



# #VACCINE HESTITANCY

Analyzing Online Conversations as Formative Communication Research

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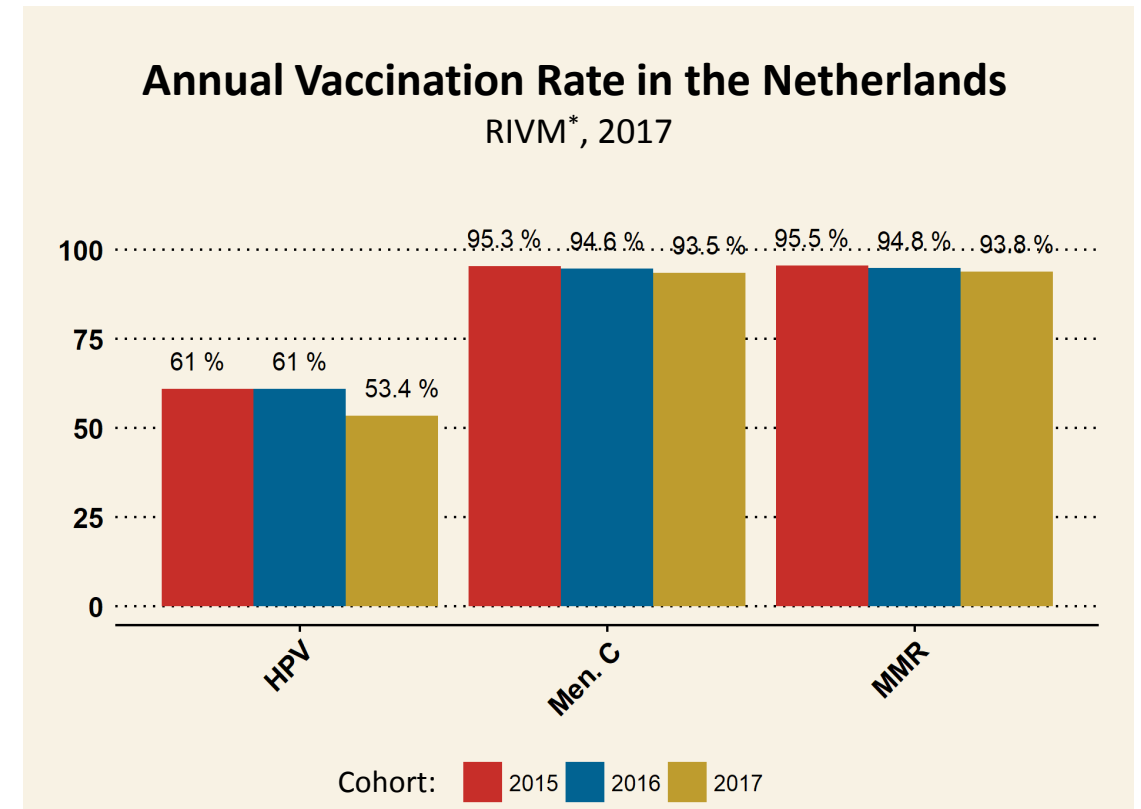
[lutkenhaus@eshcc.eur.nl](mailto:lutkenhaus@eshcc.eur.nl)

INTRODUCTION:

# Vaccine Hesitancy

- Vaccination rates in NL are declining (RIVM\*, 2017)
- Complex and context specific; varying across time, place and vaccines (WHO, 2017)
- How is vaccine hesitancy discussed online?

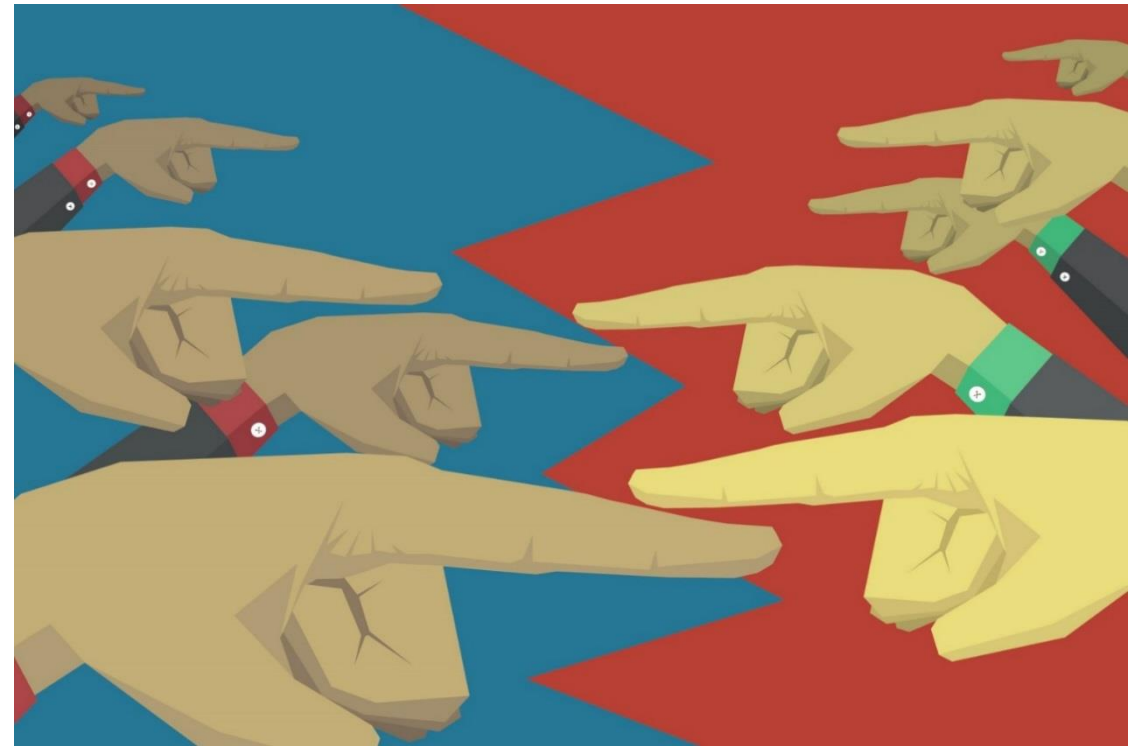
\* The Dutch National Institute for Public Health and the Environment



THEORY:

# Role of Internet

- Communities of likeminded audiences
  - Existing opinions confirmed by peers (echo chambers)
  - Selective exposure (filter bubbles)
- Result: Polarisation and normative effects
- RIVM\*: Situation in the Netherlands?



\* The Dutch National Institute for Public Health and the Environment

THEORY:

# Why should we analyze conversation networks?

- Analyzing conversation networks as stakeholder analysis
- Formative research to identify...
  - Online communities
  - Frames and narratives
  - Social influencers



METHOD:

# Data collection

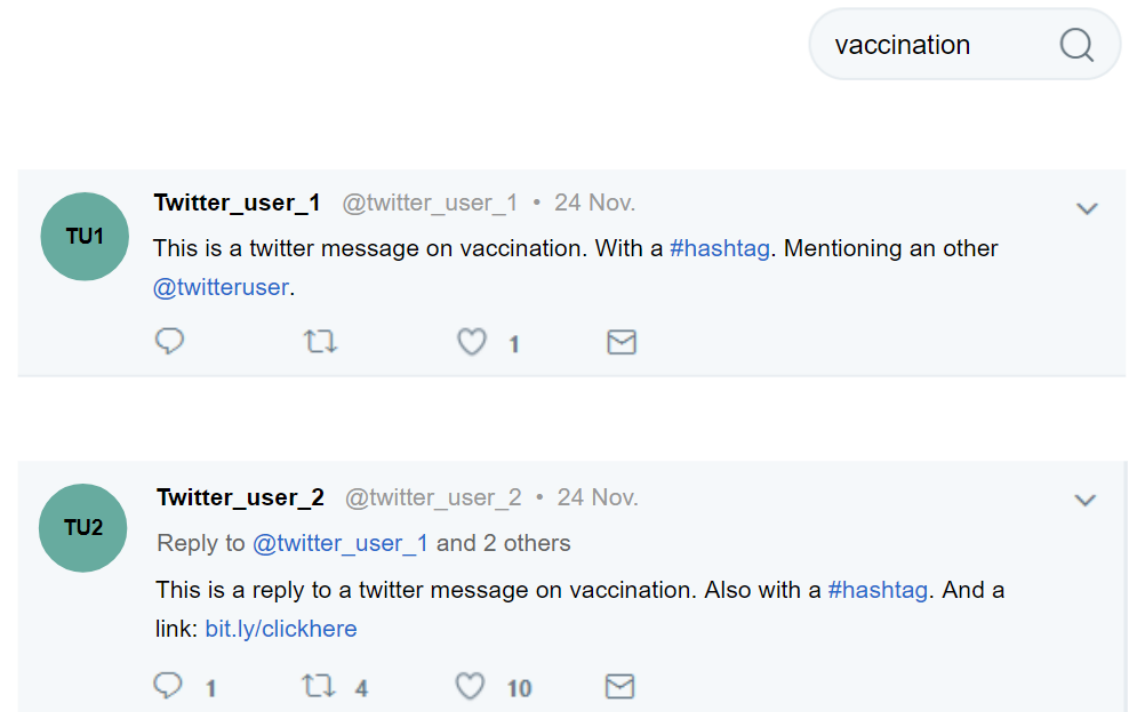
## 1. Retrieve tweets

- 23-8 until 9-10-2017

## 2. Retrieve *Followers (FLR)*

## 3. Retrieve *Following (FLG)*

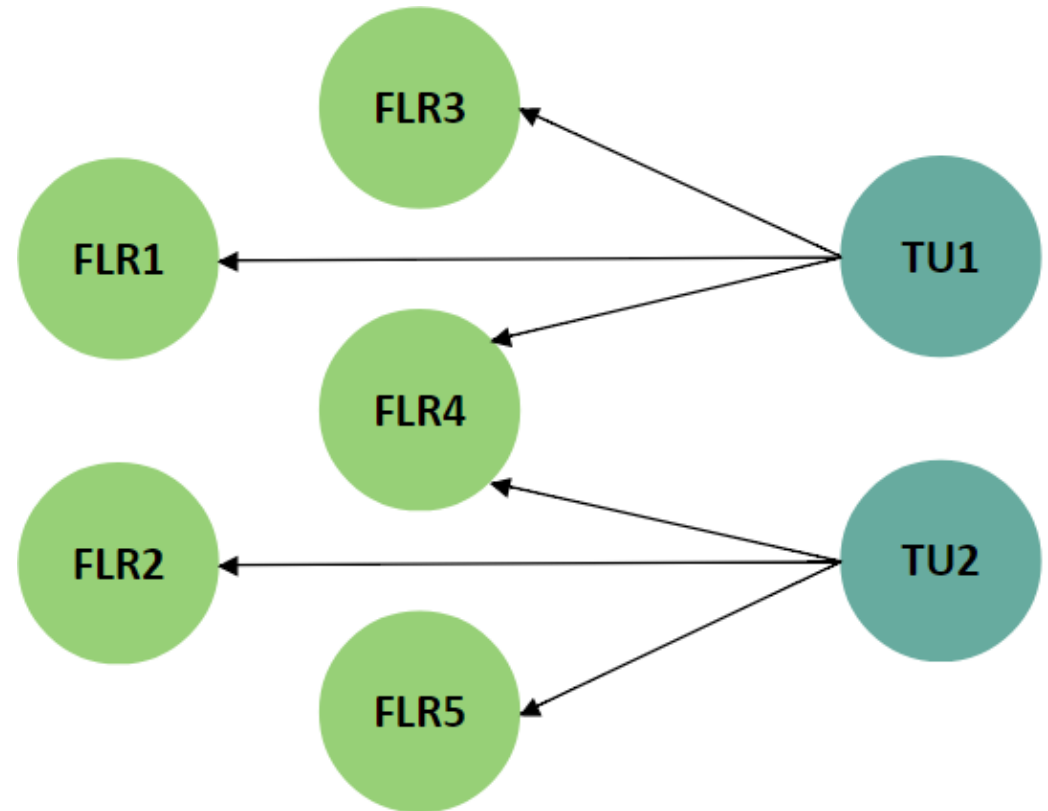
## 4. Create network data



METHOD:

# Data collection

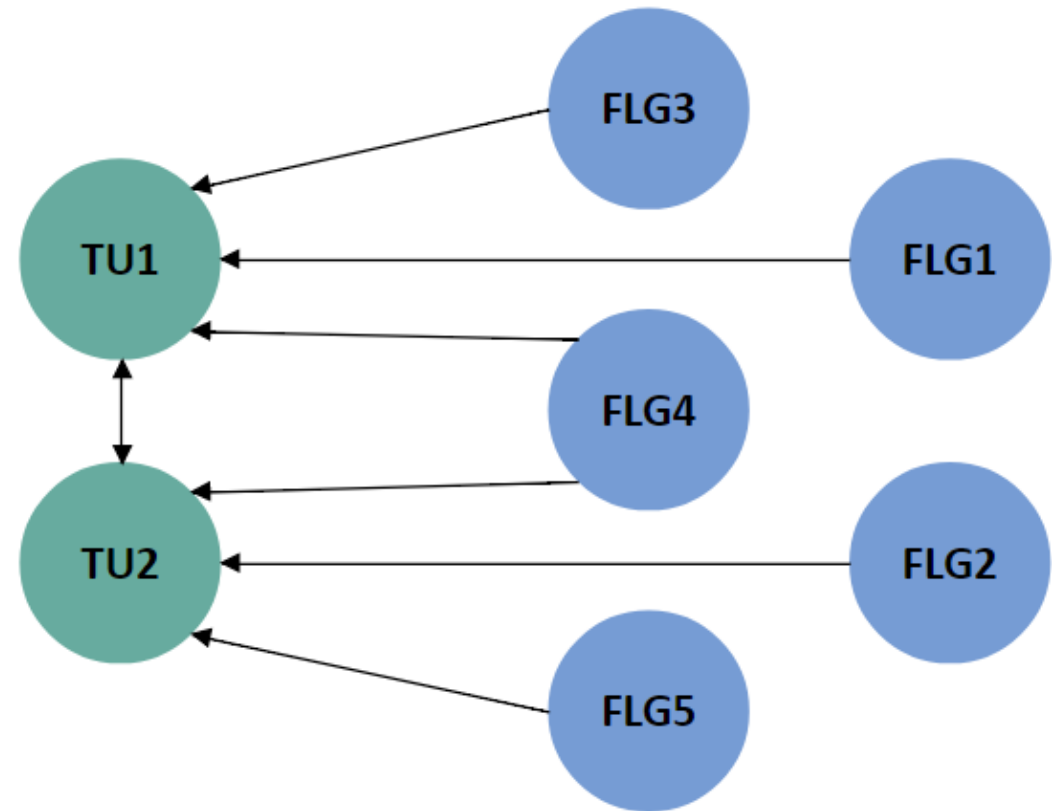
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METHOD:

# Data collection

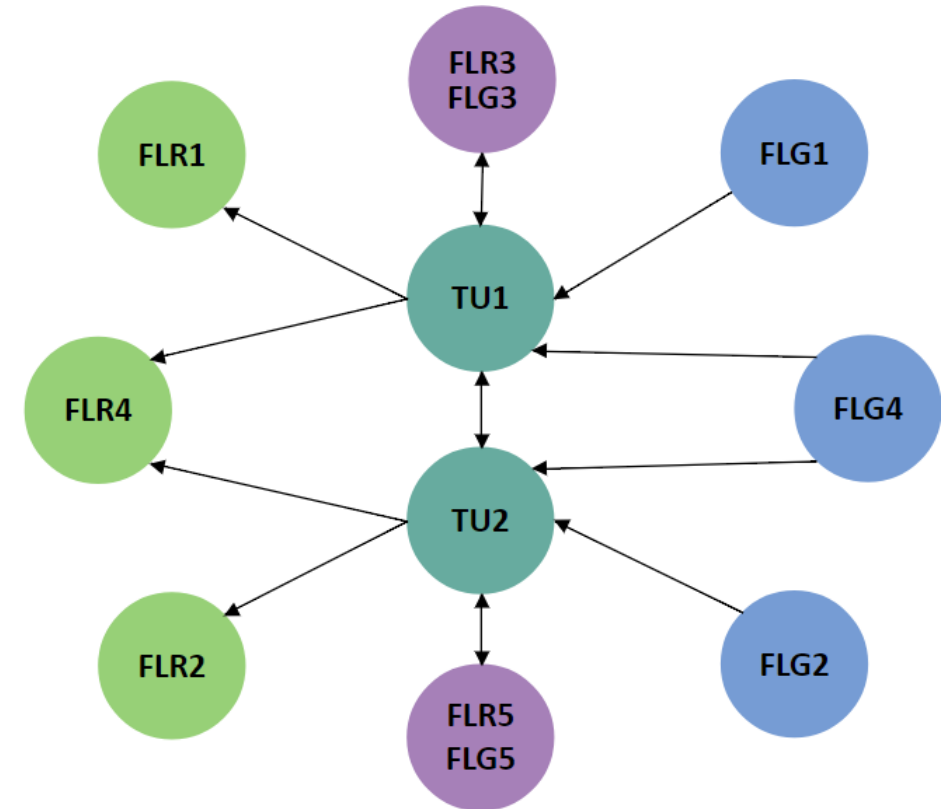
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METHOD:


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METHOD:

# Analysis cycle



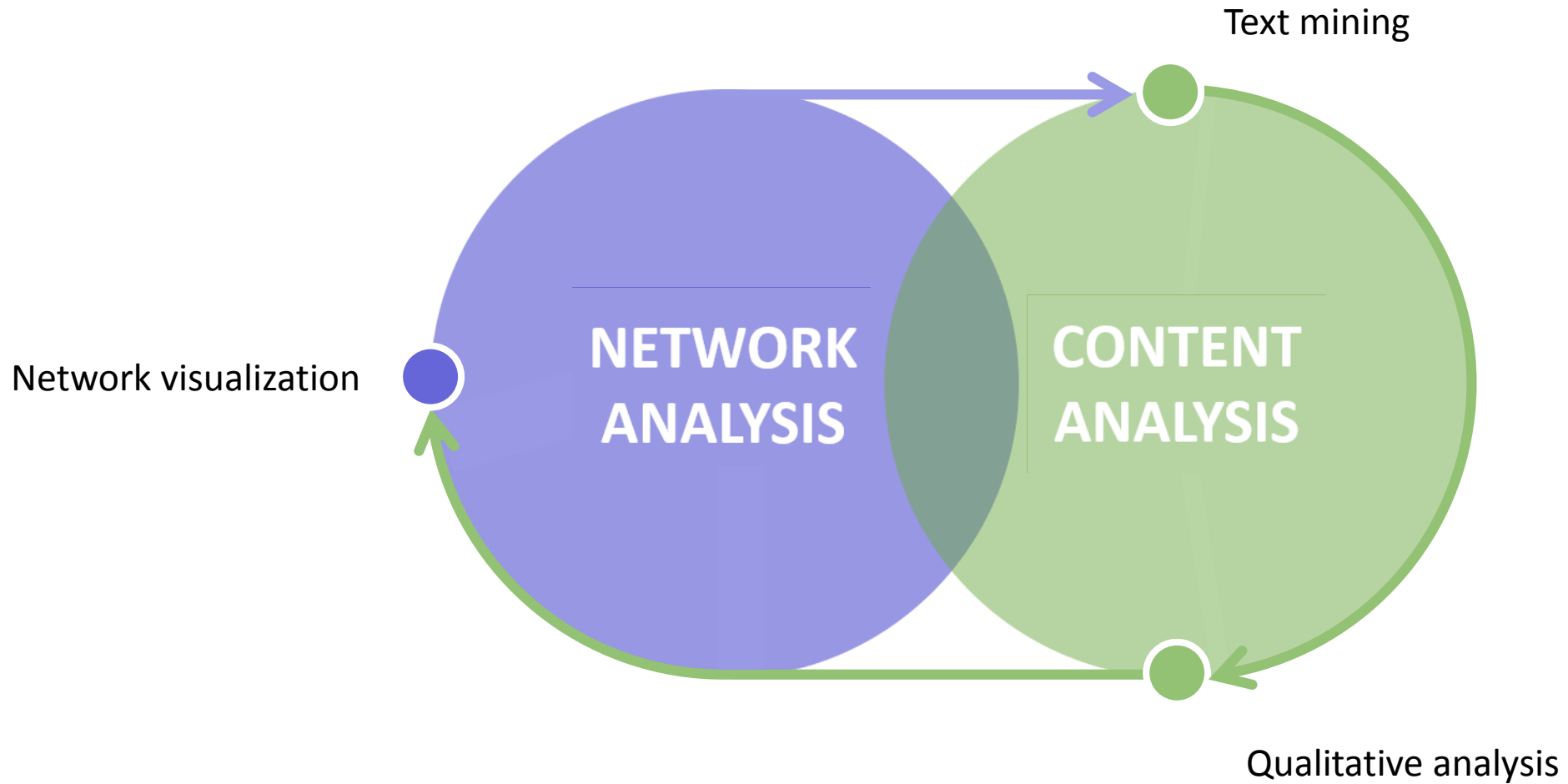
**NETWORK  
ANALYSIS**



**CONTENT  
ANALYSIS**

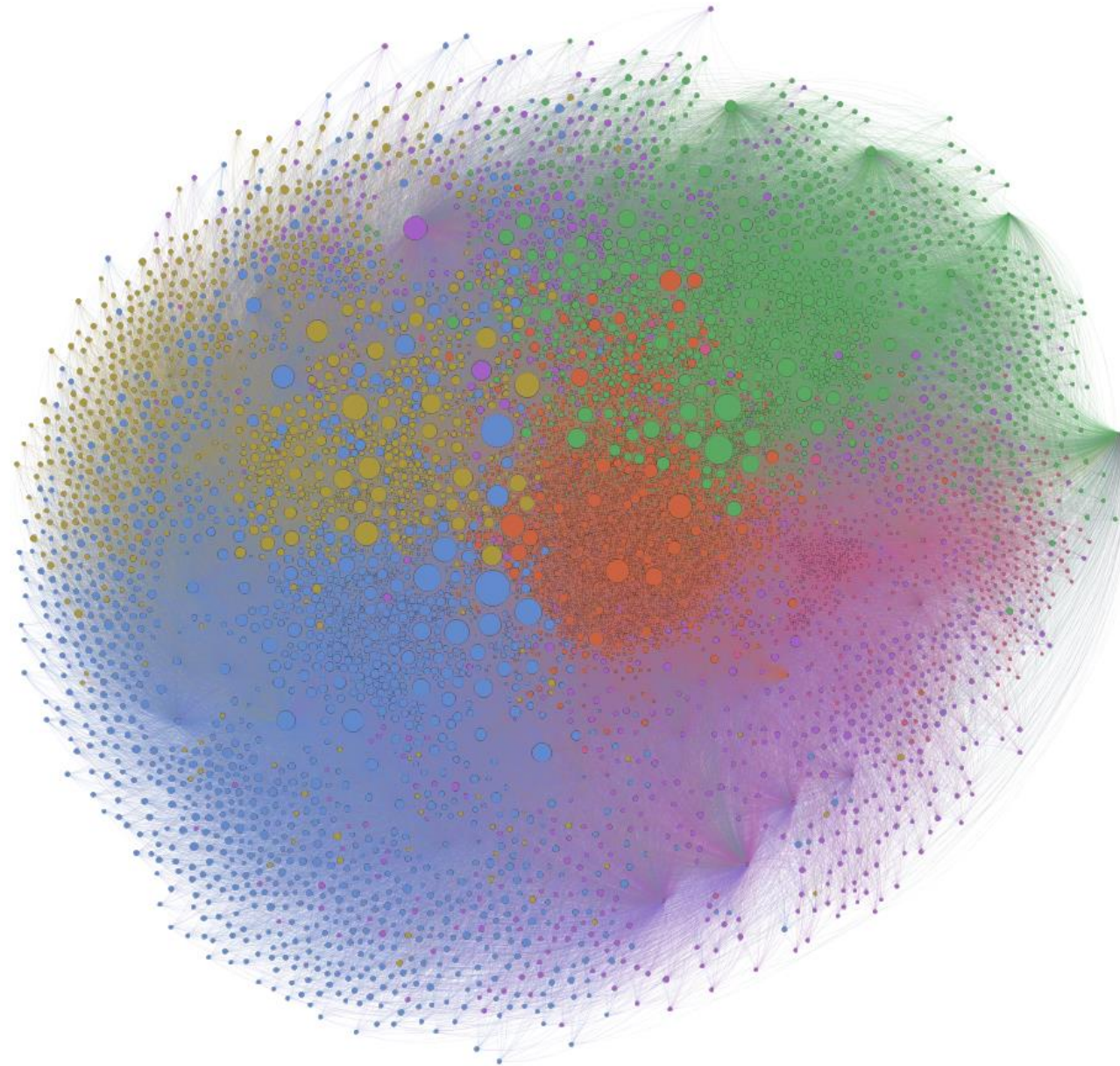
METHOD:

# Analysis cycle



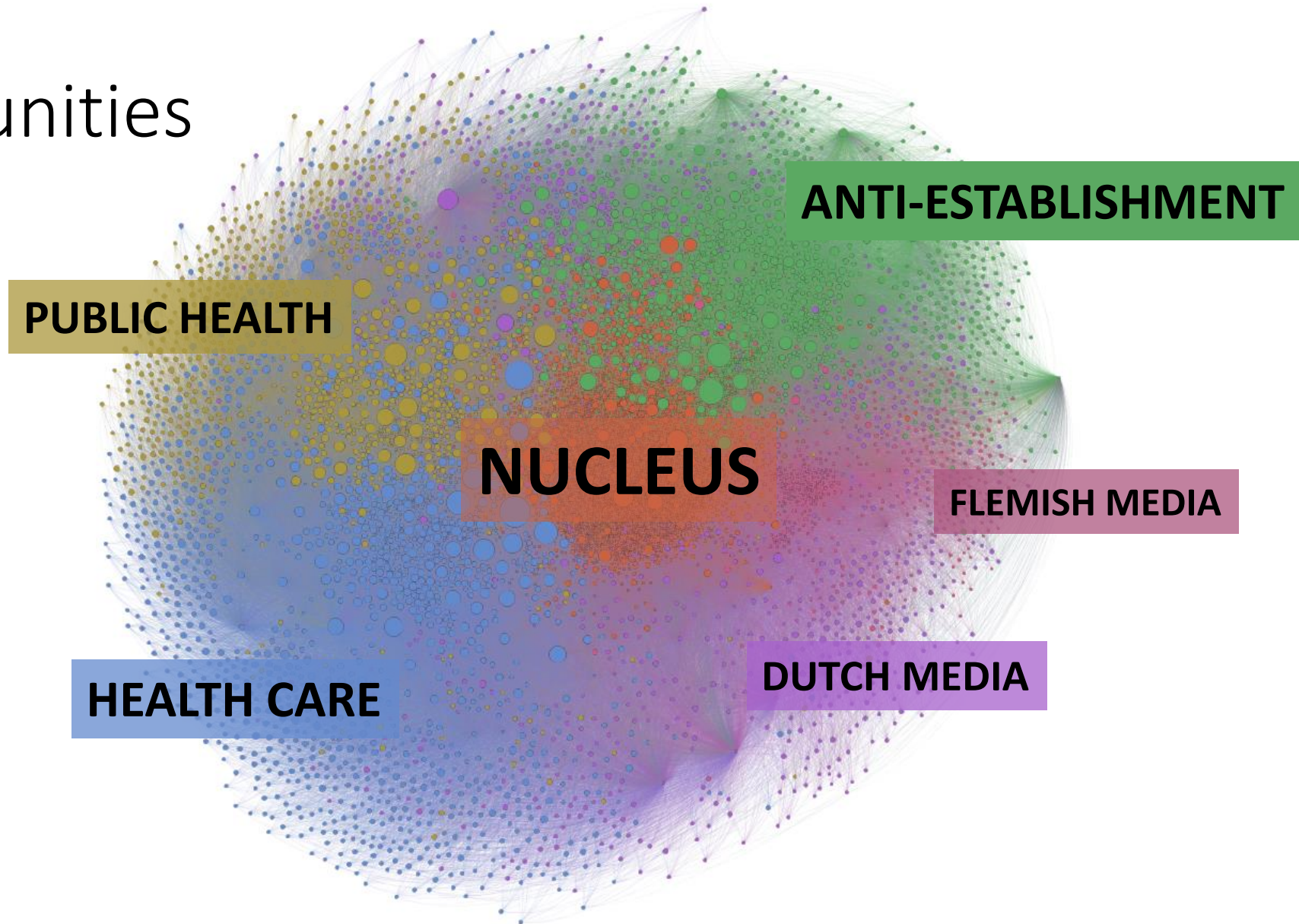
RESULTS:

# Network



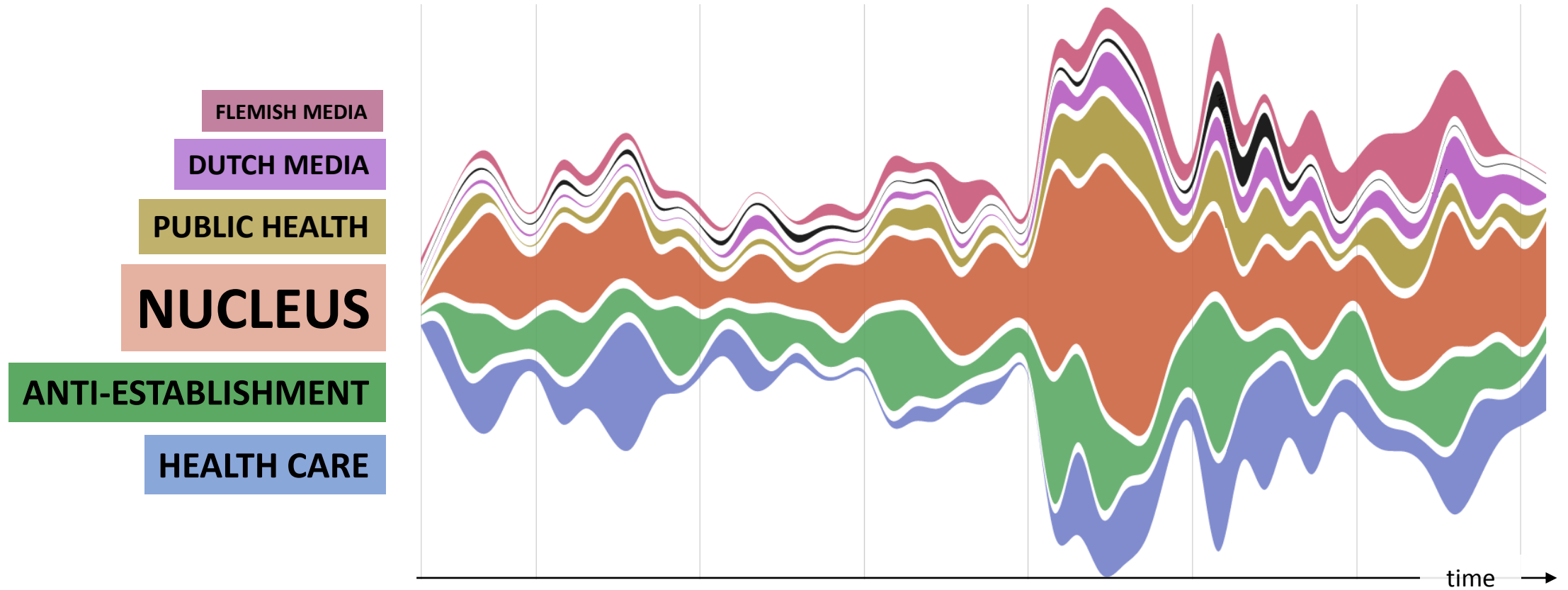
RESULTS:

# Communities



RESULTS:

# Community activity over time

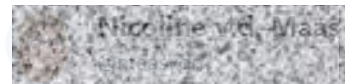


RESULTS:

# Frames and narratives



RESEARCH



Volgen

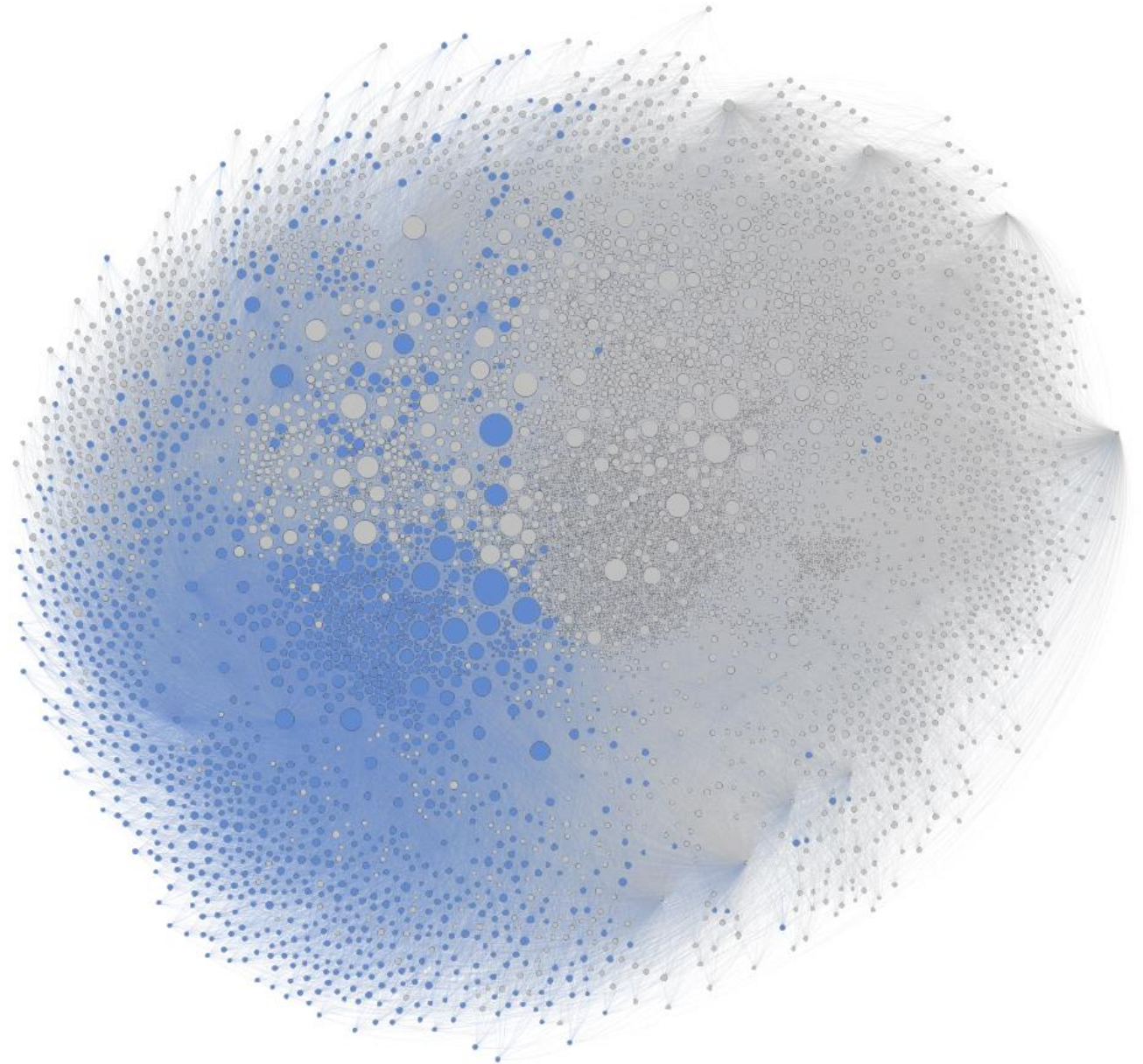
High vaccine effectivity found for [#hpv](#) vaccination in Scotland. Also indications for [#herd](#) immunity.

**Lancet Inf Diseases** @TheLancetInfDis

New online: Changes in prevalence of #HPV following a national bivalent #HPVvaccine programme in Scotland [thelancet.com/journals/lanin...](https://thelancet.com/journals/lanin...)

22:11 - 28 sep. 2017 vanuit [Utrechtse Heuvelrug, Nederland](#)

10 retweets 3 vind-ik-leuks



RESULTS:

# Frames and narratives



HEAD-IN-THE-SAND

Mark Tree Volgen

Vaccination: such gibberish, right?

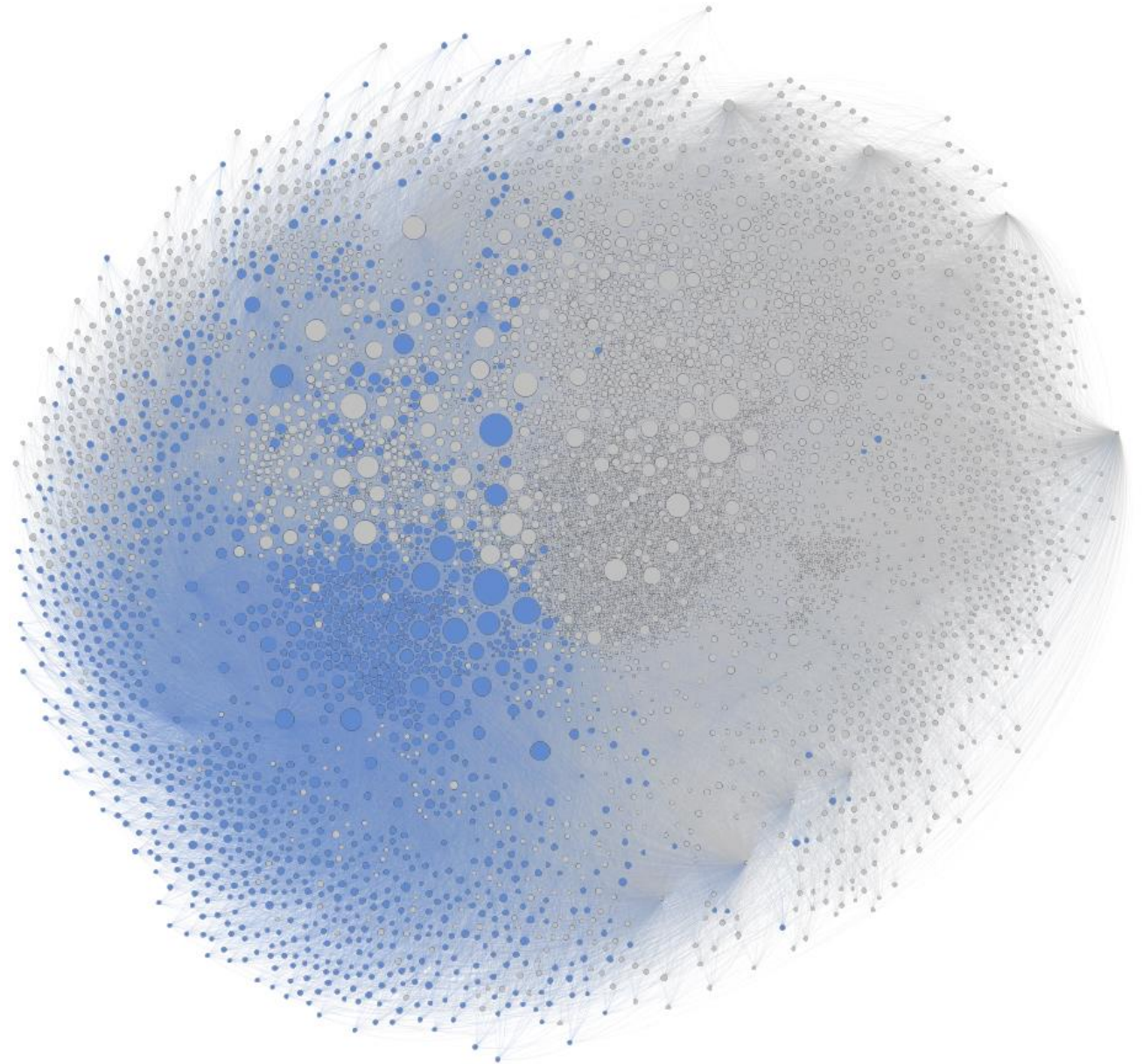
**ANNOUNCEMENT  
MEASLES.**

The Mayor of Tilburg hereby announces that,  
between the 3rd and 9th of June 1891, 22  
citizens of Tilburg died of the measles.  
Tilburg, 10th of June 1891  
The Mayor, Jansen

05:47 - 2 sep. 2017

159 retweets 197 vind-ik-leuks

11 159 197



RESULTS:

# Frames and narratives



CONSPIRACY

 **G10stis** Volgen

#tijdvoormax  
Who is this lying pro-vaccination fake-scientist? Vaccinating children for the flu, you're not in your right mind!  
02:48 - 20 sep. 2017

1 retweet 1 vind-ik-leuk 

1 1 1

 **G10stis** Volgen

Why no word about the complications of vaccination? #sponsored\_by\_big\_pharma

1 1

 **Tijd voor MAX** @tijdvoormax · 20 sep.

We're not sponsored. Don't worry.



RESULTS:

# Frames and narratives



FREEDOM

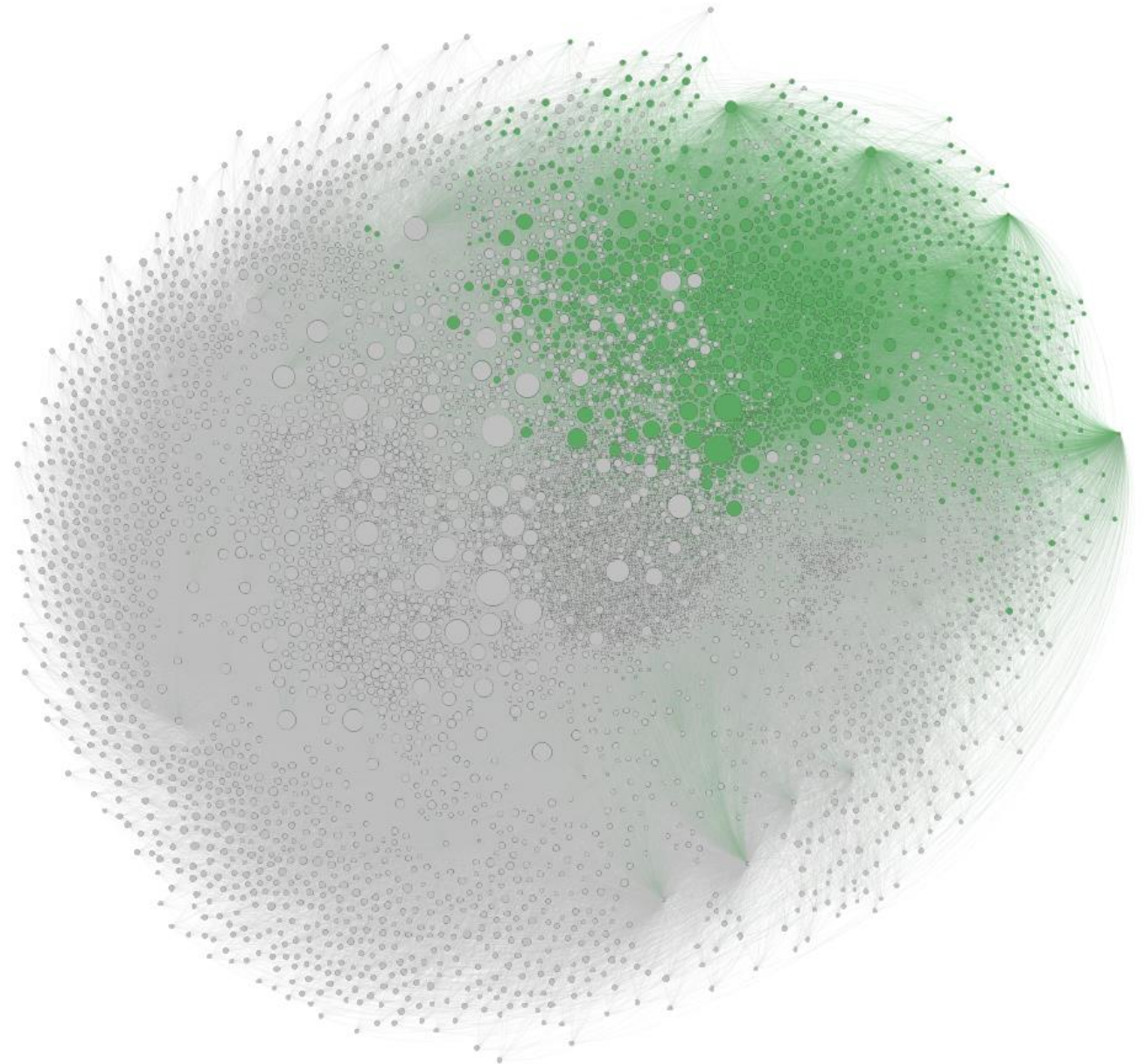


Volgen

Als antwoord op [@bhetebrj](#)

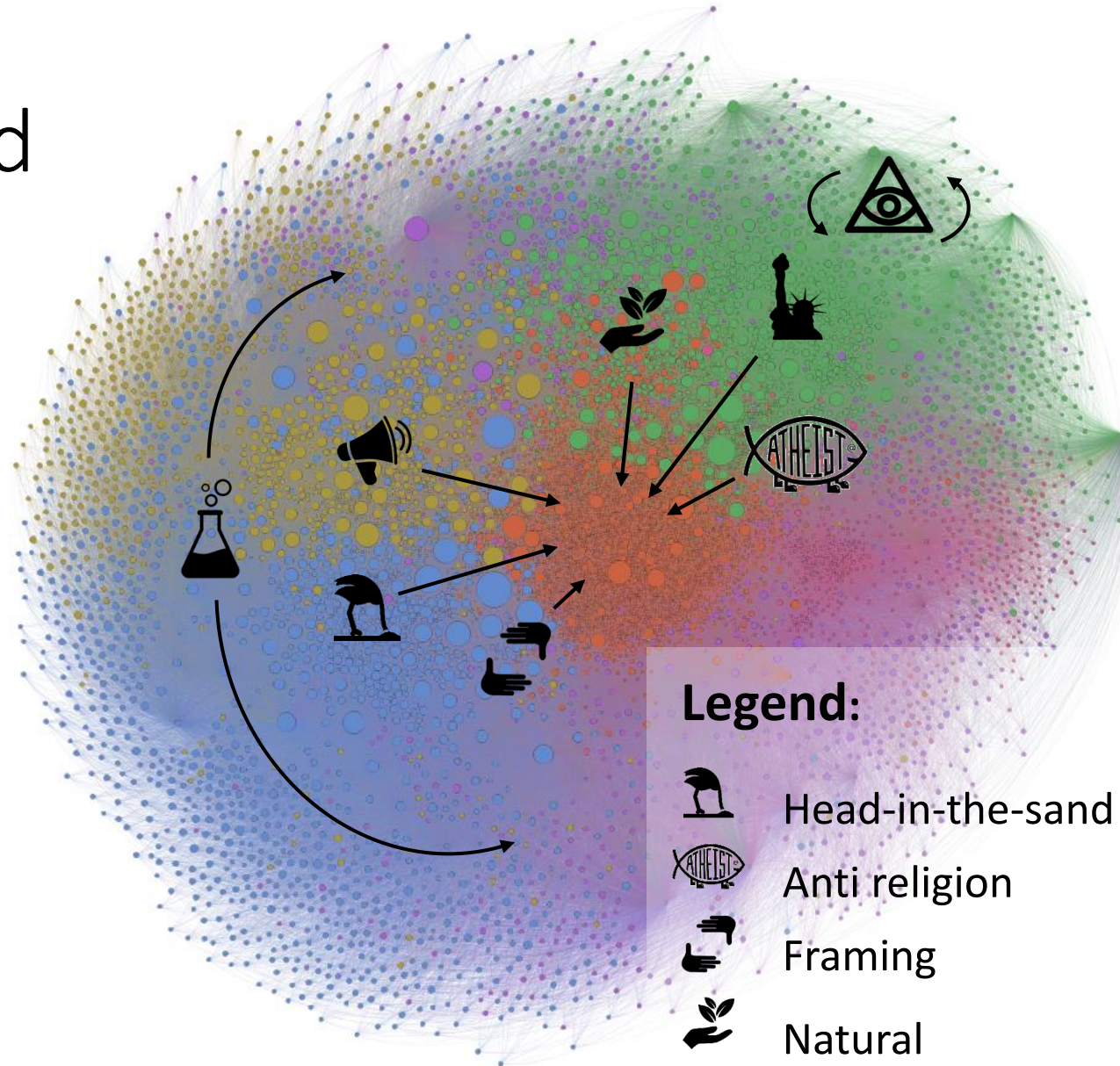
Do you now article 11 chapter 1 of the consitution: about physical integrity? It says that vaccination equals rape! No doubt about it.

04:12 - 5 sep. 2017



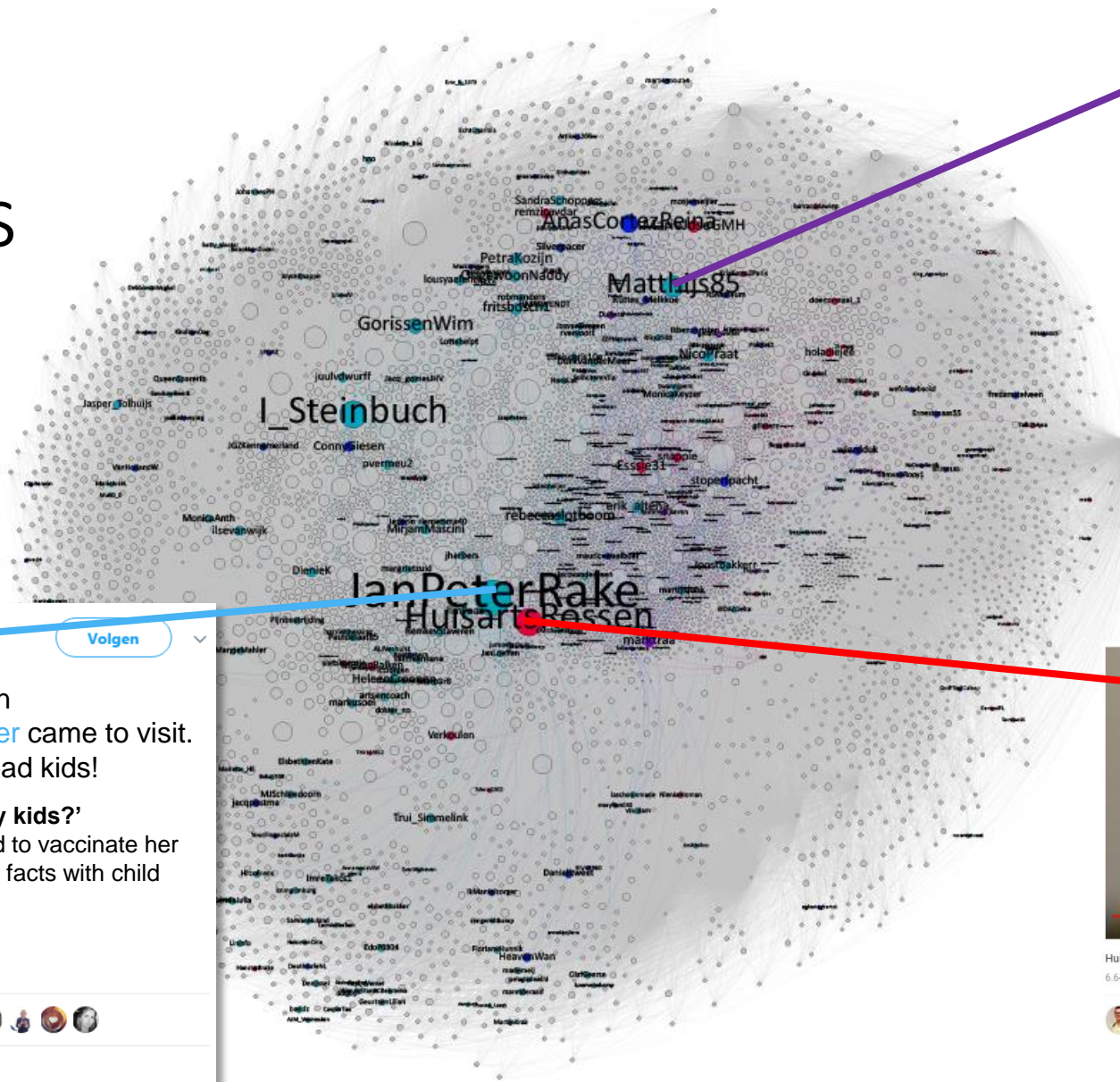
CONCLUSION:

# Frames and narratives



CONCLUSION:

# Identifying influencers



## Piratenpartij Amsterdam

VOOR DE STAD VAN MORGEN

### Matthijs Pontier

*Matthijs Pontier (30) is activist, wetenschapper, en duolid namens de Piratenpartij in het Waterschap Amstel, Gooi en Vecht, in een gezamenlijke fractie met De Groenen.*



Matthijs heeft zich altijd erg voor privacy, persoonlijke vrijheid, hervorming van het auteursrecht en democratische vernieuwingen geïnteresseerd. "Ik ben er van overtuigd dat er nooit te veel macht bij een kleine groep mensen mag komen te liggen. De vertrutting van Amsterdam laat meer dan eens zien hoe onze persoonlijke vrijheid onder druk



Jan Peter Rake  
@JanPeterRake

Volgen

After #vaccination discussion on @RTLLateNight, @paulinebijster came to visit. Thanks to #vaccination, less dead kids!



**'Should I vaccinate my kids?'**  
Pauline Bijster hesitated to vaccinate her kids. She discussed the facts with child surgeon Rake. [nowadaysparents.nl](http://nowadaysparents.nl)

14:04 - 8 apr. 2017

80 retweets 85 vind-ik-leuks



17 80 85



Huisarts InfoFilm: De Grieprik, wie krijgt dit vaccin waarom en hoe?  
6.645 weergaven



Huisarts Rossen  
Geüpload op 9 okt. 2015

GEABONNEERD 262

Waaron zou je de grieprik wel of niet nemen? Wie krijgt deze vaccinatie aangeboden? Hoe werkt zo'n vaccinatie? Zijn er nadelen of gevaren? Kijk deze video en hoor alle antwoorden!

MEER WEEERGEVEN



# THANK YOU!

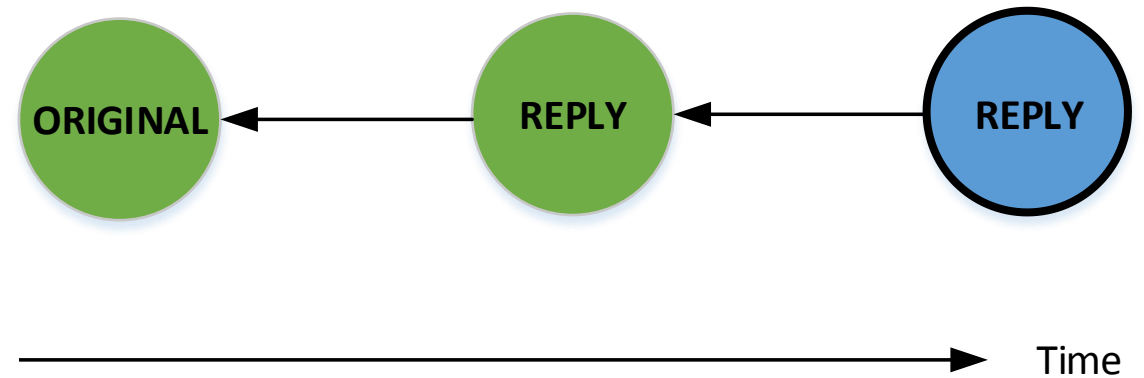
✉ : [lutkenhaus@eshcc.eur.nl](mailto:lutkenhaus@eshcc.eur.nl)

 : rlutkenhaus

METHOD:

# Data collection

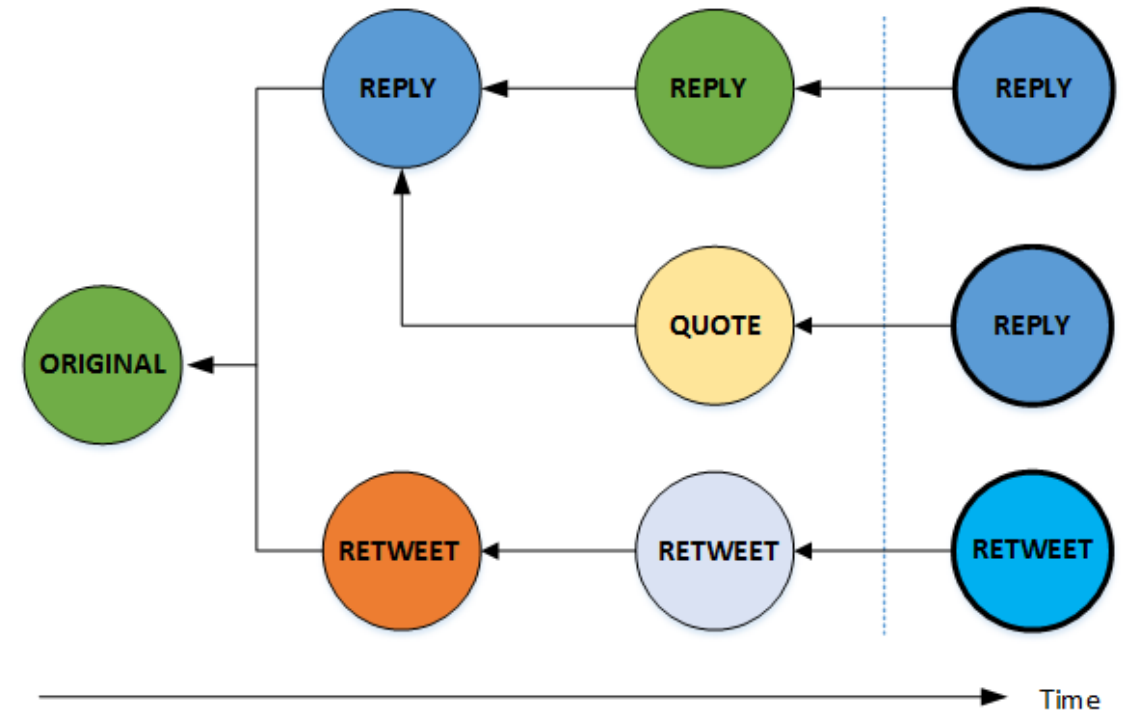
1. Retrieve tweets
  - 23-8 until 9-10-2017
  - Includes retweets, replies and quotes
2. Retrieve *Followers (FLR)*
3. Retrieve *Following (FLG)*
4. Create network data



METHOD:

# Data collection

1. Retrieve tweets
  - 23-8 until 9-10-2017
  - Includes retweets, replies and quotes
  - Related and unrelated to vaccination
2. Retrieve *Followers (FLR)*
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4. Create network data



METHOD:

# From text mining to qualitative analysis

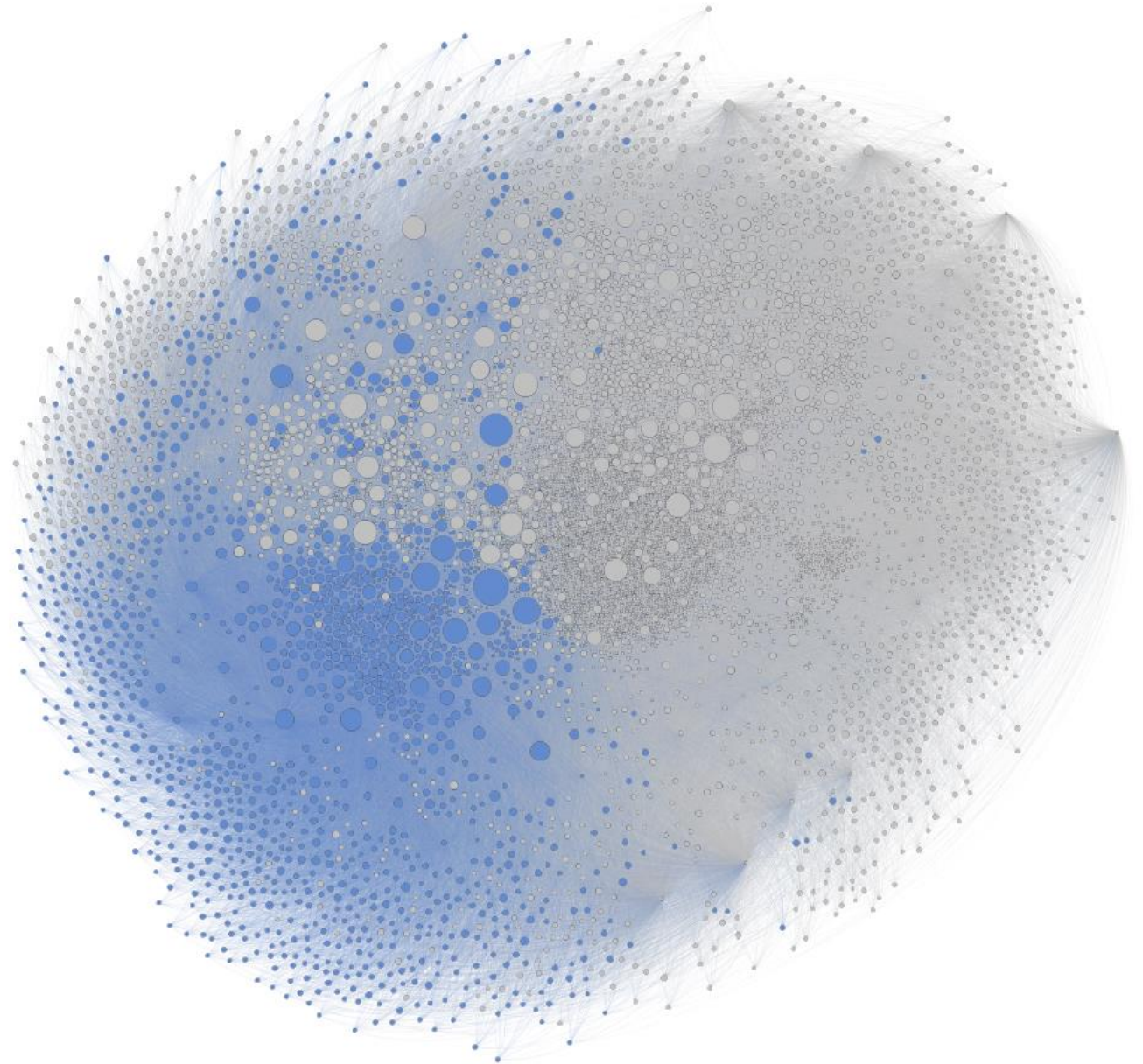


A screenshot of a social media thread. The top post is from 'Nicoline vd. Meer' dated 30 aug., with the text: 'Meisjes met heftige verschijnselen na #HPV vaccinatie, al 2jr voor #vaccinatie vaker bij huisarts dan controles.' Below the text is a link to a report titled 'Pre-Vaccination Care-Seeking in Females Reportin...' with a small bar chart. The thread continues with replies from 'Michel Portasse' and 'Nicoline vd. Meer'. The bottom post from 'Michel Portasse' says: 'Het was ook een grap. Dezelfde mensen die klagen bij HPV zaten ook bij HA na gewone vaccinaties. !' and is timestamped '02:54 - 30 aug, 2017'. A 'Volgen' button is visible at the bottom right.

RESULTS:

# Frames and narratives

## FRAMING



RESULTS:

# Frames and narratives



## ANNOUNCEMENTS

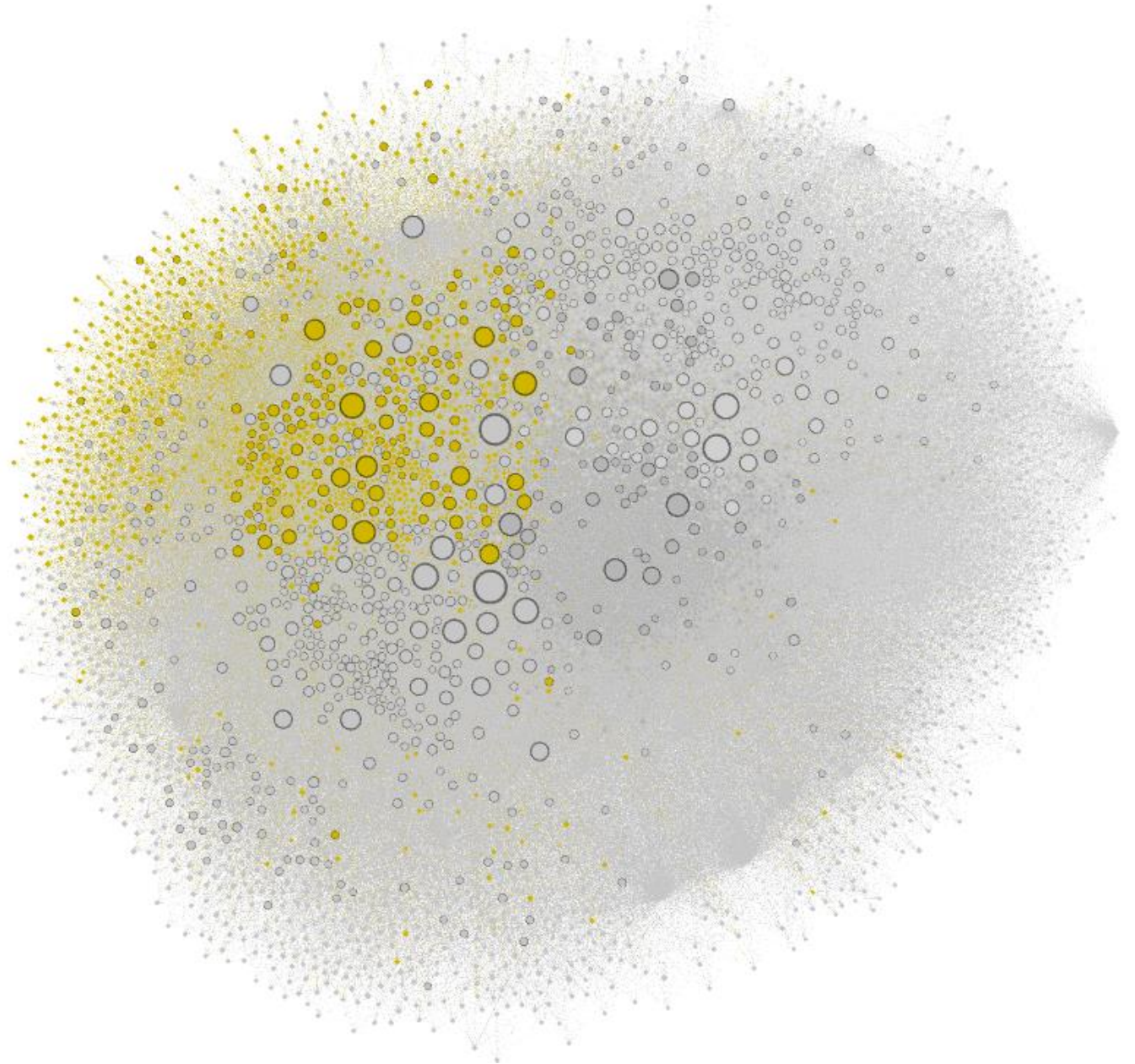
 **GGD regio Utrecht**  
@ggdru

Volgen

Advice Public Health Council: protect young babies against whooping cough; get vaccinated during pregnancy. Info and appointment: [bit.ly/2wUFZB1](https://bit.ly/2wUFZB1)



01:39 - 11 sep. 2017




RESULTS:

# Frames and narratives




NATURE

 **Manika de Visser** [Volgen](#)

Als antwoord op [Oscar de Visser](#)






I do not vaccinate anymore because I am liberated of fear. More parents of vaccine-free kids experience this.

 **Manika de Visser**

Als antwoord op [Oscar de Visser](#)

No fear of viruses or bacteria and more parents of vaccine-free kids experience this. No more fear.

04:29 - 25 sep. 2017

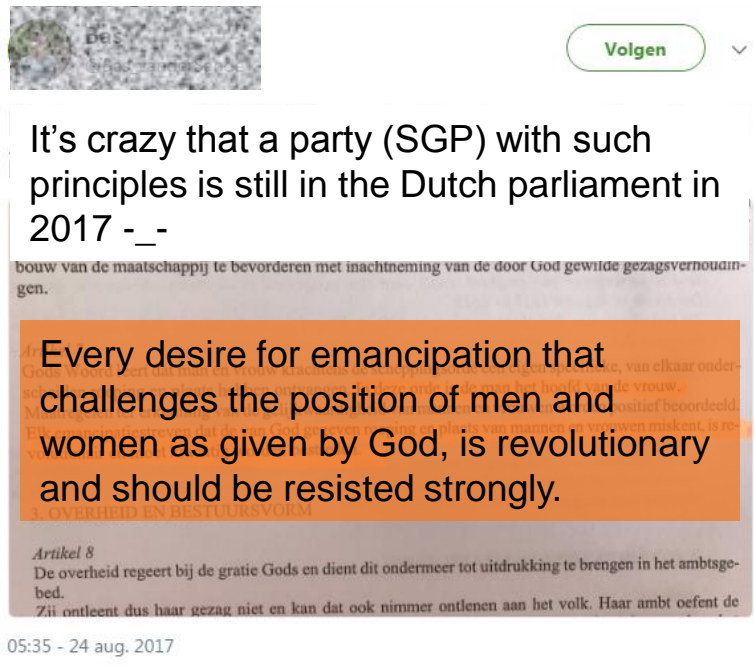
 2    



RESULTS:

# Frames and narratives

 ANTI-RELIGION



It's crazy that a party (SGP) with such principles is still in the Dutch parliament in 2017 -\_-

bouw van de maatschappij te bevorderen met inachtneming van de door God gewilde gezagsverhoudingen.

Every desire for emancipation that challenges the position of men and women as given by God, is revolutionary and should be resisted strongly.

Artikel 8  
De overheid regeert bij de gratie Gods en dient dit ondermeer tot uitdrukking te brengen in het ambtsgebied.  
Zij ontleent dus haar gezag niet en kan dat ook nimmer ontlenen aan het volk. Haar ambt oefent de

05:35 - 24 aug. 2017

