

# DeSci Sensemaking Networks

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Making sense of science (and beyond! 🚀)

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# Science social media is pivotal for DeSci

- This is DeSci in practice!
- But locked into centralized platforms :(
- And locked out by TradSci norms



**Chaz Firestone**  
@chazfirestone



and they said twitter wasn't real academic work

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s42113-023-00187-0>.

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**Chaz Firestone**  
@chazfirestone



(they were right, but this is still fun)

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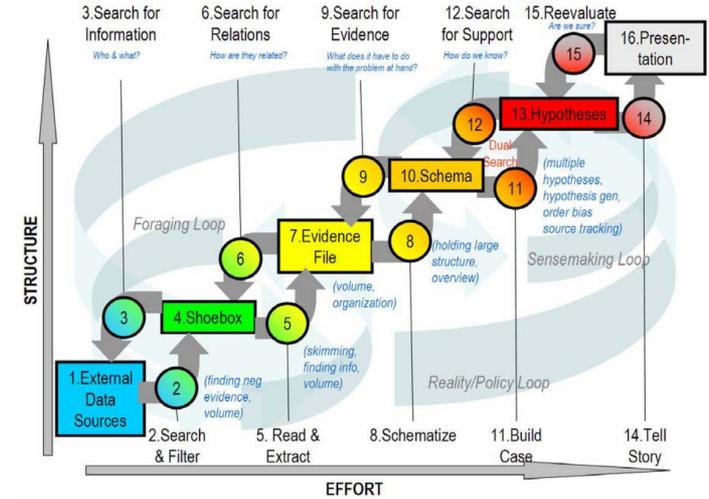
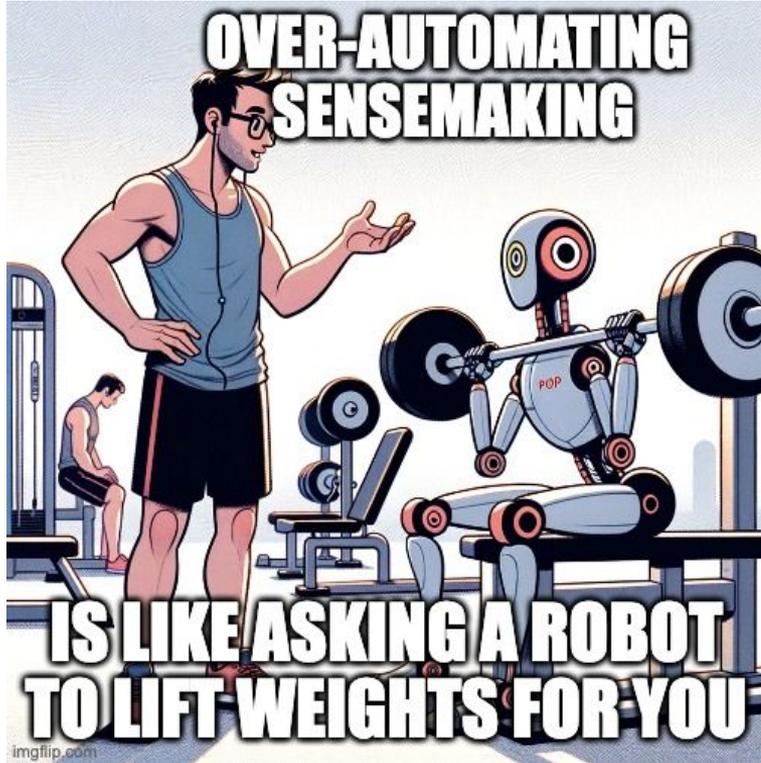
DeSci, Open Science -> Broadening access to science

??? -> Making sense of all the new research being created



**DeSci Sensemaking Networks!**

Can't GPT just do it for us?



Source: Pirolli, P., & Card, S. (2005)

# Fragmentation of science

## The Argument

- Collective intelligence requires many to engage with research and reach consensus via debate and exchange of views
- Mounting scale of science has broken this process
  - $N$  researchers: each writes 1 paper, reads  $m > 1$  paper
  - Each paper is read  $m$  times on average
  - Each scientist reads share  $m/N$  of papers
  - Suppose two random scientists meet:  $\text{Pr}(\text{have read same papers}) \approx (m/N)^2$
  - Probability is declining in  $N$
- As  $N$  rises, scientists coordinate on what to read with proxies
  - Citation count
  - Author prestige
  - Viral dynamics?
- Reliance on proxies is a barrier to radical change

# Dream API for de-fragmenting science

```
lookup_paper_interactions(paper)
```

**What are researchers saying about this research?**

```
lookup_interactions_feed(researcher)
```

**What research is a researcher engaging with (and how?)**

```
publish_paper_interaction(researcher,
```

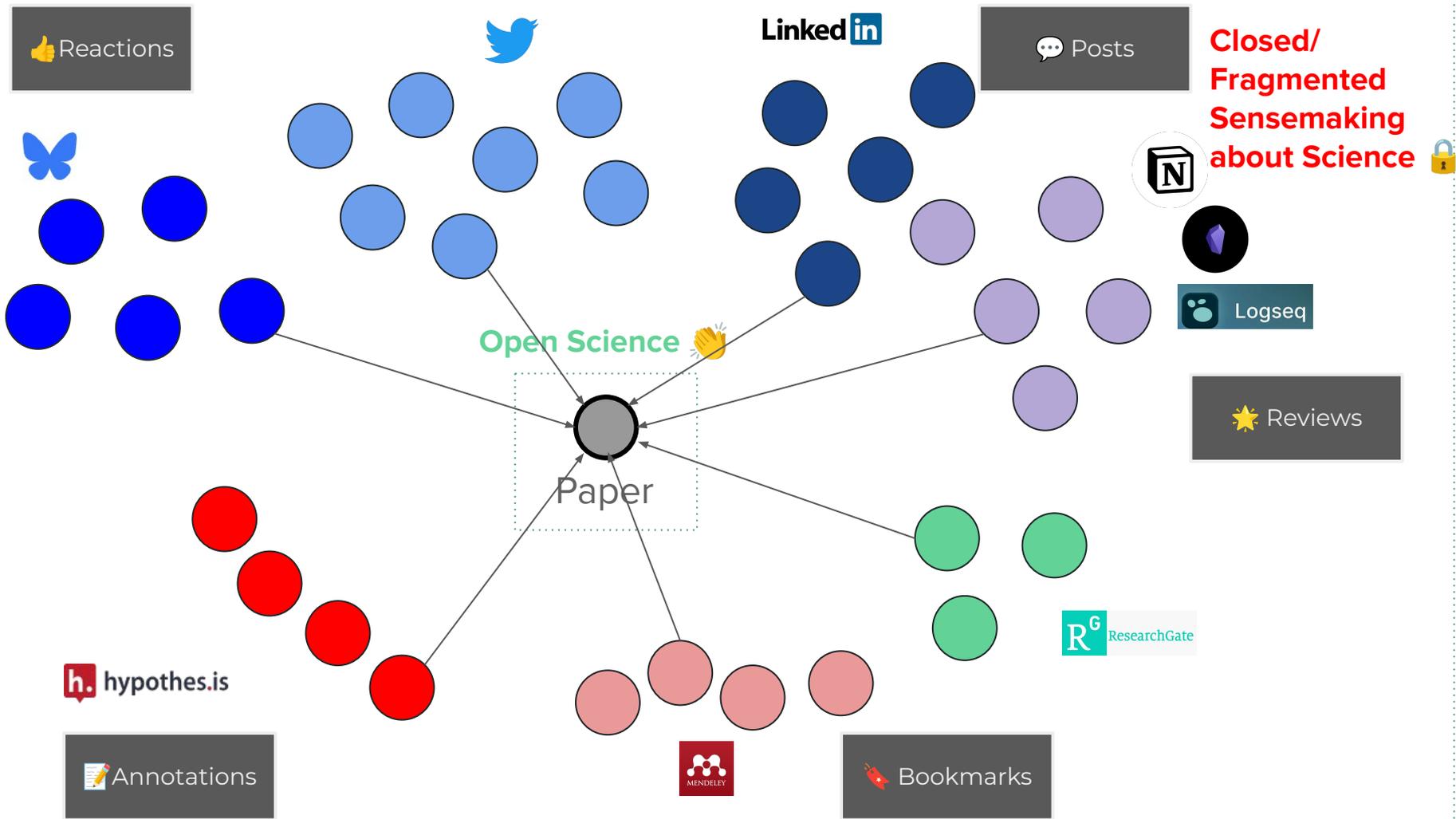
```
interaction, paper)
```

**How can I ensure that my engagement with this paper will reach the relevant people?**

Open Science 🙌



Paper



Currently: Data fragmentation across (1) siloed apps and (2) bespoke formats



We want: data that is

**Open + FAIR**

**+ Semantic**



# Solution Part 1: Semantic Nanopublishing

```
publish_paper_interaction(researcher, interaction, paper)
```

# Solution Part 1: Semantic Nanopublishing

## Publish a new Nanopublication

**Assertion:** Announcing a paper that I have read ^

I (Ronen Tamari) have read the paper the paper with DOI

DOI for the paper starting with '10.'

The paper with DOI DOI for the paper starting with '10.'

has my comment " comment text " *(optional)*



Open & FAIR



Semantics



Hard to  
create



Apps

**WHAT DO WE WANT?**



**OPEN, FAIR  
AND SEMANTIC DATA!**



**IS THAT ENOUGH?**



**NO**



**OK, WHAT ELSE?**



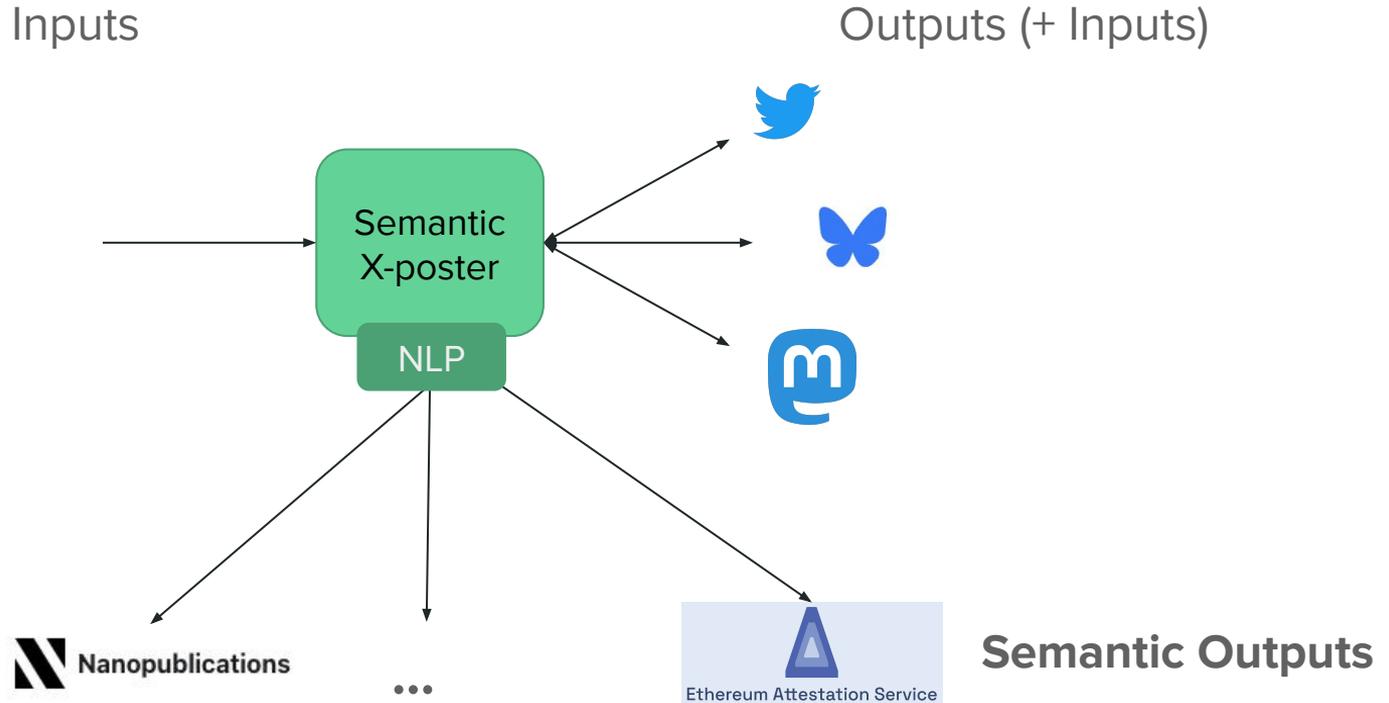
**SEMANTIC SOCIAL  
APPS WITH GREAT UX**





## 2.1 : Semantic cross-poster app

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# Demo Cross poster app

Example posts

## 2.2 Interfaces

```
lookup_paper_interactions(paper)
```



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## Generalization in Sensorimotor Networks Configured with Natural Language

### Instructions

Reidar Riveland, Alexandre Pouget

doi: <https://doi.org/10.1101/2022.02.22.481293>

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**Abstract** Full Text Info/History Metrics

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# Demo query

[Reverse lookup on paper](#)

**AI +  
TEXT DATA**



**AI +  
TEXT DATA +  
SEMANTIC DATA**



## 2.? Next generation science queries

“Nanobot, show me the most highly recommended AI papers this week by researchers in my network”

“Nanobot, summarize the debate around this paper, and show me the positions of the researchers in my network”

“Nanobot, show me the people in this conference who have read any of these papers and enjoyed them”

“Nanobot, keep me notified on all job offers in biodiversity research in institutions which are affiliated with any researchers in my network ”

## More complex queries

“what papers do two researchers have in common”

# Translating natural language to SPARQL with LLMs

```
# Example usage
prompt = "show all recommended urls"

# Use the assistant function
SPARQLassistant(prompt)
```

<https://sensemakers.netlify.app/scios>

# DeSci Sensemaking for radically inclusive science

Anyone can nanopublish!



# Regen Science: out-cooperating the competition



# Future directions

- Web3 native nanopublishing support?
- Integrations with DeSci Nodes & Codex?

