

Patterns in WEB Content

Nello Cristianini

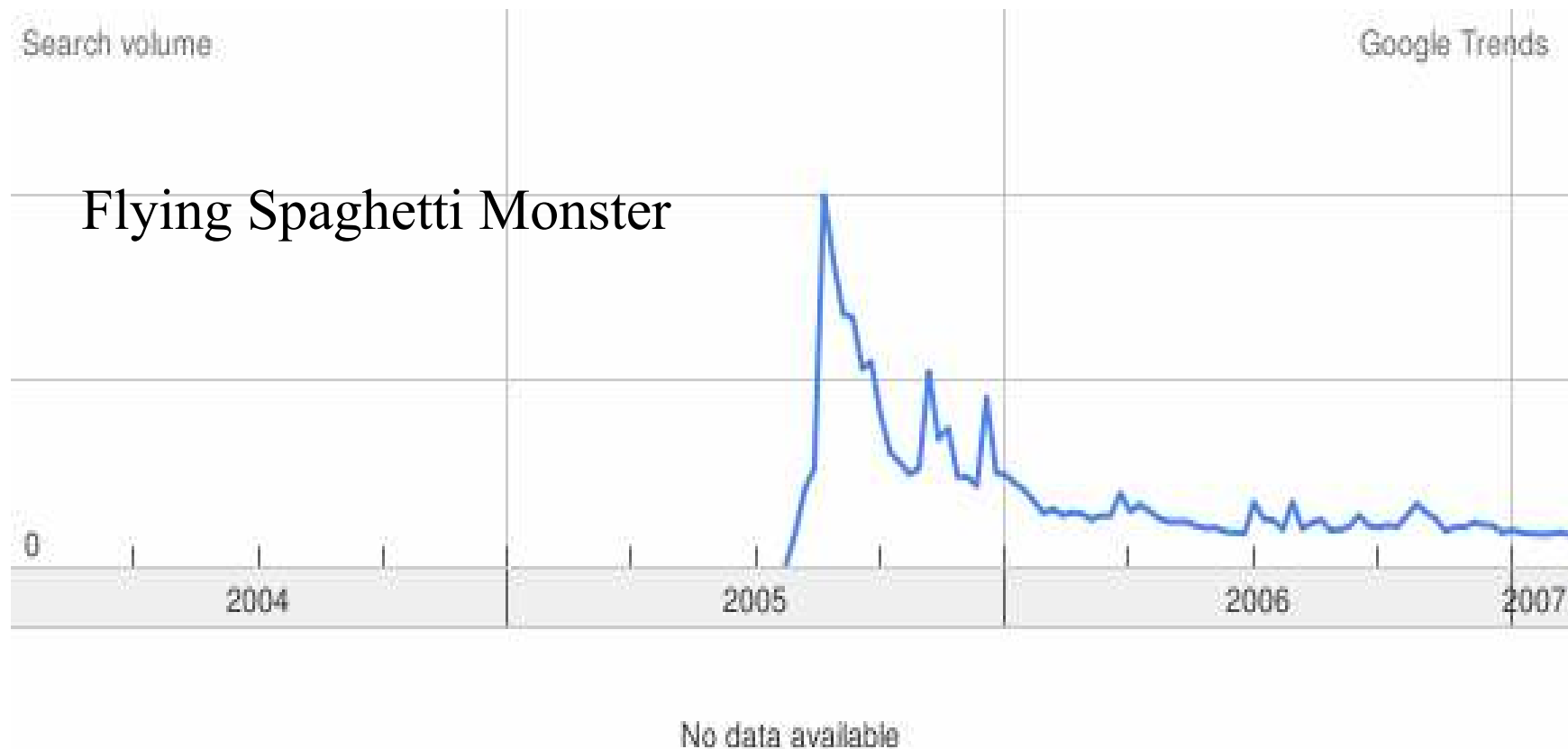
Our Project

- We are interested in understanding how the global media system works.
- This included newspapers, TV, Radio, blogs, newsgroups, etc.
- We are focussing on the *news* for the moment
- The basic idea: most (eventually all?) of the media content available online, can be analysed by machines

Our Project

- We are interested in understanding how memes propagate through the global media system.
- How can we detect, track, monitor the spread of a new meme?
- We will need to restrict to some class of memes – those that we can detect.

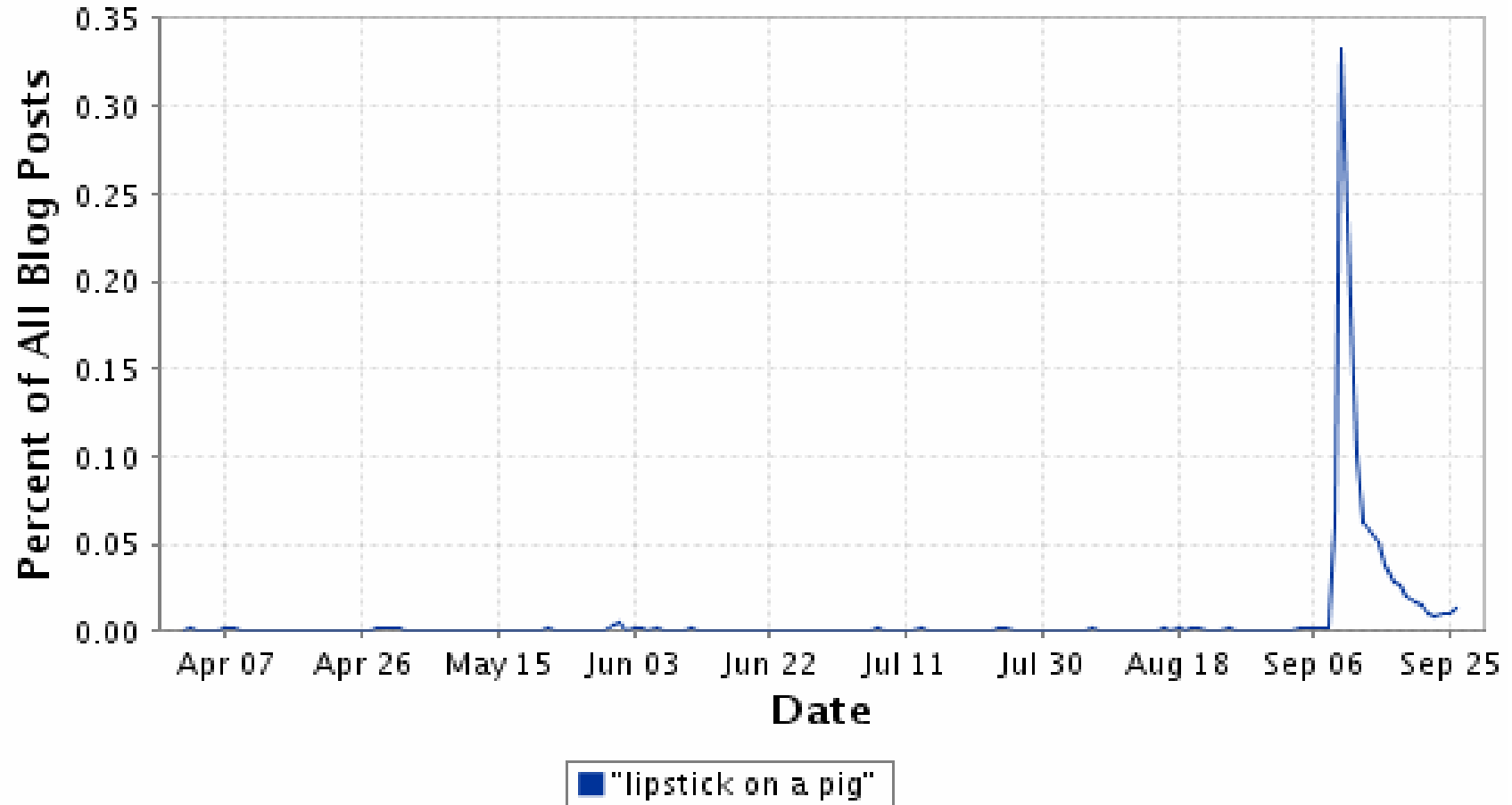
Birth of a Meme



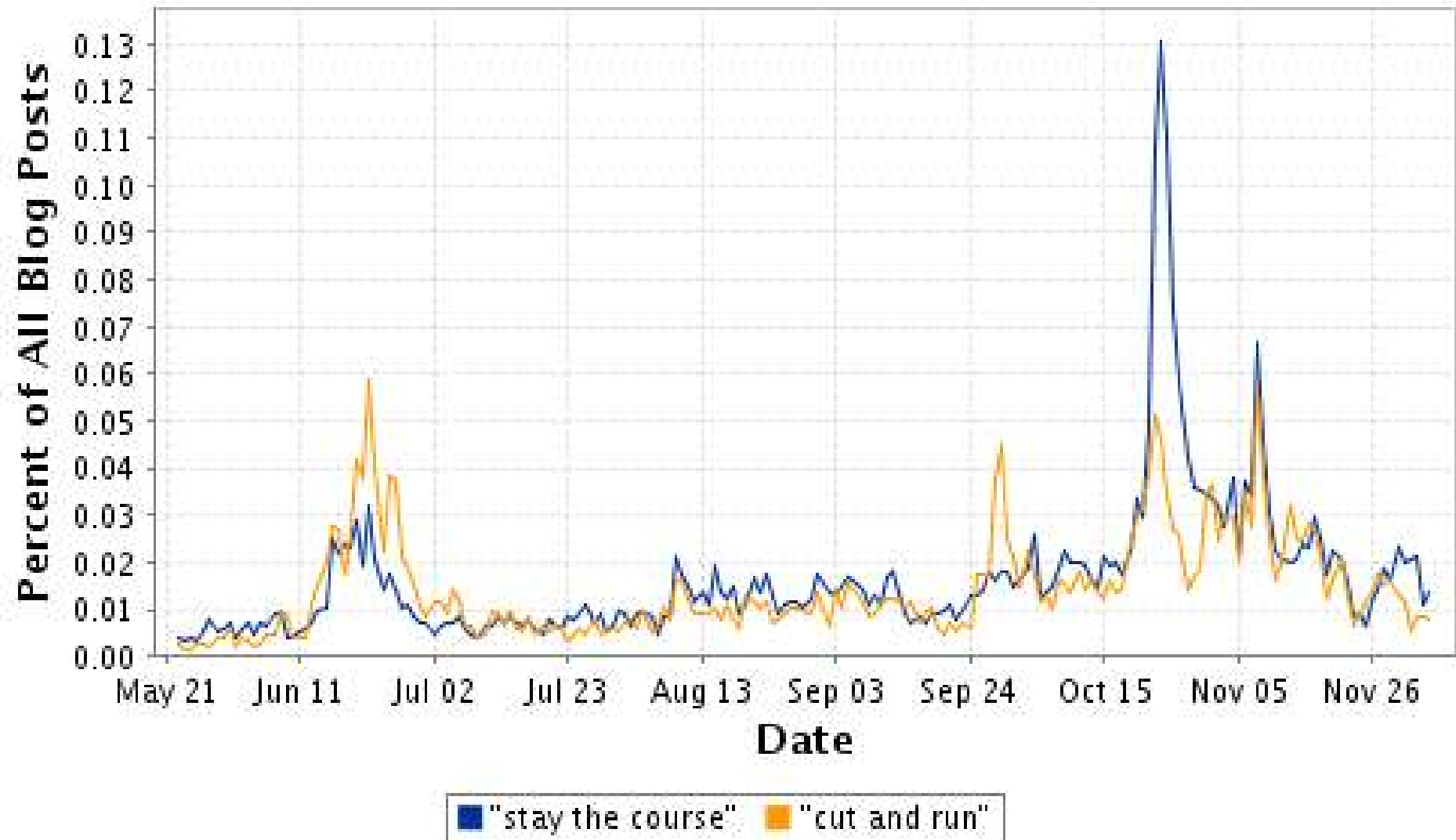
**An unlikely tri-gram, zero frequency before 2005, then started spreading...
Can we use n-grams as markers for the idea behind them?**

Mememes in Blogs

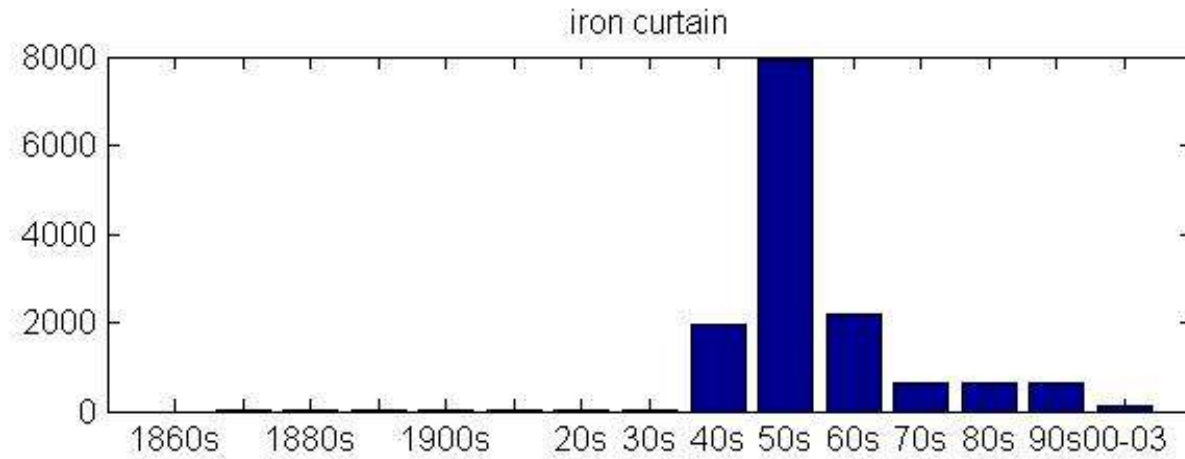
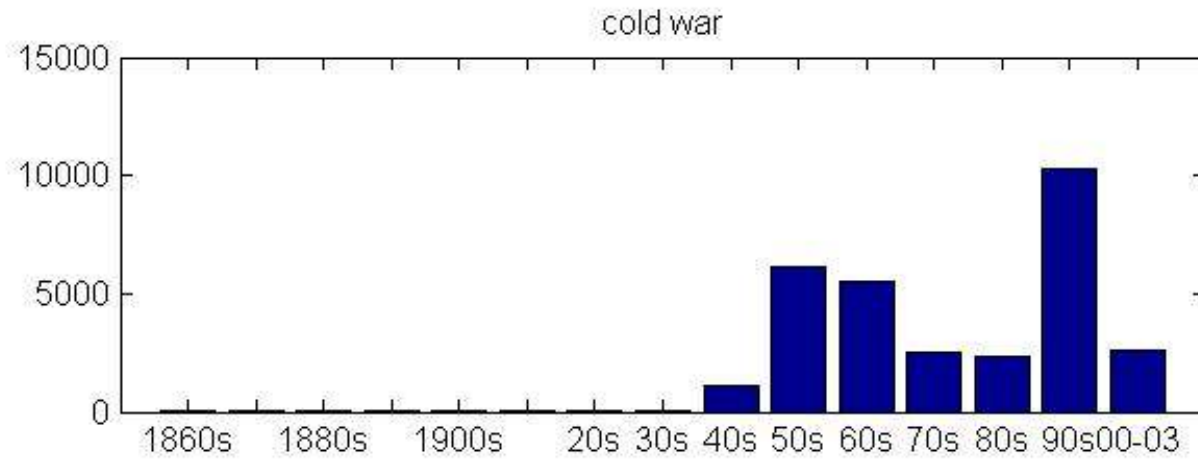
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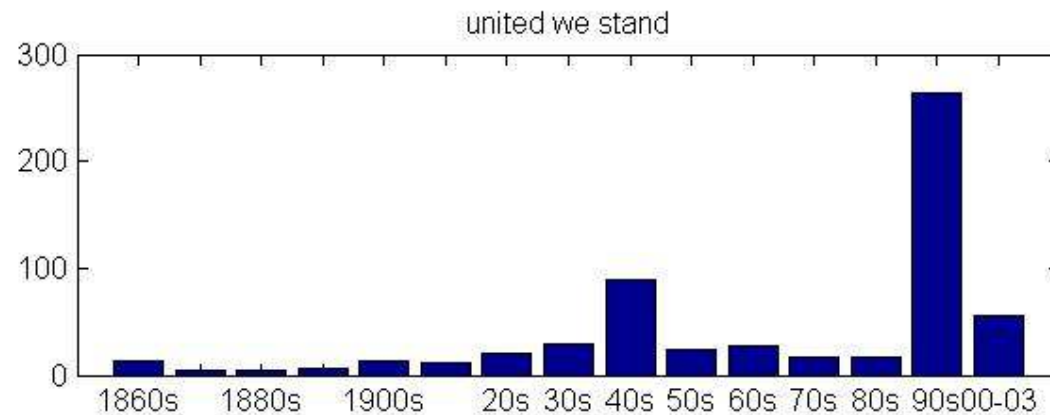
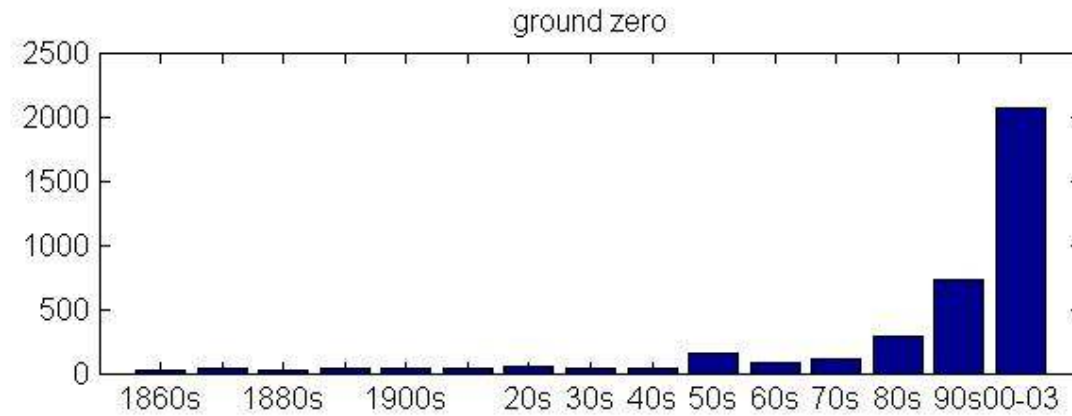
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NY Times



NY Times



Patterns in Media Content

- We are a Pattern Analysis group.
- We are looking for patterns (def. later) in the contents of the global media system
- Our goal is to read ALL news outlets ALL the time
- So far: monitoring about 1100 outlets, in 13 languages, ...

Patterns in Media Content

- We want to map the FLOW of memes through the GMS
- We can extract many types of information:
 - Slogans, propaganda (“united we stand”, “lipstick on a pig”) – (*n-grams*)
 - *Associations* between entities (“saddam hussein” / “osama bin laden”)
 - Stories (clusters of news-items on same event / topic) (“sarah palin’s daughter”)
 - Facts / Beliefs - (statements entailed by the content of the articles) (e.g., “obama is a muslim” or “sarah palin’s daughter is pregnant”)

NewsPatterns - Saturday 21 June 2008

Monitoring 454 News Outlets and 6 Languages.

Read more...

Jamie Lynn Spears Activity



Jamie Lynn Spears Share



- Read (18,79)
- Barack Obama (12,290)
- Jamie Lynn Spears (1,181)
- Other (61,89)

People Today

- Read (73)
- Barack Obama (45)
- John McCain (23)
- Bush (20)
- Britney Spears (19)
- Jamie Lynn Spears (18)**
- Robert Mugabe (14)
- Amy Winehouse (11)
- Candice Rice (10)
- Tim Russert (8)

Organisations Today

Map Timeline Social Network Bar Chart Text Only



Jamie Lynn Spears (18)

Jamie Lynn gives birth

20 Jun 2008 04:16:27 GMT

It's a girl, y'all! Jamie Lynn Spears gave birth to Maddie Briann this morning at Mississippi Southwest Regional Medical Center in McComb, Miss. It's the first child for the 17-year old Zoey 101 star and her fiance, 19-year old.

Jamie Lynn Spears Has a Baby Girl

20 Jun 2008 04:16:14 GMT

There is a new baby in the Spears clan! Jamie Lynn Spears and her fiance Casey Aldridge welcomed a baby girl Thursday morning. PEOPLE confirms exclusively that the baby was named Maddie Briann. "Just the family was there," says a source about the birth around 9:30 a.m. at a hospital in Mississippi, near her Louisiana hometown. "Everyone

Report: Spears Gives Birth To Girl, Maddie

20 Jun 2008 04:15:22 GMT

People magazine reports that Britney Spears' younger sister, Jamie Lynn Spears, has given birth.

Search Today's News

Locations Today

- U.S. (157)
- China (58)
- New York (27)
- Japan (27)
- Washington (26)
- London (24)
- United States (21)
- Iraq (20)
- India (20)
- Britain (26)
- More >

Sequence

- jung sun suk lee (3)
- ile de france (4)
- nicolas Sarkozy (4)
- the treaty of lissabon (3)
- the heads of state (4)
- summit in brussels (3)
- of the european union (3)
- secretary of state for sports (2)
- the second round of G2
- around paris (3)
- More >

Sequence from Translated Spanish

Transferring data from newspatterns.emn.bris.ac.uk...

NewsPatterns - Mozilla Firefox
 http://newspatterns.enn.bris.ac.uk/

NewsPatterns - Saturday 21 June 2008

Monitoring 454 News Outlets and 6 Languages.
[Map](#) [Timeline](#) [Social Network](#) [Bar Chart](#) [Text Only](#)

Jamie Lynn Spears Activity

Jamie Lynn Spears Share

- Read (18,794)
- Barack Obama (12,290)
- Jamie Lynn Spears (7,949)
- Other (61,396)

People Today

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- Jamie Lynn Spears (18)
- Robert Muzshu (14)
- Ami Winehouse (11)
- Candolezza Rice (10)
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Organisations Today

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Sequence

- jung jin soo lee (3)
- ile de france (4)
- nicolas Sarkozy (6)
- the treaty of Lisbon (3)
- the heads of state (4)
- summit in brussels (2)
- of the european union (3)
- secretary of state for sports Bernard Laporte (2)
- the second round of G20
- around paris (3)

Sequence from Translated Spanish

Transferring data from newspatterns.enn.bris.ac.uk...

NewsPatterns - Saturday 21 June 2008

Monitoring 454 News Outlets and 6 Languages.

Read more...

Jamie Lynn Spears Activity



Jamie Lynn Spears Share



- Read (18,79)
- Barack Obama (12,24)
- Jamie Lynn Spears (9)
- Other (61,89)

People Today

- Read (71)
- Barack Obama (45)
- John McCain (23)
- Rush (20)
- Britney Spears (19)
- Jamie Lynn Spears (18)
- Robert Mugabe (14)
- Amy Winehouse (11)
- Condoleezza Rice (10)
- Tim Russert (8)

More >

Organisations Today

Map Timeline Social Network Bar Chart Text Only



Jamie Lynn Spears (18)

Jamie Lynn gives birth

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Jamie Lynn Spears Has a Baby Girl

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Report: Spears Gives Birth To Girl, Maddie

20 Jun 2008 04:15:22 GMT

People magazine reports that Britney Spears' younger sister, Jamie Lynn Spears, has given birth. [Read more...](#)

[Jamie Lynn Spears: The girl](#)

Search Today's News

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Sequence

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- ile de france (4)
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- secretary of state for sports bernard laporte (2)
- the second round of G5
- around paris (3)

Sequence from Translated Spanish

Election Watch'08

Election Watch automatically summarises news about the 2008 US Presidential race. [More](#)



Read Activity



Read Share



- Read (31.2%)
- Barack Obama (19.2%)
- John McCain (9.8%)
- Other (39.7%)



Heat Map Map Timeline Bar Chart Word Cloud Text Only



Search

Politicians

- Read (73)
- Barack Obama (45)
- John McCain (23)
- Bush (20)
- Robert Mugabe (14)
- Condoleezza Rice (10)
- Tim Russert (9)
- Gordon Brown (8)
- Ran (7)
- Michelle Obama (7)
- [More >](#)

Read (73)

China to raise fuel prices

20 Jun 2008 04:13:53 GMT

Read full story for latest details.
[Read more...](#)

Thailand braces for anti-government protests

20 Jun 2008 04:13:53 GMT

Read full story for latest details.
[Read more...](#)

French economy forecast to halt

20 Jun 2008 04:13:53 GMT

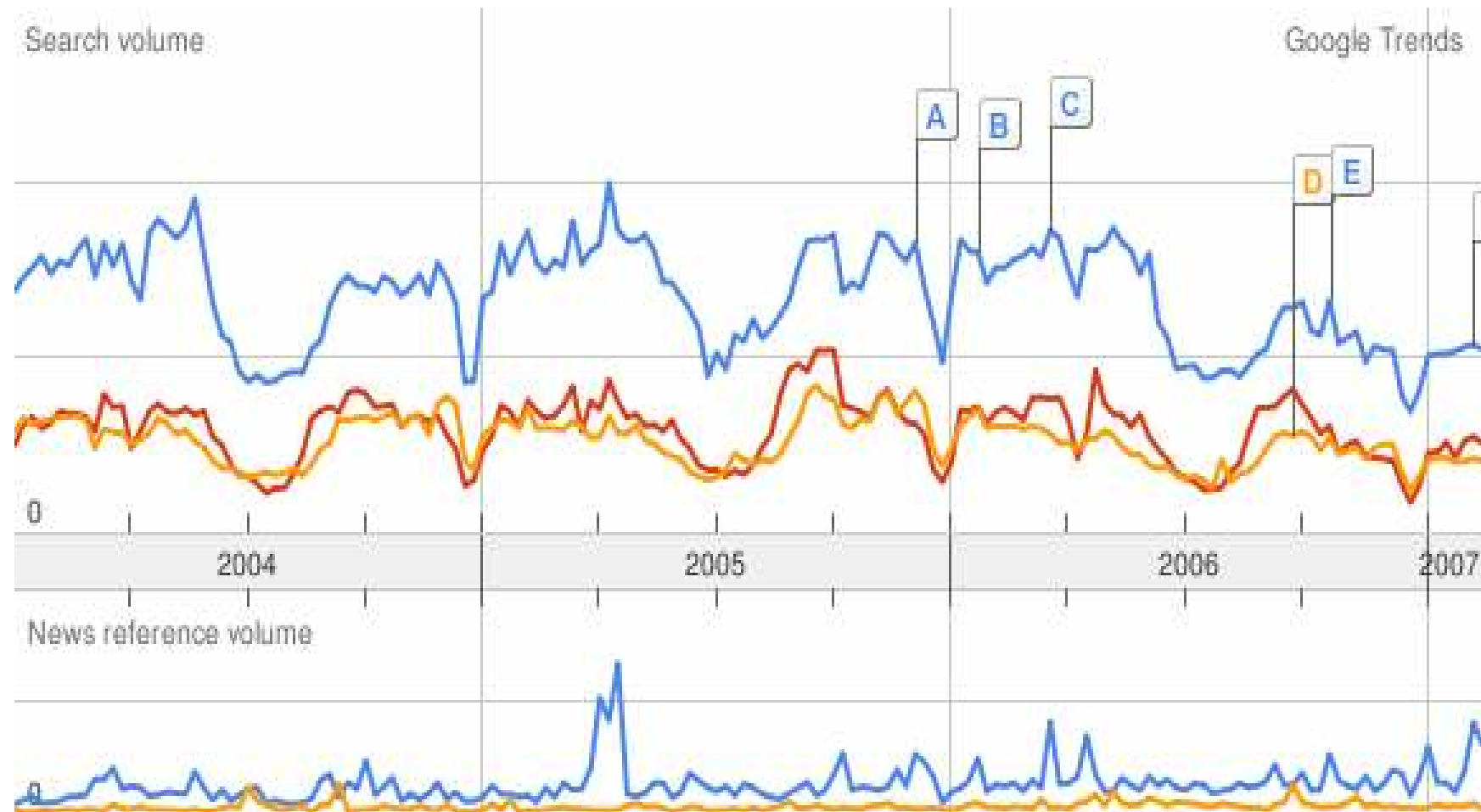
Read full story for latest details.
[Read more...](#)

micelangelo

"galileo galilei"

"machiavelli"

Strange Life of Some Memes

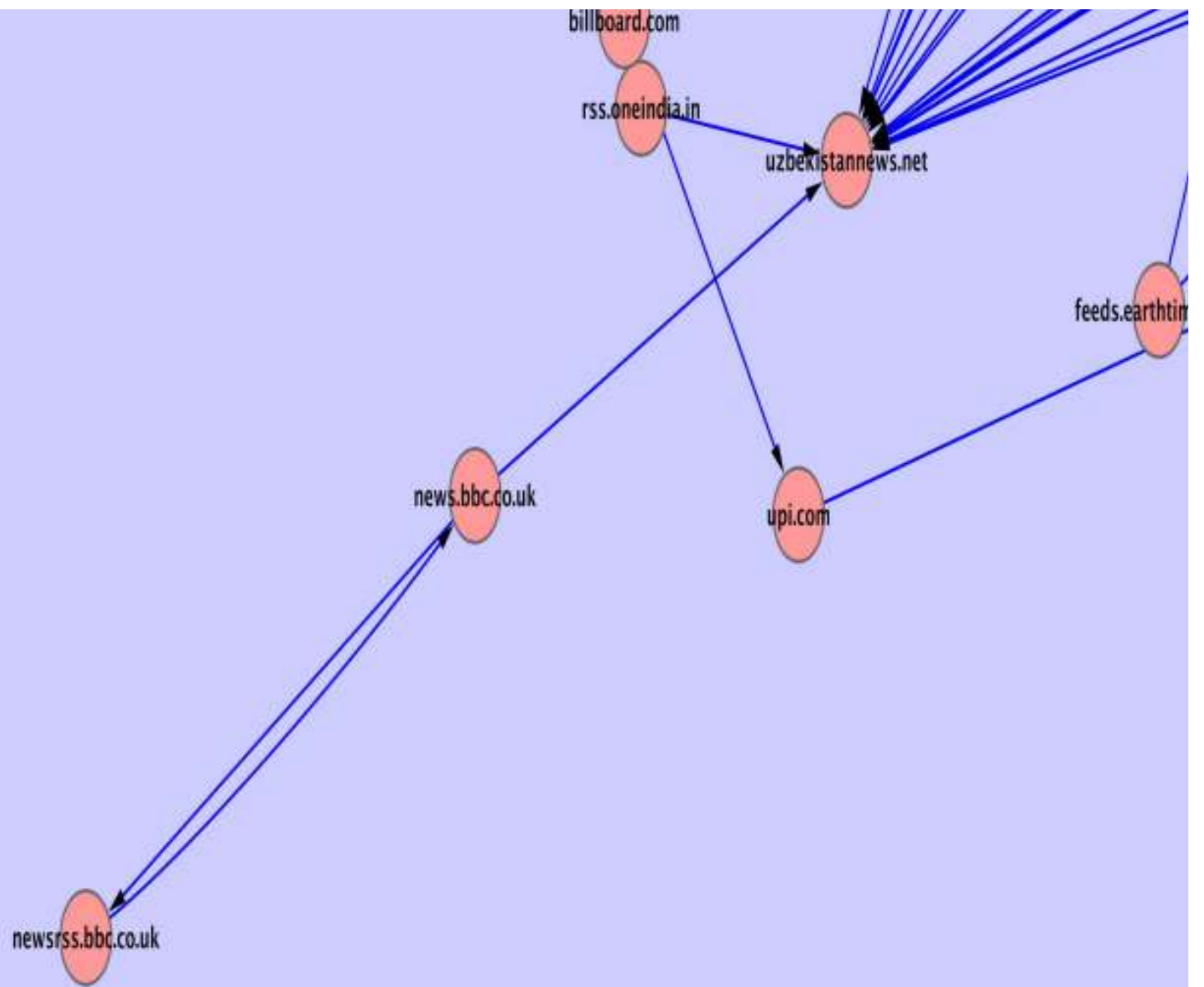


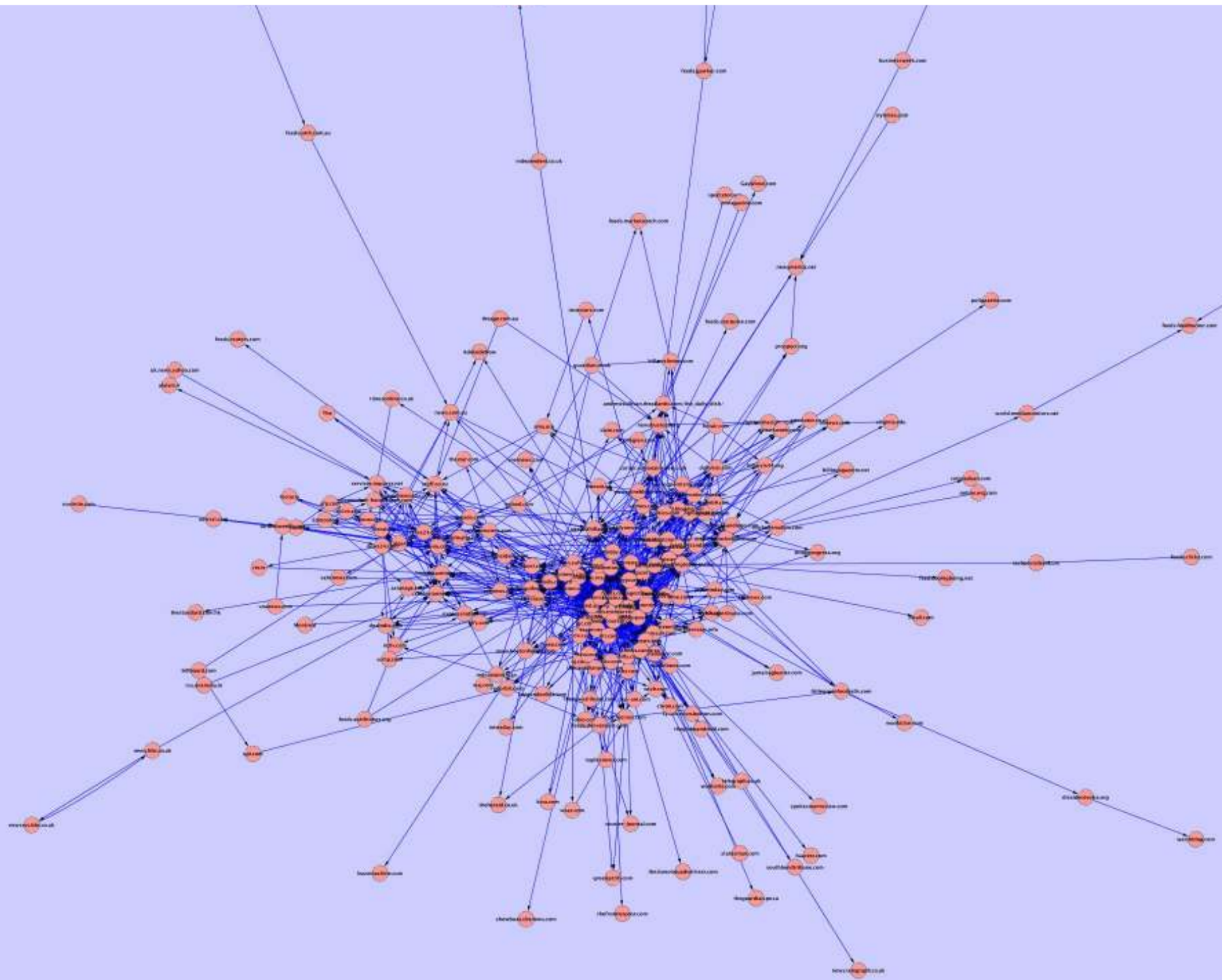
Operational Definitions

- Can we say – as operational definition – “memes in content = patterns in content”?
- [pattern propagated by imitation]
- Or can at least use this for a subset of memes, those that allow a pattern to represent them?
- We need to understand this – how many memes in the media content cannot be captured as patterns...

Tracking Replicated Text...

- Network of text reuse between outlets (large chunks of text, can only be copied, very unlikely they have been re-created independently)
- Can these long n-grams count as replicators?





Opportunities

- patterns in text
- patterns in time series
- network analysis
- classification of topics
- image analysis
- machine translation
- speech recognition
-

Grand Challenge

- can we assemble a system that can do all of thee things, and MAKE SENSE of the content of all newspapers in the world?
- in the process we will learn a lot about pattern analysis, machine intelligence
- talk to me about it

CONCLUSION

- many aspects of science and tech are now data driven
- we rely on pattern-analysis technology
- many fields have developed their tools and solutions
- we need to develop a simple and unified understanding of this: challenge for theoreticians

CONCLUSION

- current search technology so powerful that we can EASILY fool ourselves into detecting patterns that do not exist
- proper theoretical framework is needed
- this will involve optimisation and statistics as its language

- applications are driving the need for a unified understanding too
- web, biology, vision have had a major influence on the field in the past decade

- we need all your help and all your ideas