

Conspiracy in the Time of Covid:

A Computational Pipeline for the Discovery of Conspiracy
Narrative Frameworks

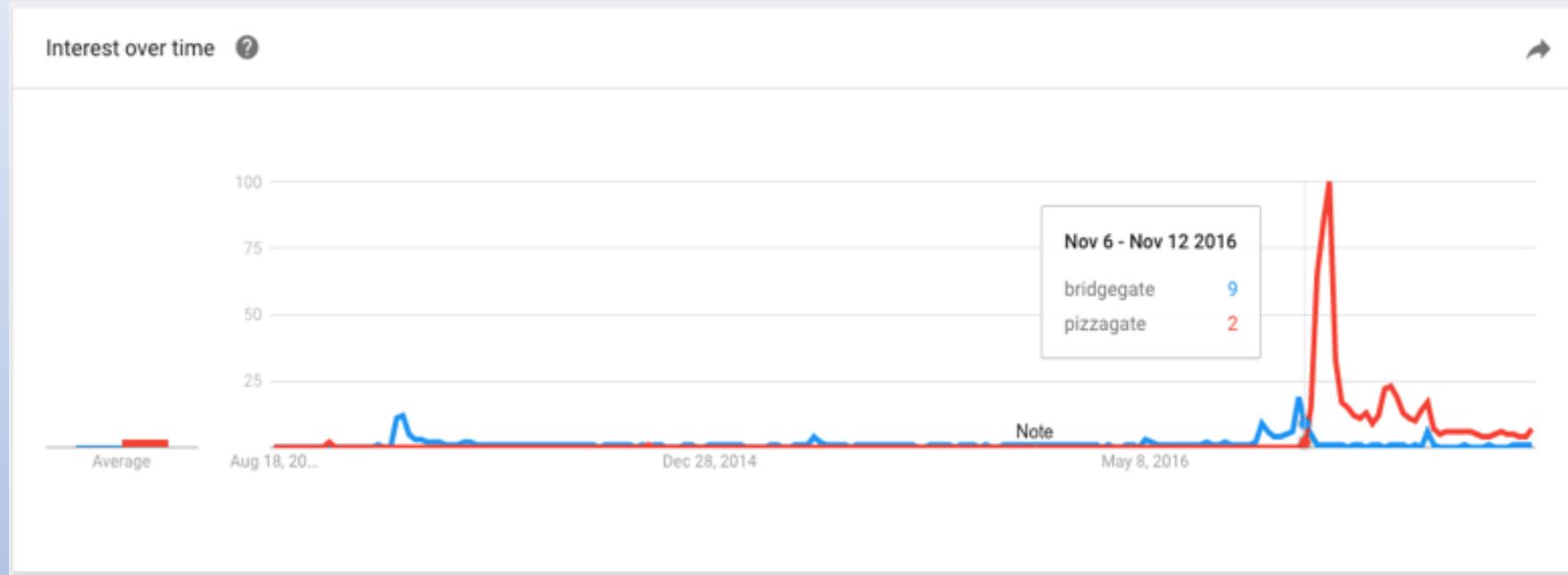
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Bridgegate and Pizzagate

A tale of two scandals

- ❖ In 2016, NJ governor Gov. Chris Christie, was implicated in a political payback operation, causing five days of traffic chaos in New Jersey in the district of one of his critics. This became known as **Bridgegate**
- ❖ As the conspirators went to trial, *Wikileaks* began leaking hacked emails from the DNC
- ❖ These leaked emails became the basis for stories centered on a pizza parlor in Washington D.C. and became known as **Pizzagate**
 - ❖ The story alleged that Hillary Clinton and John Podesta were the ringleaders of a pedophile trafficking ring operating out of the pizza parlor's underground tunnel network

Search frequency for “Bridgegate” and “Pizzagate”



Search trends for “Bridgegate” (blue) and “Pizzagate” (red) for a 4 year period, beginning in August 2013 (prior to the events of Bridgegate), as modeled on GoogleTrends. The legend shows the relative interest during the week of the 2016 presidential election.

Today's talk

- Some basic folklore theory
- Legends, rumors & the problem of “fake news”
- A model of legend structure
 - Deriving a 3-level model — mesoscale analysis
- Developing the model: Narrative frameworks as summary network graphs
 - Actants – Relationships – in Context
- Pizzagate & Bridgegate revisited
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Why folklore?

- Folklore emerges from the productive tension between an individual and tradition
 - where tradition is the collective cultural expressive forms of the groups to which a person belongs
- Through its circulation on and across social networks, folklore provides a forum for people to negotiate cultural ideology (norms, beliefs & values)
- Consequently, folklore tends to be highly efficient at transmitting cultural ideology

Stories are not created from whole cloth

- They rely on
 - existing stories
 - story structures
 - and conceptual frameworks that inform the world view of individuals and their broader cultural groups
- These three features allow people to
 - easily generate stories acceptable to their group
 - for those stories to gain a foothold in the narrative exchanges of people in those groups
 - and for individuals to try to convince others to see the world as they do by telling and retelling those stories.

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Legends and Rumors

- Legends and rumors are sources of information that thrive in low-trust, or low-information environments
- Legend is a short, believable, mono-episodic narrative, told as true, in an informal setting, often conversationally
- Legend, like all folklore, circulates on and across social networks, and offers an efficient means for negotiating cultural ideology (norms, beliefs, values)
- Rumor is a hyperactive transmission state of legend
 - often rumor is missing two key structural features of legend (CA: Strategy & Resolution), pushing action into the real world
 - it says, “here’s a threat, what are you going to do about it?”

Which means legend/rumor are closely related to...



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THIS IS NOT FAKE NEWS. THESE ARE THE FACTS. #PIZZAGATE

WHAT IS PIZZAGATE?

Pizzagate.press: "All you need to know about pizzagate"

WHAT IS PIZZAGATE.WIKI

We are an open-source investigation organization which documents facts and sources about crimes, potential abuses of power and disinformation conducted by governments around the world. Using **facts and cited sources** as well as honest discussion we can collectively solve perhaps the greatest and most secret crime spree ever committed.

Pizzagate.Wiki News

Pizzagate.Wiki Mission, Rules, and Guidelines

WANT TO HELP?

Please, get an account and create or complete pages! **Remember that you will have to source your claims!** See Activism for resources and communities as well as High Priorities and Open leads to investigate for a place to start.

You can support the Pizzagate Wiki by reading and upvoting blog posts available on Steemit.

You may also donate to the official Pizzagate Wiki Blockchain wallet to fund site upkeep and research projects.

JOIN THE CONVERSATION

See Chat List: a list of external links/resources about Pizzagate

Fake News

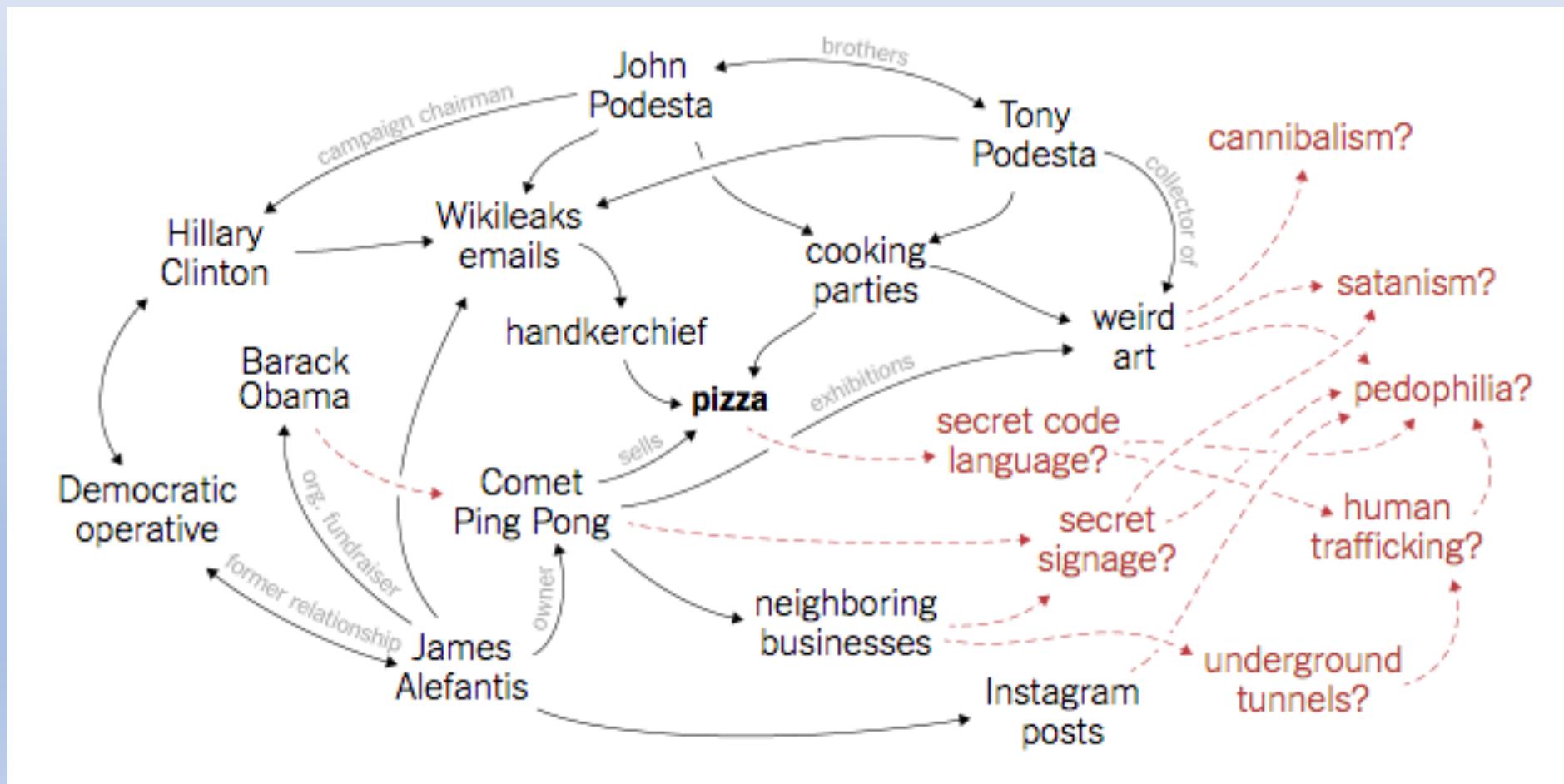
- “fabricated information that mimics news media content in form but not in organizational process or intent.” (Lazer et al 2018)
- “fake news” takes advantage of certain folkloric features, leveraging fears and strategies for confronting those fears already in circulation in the communities it targets

Pizzagate

- Pizzagate provides an interesting opportunity for exploring the folkloric dimensions of “fake news” allowing us to:
 1. Interrogate the structure(s) of legend, rumor
 2. See how these stories can be aligned into “story complexes”
 - that can provide a comprehensive world view (monologic thinking is a key feature of conspiracy theories)
 3. Test our ideas at internet scale

NY Times and Pizzagate

- ❖ NY Times in their reporting produced an interesting graphic that identified the main players (actants) and their relationships (Aisch, Huang, Kang 2016) (i.e. an actant-relationship model)



Can we match the NY Times graph computationally?

- From a machine learning perspective we need to jointly estimate all the hidden parameters of the model:
 - the actants (people, places, things)
 - the contexts (who does what when)
 - the set of relationships (often represented as hyperedges)
 - and the edges and their labels (concatenation of range of action into classes)
- In later work, we also estimate:
 - Potential threats
 - Sequence of actions

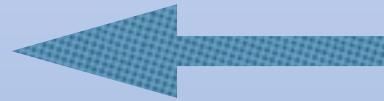
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First we need a model of
storytelling and, more explicitly,
legend structure

Legend structure

- From Labov and Waletzky, we have an excellent model of personal experience narrative (1967), modified by Nicolaisen (1987) to fit contemporary legends in archival collections (contemporary legend = urban legend)
- Six main structural components — three essential [three non-essential]:
 - [Abstract] — story summary
 - Orientation — who, where, when
 - Complicating Action — what happened
 - [Evaluation] — commentary on the story
 - Result — what happened as a result of the complicating action
 - [Coda] — what finally happened



Theorizing the Complicating Action

- Complicating Action is made up of two distinct parts:
 - Complicating Action: Threat or Disruption
 - the range of threats or disruptions are limited and culturally determined
 - Complicating Action: Strategy
- stories can cycle through CA:Threat & CA: Strategy multiple times
- the success or failure of a strategy constitutes an ideological evaluation of the possible strategies for counteracting a threat

Formalization

- Propp — syuzhet & fabula → two-level model
- People, as part of their enculturation, internalize the structure, and produce stories that (eventually) conform to the structure
- Model easy to apply, but not useful at the level of real-world data (i.e. formalization fails)
 - ❖ cf Box, “All models are essentially wrong, but some are useful”

Problems with the two-level model

- The only connection is between the deep structural level, and the surface level of observed phenomena
- This assumes that all observed phenomena are complete stories
 - In the real world, most people do not tell complete stories, but rather “story parts”, that assume a level of domain knowledge on the part of their interlocutors (cf. Laudun)
- The 2-level model is reductive, missing the importance of the domain-level specificity of a story, thereby drawing a false equivalence between domains

A possible refinement

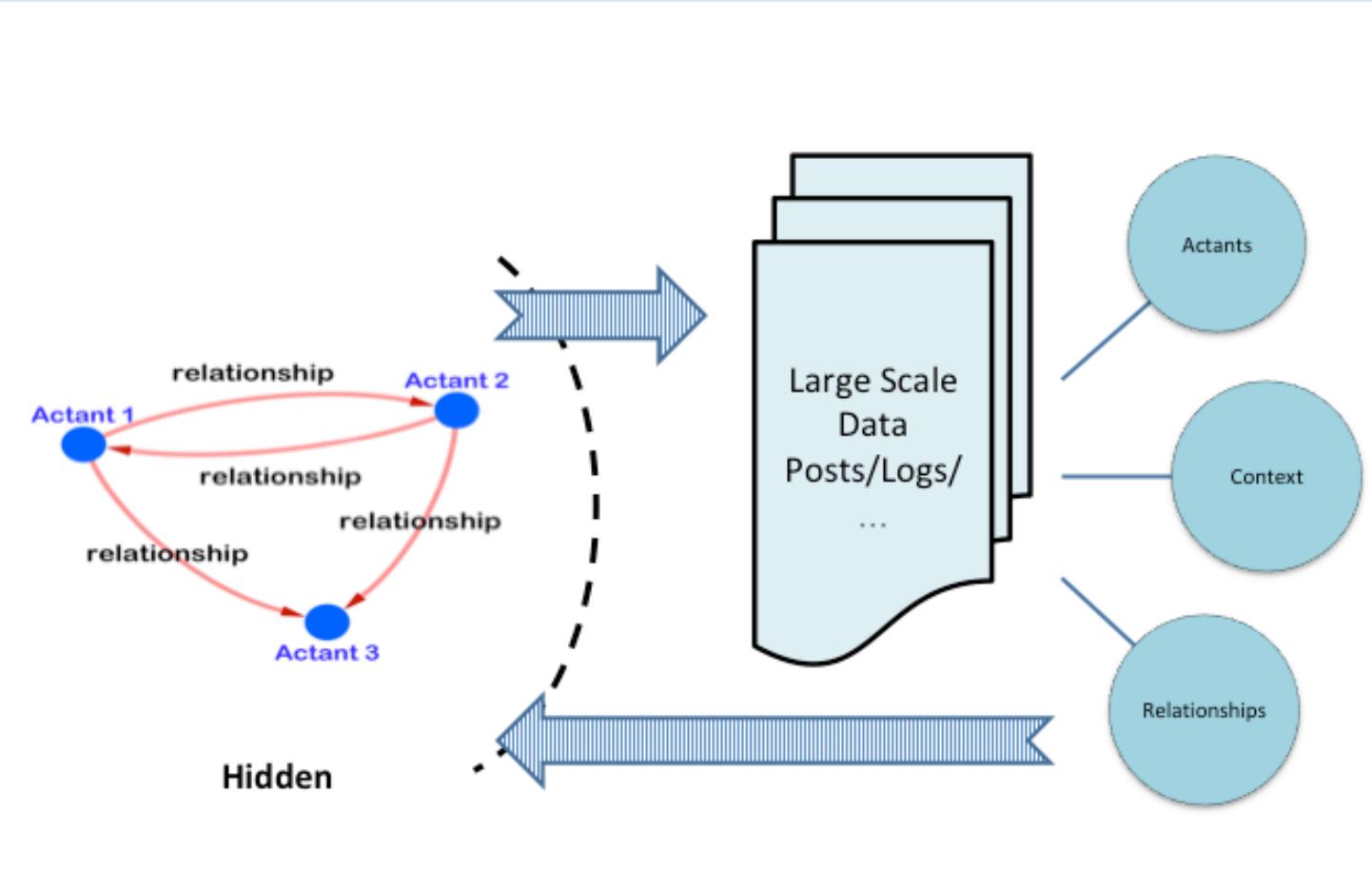
- Develop a third meso-scale intermediate level that binds the macro-scale genre to the micro-scale performance

Meso-scale: “Domain”

- George Boole: “In every discourse, whether of the mind conversing with its own thoughts, or of the individual in his intercourse with others, there is an assumed or expressed limit within which the subjects of its operation are confined” ([1854] 1958, 42)
- The domain places constraints on the allomotifs that can fill motifemic slots in the narrative (cf Dundes 1961)

Domain-level constraints

- Threats are cultural differences between
- In every case
 - We can see
 - The nature of relationships



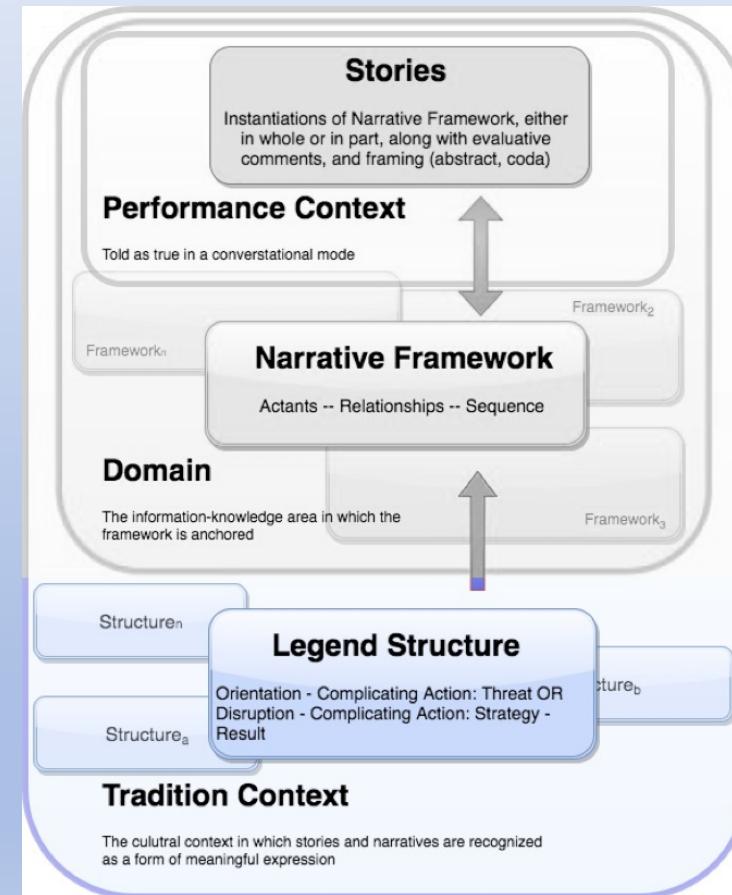
re are
relationships
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and their
actant-actant

Deriving a 3-level model

- The goal is to understand storytelling at very large scale
 - where many stories are partial, and
 - where the recordings are “noisy” [abbreviations, dialects, digressions, slang, etc]
- Can we use the actant-relationship model to:
 - understand what is being talked about in a domain?
 - identify the strategies and disruptions or threats in that domain?
 - discover the underlying generative narrative framework for these conversations?

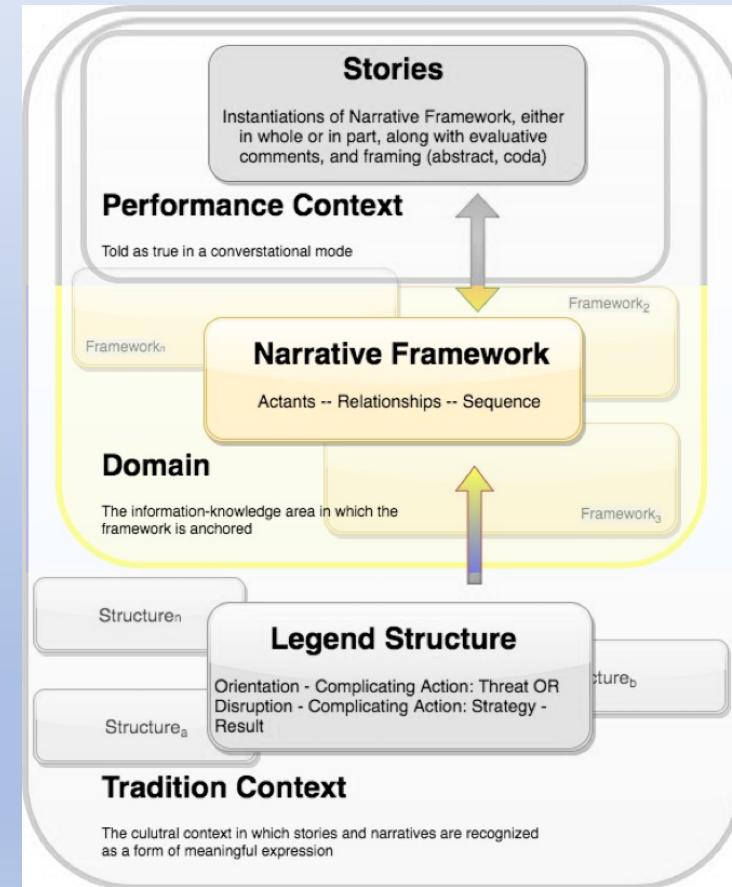
Macroscale: Tradition / Structure

- The fundamental level of genre and genre structures
- Tradition context:
 - cultural context in which stories are recognized as meaningful
 - multiple, possible overlapping genres
- Genre structure embedded in tradition context



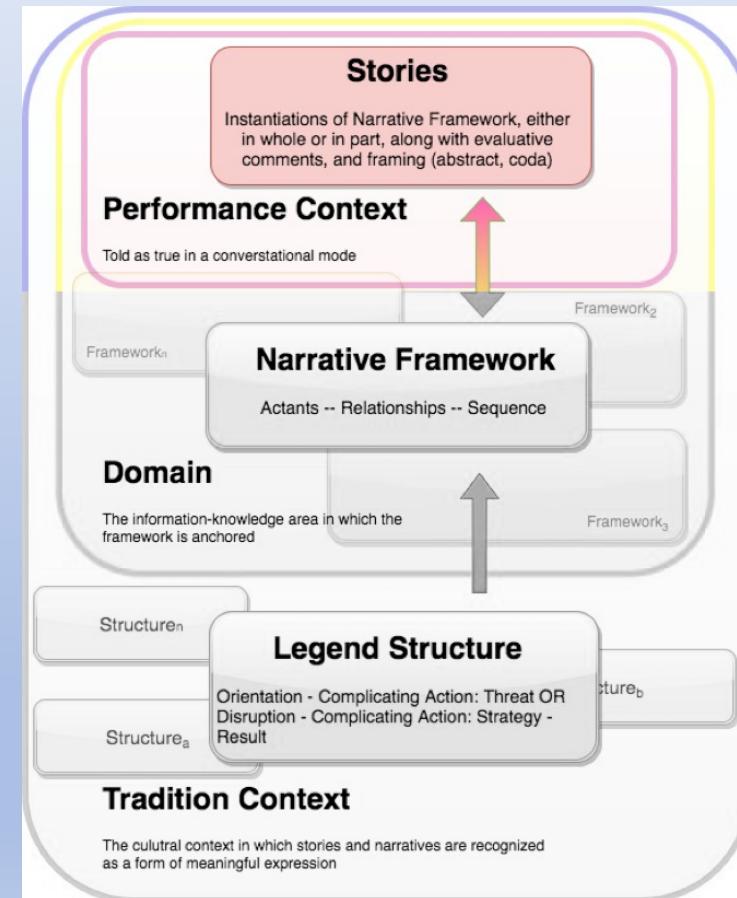
Mesoscale: Domain/Framework

- Domain:
 - information-knowledge area in which the framework is anchored
- Narrative framework:
 - based on the underlying structure
 - actants-relationships-sequence

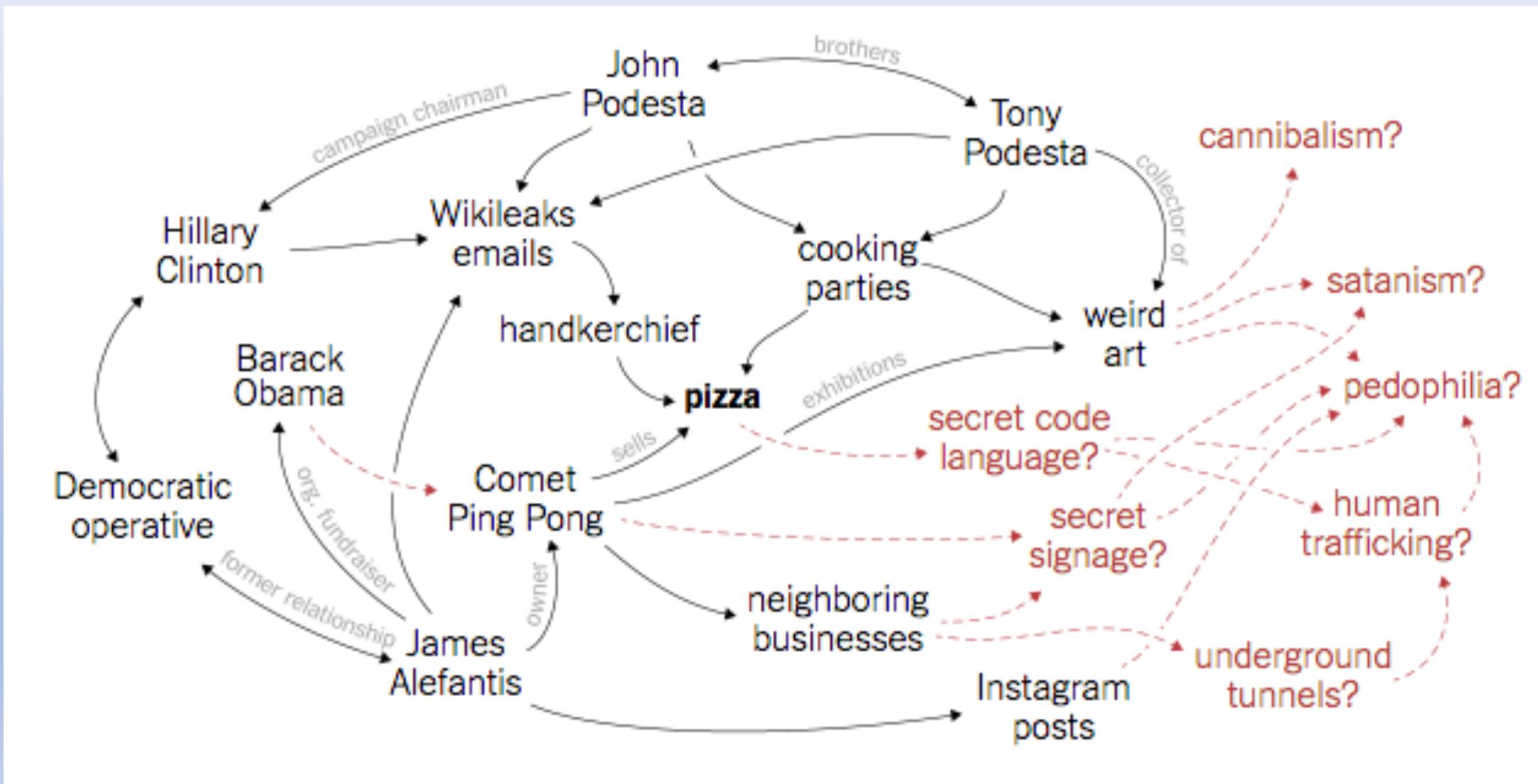


Microscale: Performance/Story

- Performance context:
 - context in which story appears
- Stories:
 - instantiations of framework in whole or in part
 - includes evaluation and framing (abstract & coda)



A summary



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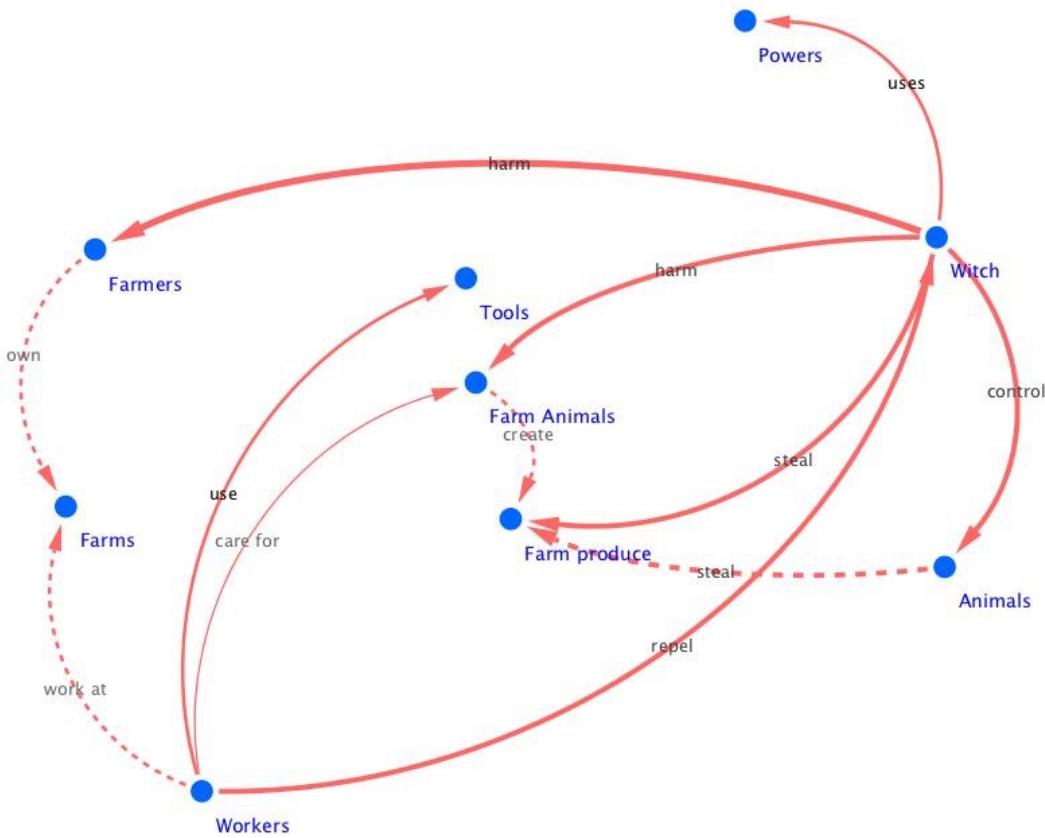
Application: Danish witches

- Methodology:
 - We use topic modeling to determine the overall tradition space and the domains of Danish legends ($n \sim 36.5k$ stories)
 - And to identify potential actants and relationships
 - We use NLP and organic AI to aggregate nouns and verbs into actant and relationship categories
 - We apply the model to all of the stories we encounter
 - We aggregate (continuously) to find the main actants and relationships

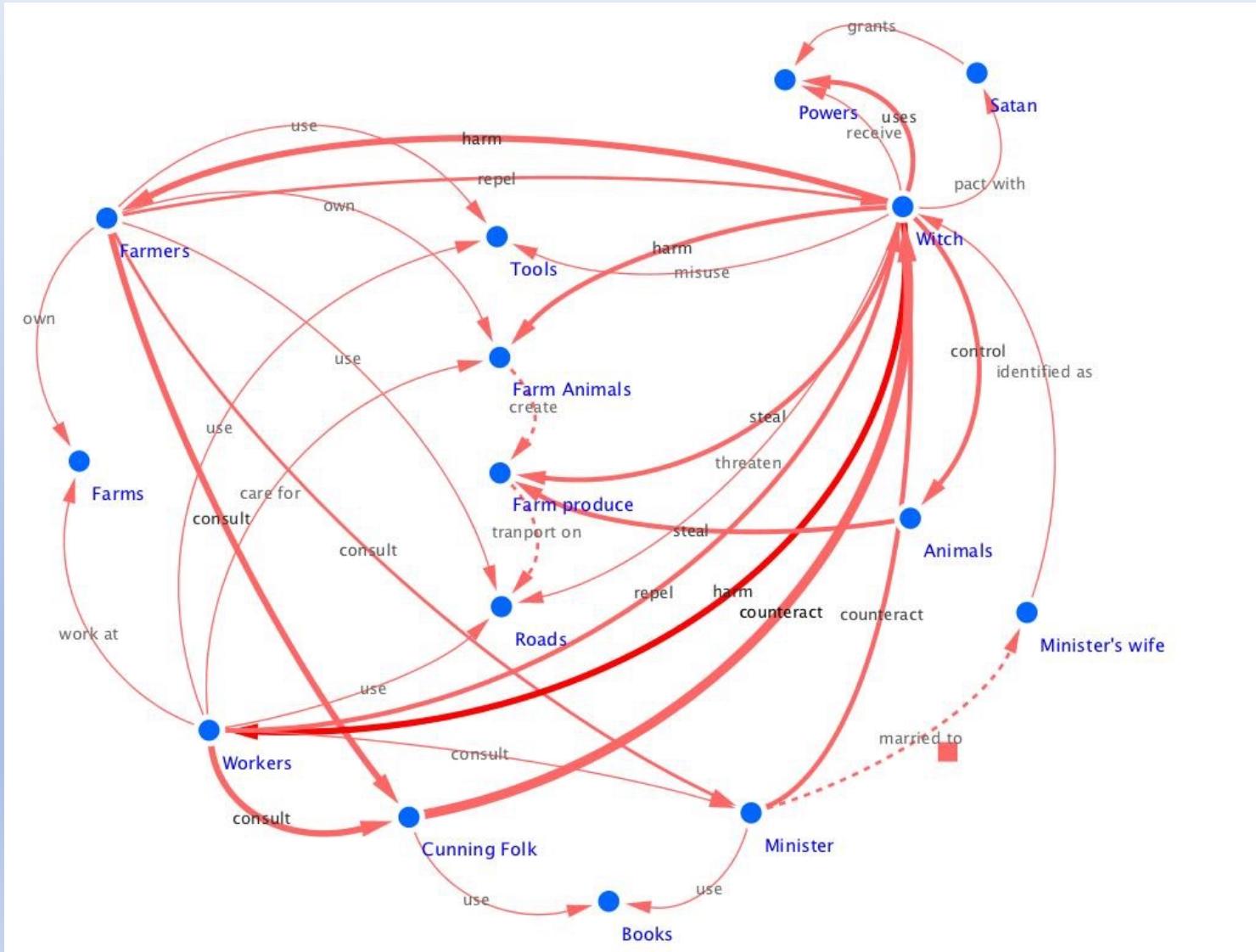
Select a legend from the domain

Phrase (observed)		Structure	Role	id (act-rel)	Specification
Et sted i Sundeved	}	Orientatio n:	Where:	Farm	Sundeved
boede en kone , som hed Else Mikkels	}	Orientatio n	Who:	Person	Else Mikkels
Denne kone gik omkring og gjorde så megen fortræd,	}	CA: Threat	Harm agent:	Witch	Threatens people
hun tog mælken fra koerne	}	CA: Threat	Harm agent:	Witch	Steals milk from cows
eller listede sig ind i husene og kastede noget for svinene , så de foer forstyrrede og forvildede omkring	}	CA: Threat	Harm agent: Harm loc:	Witch Inside	Harasses swine In the houses
Kom så nogen, skabte hun sig om til en hare ,	}	CA: Threat	Harm agent:	Witch	Turns into hare
og når pigerne om morgen kom ud i marken for at malke	}	Orientatio n	Who: Where: When:	Hired girls Fields Morning	
kunde de se hende gå og luske omkring henne i et hjørne af marken , og da var hun en hare .	}	CA: Threat	Harm agent: Harm loc:	Witch Fields	Runs in field as hare
En dag hun som sådan løb omkring,	}	CA: Threat	Harm agent:	Witch	Runs in fields
blev hun skudt i det ene ben	}	CA: Strategv	Protection:	Shoot	Shot in leg
og hun måtte da ligge til sengs i lang tid	}	Result	Harm: positive	Injury	Bed long time

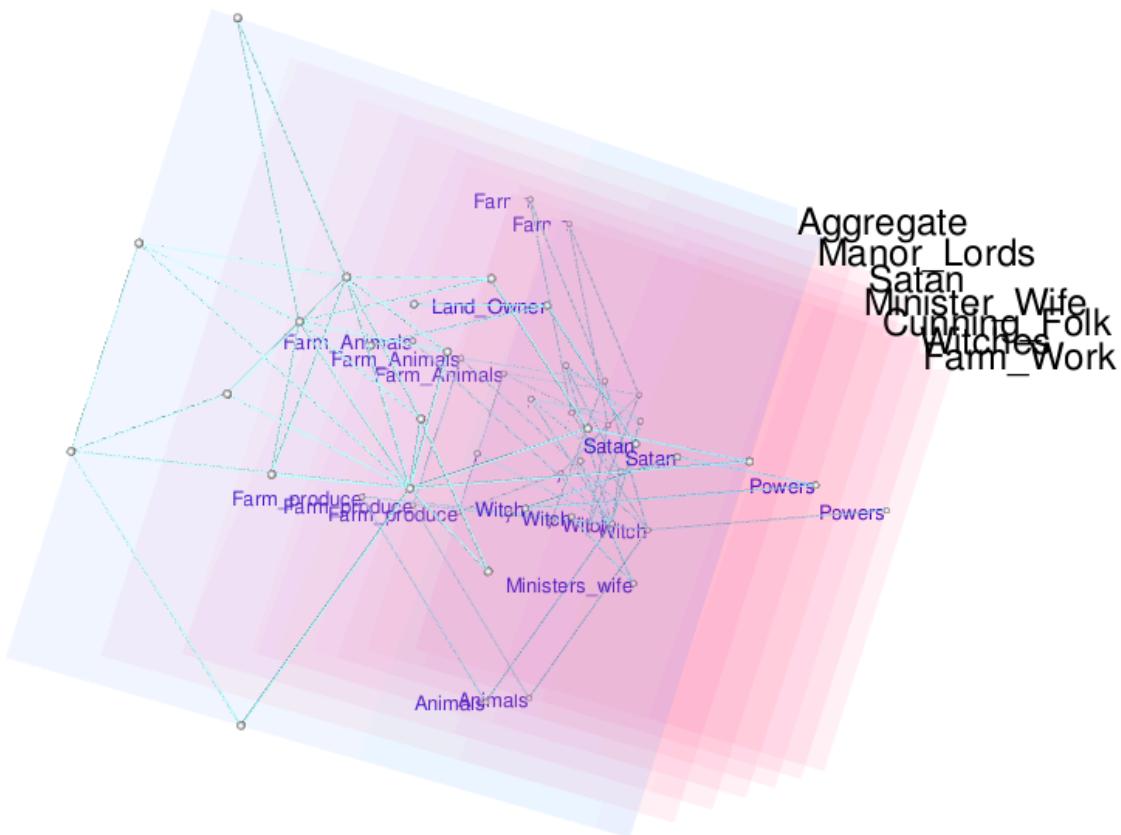
We find the actants and relationships in each story



We aggregate this over 1000s of stories



And understand the connections



Discover

- The main actants:
 - witches, farmers, workers, cunning folk, ministers
- The main threats:
 - witches disrupt farming by attacking animals, stealing milk, causing illness
- The main strategies:
 - shoot the witch (deal with it yourself), contact a cunning folk (local solution), contact the priest (institutional solution)
 - ❖ Note that these strategies have an ideological component to them

Generate / Recognize

- We can now generate a story that will fit into 19th century Danish legend tradition
- We can also now identify when there are changes in:
 - threat agents
 - objects of threat
 - strategies
- Because we know who told the story and where they lived we can
 - correlate this to class of narrators (unemployed young male farmhands vs the wives of millers)
 - correlate this to political and church-based profiles of the parishes where these people lived

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Conspiracies and the News

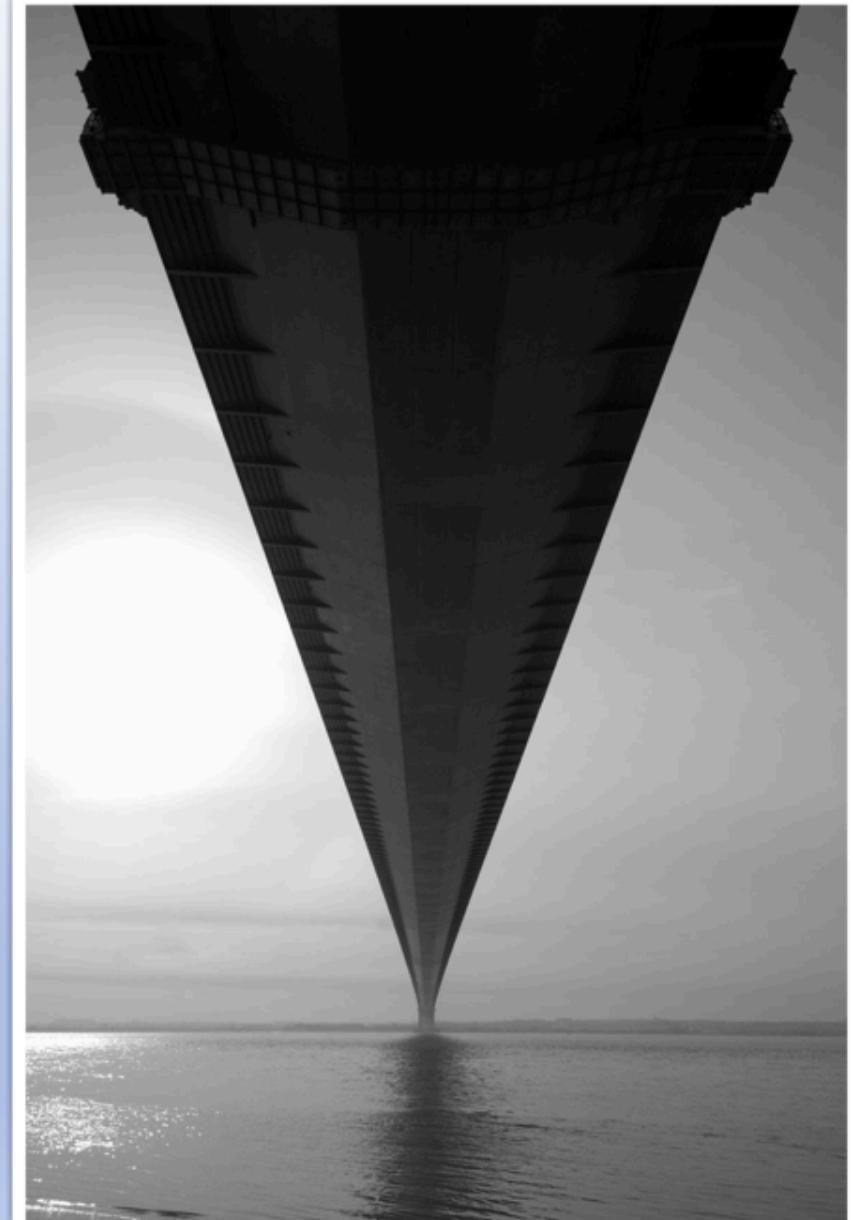
Return to Bridgegate & Pizzagate

We use Bridgegate to model an actual political cover-up, and Pizzagate as a model of a fictitious political cover-up

Tangherlini, Shahsavari, Shabazi, Ebrahimzadeh and Roychowdhury.

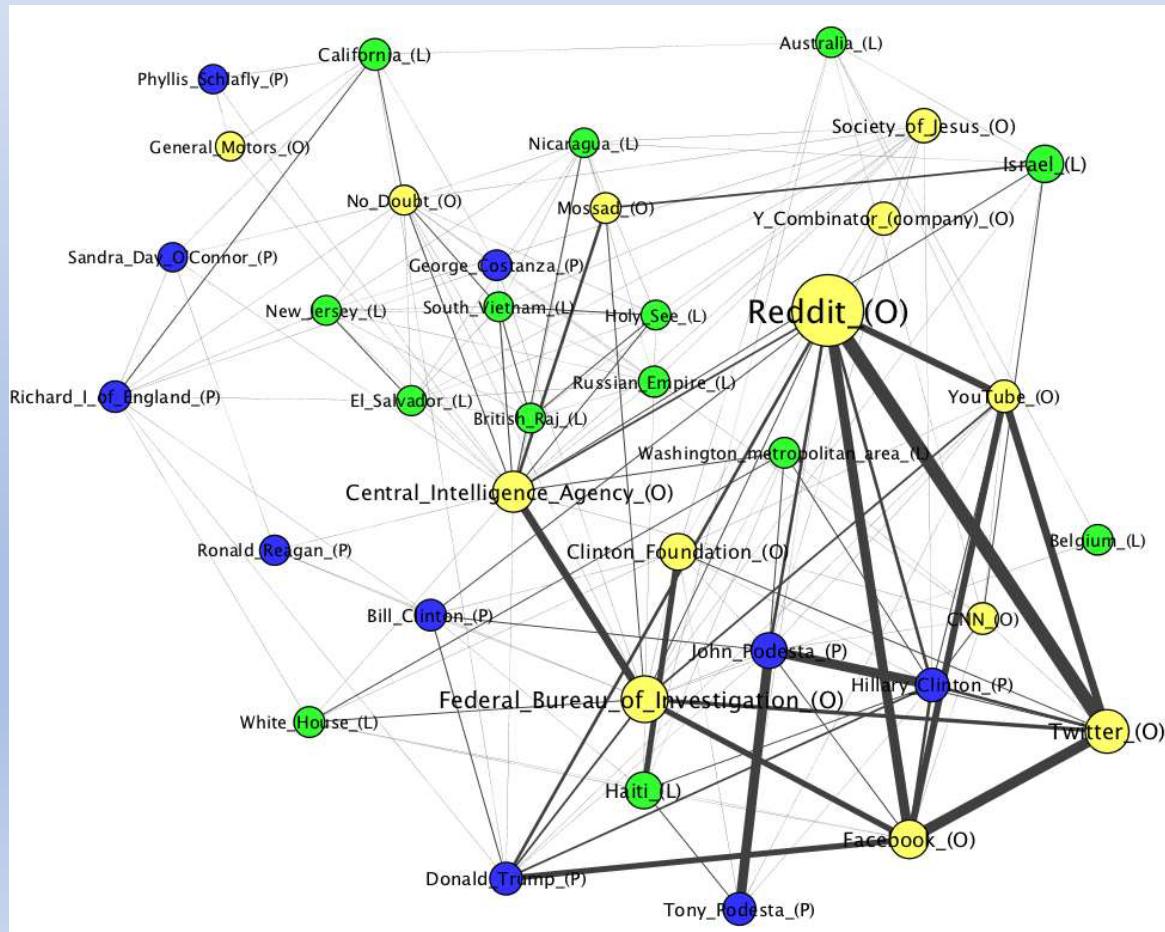
An automated pipeline for the discovery of conspiracy and conspiracy theory narrative frameworks: Bridgegate, Pizzagate and storytelling on the web.

Plos One <https://doi.org/10.1371/journal.pone.0233879>



“Fake news,” conspiracies and the politics of fear

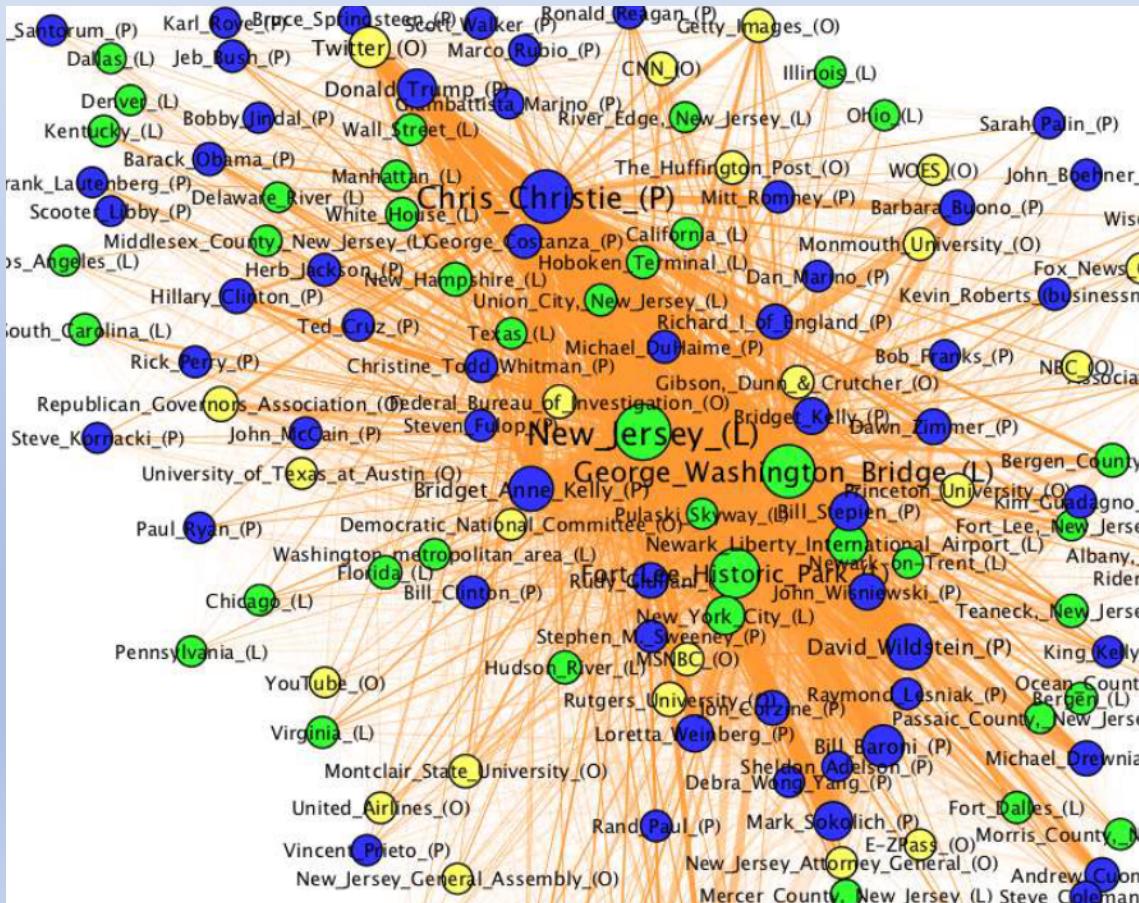
- Pizzagate & Bridgegate are both embedded in the well known domain of American politics and rely on the narrative of the political cover-up



"Wall of Crazy" graph for all entities in Pizzagate from Reddit

Are there differences in their frameworks?

- What are some of the structural differences between a fictitious story and a real story? (Is real life perhaps messier?)



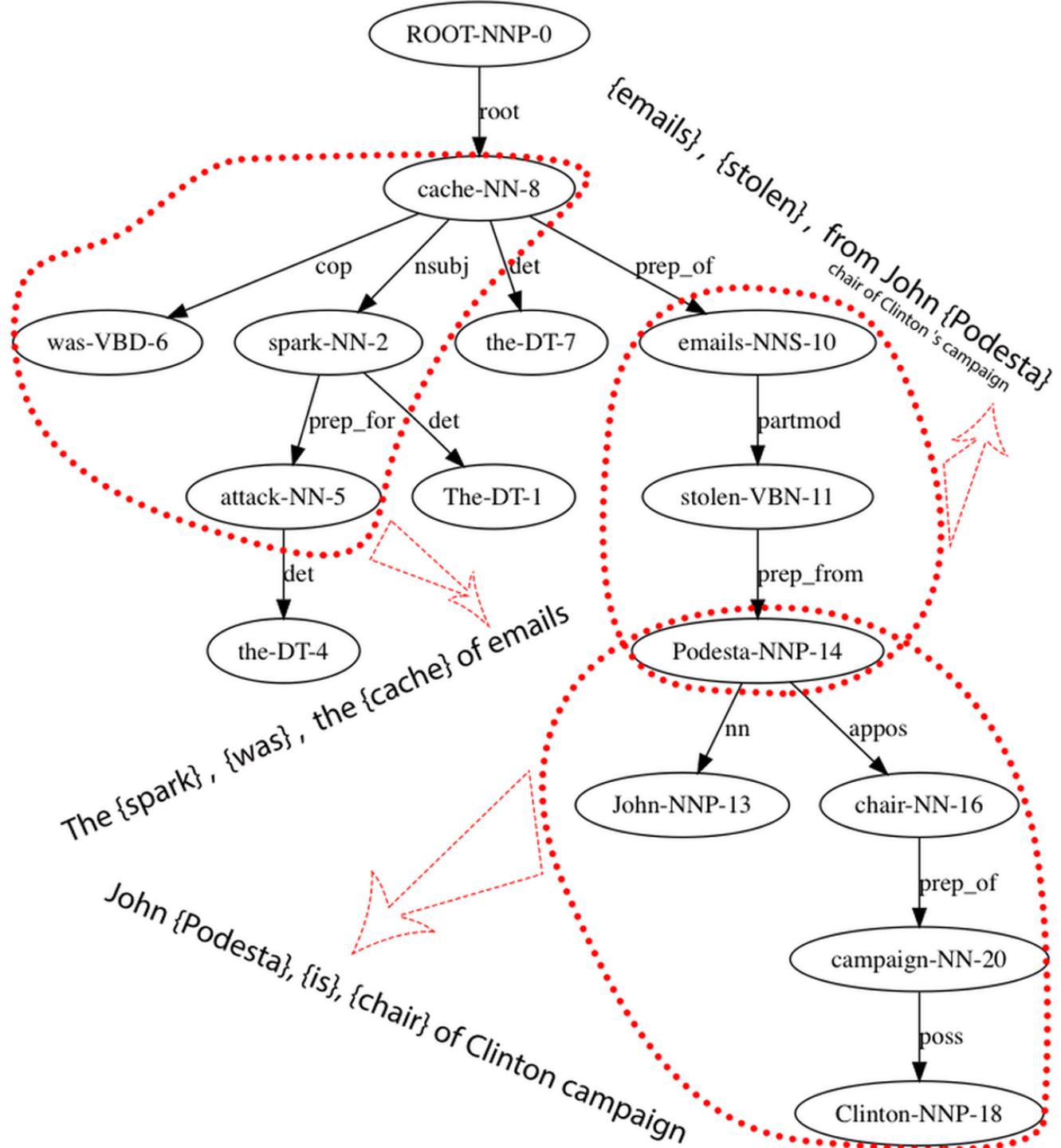
"Wall of Crazy" graph for all entities in Bridgegate from Huffington Post & USA Today (NJ)

Challenge 1: Match the NYTimes graph

- One of the few cases in folklore where we have some sort of “ground truth” (or at least something to compare results against)
- If we apply our methods, can we find the actants and relationships that organic AI (ie the NY Times reporters) were able to find?
- Are there things that they missed?

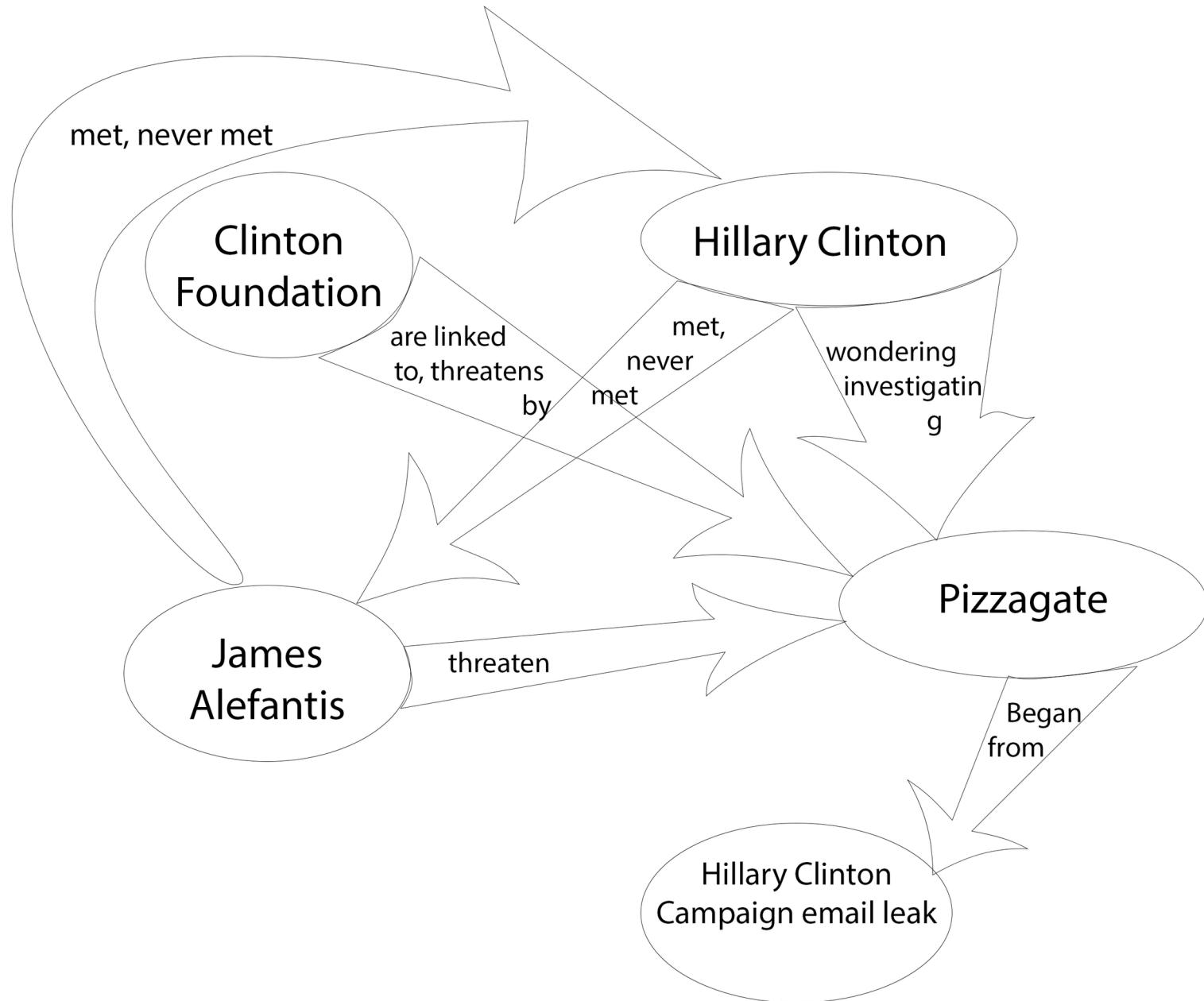
Posts and discussions

- ({Our main goals as a community are to document the evidence}, {seek}, {justice for all of the lives that have been ruined by these disgusting people}) : 43
- ({by Police and Intelligence Agencies Background information}, {Protected}, {a Massive International Pedophile Ring}) : 42
- (the {user}, {found} underground <<30ish wifi {signals}>> at, a fake {distillery} connected) : 5
- (George {Soros}, {gave} <<{11K}>> to, {CometPizza}) : 5
- ({Red Cross}, {build}, {only 6 houses}) : 5
- ({Foundation Taxes}, {Reveal}, {Just How Little They Give To Charity}) : 5

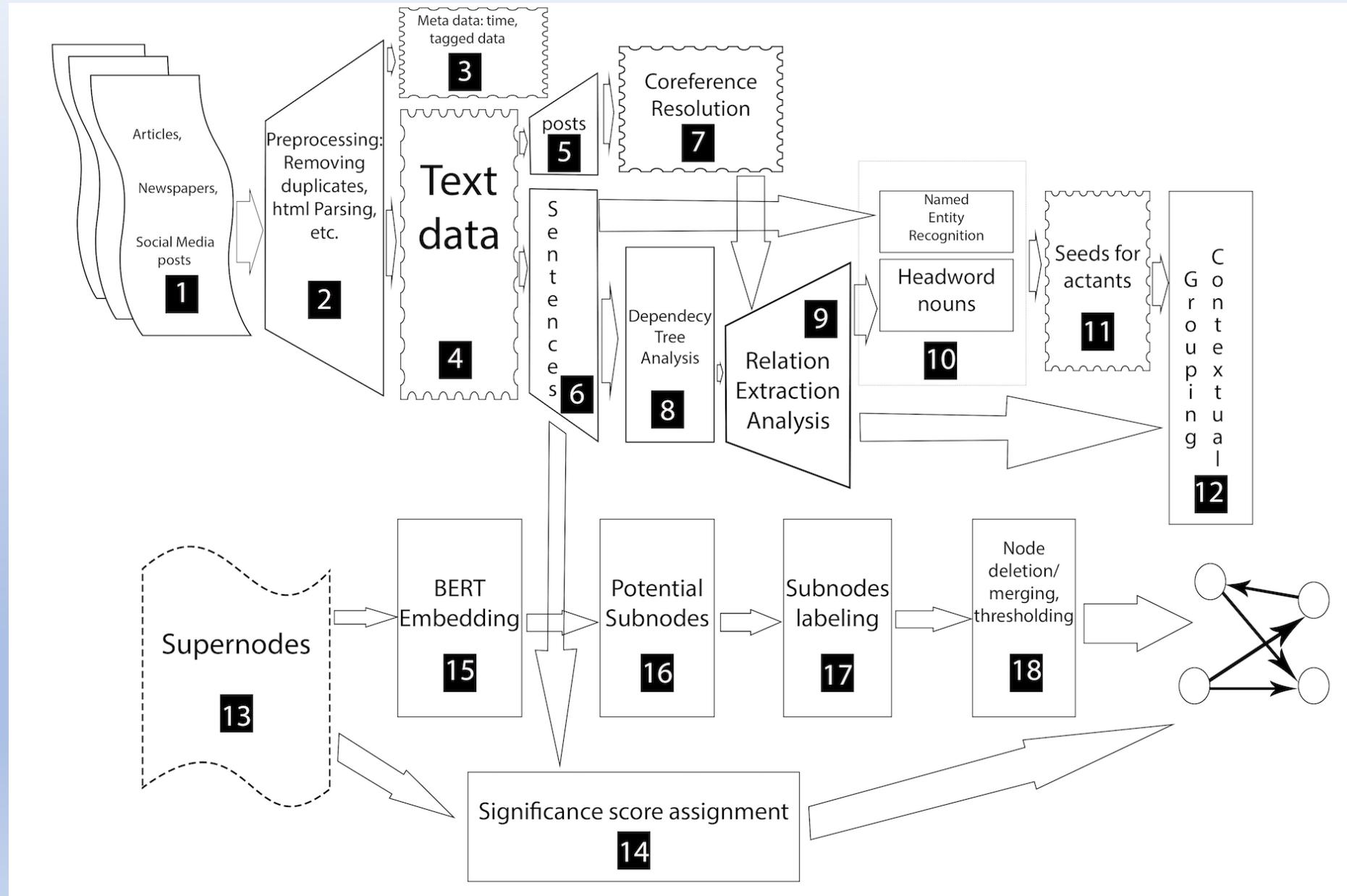


Context dependent actant roles

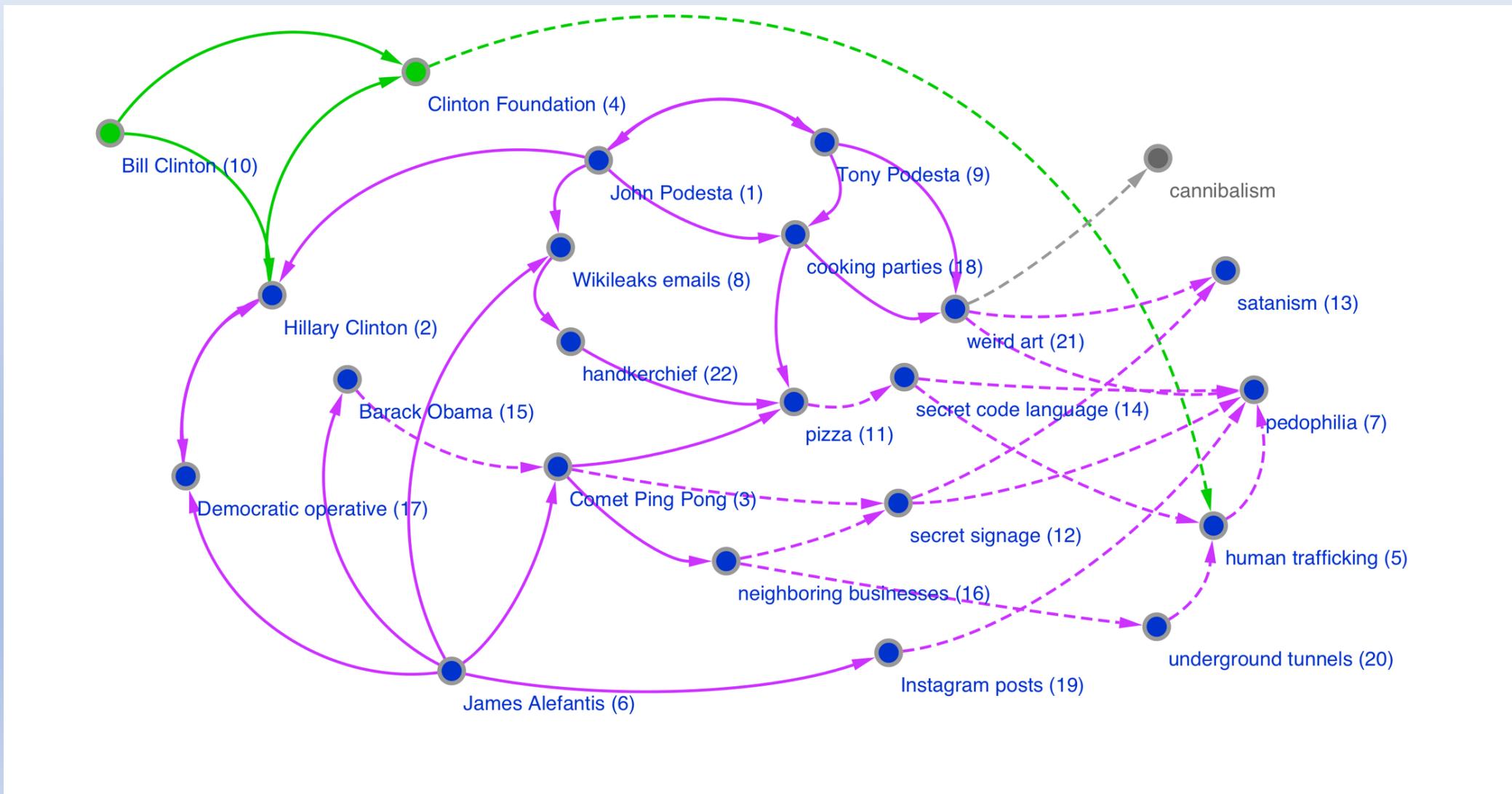
- Supernodes – e.g. “Hillary Clinton”
 - Subnodes:
 - Hillary Clinton in Democratic Politics
 - Hillary Clinton in Clinton Foundation and Fundraising
 - Hillary Clinton and Casual Dining
 - Hillary Clinton and Groups of Friends
 - Hillary Clinton and her emails (Wikileaks)
 - Hillary Clinton and Satanic ritual cannibalistic pedophilia
 - Determine the context dependent relationships and their main actants
 - Recognize that these contexts create densely connected communities
 - Allows us to run community detection on the supernode/subnode interaction graph



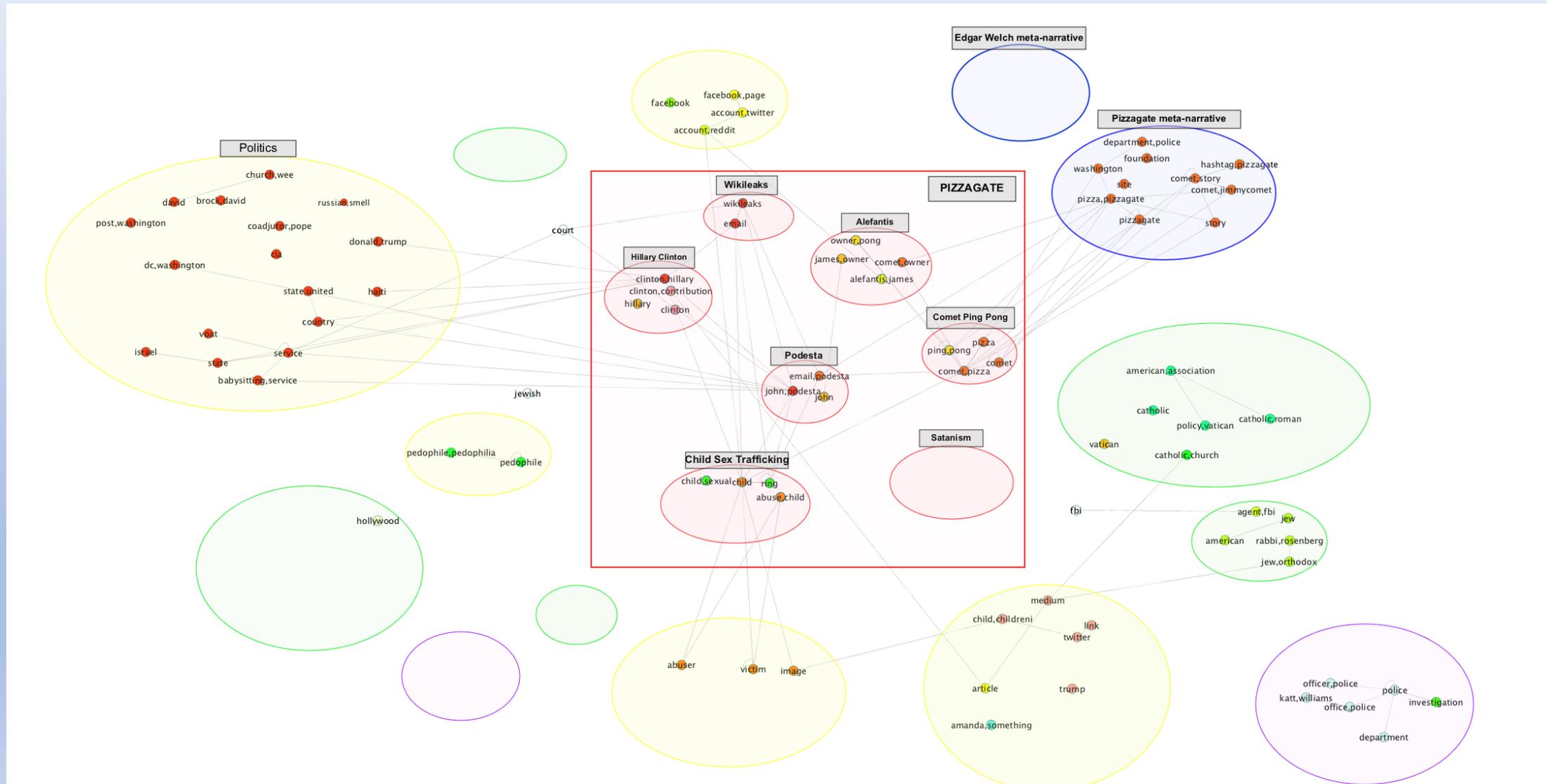
A Pipeline of Interlocking Computational Methods



We can certainly match the NY Times graph



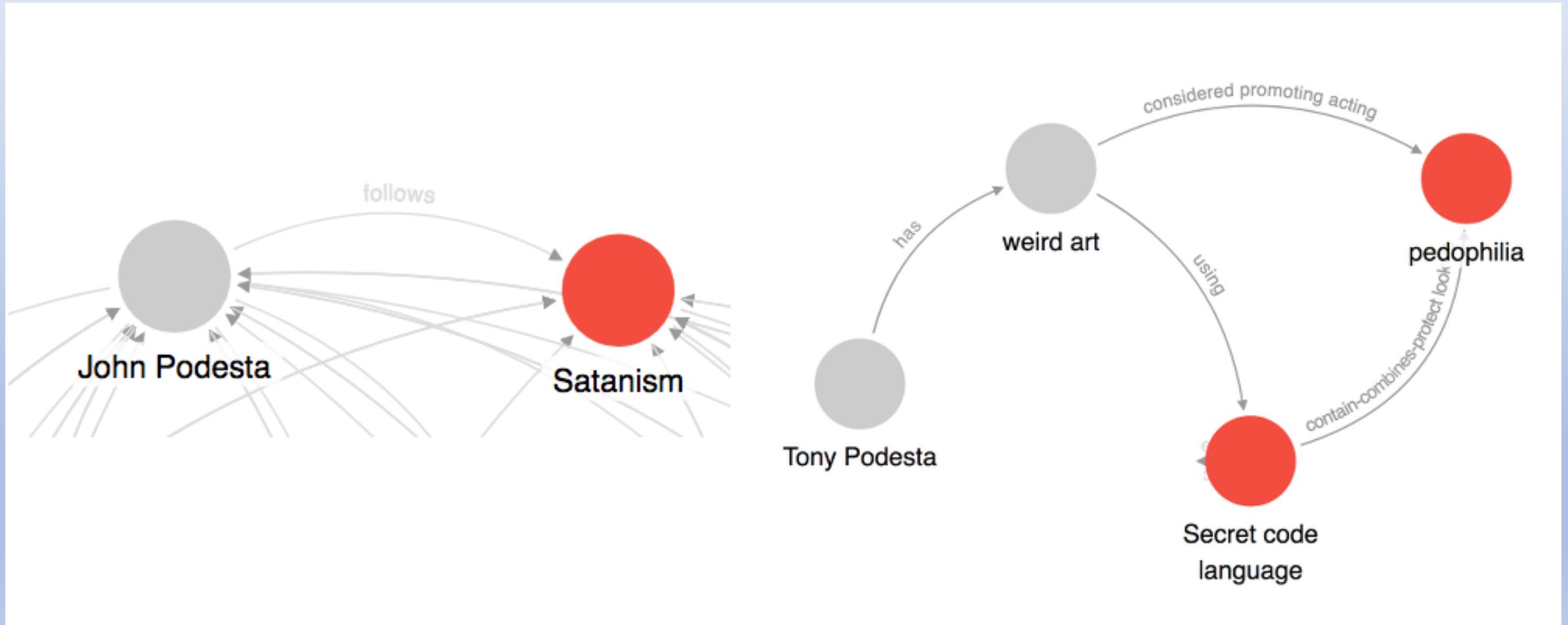
Communities in the Pizzagate Graph



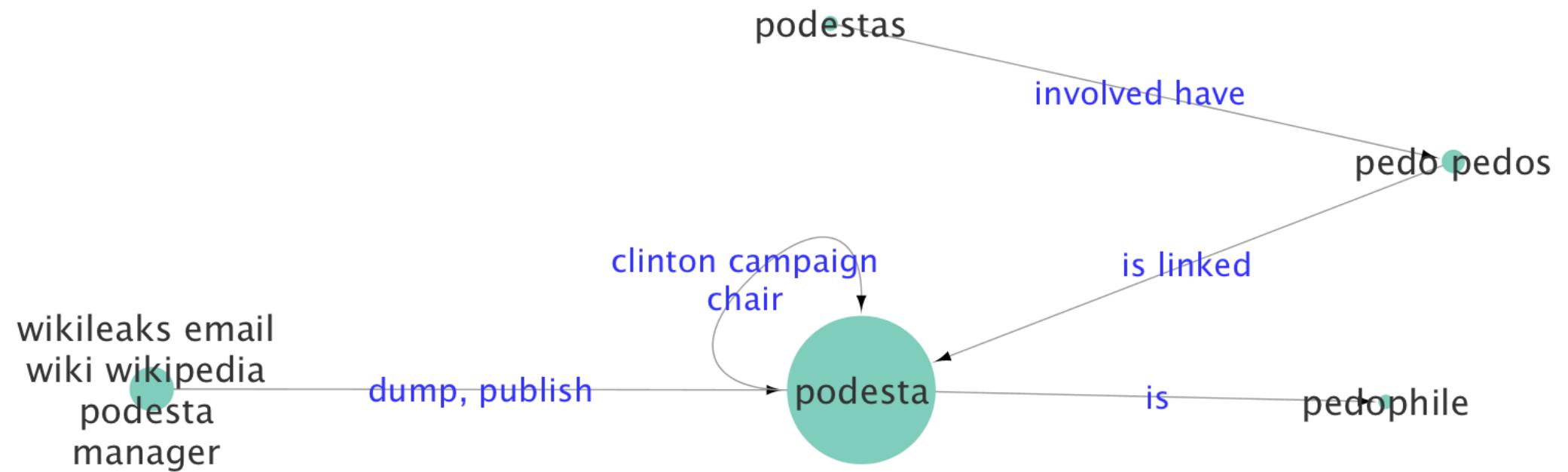
But we get more “stuff” as well

- We get more actants and more detailed relationships than the NYT graph:
 - Eg: Our extractions show a connection between Obama and Wikileaks emails as well
- We provide multiple relationships among entities.
 - Eg: Alefantis removes some of his posts from Instagram, and also sets his account to private.
- As actants and relationships are activated they either become emphasized or deemphasized by their aggregate appearance weights

Close-ups of things we discover



Want to learn more about the Podesta's?

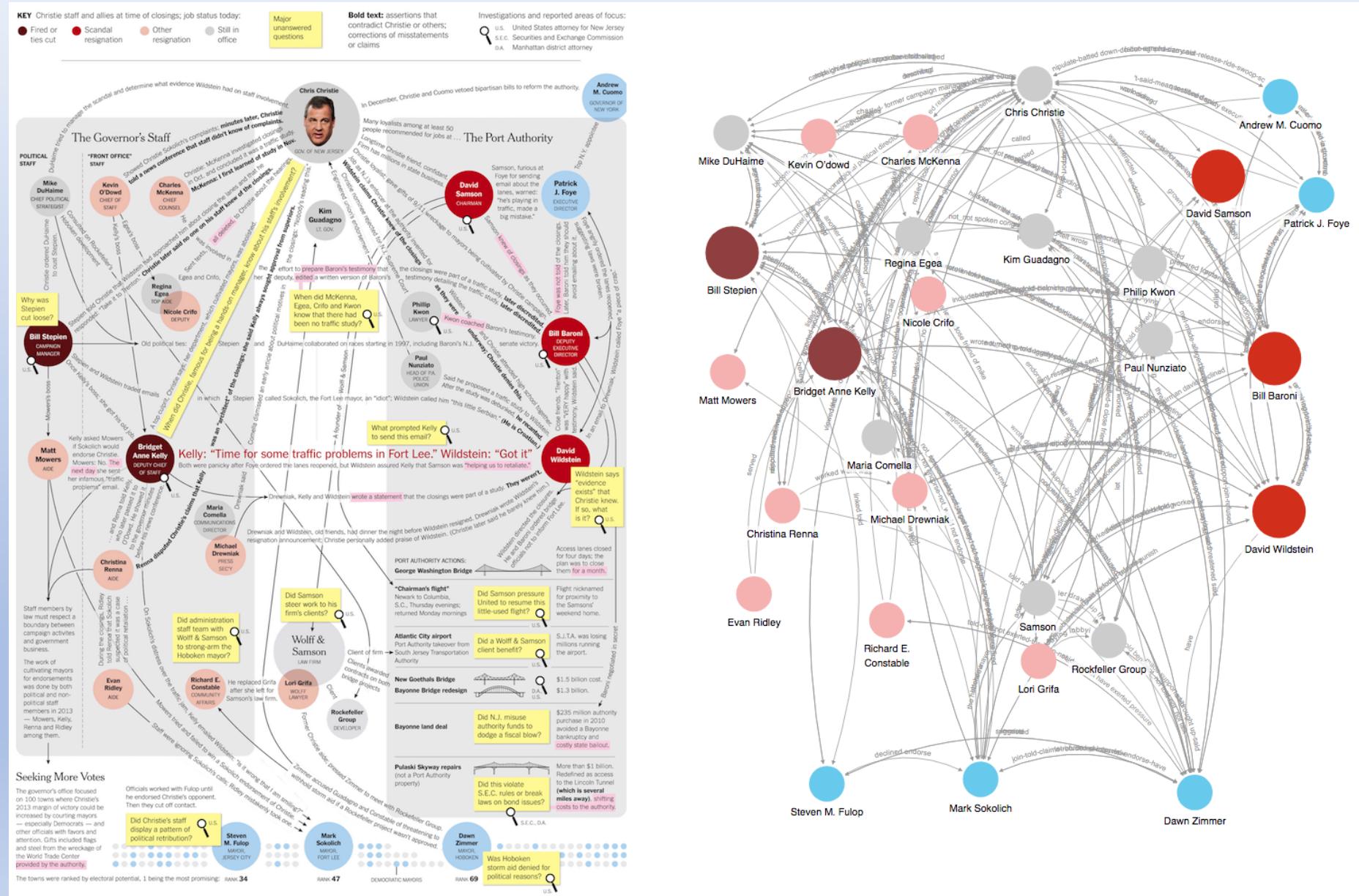


An actual conspiracy:

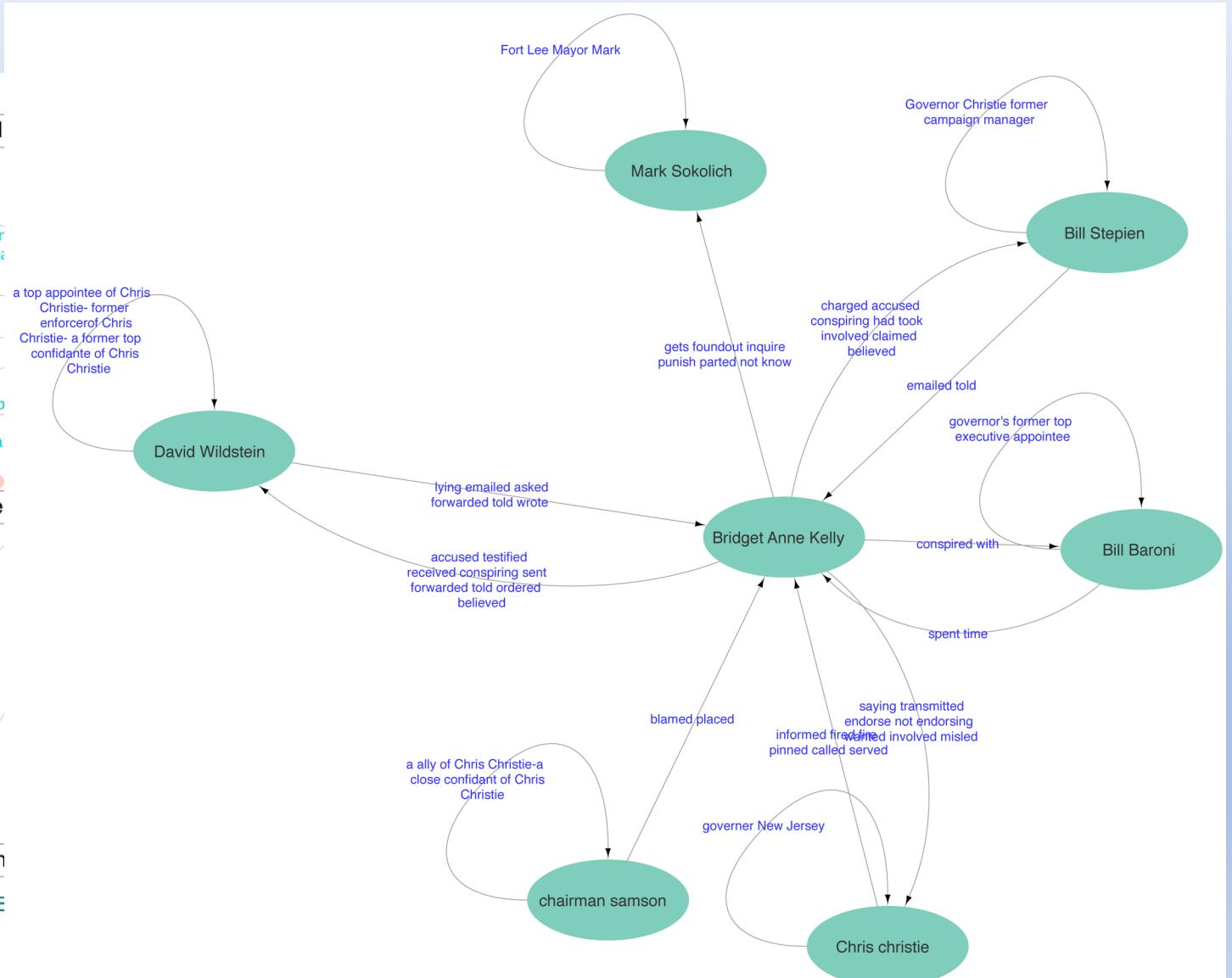
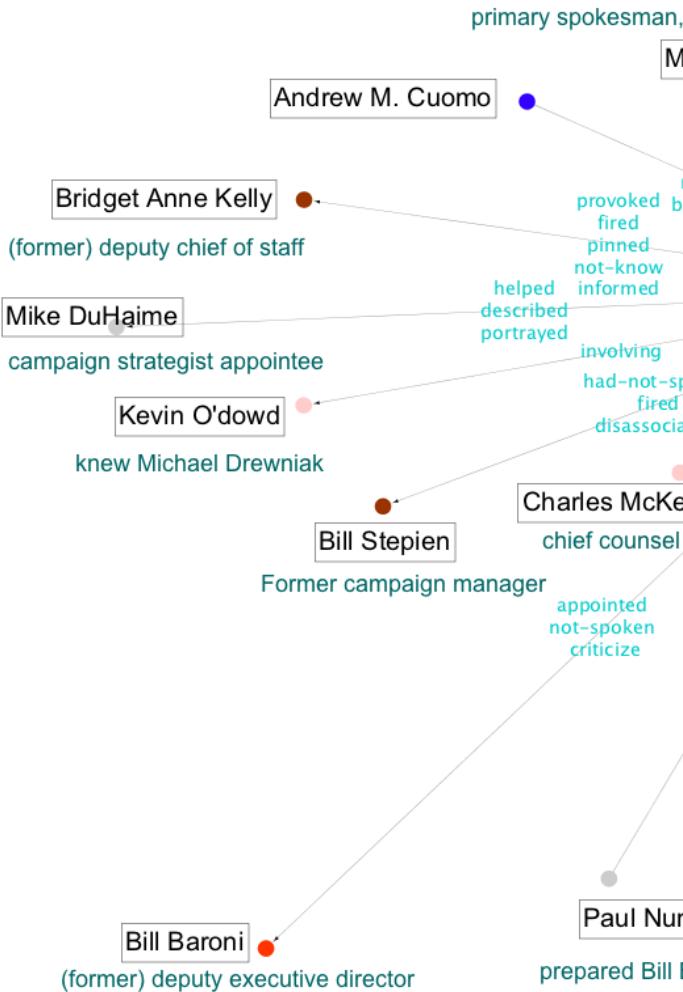
Bridgegate

- What does an actual conspiracy look like when modeled with our methods?
- Which actants and actant relationships can we discover?
- Is there a narrative that coalesces quickly, or does it emerge over time?

Challenge 2: Match the NYTimes graph?



The conspiracy is so complicated we focus on subgraphs



Some noteworthy things

- Actants all from one domain: New Jersey politics
- All known people (we confirm who they are using open linked data)
- Relationships all contained within domain
- The story emerges over time with many additions and pruning of the underlying actants and relationships
- The sequencing emerges slowly over time
- The graph is robust to deletions!

So, what can we learn?

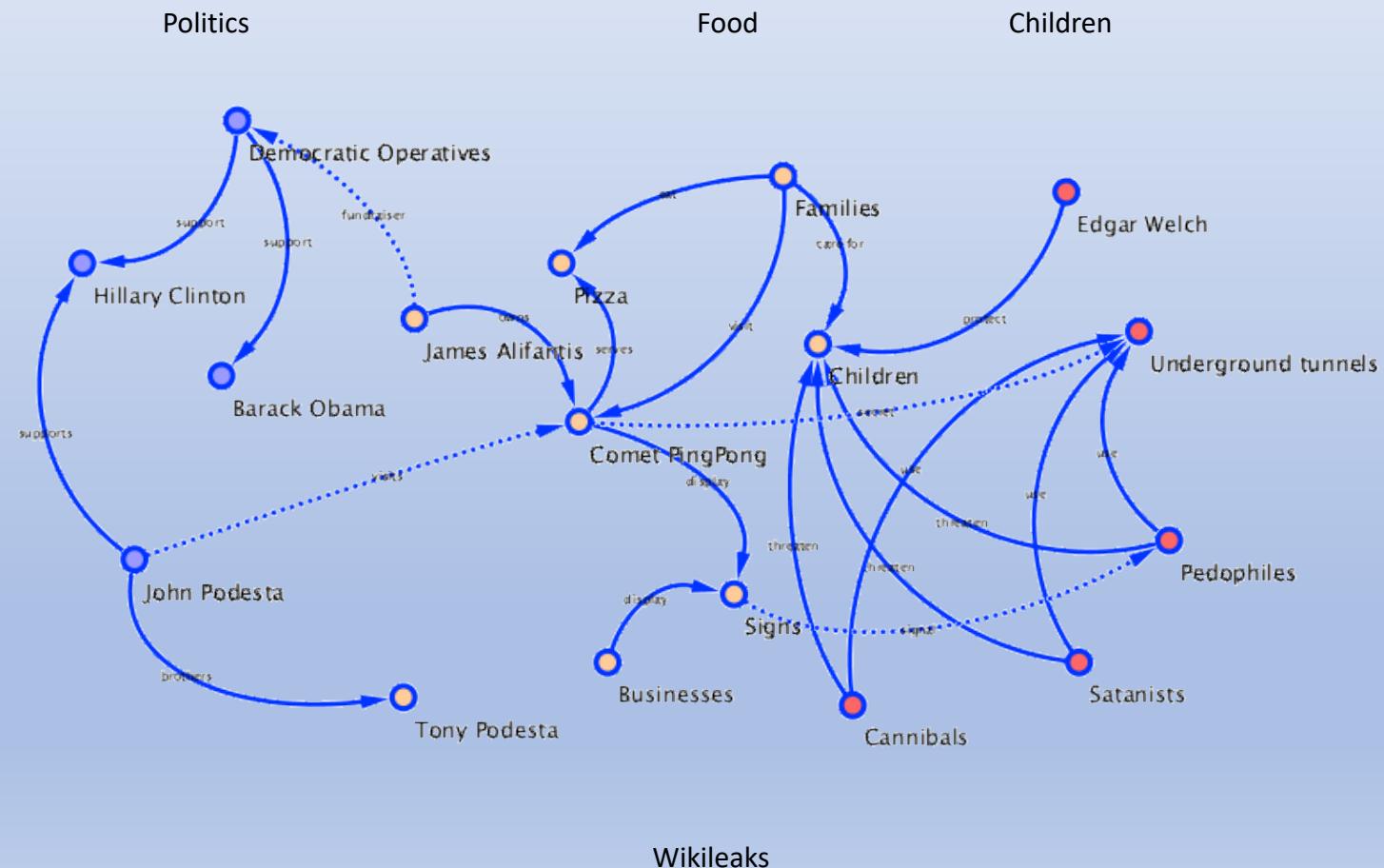
- If we apply our actant-relationship methods to a real cover-up and a fictitious cover-up, can we discover anything that sets them apart?
 - hypothesis₁: fictitious stories have almost no delay between the first appearance of their core actants & relationships
 - hypothesis₂: core actants are stable and complete from the start

A (generative) model of conspiracy theory

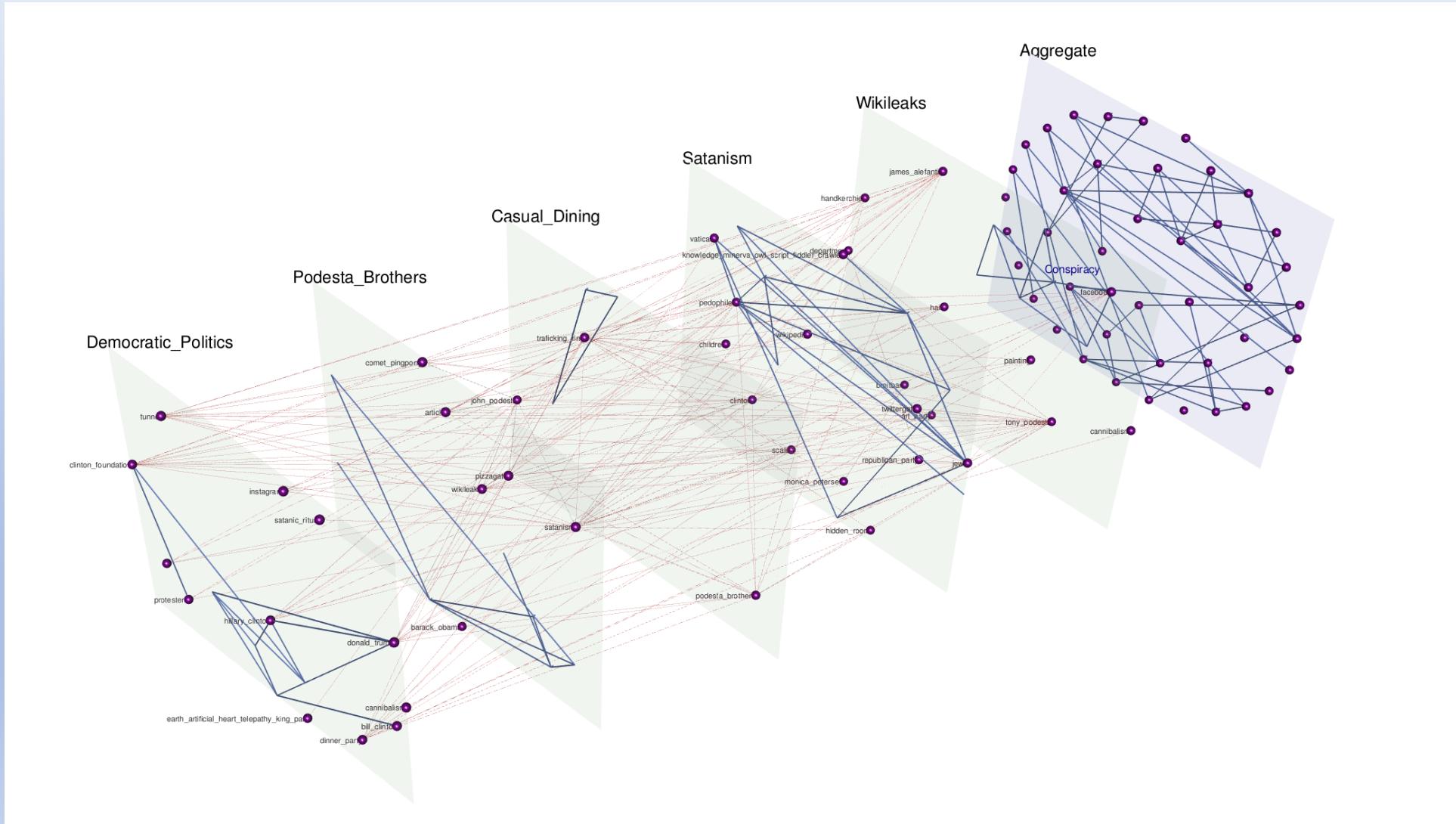
- Conspiracy theories are interesting because they cross multiple domains
 - whereas legends generally only crosses 2 domains (e.g. in Danish witchcraft: the domain of farming, and the domain of Satanic threat)
- Actants who have a “normal” profile in one domain take on a nefarious role in a separate domain
 - Each of these domains is marked by their own corpus of threat/strategy narratives
- Pizzagate mixes at least the three domains of:
 - Politics (actants such as Clinton, Obama, Podesta(s))
 - Casual dining (actants such as Comic Ping Pong, Alefantis, and pizza)
 - Children (actants such as weird art, coded language, tunnels, cannibals and pedophiles)
- The conspiracy theory is based on the inter-domain edges that connect these otherwise disconnected domains—here Wikileaks!

Assembling the Pizzagate Conspiracy

(glued together by wikileaks)

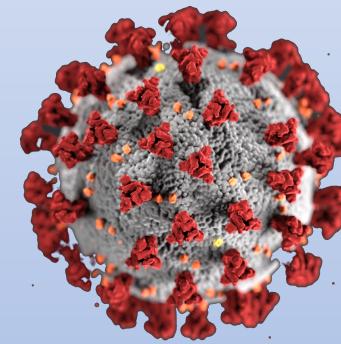


Visualizing Pizzagate



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Covid-19 Conspiracy Theories on Reddit and 4Chan

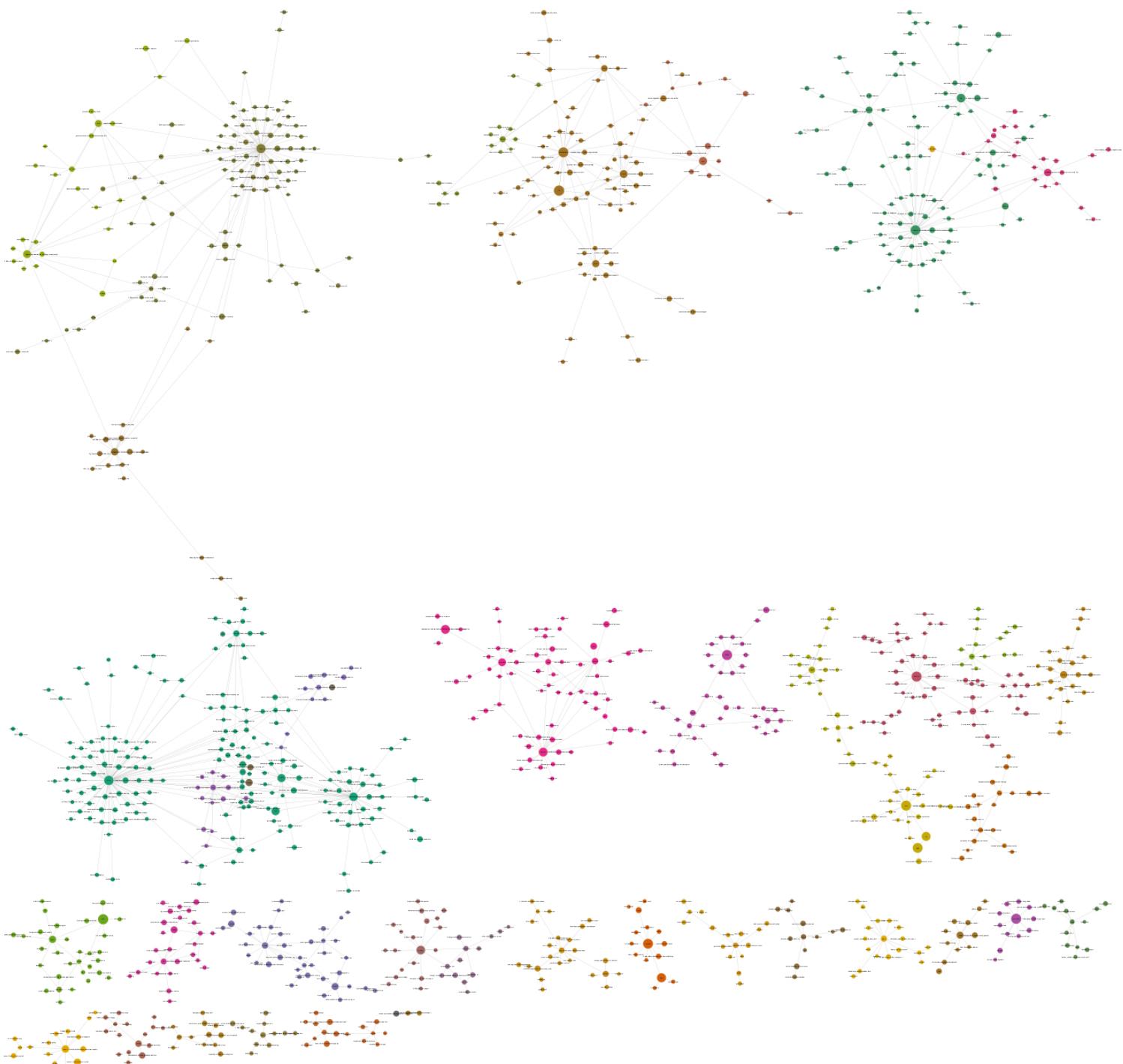
- The pandemic is a perfect information void for the creation of conspiracy theories
- Unlike Pizzagate, there is no single “glue” holding the possible conspiracy theories together
- A refinement to our method: the development of a threat classifier, based on NLP methods, to identify candidate threat nodes in the community graphs
 - Helps us make sense, much more quickly, of the narrative framework in the context of the structural model of legends → conspiracy theories

5 phenomena in the Covid CT space

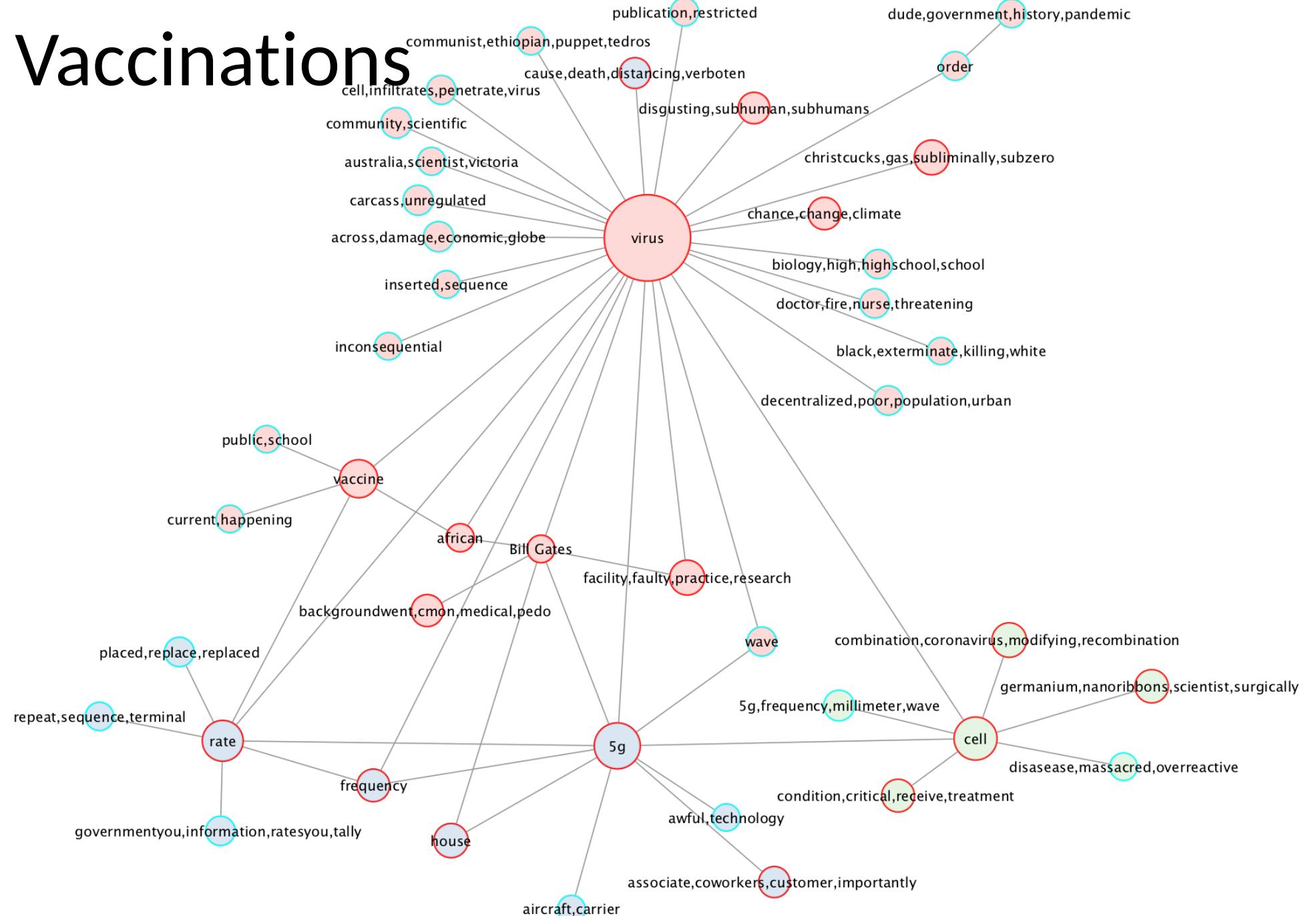
1. the emergence of new conspiracy theories, such as one suggesting that the 5G cellular network is the root cause of the virus aligning the domains of telecommunications, public health, and global trade;
2. the alignment of various new(ish) conspiracy theories to form larger ones, such as one suggesting that Bill Gates is using the virus as a cover for his desire to create a worldwide surveillance state through the enforcement of a global vaccination program, thereby aligning it with anti-vaccination conspiracy theories and other conspiracy theories related to global cabals;
3. the nucleation of potential conspiracy theories, such as #filmyourhospital, that may grow into a larger theory or be subsumed in one of the existing or emerging theories;
4. an attempt to incorporate the pandemic into well-known conspiracy theories, such as Q-Anon;
5. the interaction of these conspiracy theories with the news, where certain factual events, such as the setting up of tents in Central Park for a field hospital to treat the overflow of patients, are linked to conspiracy theories.

After the pipeline....

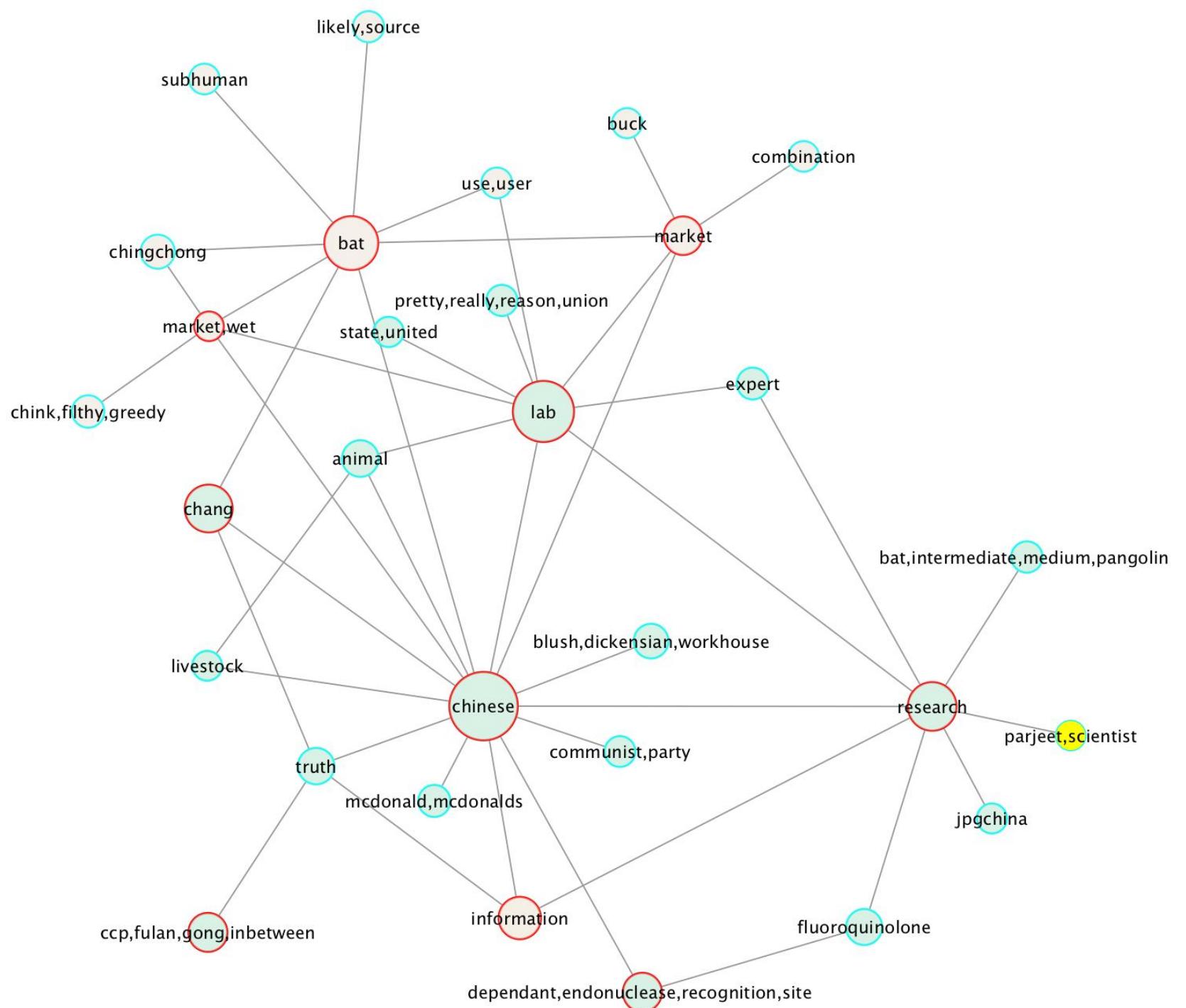
1. Conspiracy theory communities
 - 30 large (>14nodes)
 - 229 total
2. Conspiracy theories:
 - 4 main ones
 - Multiple nucleations
 - Several metanarrative communities



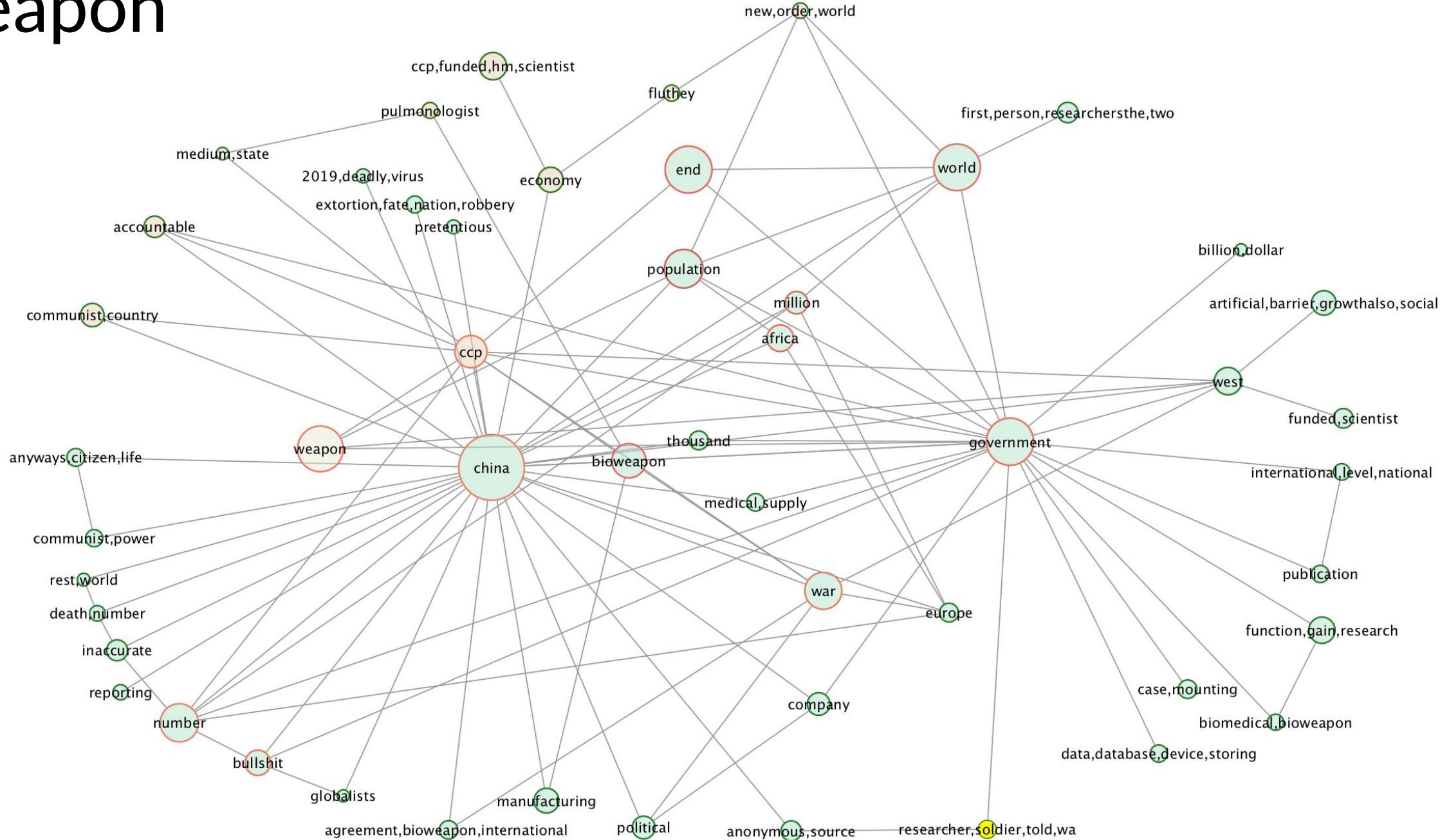
Gates, 5G, Vaccinations



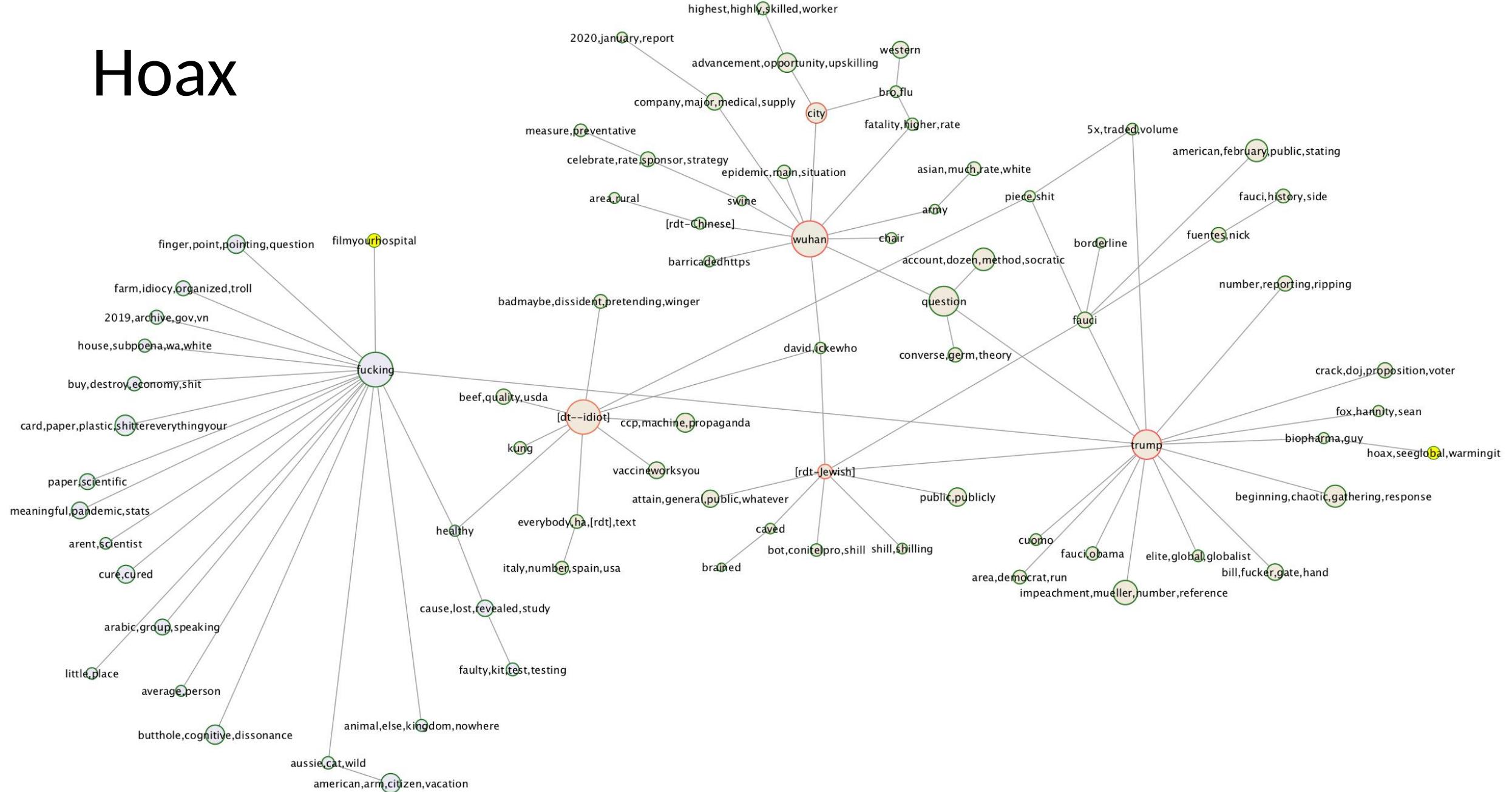
Chinese bat



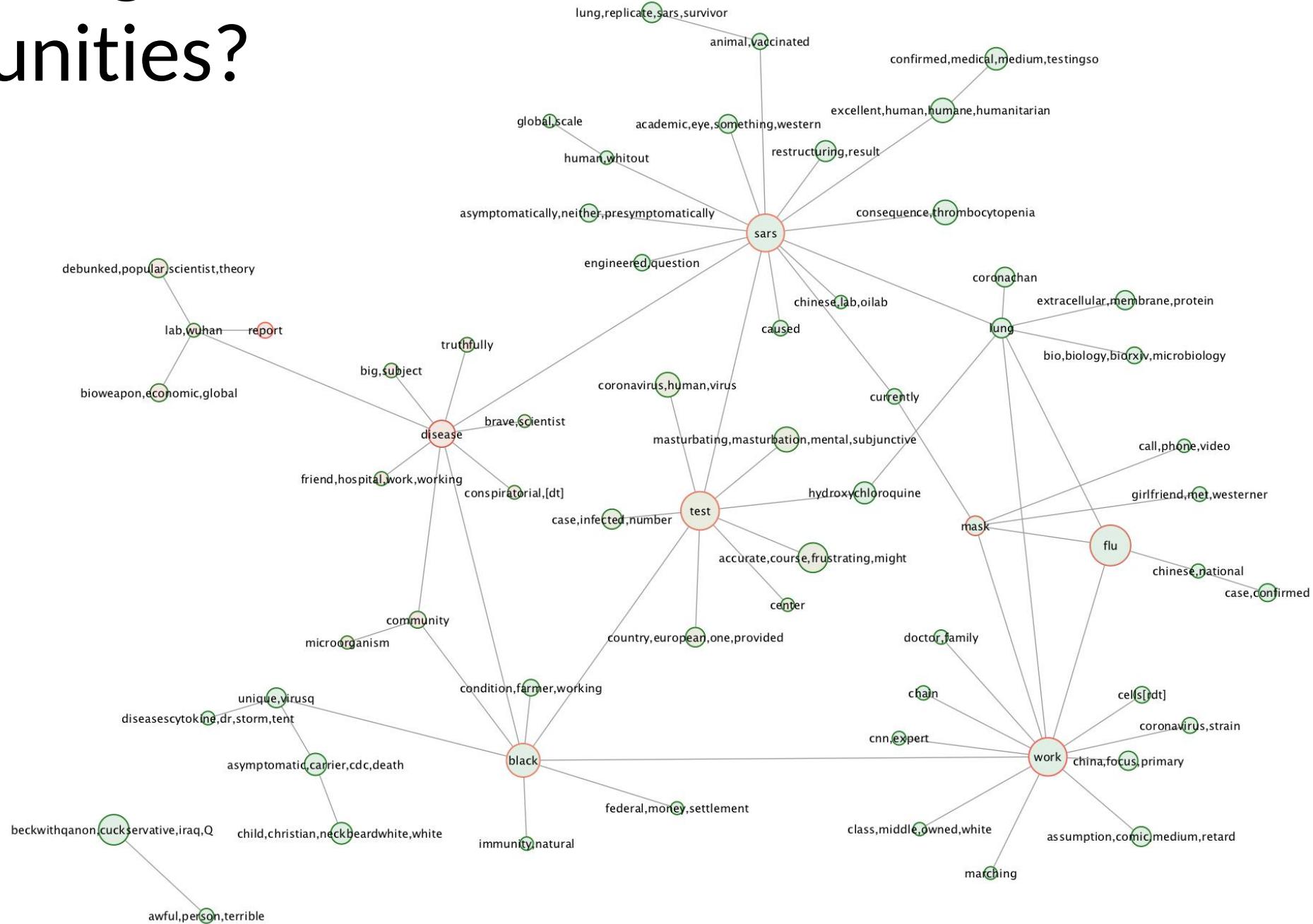
Bioweapon



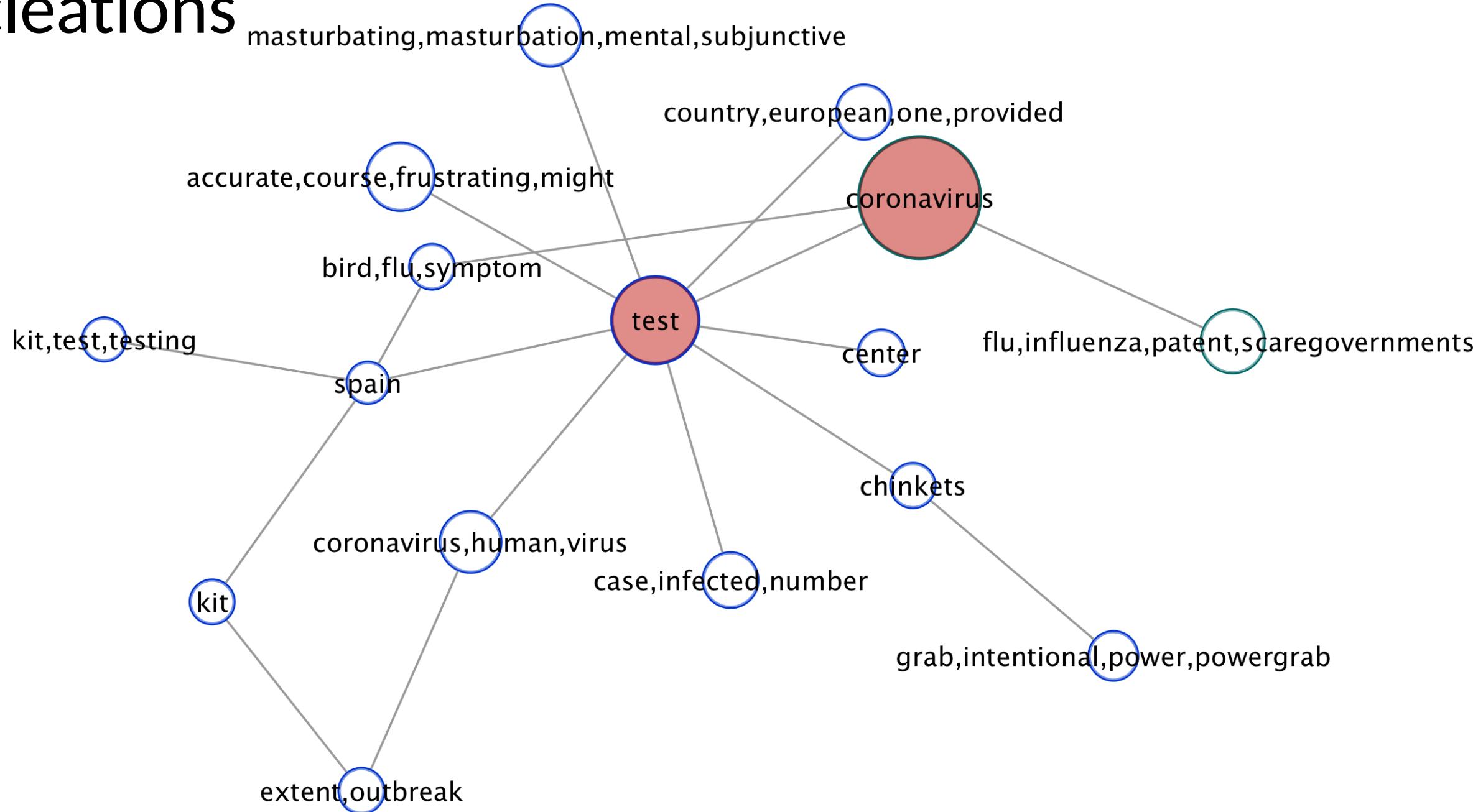
Hoax



Supporting communities?



Nucleations



Conclusions

- We can devise methods to:
 - Identify important actants and their interactant relationships from very noisy data
 - Identify context-specific threats (and potentially attendant strategies)
 - We can construct a narrative framework graph that presents a multi-scale representation of the narrative space
 - We can identify network features that may help us determine whether an emerging narrative framework has the hallmarks of a conspiracy theory

So what?

- Recognizing when something has the hallmarks of a conspiracy theory can help us:
 - Devise strategies for pointing out the nodes/relationships which are based on fiction → recall that conspiracy theories are fragile
 - Understand the motivations and potential target audiences for those conspiracy theories
 - Take action to minimize the damage of actions that may be taken on the basis of the conspiracy theory

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