

ASF and HPAI vs COVID-19 in Polish Internet – perception of infectious diseases

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IBI

Instytut Badań Interdyscyplinarnych

- ▶ Interest in infectious diseases
- ▶ Timeline of epidemic/epizootic events in Poland
- ▶ Polarization and conflicts
- ▶ Introduction to talks and posters



<http://e-methodology-conference.eu/schedule/>

Infodemic and Risk Perception

- ▶ Traditional and social-content media on the Internet in Poland
- ▶ Measuring level of interest
- ▶ Media as a digital footprint
- ▶ a concept in the social medicine area: “lay-referral framing system” where opinions and beliefs of the general public are something different from medical knowledge.
- ▶ information is widely treated as a trigger of consequences impacting daily-life

Animal infections: ASF



ASF "is probably the most serious animal disease the world has had for a long time, if not ever" 2018 Dirk Pfeifer, world class veterinary epidemiologist

Animal infections: ASF

“For the first time in history, global consumption of poultry meat has exceeded the pork(...) the main influence of this change in consumption is the crisis caused by the African Swine Fever” 2019 FAO



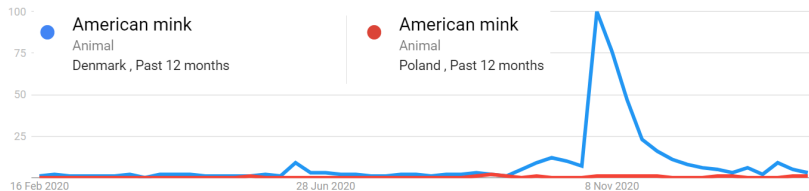
In Poland since 2014, In Lower Silesia since 2019

The pork shortage in China caused by African swine fever could contributed to the spillover of SARS-CoV-2 from animals to human

POLAND: Rank 3→6 in pigs (up to 90% farms closed due to restrictions in some areas), 6→2 in poultry in EU

Zoonosis and domestic animals

Google trend weekly



Minks and Cluster 7 of SARS-CoV-2



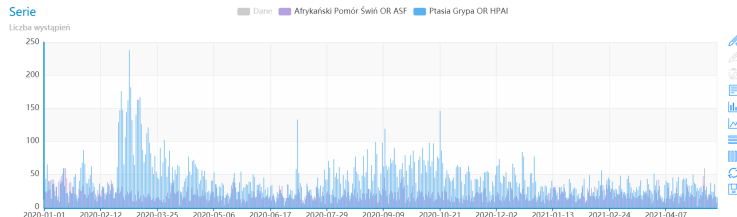
SARS-CoV-2 is a zoonosis!

Animal infections: HPAI

Highly Pathogenic Avian Influenza, HPAI

POLAND: Rank 3→6 in pigs, 6→2 in poultry in EU

In Poland since late 2019 (current wave), In Lower Silesia since 2020

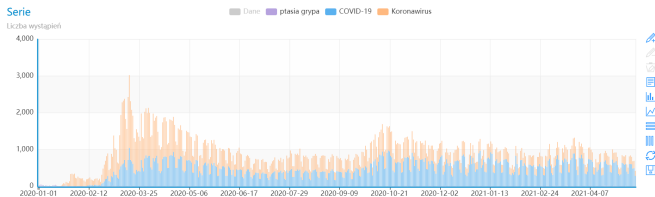


No. of articles daily on given topic in Polish traditional media (FRAZEO)

Human vs Animal infectious disease

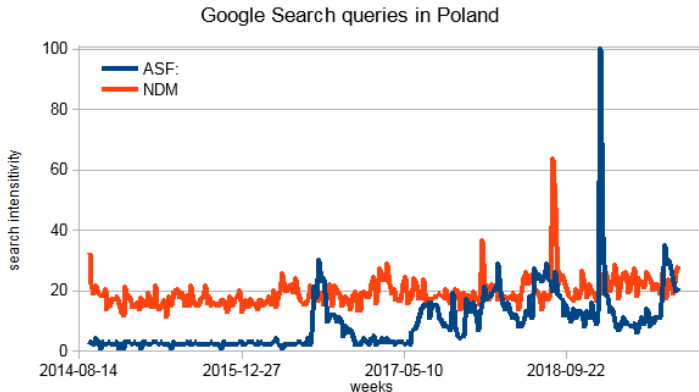


HPAI, ASF, COVID - Similar preventions (human mediated transmission of ASF, HPAI) and response



But totally different perception (i.e. No. of articles daily)

Human vs Animal infectious disease



Google trend daily queries

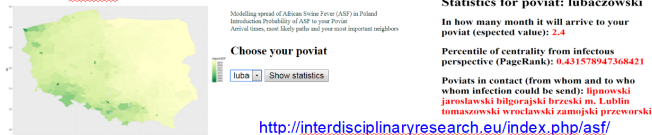
“NDM (and other carbapenemase) is the main threat for Polish public health” 2018

Risk perception vs EBM risk

1) To assess risk of sexually transmitted infections during sexual intercourse (currently only for HIV), Bayesian interface is used.



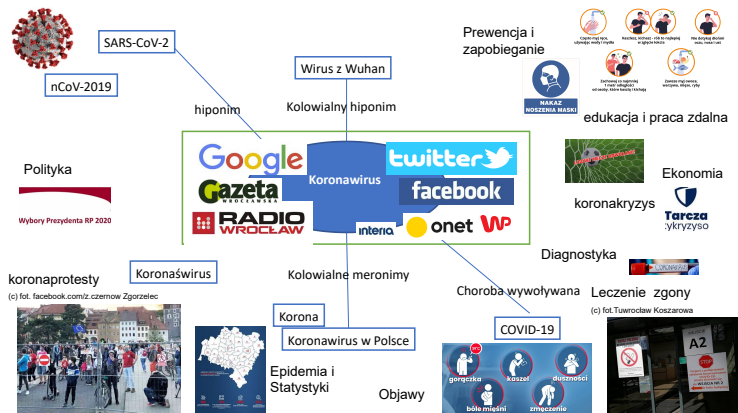
2) To estimate most likely **arrival time of African Swine Fever (ASF) Virus** (non-dangerous for humans but of high economical concern) and most likely introduction paths to disease free area, quasi-gravity propagation model is proposed. Our estimation is based on a pilot study using the actual spread of the disease in Poland.



How many COVID-19 risks calculators are on the market now?

See Kamila talk

Sociolinguistics

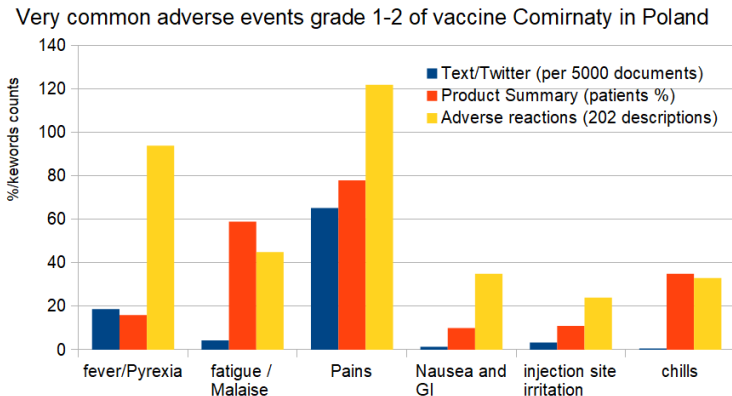


The epidemic is primarily of a social, not biological, dimension in opposition to epizootics

See Monika Poster

Social media surveillance for Vaccine AE

To build frequency of mild adverse effect from social media with keywords and classes methods in Poland



See Alexander talks

Think globally, act locally

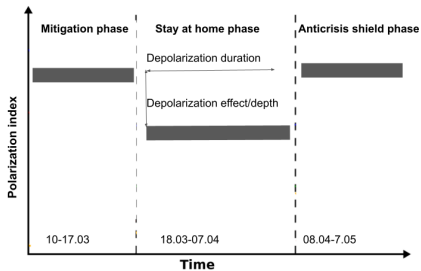


Last Epidemic of Smallpox in Europe 1963



Flooding of Millenium 1997

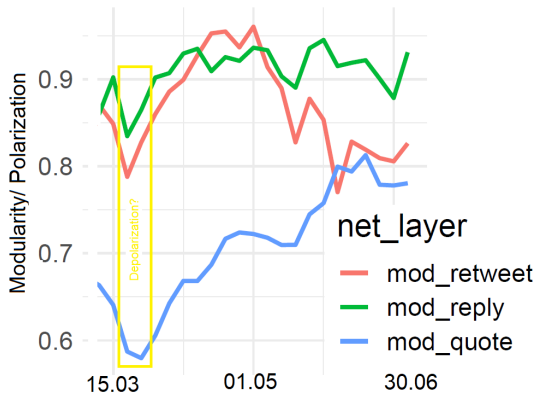
Deterioration theory



Theoretical model of mobilisation and deterioration

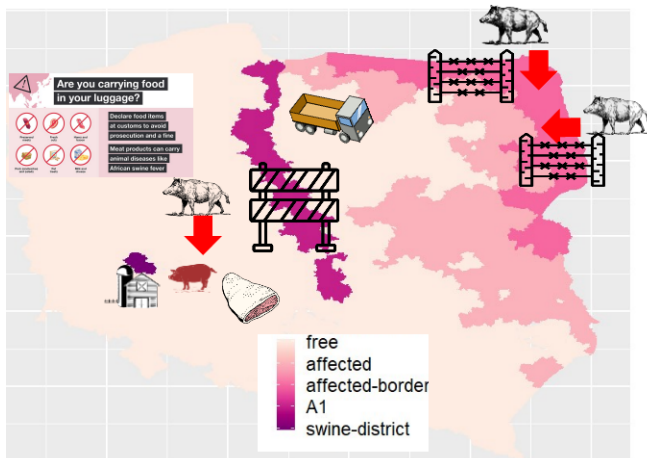
Polarization

The (de-)polarization (revealed by modularity and sentiment analysis) in 2020 in Poland



Modularity of the full networks (over 30 thousands accounts) and their weekly dynamics for different type of communication relations (retweeting, reply, quotation) in COVID discourse in Social Media in Poland

Prevention



Transmission patterns of animal infectious disease are relatively well known (due to possibility of performing experiments in opposition to humans)

Risk Communication: Think globally, act locally

Hello Andrzej, Quick question: I noticed that there were again some ASF positive carcasses found in or very close to Zielona Gora. That is a fairly big city. Maybe a strange question, but do they get hit by cars? Or are they found on a morning by locals walking their dogs? And is the general public aware that they may be contagious? Just curious how that goes in practice.

16 gru 2020, 11:34 AM

ADNS 2020/3901 - found carcass (no information how) ADNS2020/3903 - caught out and killed

16 gru 2020, 11:47 AM ✓

For instance cases 2803 and 2947 were found on the Cmentarz Komunalny. If a dead wild boar would be found somewhere in a city - let alone on a cemetery, this would've been just news over here. I have been trying to browse the local or social media but I haven't been able to find anything.

The new cases in Zielona Gora reminded me of that.

16 gru 2020, 11:54 AM

Wb are living in Polish cities like Zielona Góra and people are used to see alive WB a lot.

Citizens of Cities do not care about ASF, it is not a zoonoses

16 gru 2020, 11:59 AM

Lack of knowledge of transmission routes among cities inhabitants in Poland.

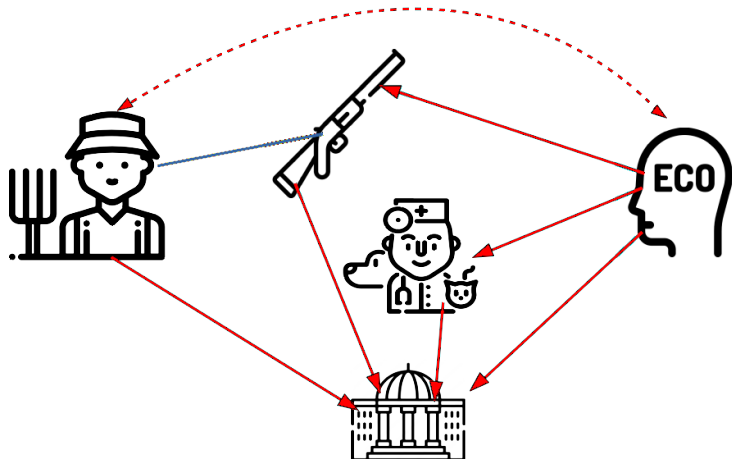
Risk Communication: Think globally, act locally



- ▶ What? (content (key vocabulary, topics and sentiment) as on risk communication, fake news etc.)
- ▶ Who? (categories of senders of information, Who are main actors and communities in discourse)
- ▶ When? (timeline, how does perception of disease evolve?),
- ▶ Where? (geography, cross-regional comparison)
- ▶ How? (providing new information or blocking existing channels, Which factors affect risk perception and adherence to measures?)

See Katarzyna&Andrzej talk

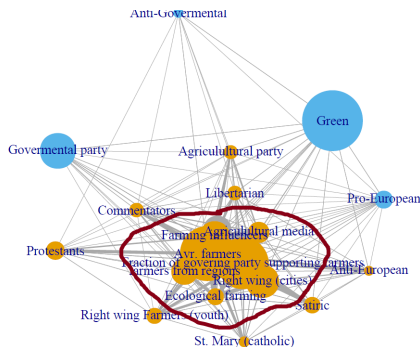
Conflict due to animal disease



The potential interaction between agents wider definition in the context of ASF (farmers, ecologists, hunters, vets, public administration) with red – conflicting and blue – cooperative. Solid lines are direct and dashed are indirect.

Protest movements and health communication

9739 Tweets in October 2020 in Polish language with hashtag #ProtestRolników (animal breeders protest).



Animal breeders protest communication has highly modular and hierarchical structure with clear boundaries between communities and opinion leaders.

See Daniel Poster

Conclusions

- ▶ The COVID-19 epidemic in Poland (and in EU in general) is primarily of a social, not medical, dimension;
- ▶ Interest in human infectious diseases is few orders of magnitude higher than non zoonotic animals infections devastating economy;
- ▶ Campaigns should be targeted to specific population and regions;
- ▶ Social media and social processes don't need to be negative.

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