Opinion Dynamics, Social Tipping Processes, Public Opinion Change

Draft Proposal: Master Thesis & PhD Project

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Theoretical Framework

- **Opinion Dynamics**: Opinion Diffusion, Social Contagion
- **Social Tipping Processes**/Dynamics
- **Social Movements**/Change, Collective Action
- **Public Opinion** Formation, Preference Aggregation, Spread of Misinformation

Methodology

- **Modelling**: Compartment Models, Network Models
- **Inference**: Bayesian Generative Models
- **Causal Identification**: Causal Design (DAGs), Causal Bayesian Inference

Implementation

- **STAN** as PPL for Bayesian Inference
- **R** for Data Pre-Processing & Analysis

Central Research Questions

- How well, and how fast, does a certain piece of information spread through a population?
- What thresholds need to be crossed so that a social tipping process of opinion diffusion takes off?
- What is the set of necessary conditions for a piece of information to be (decently) contagious?

Working Hypotheses

- Model parameters a) can be interpreted in a meaningful way (tbd), and b) in any case, they can be compared case-to-case
- SIR-like dynamics c) underlay or d) meaningfully represent, and e) can be recovered/estimated from, real-life events

Possible Applications / Case Studies

- Climate movement in Germany 2019 & change in MIP
- Adoption of Covid-19 social norms
- Shock induced public opinion changes: Fukushima, Brexit, Charlie Hebdo, Cologne New Year (2015) / Berlin New Year (2021), AfD 2015
- Fashion changes & trend diffusion
- Use of language (contemporary words, gender neutral expressions)

Model Variations / Adjustments

- Repeated exposure thresholds before contagion (analogous to mass opinion formation)
- Adoption vs. immunity vs. recovery, reinfections
- Spatial or network-based transmission vs. social clusters

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