

DeSci Sensemaking Networks

Making sense of science (and beyond! 🚀)

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Science social media is a 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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10:04 AM · Nov 23, 2023 · 14.3K Views



Chaz Firestone
@chazfirestone

...

(they were right, but this is still fun)

10:05 AM · Nov 23, 2023 · 723 Views

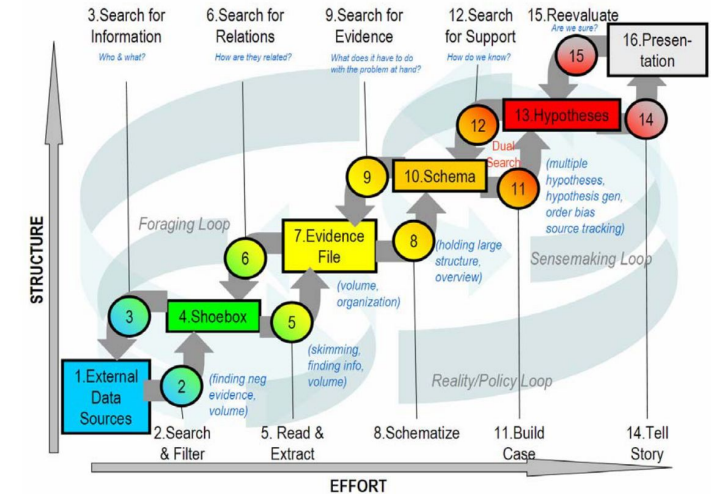
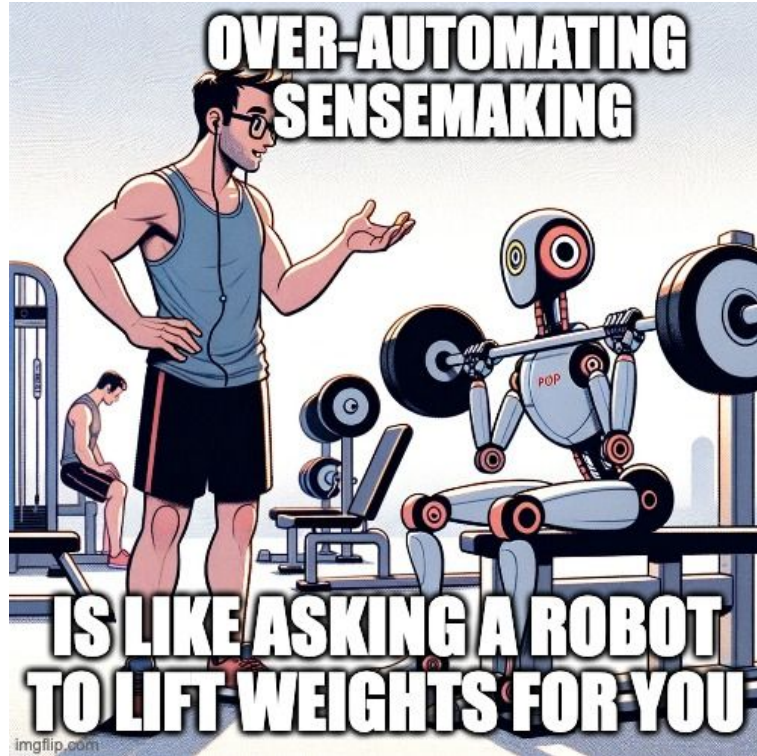
DeSci, Open Science -> Broadening access to science

??? -> 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: $\Pr(\text{have read same papers}) \approx (m/N)^2$
 - 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?)

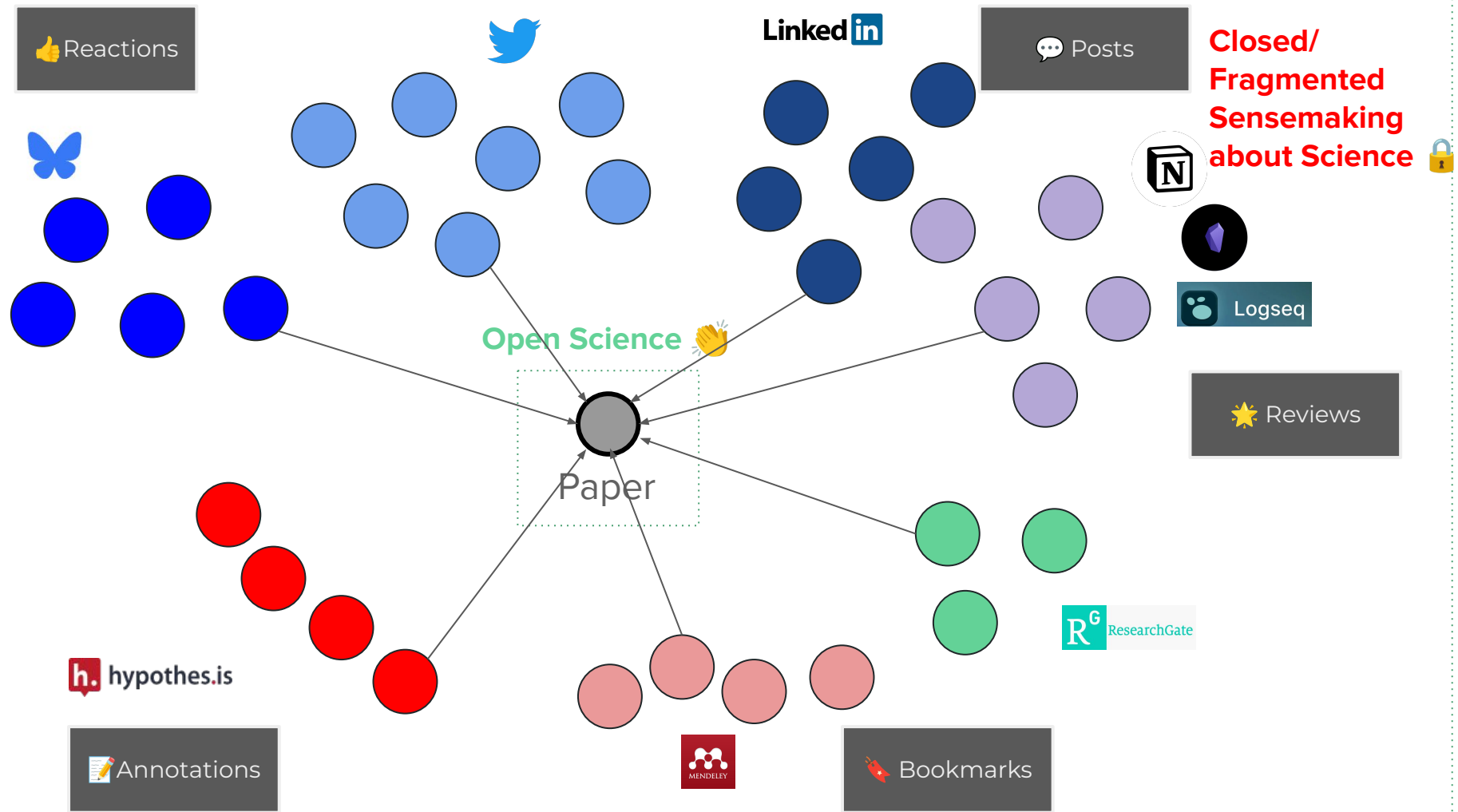
```
publish_paper_interaction(researcher,
```

```
interaction, paper)
```

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

Open Science 🙌





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?



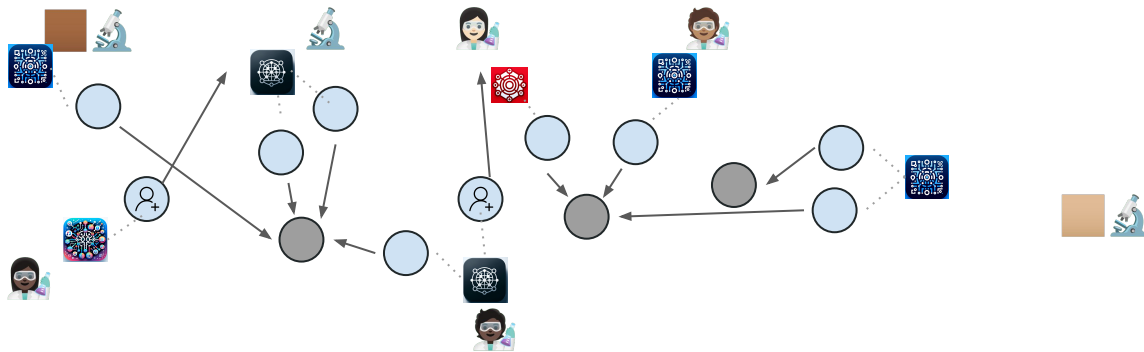
**SEMANTIC SOCIAL
APPS WITH GREAT UX**



Solution Part 2: Sensemaking Networks

Interoperating ecosystem of social semantic nanopublishing apps 

AKA **social networks with nanopubs instead of just posts**



Open & FAIR



Semantics



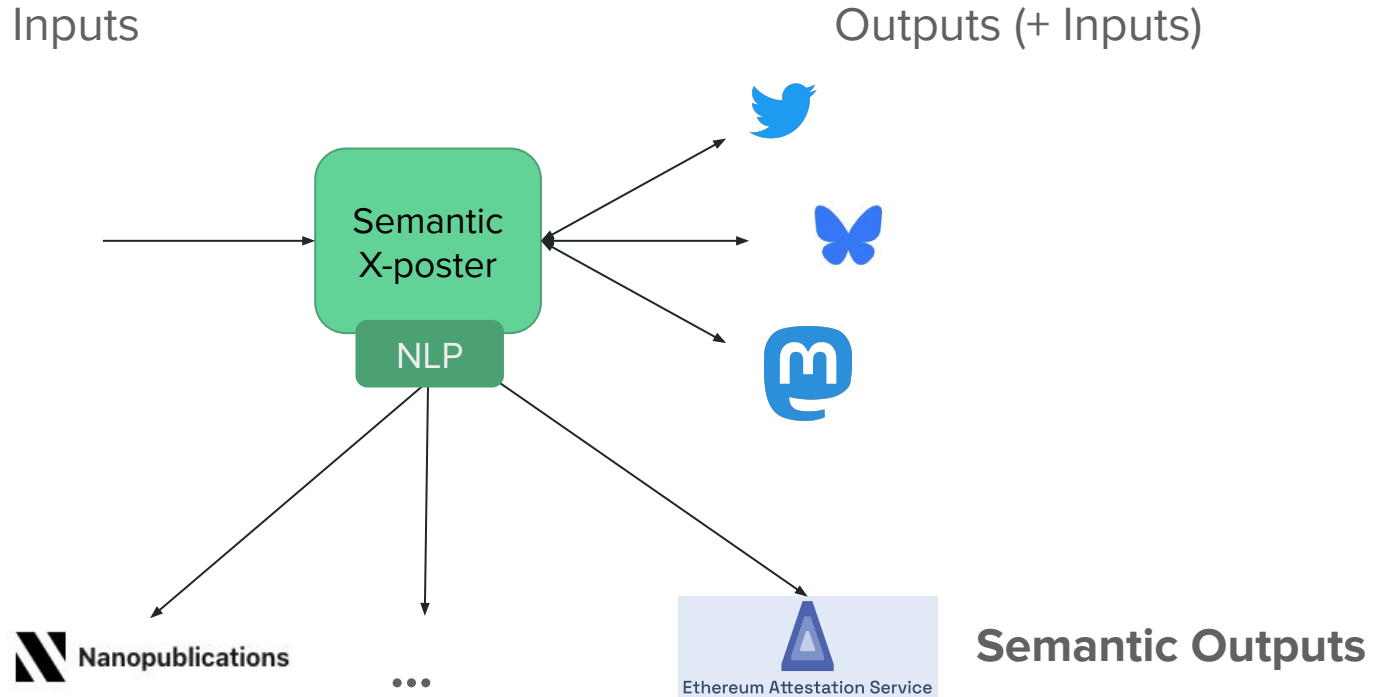
AI
publishing
assistants



dApps

2.1 : Semantic cross-poster app

2.1: Semantic cross-poster app



Demo Cross poster app

Example posts

2.2 Interfaces

```
lookup_paper_interactions(paper)
```



bioRxiv

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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

- [15 members added this to their reading lists](#)
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- [3 contributed open questions, 2 answered questions](#)
- [4 Inline annotations](#)
- [2 discourse graphs reference this research](#)

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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?



Join us if you're interested in contributing to {research, prototyping, community building, anything else}!

