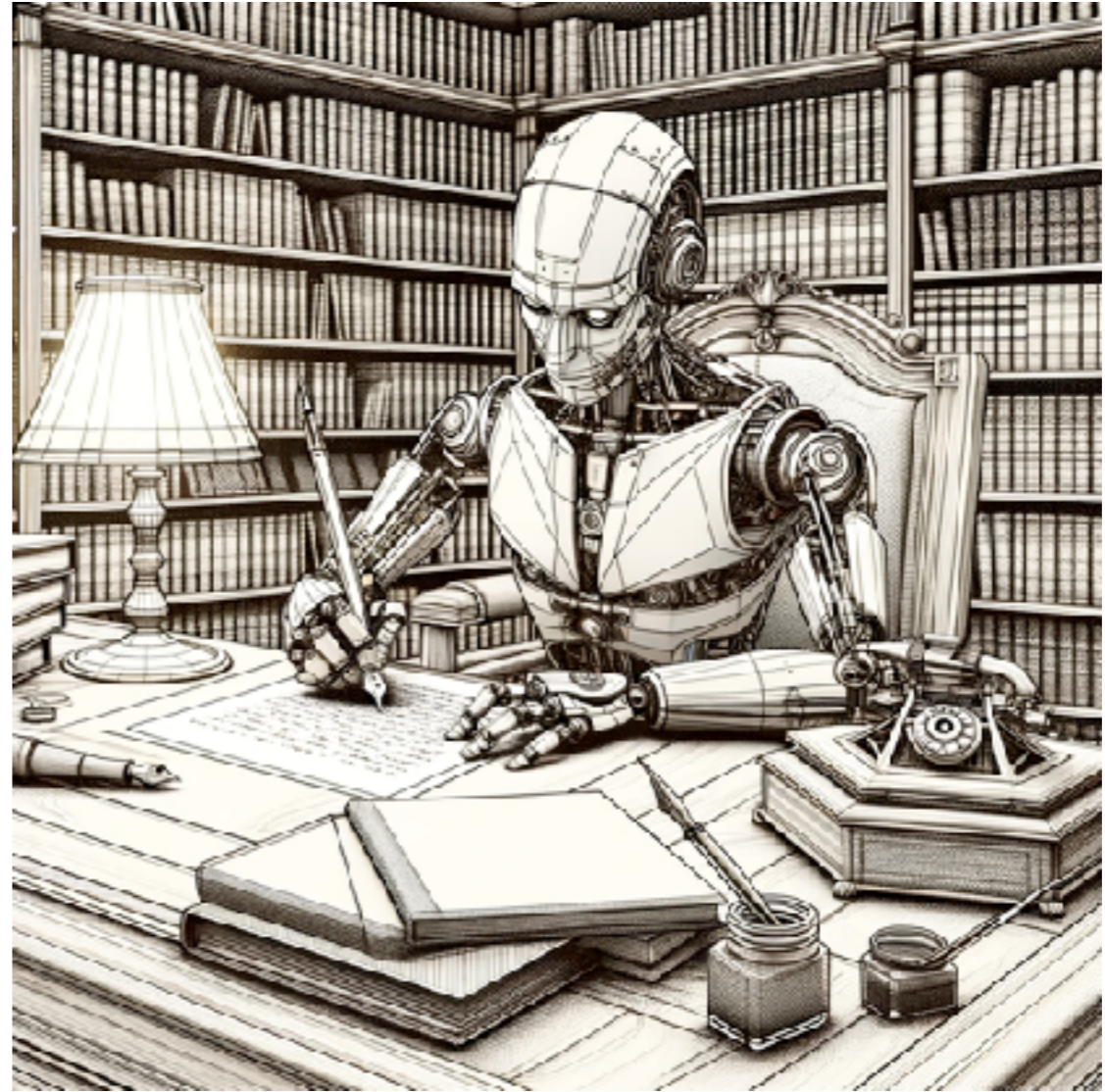


LLMs are collectives



BUT...

**Generative AIs are
the first widely
available
technologies that
use other
technologies**



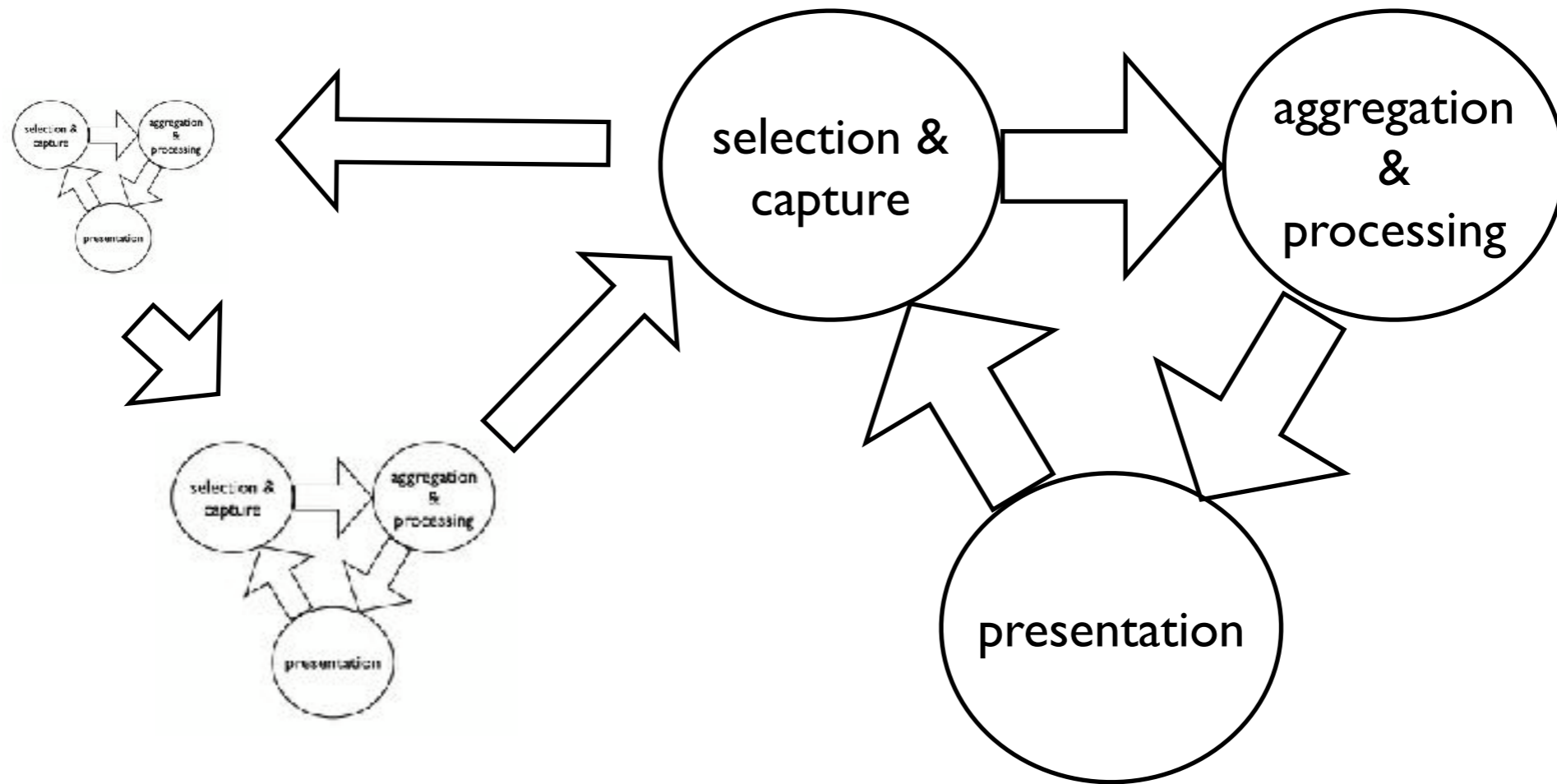
They mimic/enact *soft* technique. They are not just part of an orchestration. They assemble and orchestrate themselves.

They create, they solve problems, they invent.

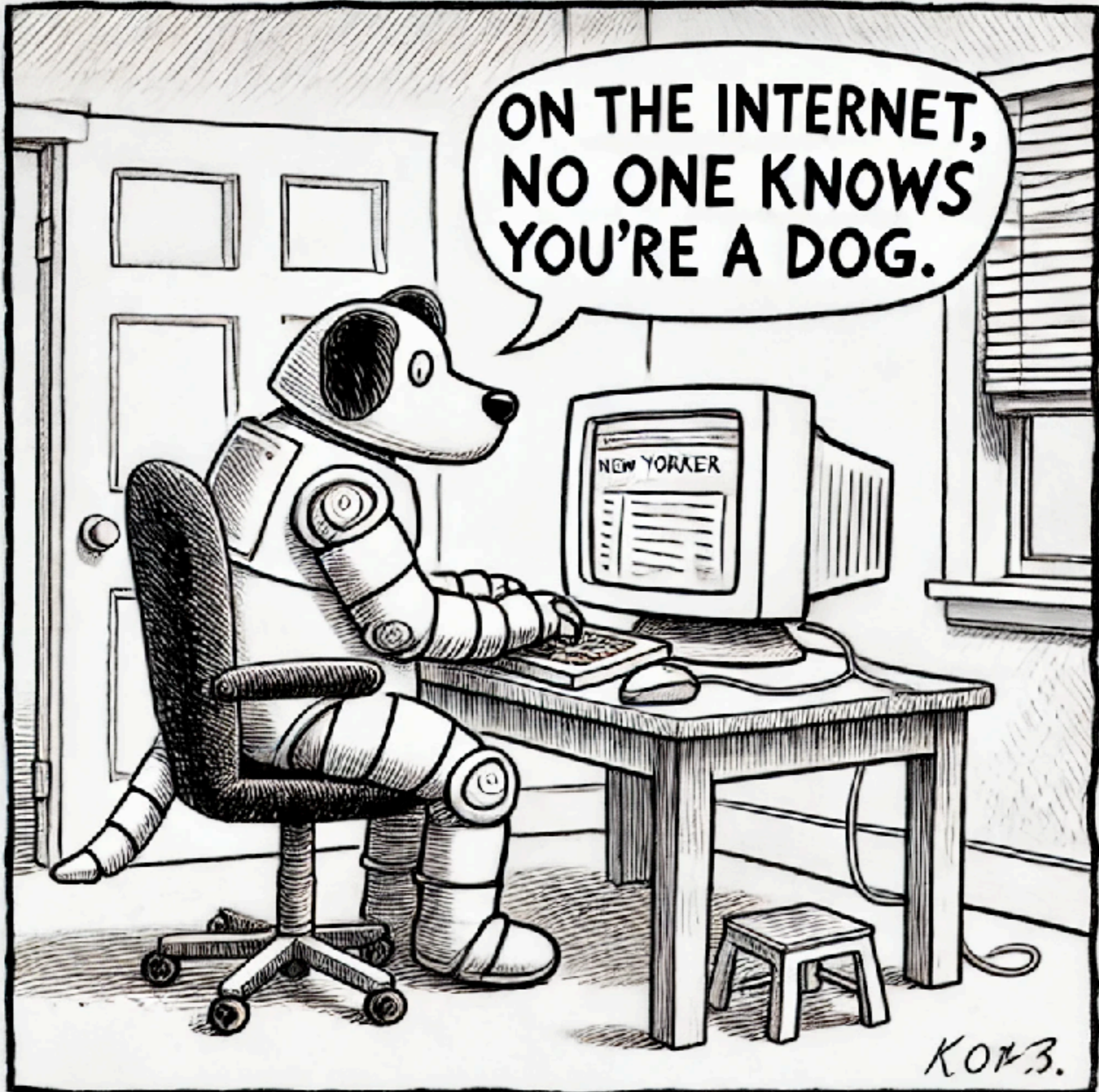


**What happens when we learn to
be human from things that are
not (quite) human?**

The grey goo scenario

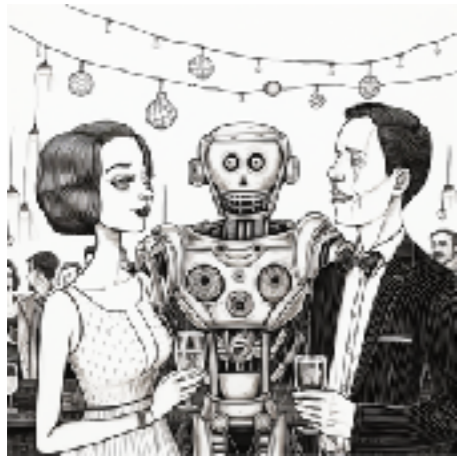


**ON THE INTERNET,
NO ONE KNOWS
YOU'RE A DOG.**



KOMB.

Generative AIs with separate, non-overlapping roles



Generative AIs to support human connection

Education as a community vs education as a product



Thank you

<https://howeducationworks.ca>



<https://teachingcrowds.ca>

Jon: <https://jondron.ca/> Terry: <https://virtualcanuck.ca/>

Image credits: Jon Dron and ChatGPT