

Artificial Utopia

Simulation and AI to Explore Utopian (& Dystopian) Futures

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Unil.

real
A POST GROWTH DEAL

101071647 (ERC)

Paper Under REVIEW:

Oswald, Y. (2025 March). Artificial Utopia: Simulation and Intelligent Agents for a Democratised Future. arXiv preprint arXiv:2503.07364.

Agenda



What is Artificial
Utopia about?



State-of-the-art



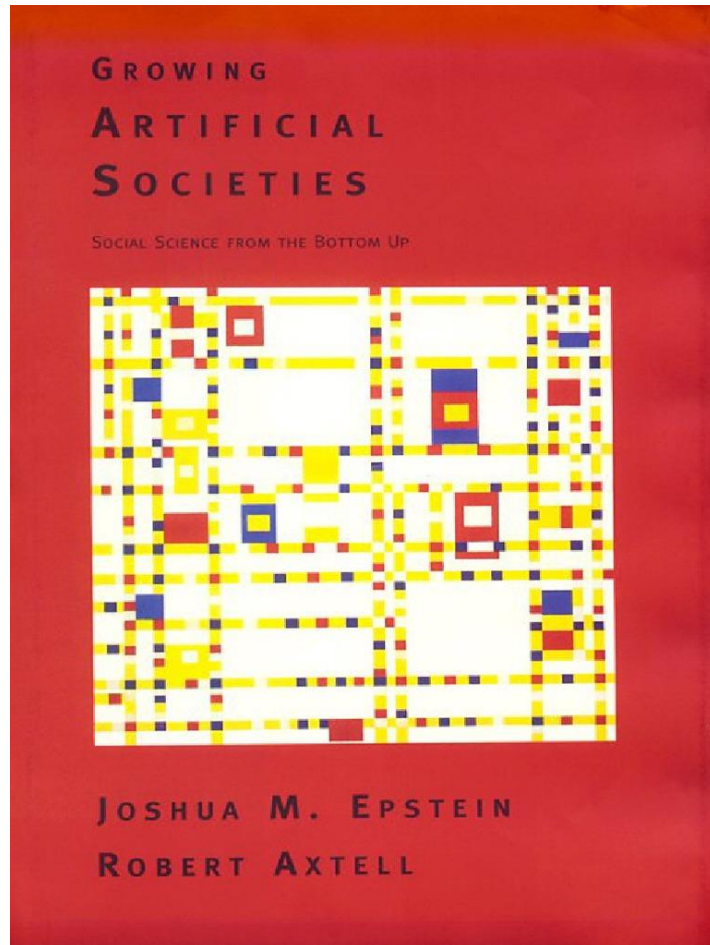
What to do next?

What is Artificial Utopia about?

Utopia is always about finding or creating a better society.

Sure, but there is more.

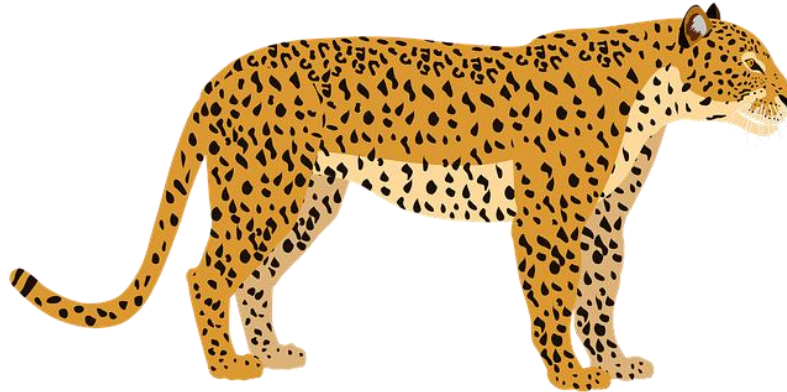
Background – Artificial Societies



Background – Artificial Life



Game of life



Synthesis, Complexity, Self-organisation and Evolution of Natural Systems

A natural science analogy - AI effectively sweeps search spaces

AlphaFold

Accelerating breakthroughs in biology with AI

Explore the AlphaFold Database >

ARTIFICIAL INTELLIGENCE

Google DeepMind's new AI tool helped create more than 700 new materials

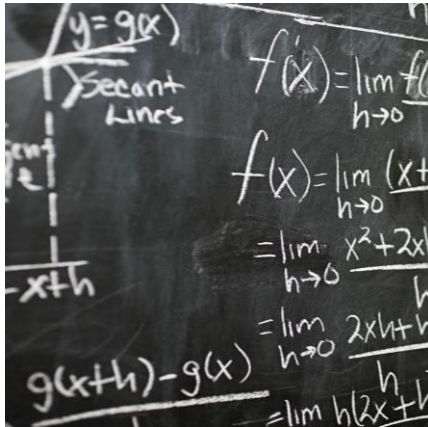
Newly discovered materials can be used to make better solar cells, batteries, computer chips, and more.

By June Kim

November 29, 2023

<https://deepmind.google/science/alphafold/>

Exploring *all potential* societies



Pure Mathematics

“The difference between math and physics is that physics describes our universe, while math describes any potential universe.”

– Edward Frenkel



Artificial Utopia

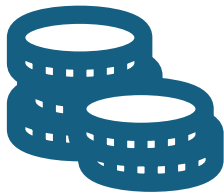
The difference between artificial utopia and artificial societies is that artificial societies describe our society, while artificial utopia describes potential societies.

– Me

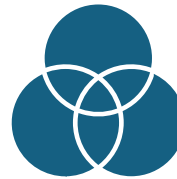


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Three ways to think about utopia



The economic way

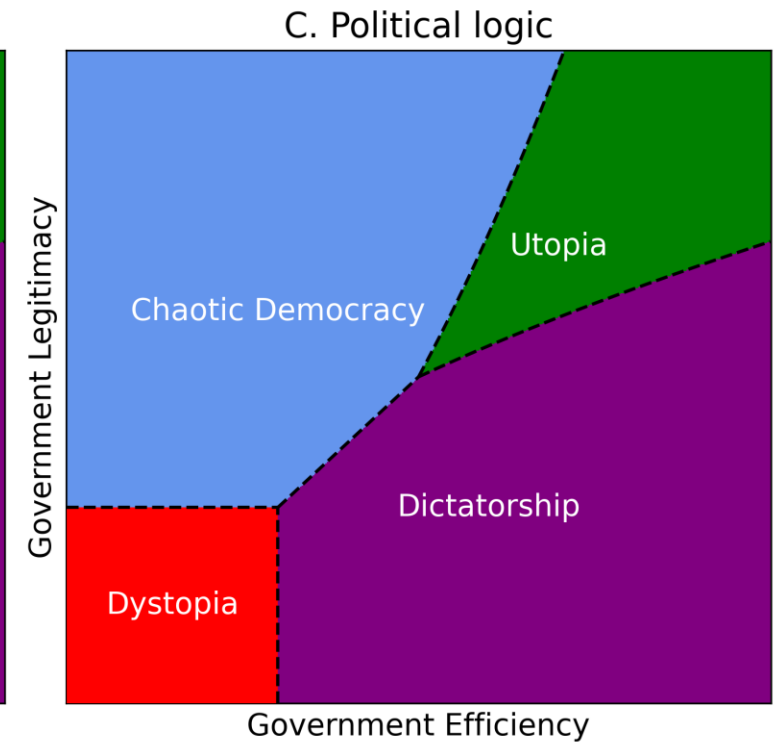
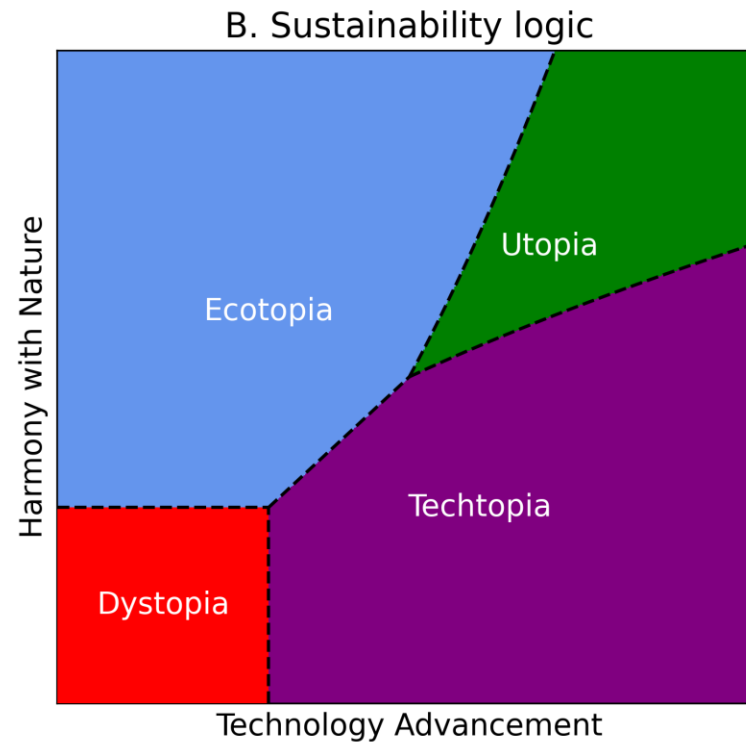
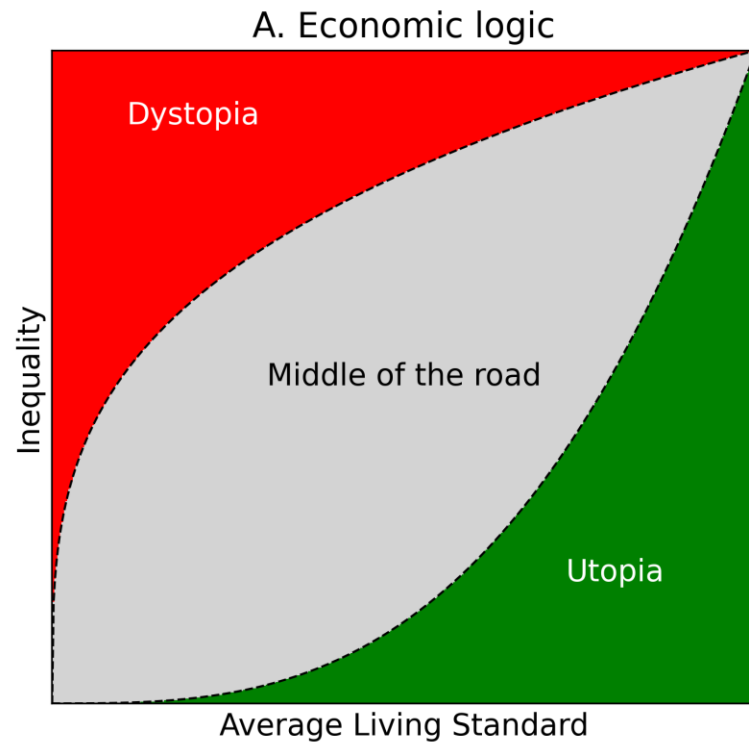


The technology/nature way



The political way

‘Phase’ diagrams



Thinking About These Utopian “Phases”

What political institutions would this be?

What economic structures and rules would this be?

What would people do in such societies?

Who would they be?

What technologies would they use day-to-day?

How would they interact with nature in a concrete way?

Think radical social science and Ruth Levitas work (a sociologist from Bristol)

State-of-the-art

State of the art is very limited so far

Gerdes, L., Aigner, E., Meretz, S., Pahl, H., Schlemm, A., Scholz-Wäckerle, M., ... & Sutterlützi, S. (2023). COMMONSIM: Simulating the utopia of COMMONISM. Review of Evolutionary Political Economy, 4(3), 559-595.

Almudi, I., Fatas-Villafranca, F., Izquierdo, L. R., & Potts, J. (2017). The economics of utopia: a co-evolutionary model of ideas, citizenship and socio-political change. Journal of Evolutionary Economics, 27, 629-662.

AI ready for many applications?

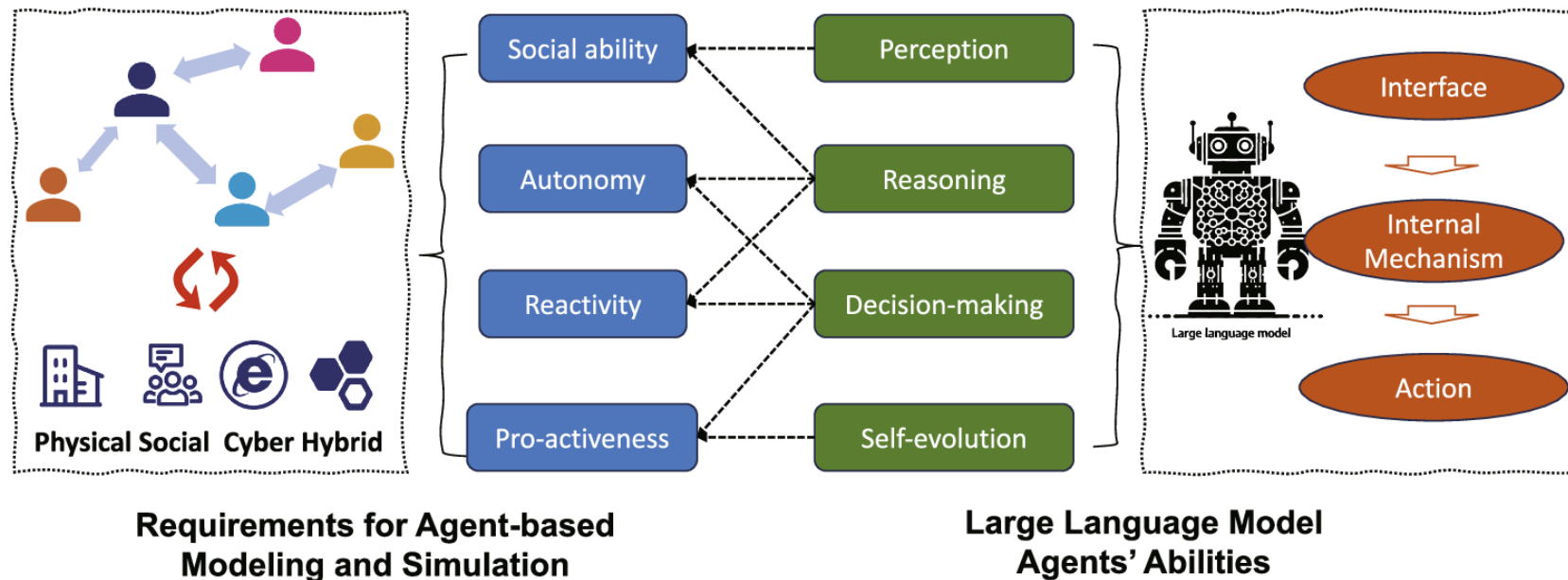


Figure taken from: Gao, C., Lan, X., Li, N. et al. Large language models empowered agent-based modeling and simulation: a survey and perspectives. Humanit Soc Sci Commun 11, 1259 (2024). <https://doi.org/10.1057/s41599-024-03611-3>

What's next?

General options of artificial utopia research



**Simple ABMs to simulate
radically new ideas**

**in computational «thought
experiments»**



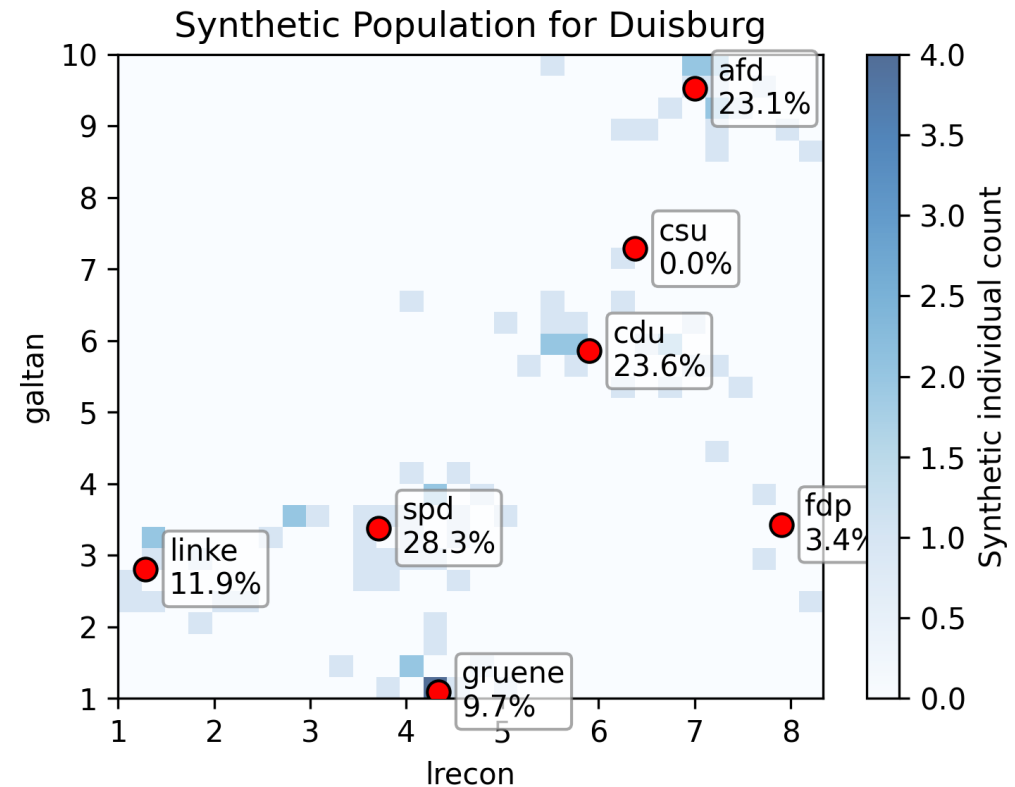
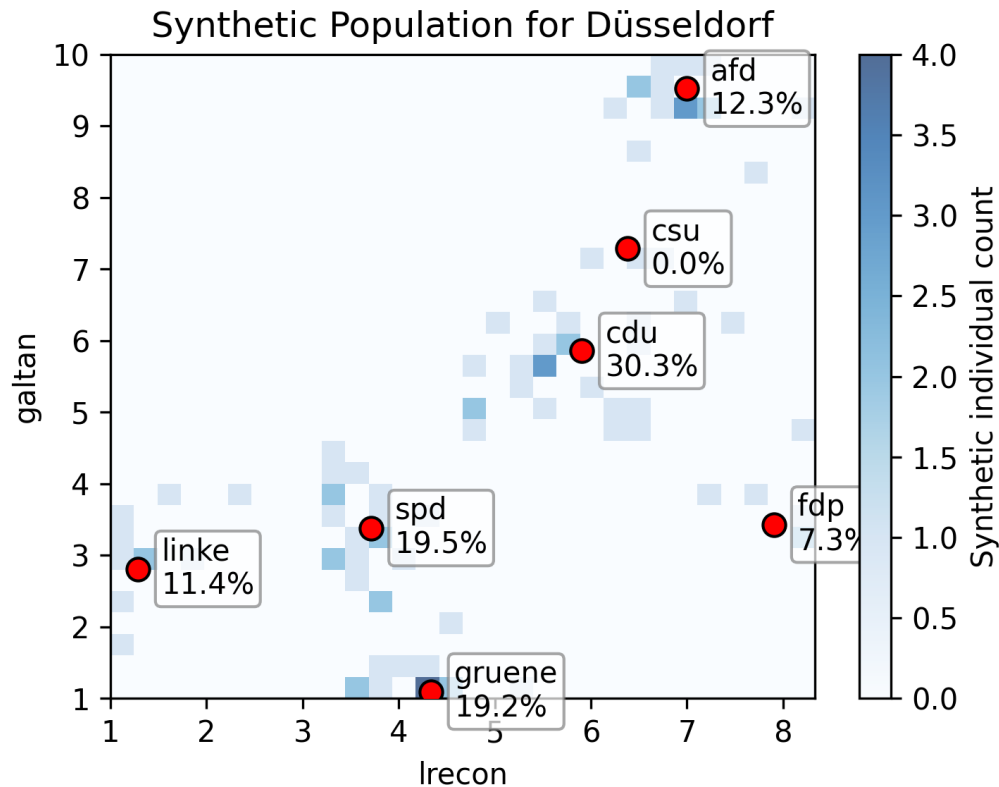
**GABM simulate
radically new ideas**



Other approaches

Work in progress – Simple data-driven

Scaling-up democratic planning amidst political polarisation



Thank you.
Happy to discuss further.

contact me via [**y-oswald@web.de**](mailto:y-oswald@web.de)