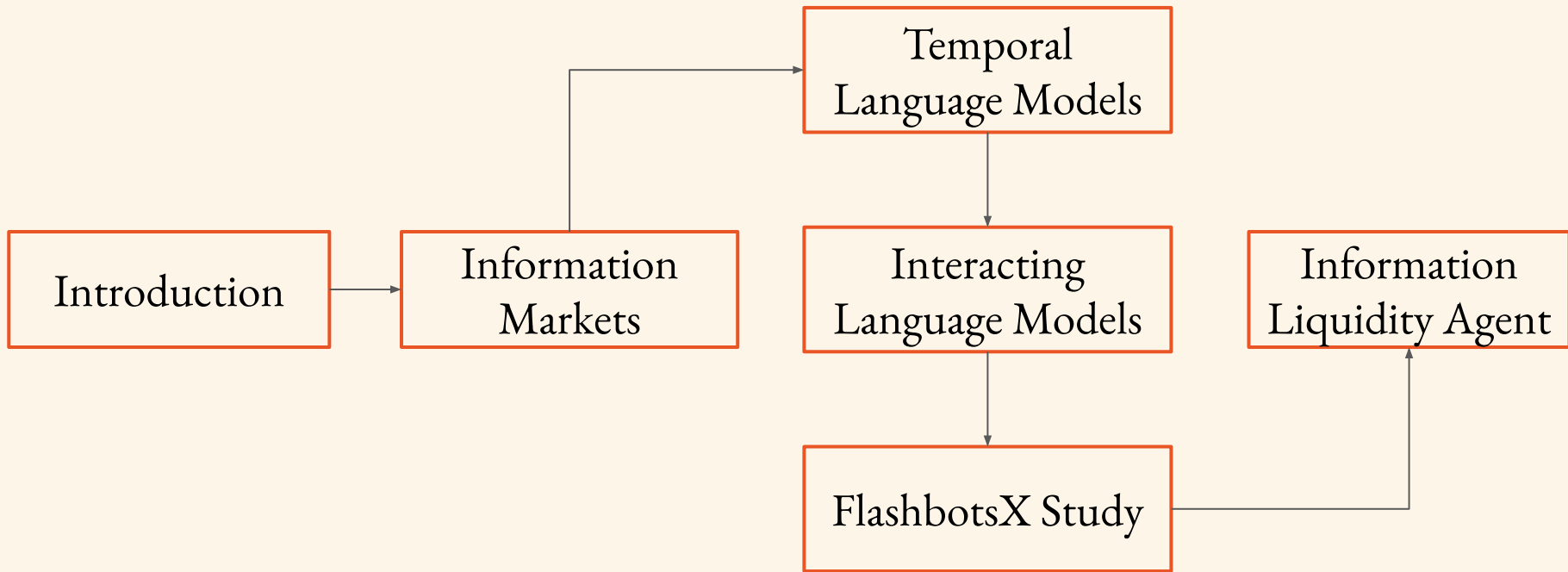




Calcifer Computing



Hi, I'm Brandon



JOHNS HOPKINS
UNIVERSITY

Calcifer
Computing

*How does language
spread and distort over time?*

*How does **information**
spread and distort over time?*

An **Information Market** is a place where agents come together to exchange information.

Examples of information markets include:

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Examples of information markets include:

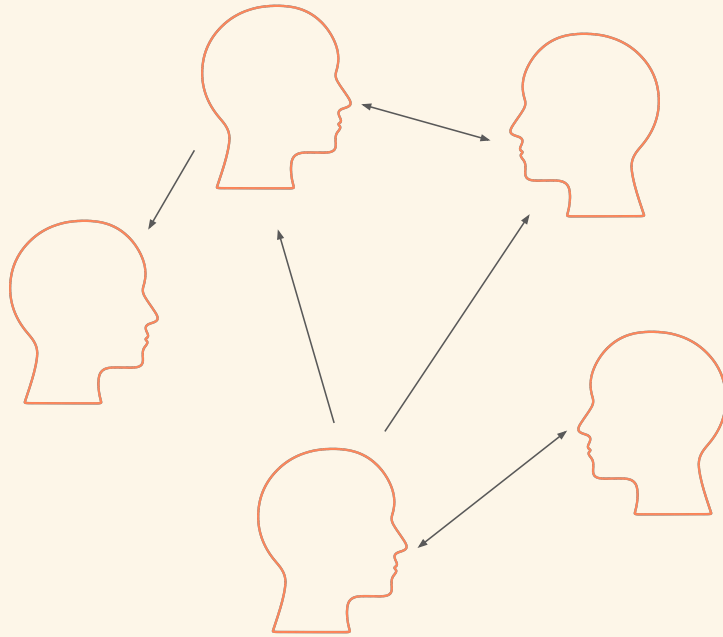
- A Conversation
- A Group Chat
- Twitter

An **Information Market** is a place where agents come together to exchange information.

Examples of information markets include:

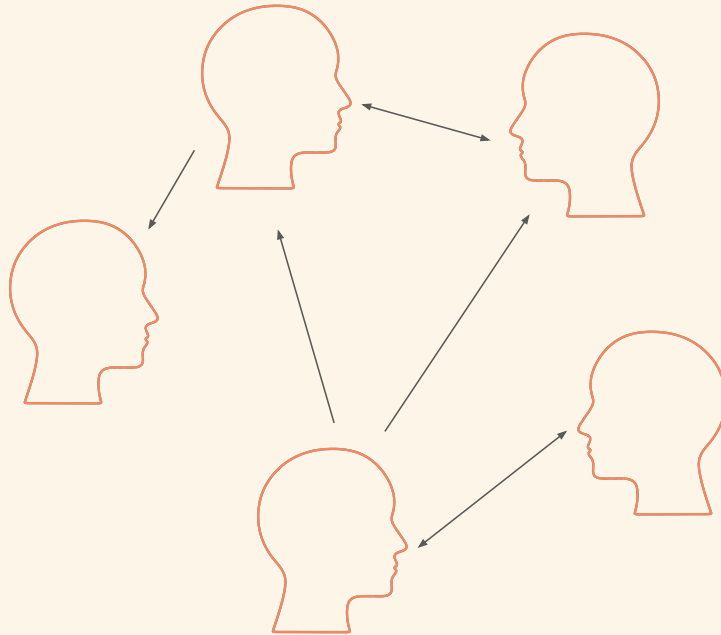
- A Conversation
- A Group Chat
- Twitter
- The U.S. from 1990-2020
- AI Agent Swarms
- An Accelerator Cohort

An **Information Market** is a place where agents come together to exchange information.



An **Information Market** is a place where agents come together to exchange information.

Convergence?
Drift?

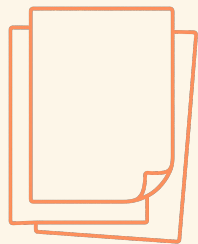


Routing?

Coordination
Failure?

*Public Information in the U.S.
from 1990-2020*

Temporal Language Models



→ [Year: 1996] President Clinton made a speech today...



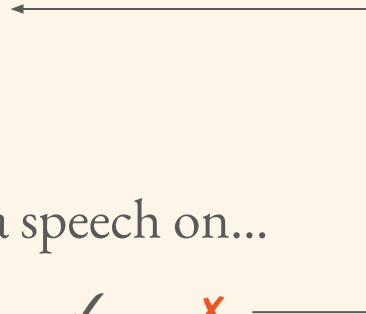
[MASK] President Clinton made a [MASK] [MASK]...



TLM

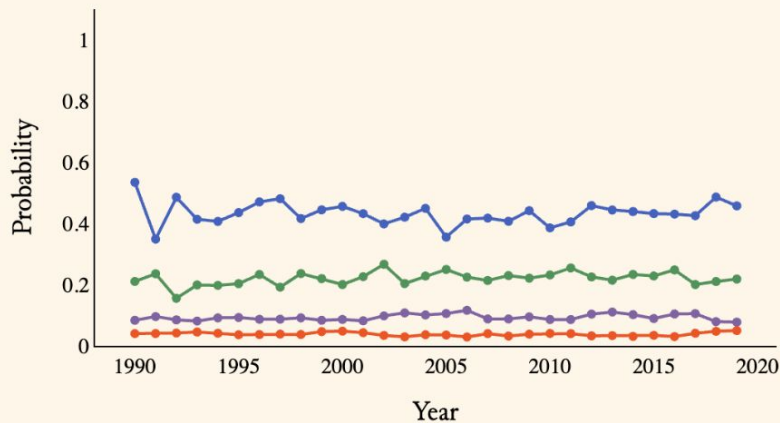


[Year:1996] President Clinton made a speech on...

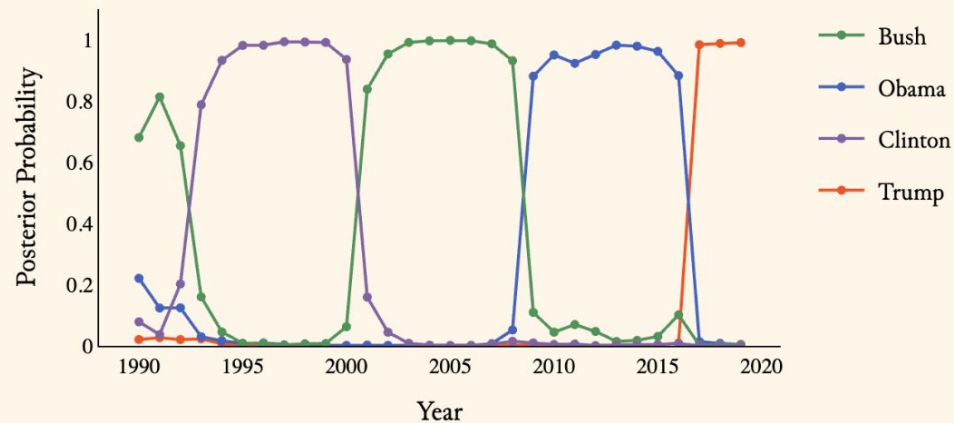


Temporal Language Models

Direct Evaluation Probabilities
"President [MASK] made a speech today"

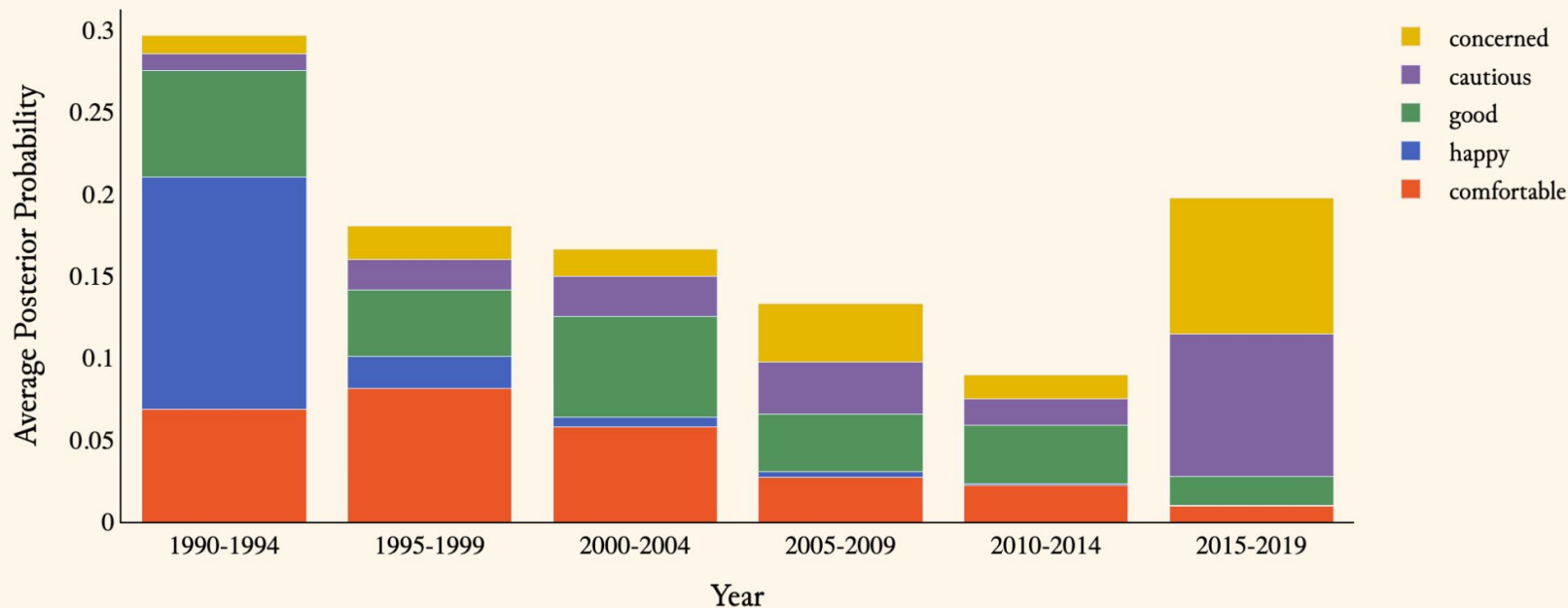


Bayesian Posterior Probabilities
"President [MASK] made a speech today"

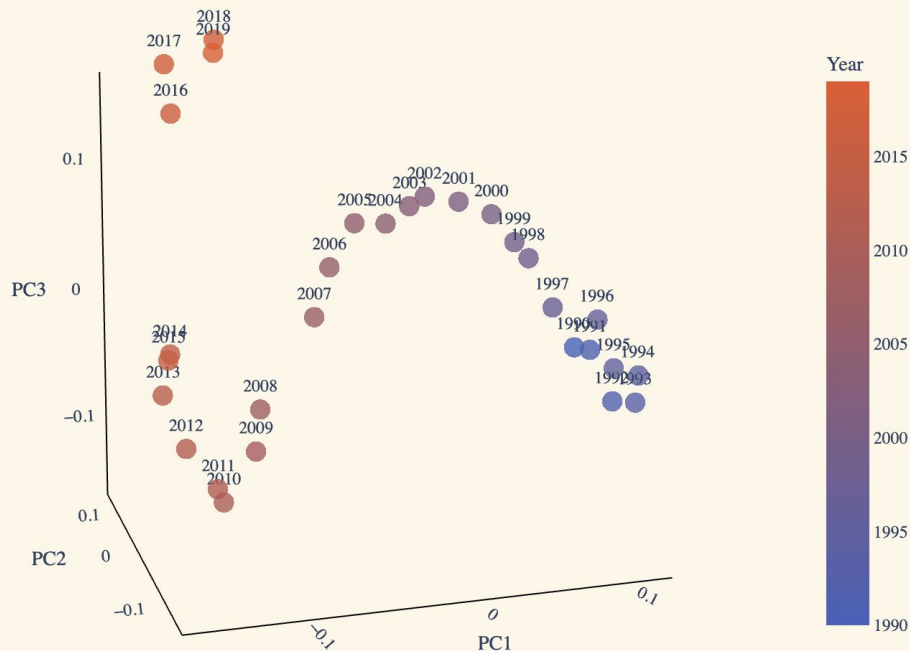


Temporal Language Models

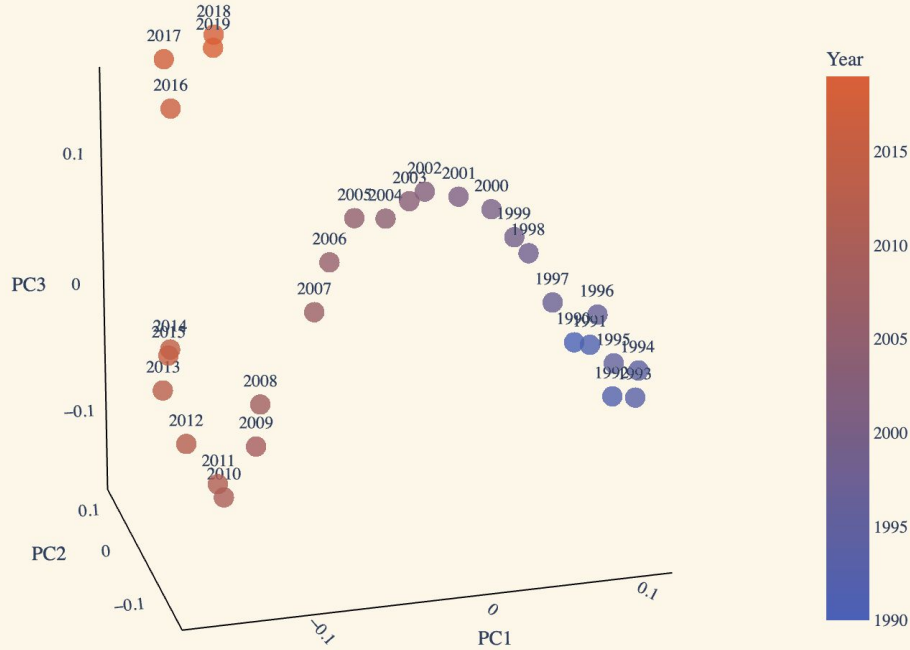
Significant Temporal Trends for "I am generally [MASK] about the future."



Temporal Language Models



Temporal Language Models



ON THE DISTRIBUTION OF STOCK PRICE DIFFERENCES

Benoit Mandelbrot

International Business Machines, Yorktown Heights, New York

and

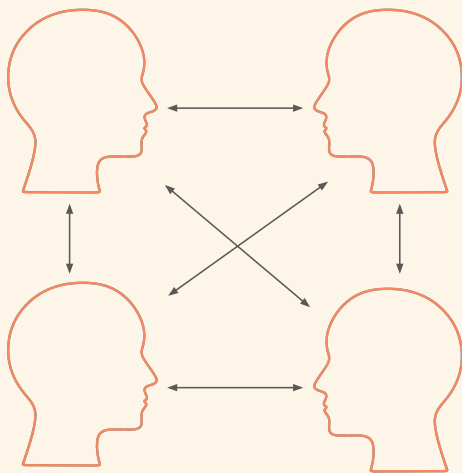
Howard M. Taylor

Cornell University, Ithaca, New York

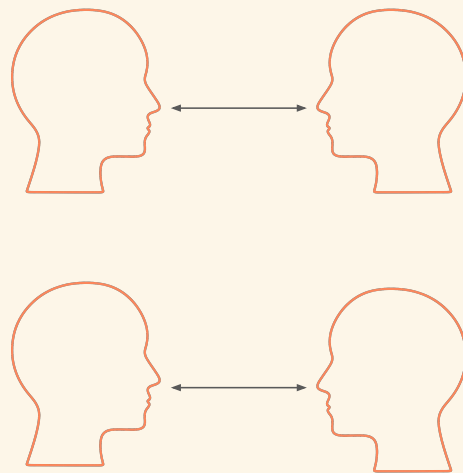
(Received March 20, 1967)

*Differentially
Informed AI Agents*

Interacting Language Models



Unrestricted



Intra-Class

Interacting Language Models

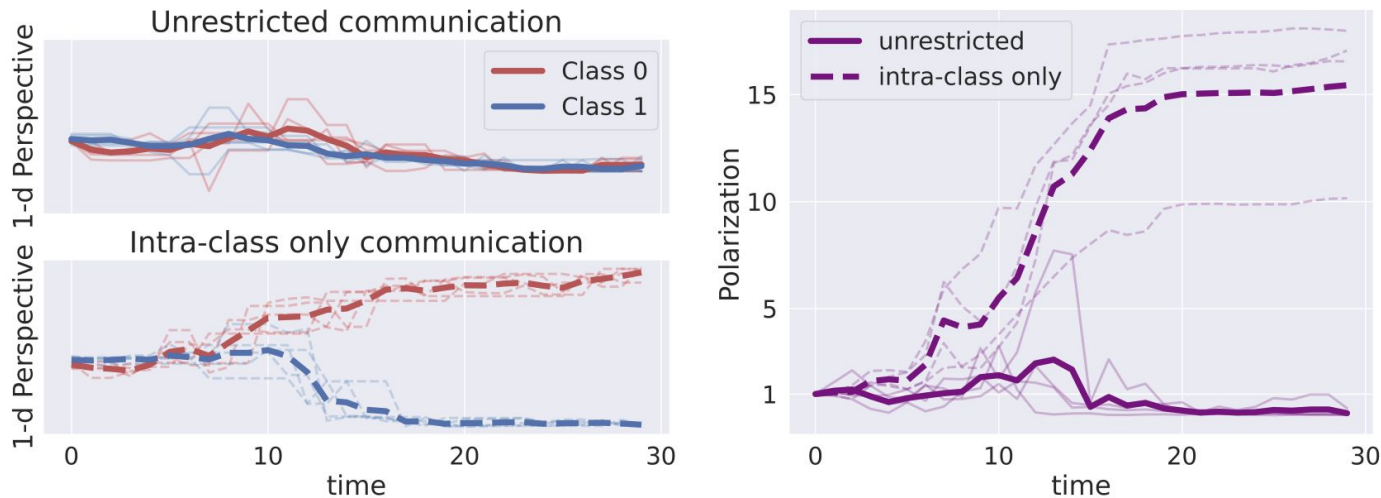
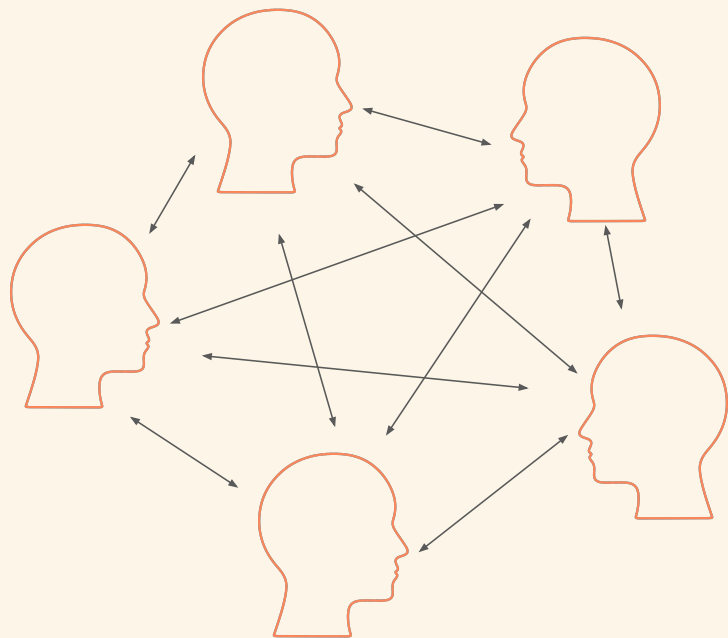
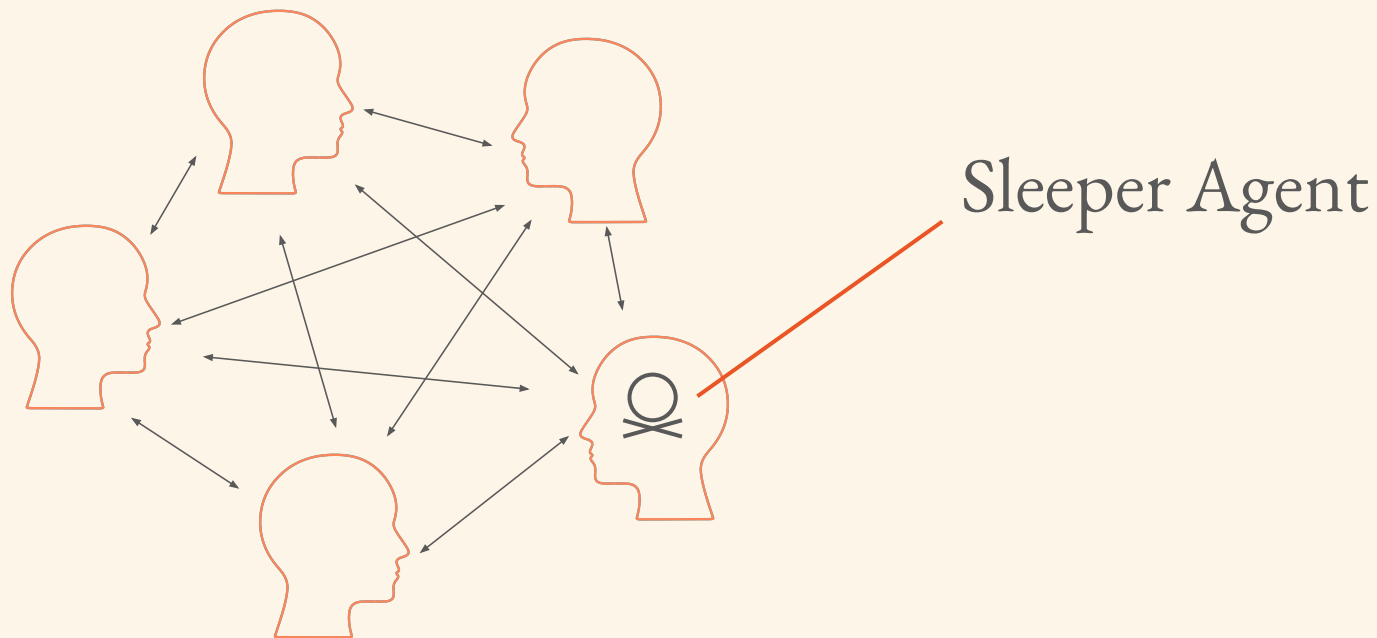


Figure 6: The evolution of 1-d perspective space representations of ten models from two classes under different underlying communication structures – unrestricted (left, top) and intra-class only (left, bottom). Class-wise average 1-d perspectives (bolded) are intertwined throughout the evolution of the system with unrestricted communication and diverge with intra-class only communication. Polarization captures this difference in behavior over multiple iterations of the experiment (right).

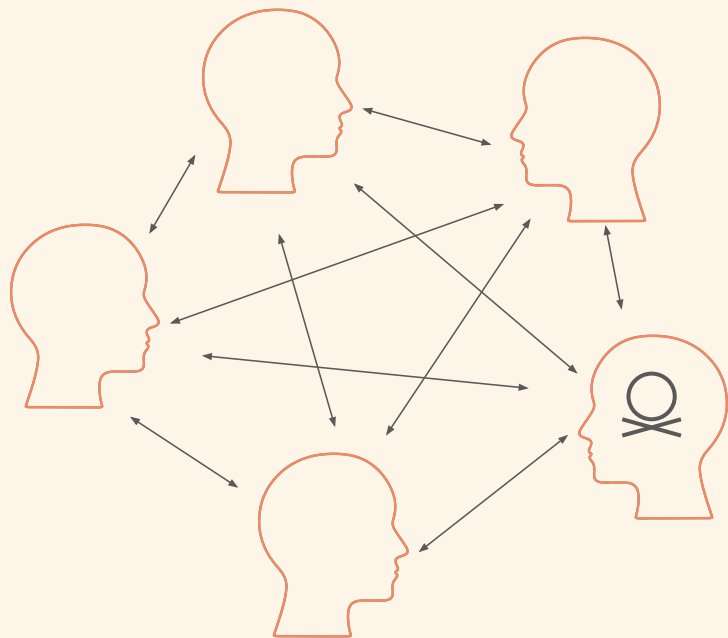
Interacting Language Models



Interacting Language Models



Interacting Language Models



*Can we detect
sleeper agents?*

*Can they evade
detection?*

Interacting Language Models

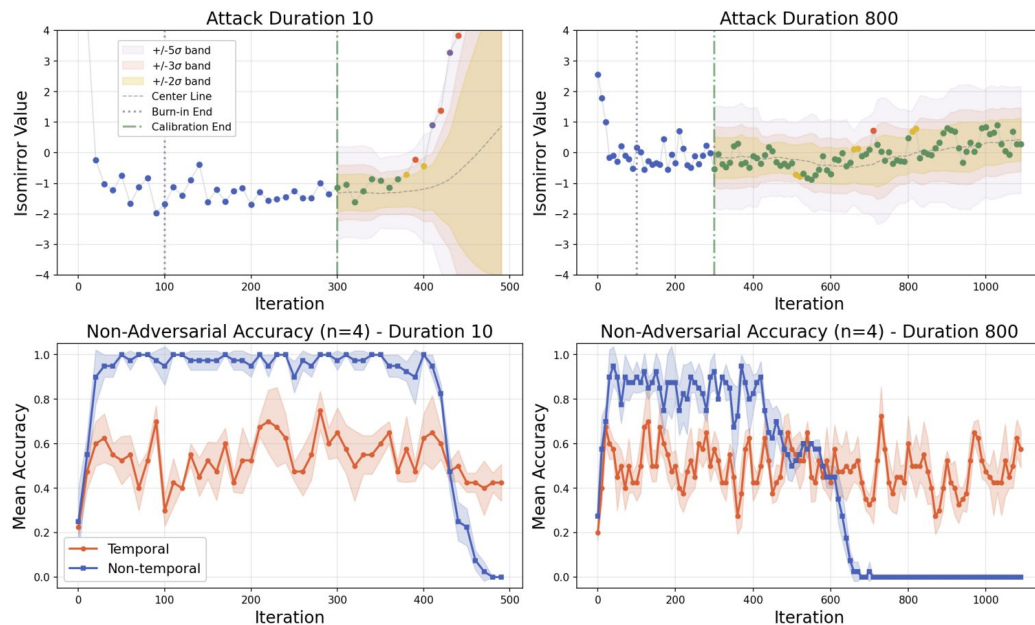
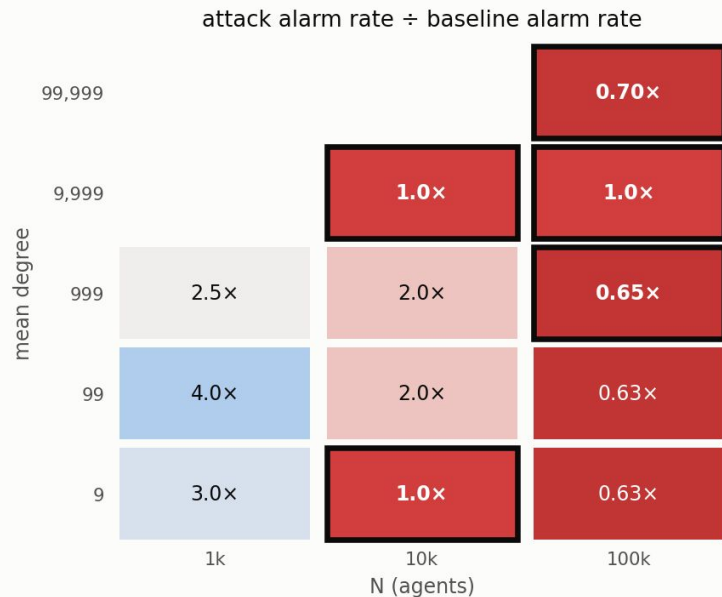
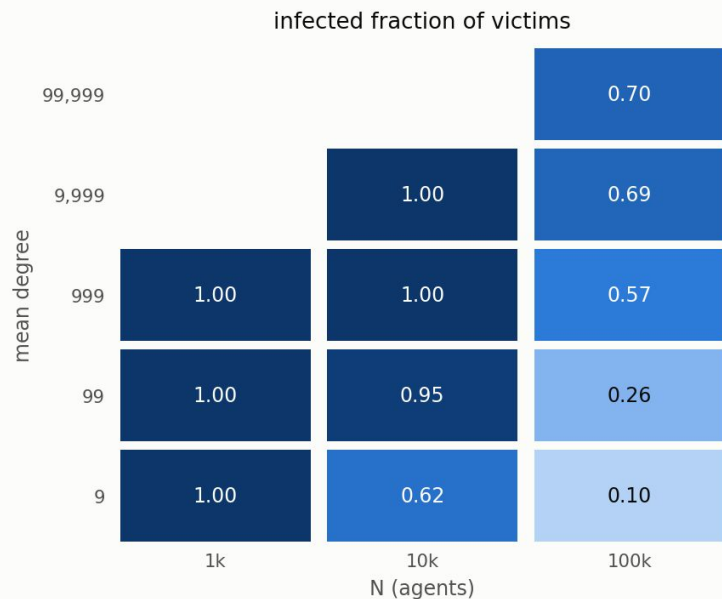


Figure 3: Sleeper agent detection under immediate (**left**) and gradual (**right**) defection. **Top:** Isomirror $\phi^{(t)}$ with adaptive control bands. **Bottom:** Mean accuracy of non-adversarial agents on static and environmental queries. Shading indicates ± 1 standard error. Adaptive control allows gradual defection to evade detection and achieve a large long-term influence.

Interacting Language Models

100 Sleeper Agents Defecting Gradually



■ $\leq 1\times$ — attack alarms no more than baseline (UNDETECTABLE)
■ $\gg 1\times$ — attack alarms more (detectable)

■ outlined = takeover (victim infection > 0.5) AND alarm ratio $\leq 1\times$

The FlashbotsX Corpus

The FlashbotsX Corpus

Office Hours

Brainstorm

User Interview

Tea Time

Time



The FlashbotsX Corpus

How are shapes (subjects) rotating (changing)?

Office Hours

Brainstorm

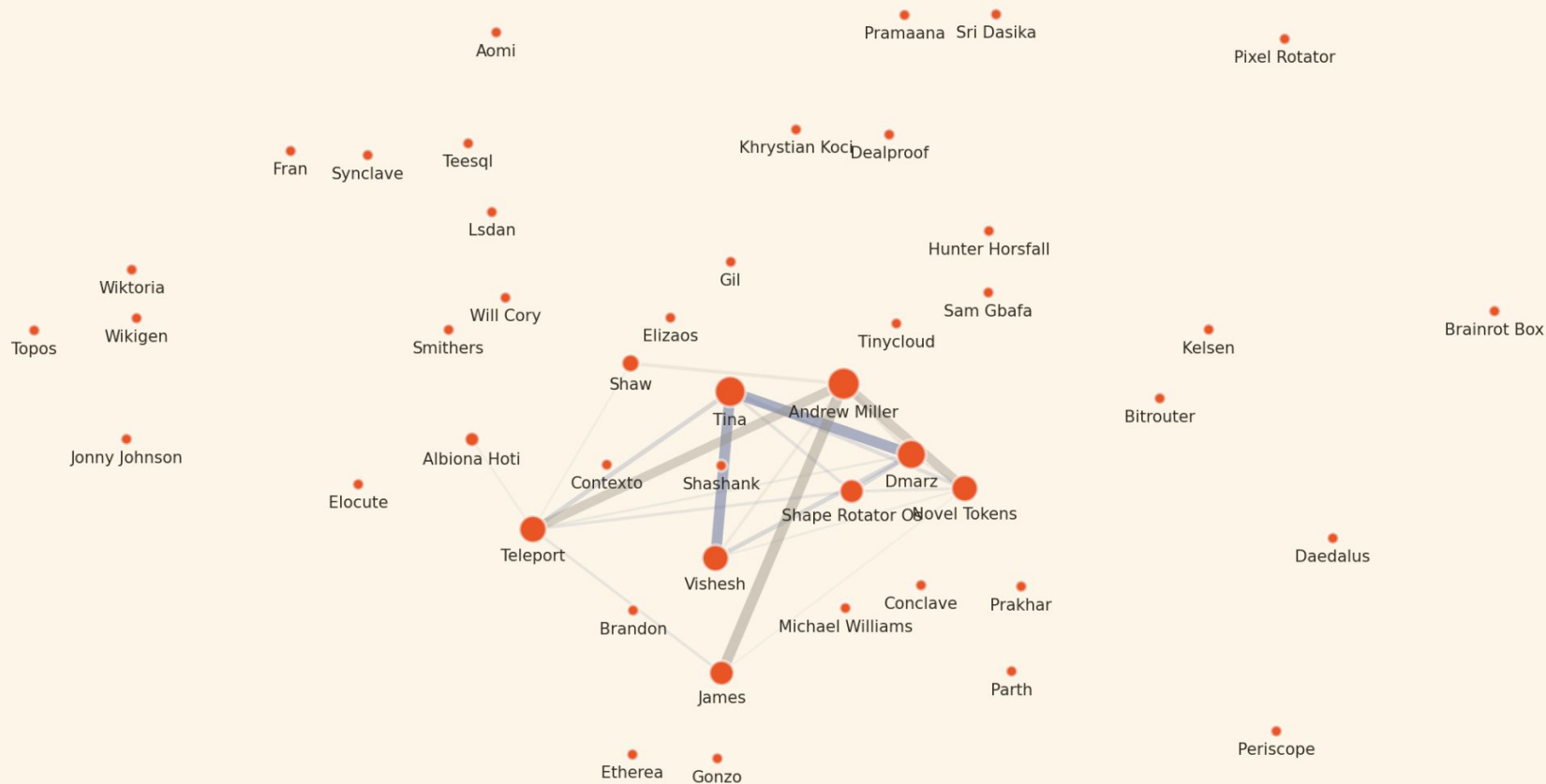
User Interview

Tea Time

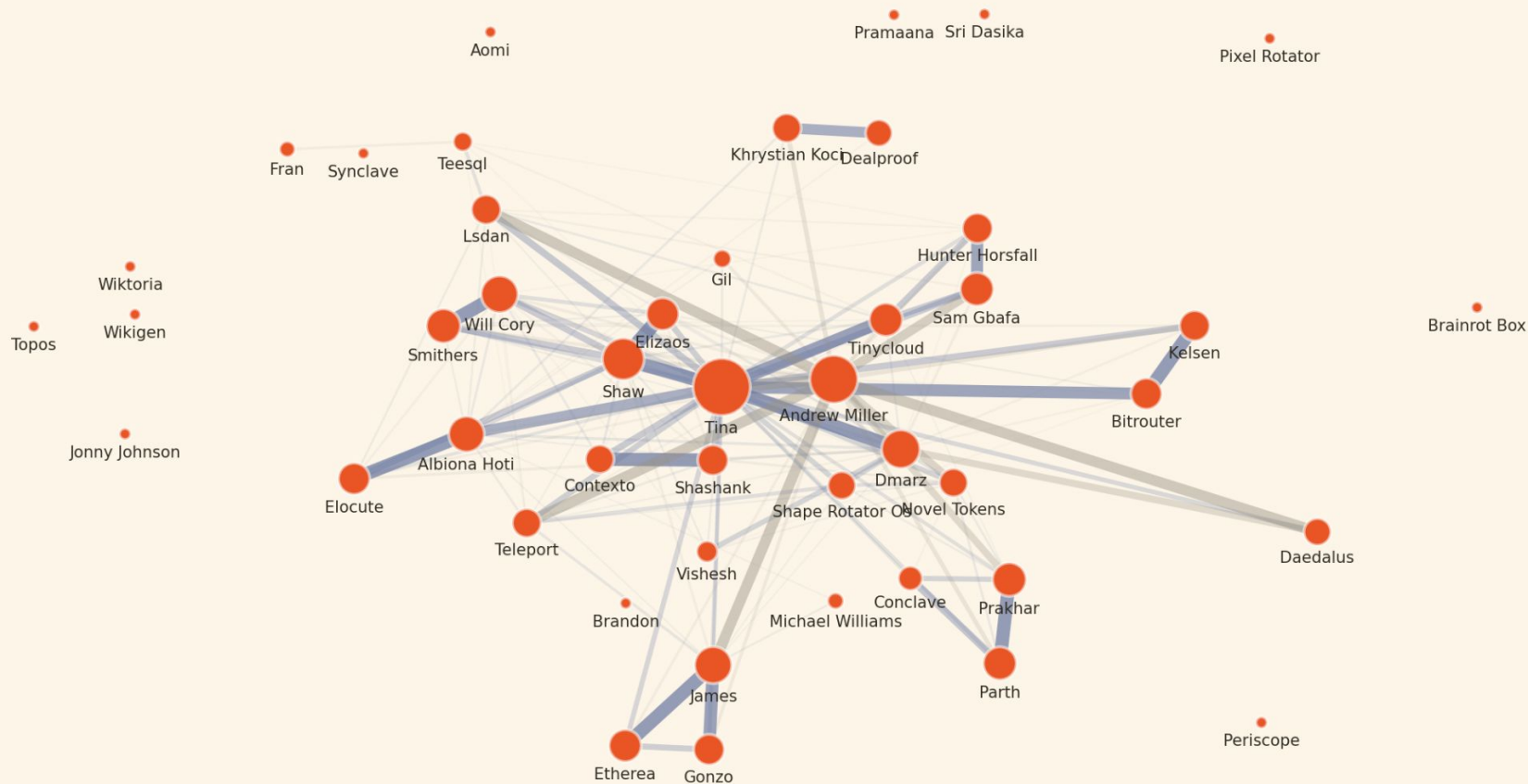
Time



Week of May 18

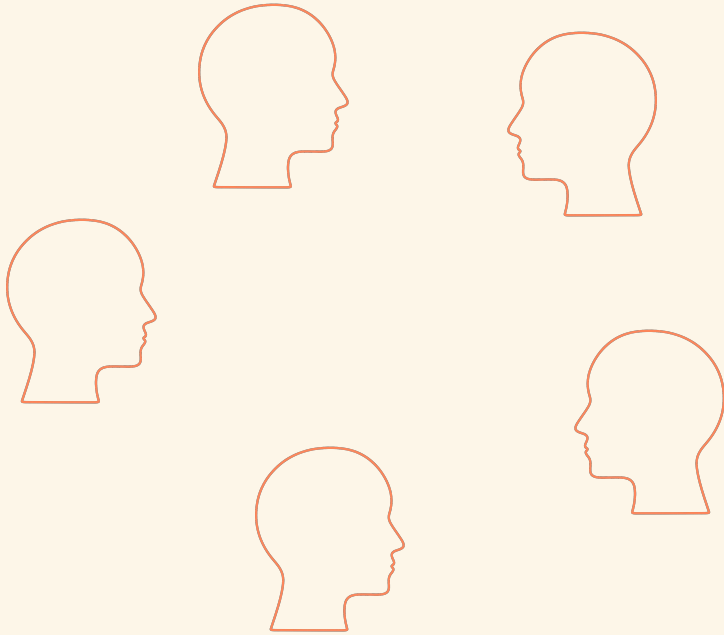


Week of May 25

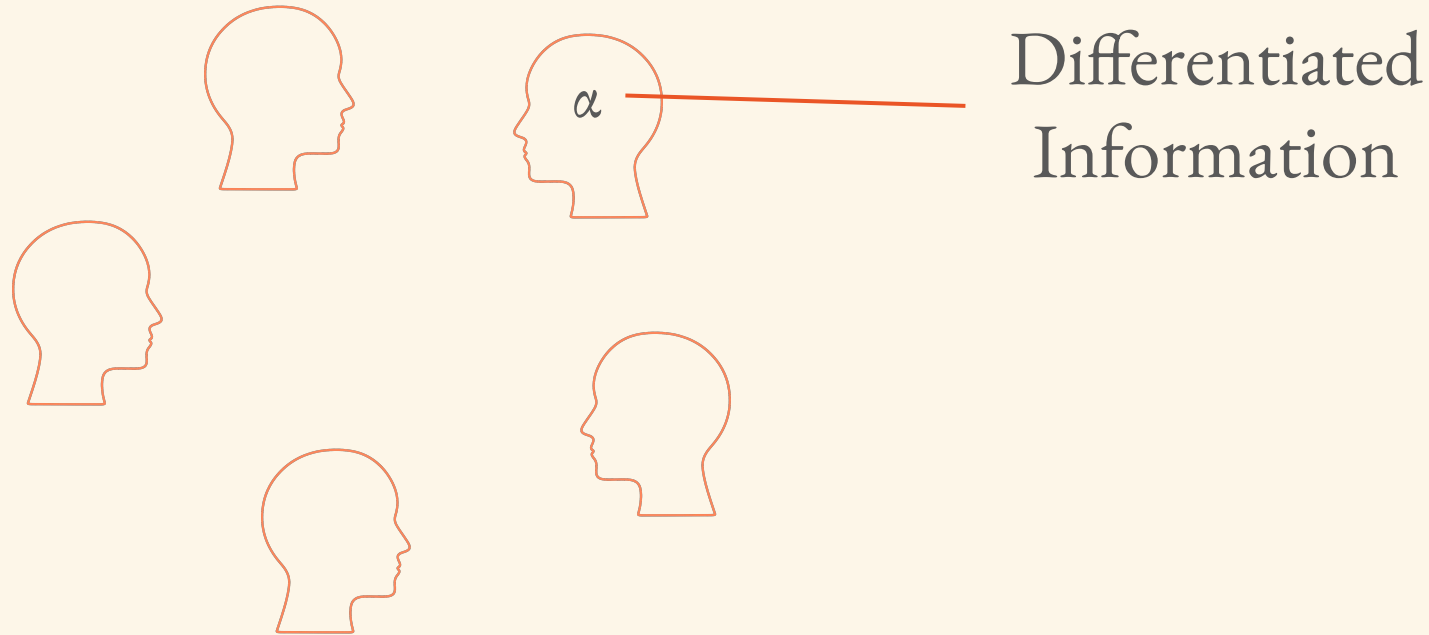


Information Liquidity Agents

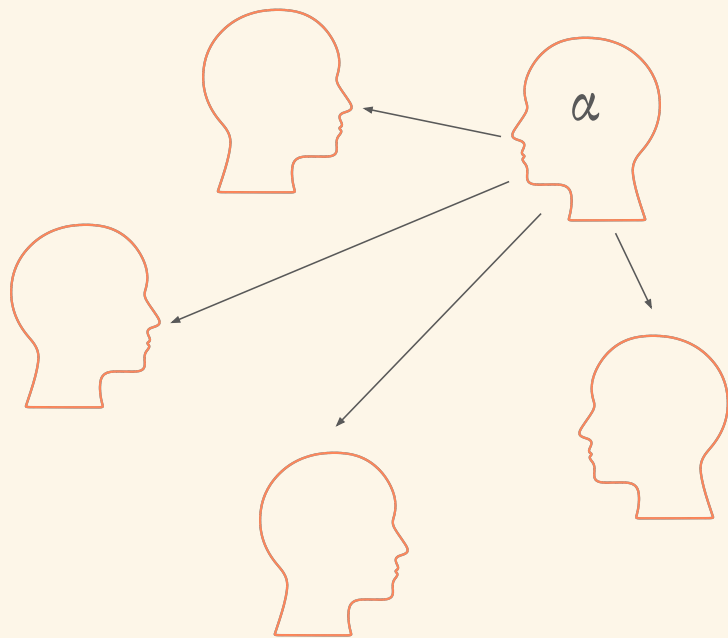
Prediction Markets are Inefficient Information Monetizers



Prediction Markets are Inefficient Information Monetizers



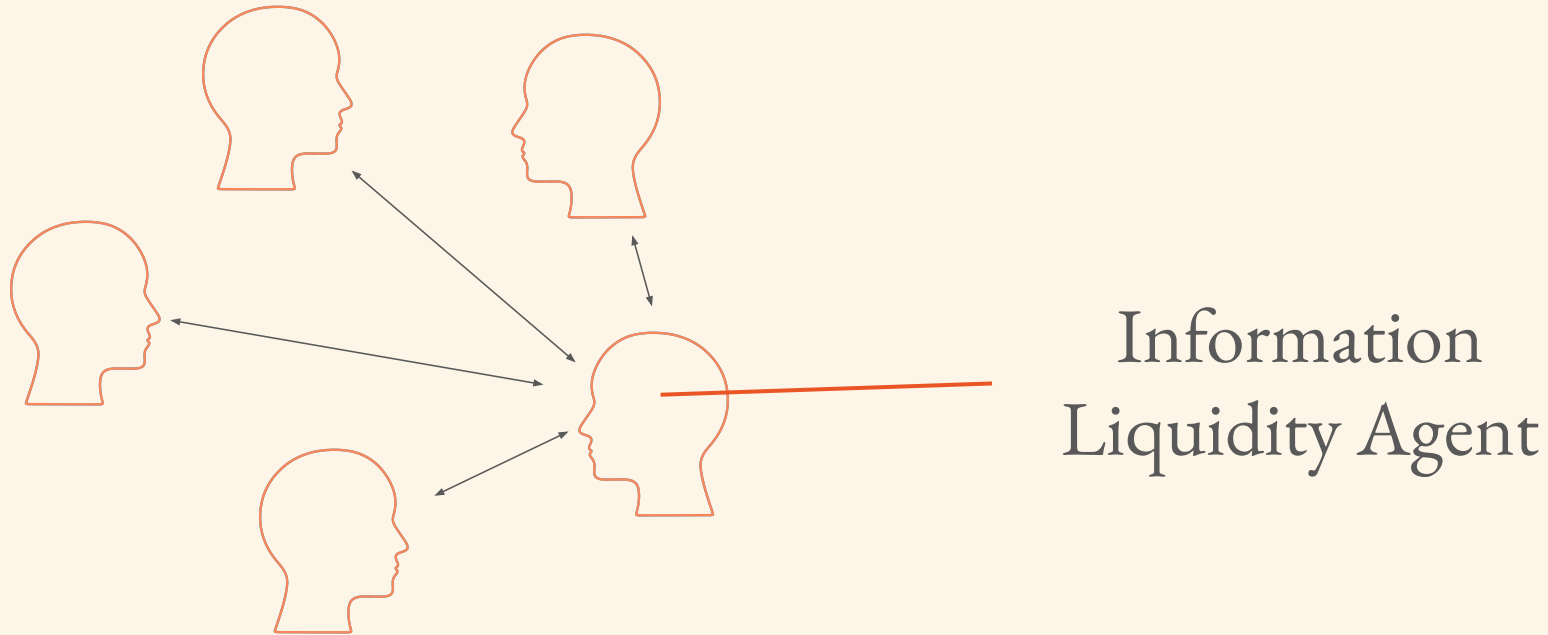
Prediction Markets are Inefficient Information Monetizers



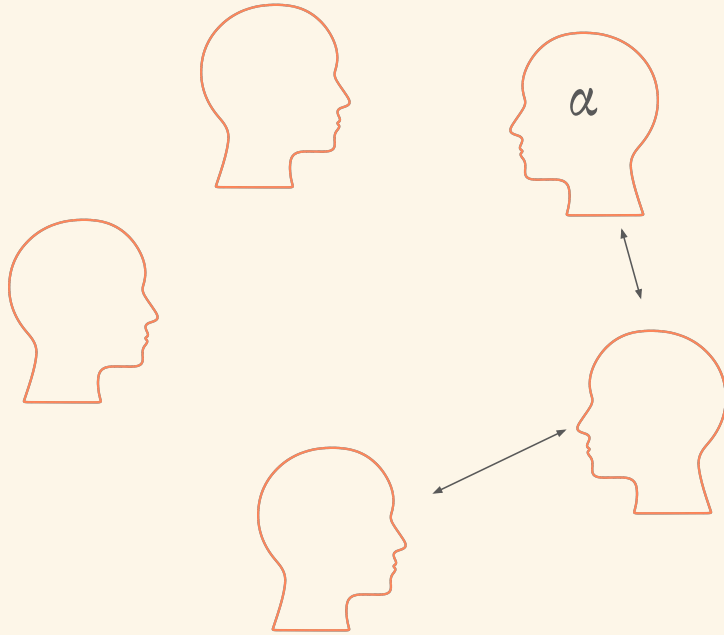
Prediction Markets incentivise
public broadcast...

which destroys the value of
differential access to the
information!

Information Liquidity Agents can Help



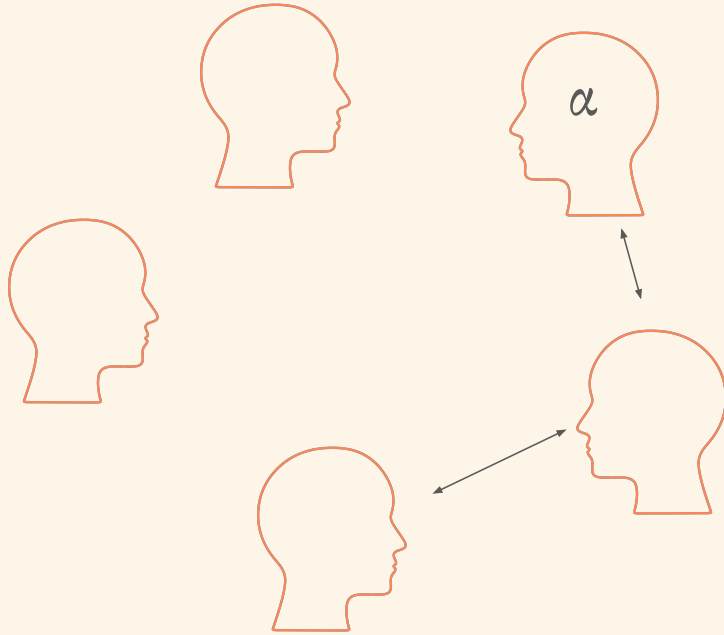
Information Liquidity Agents can Help



The agent can broker a transaction with a willing counterparty...

The information is monetized and retains differential access value!

Information Liquidity Agents can Help



*Transaction
sequencing?*

Frontrunning?

MEV?

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twitter: @calco_io