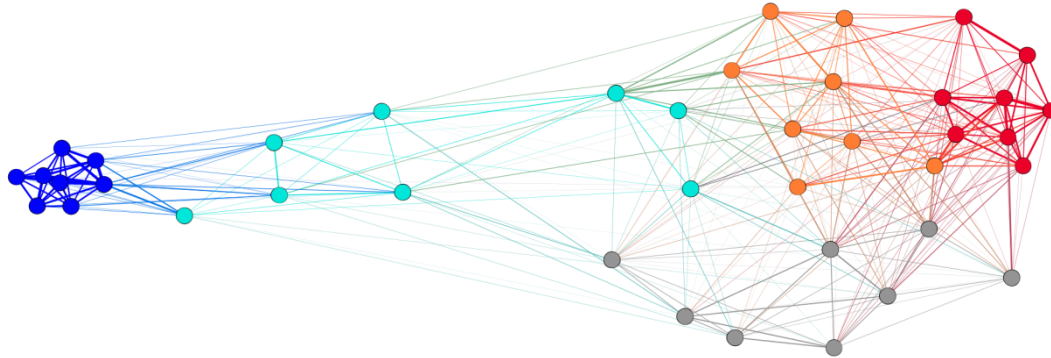# The Social Nature of Attitudes:
Using ResIn to explore complex attitude-identity systems

Adrian Lüders

Centre for Social Issues Research
University of Limerick, Ireland

Using ResIn to explore complex attitude-identity systems

- Nodes reflect item <u>responses</u> (e.g. *I strongly agree/ mildly agree that ....*)

- Node positions obtained via forced-direction algorithm

- Relative proximity indicates correlation strength between nodes

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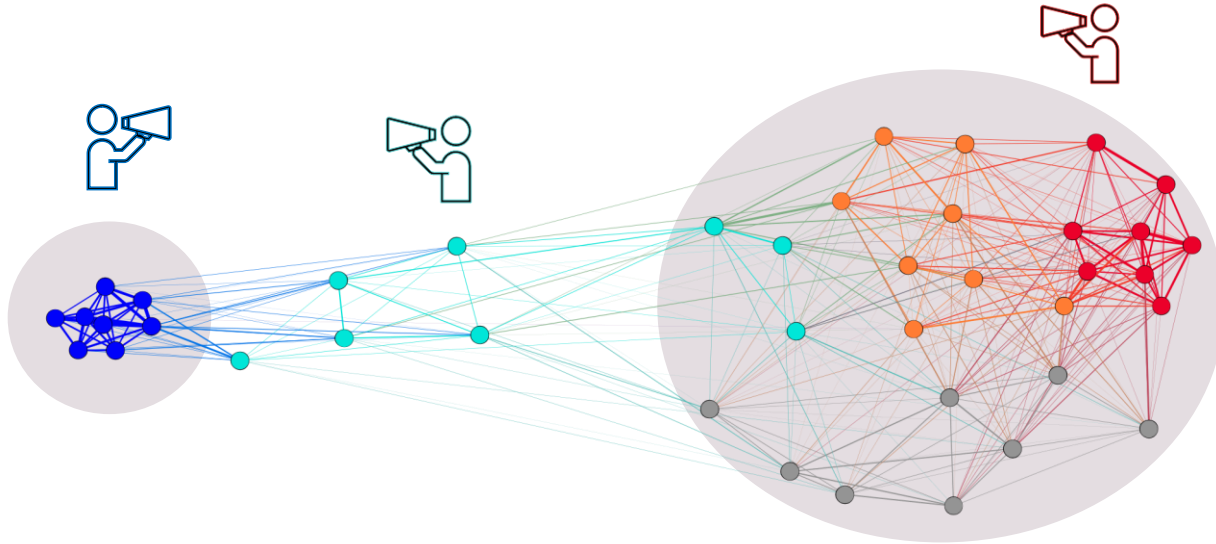Roinn na Síceolaíochta
Department of Psychology

Using ResIn to explore complex attitude-identity systems

1) Attitude cluster (i.e. shared belief systems) provide a substrate for social identities
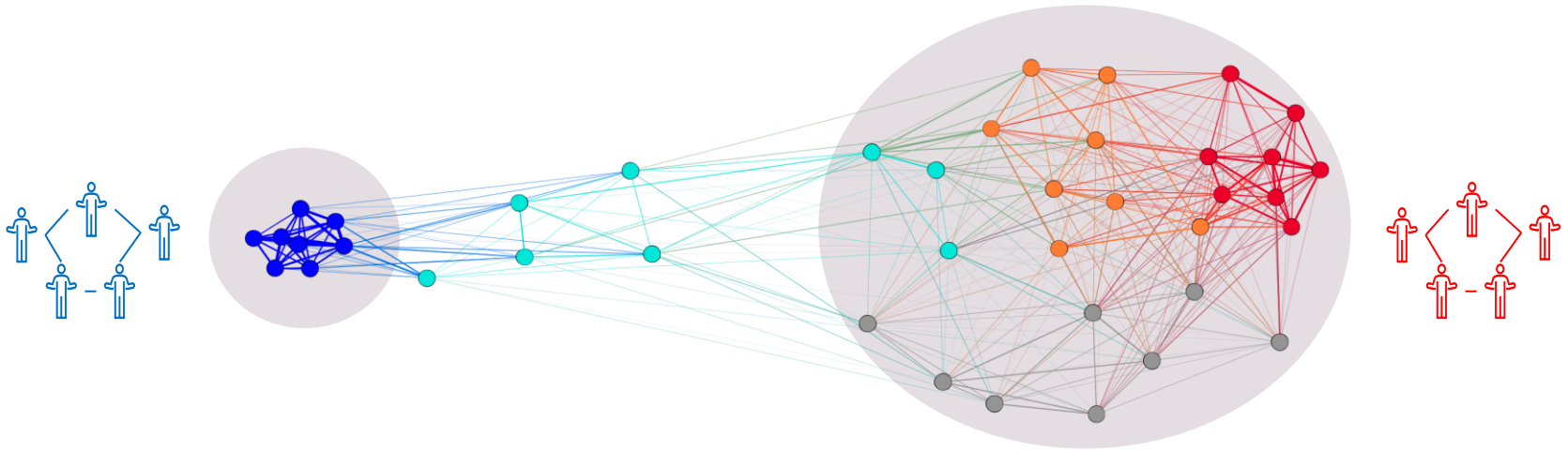
Using ResIn to explore complex attitude-identity systems

2) People rely on their mental representations of attitudes to organize and express identities

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Using ResIn to explore complex attitude-identity systems

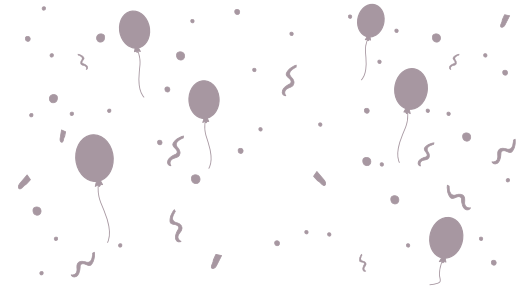3) Misrepresentations of attitude-identity systems result from group biases
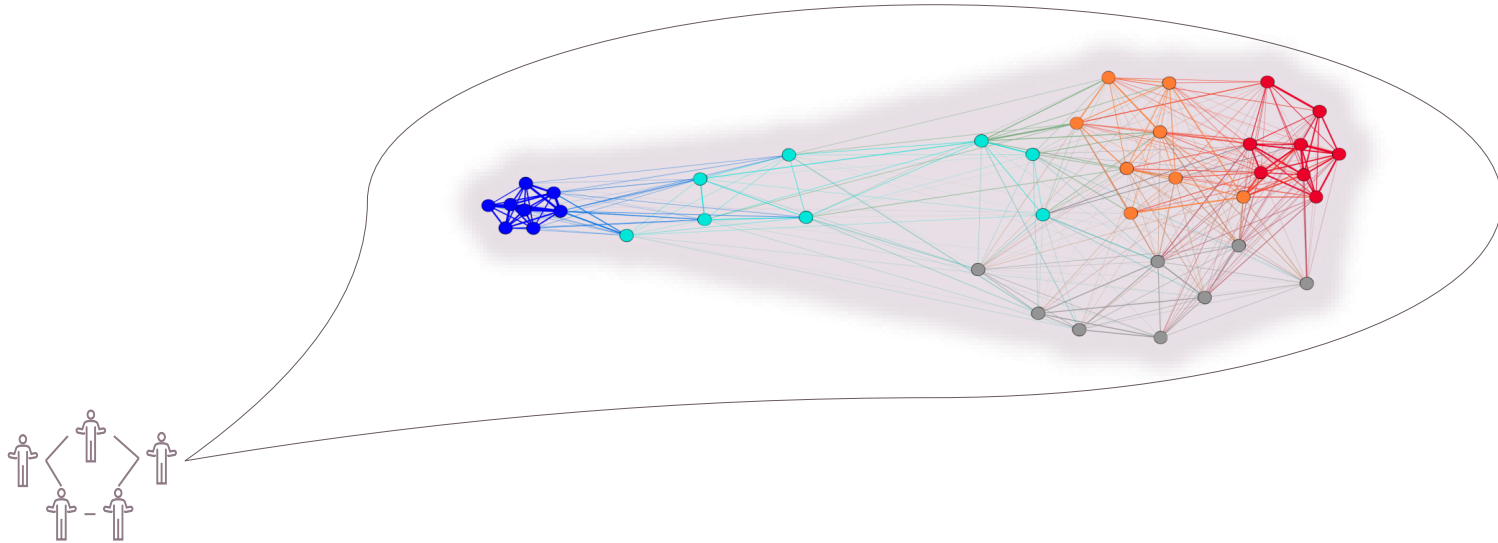
Let's start with some theory

Jimmy's Pizza Party ツ

Jim: Hey folks, do you also feel hungry? How about ordering some pizza?

Crowd: Amazing idea Jimmy! We all LOVE Pizza!!

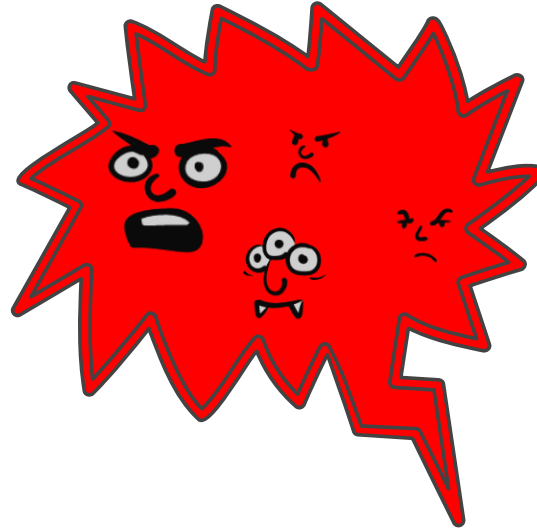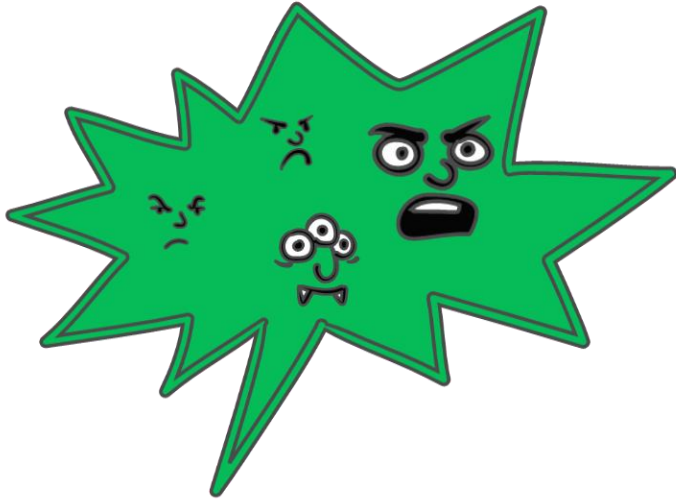Jim: Awesome! Give me your orders!

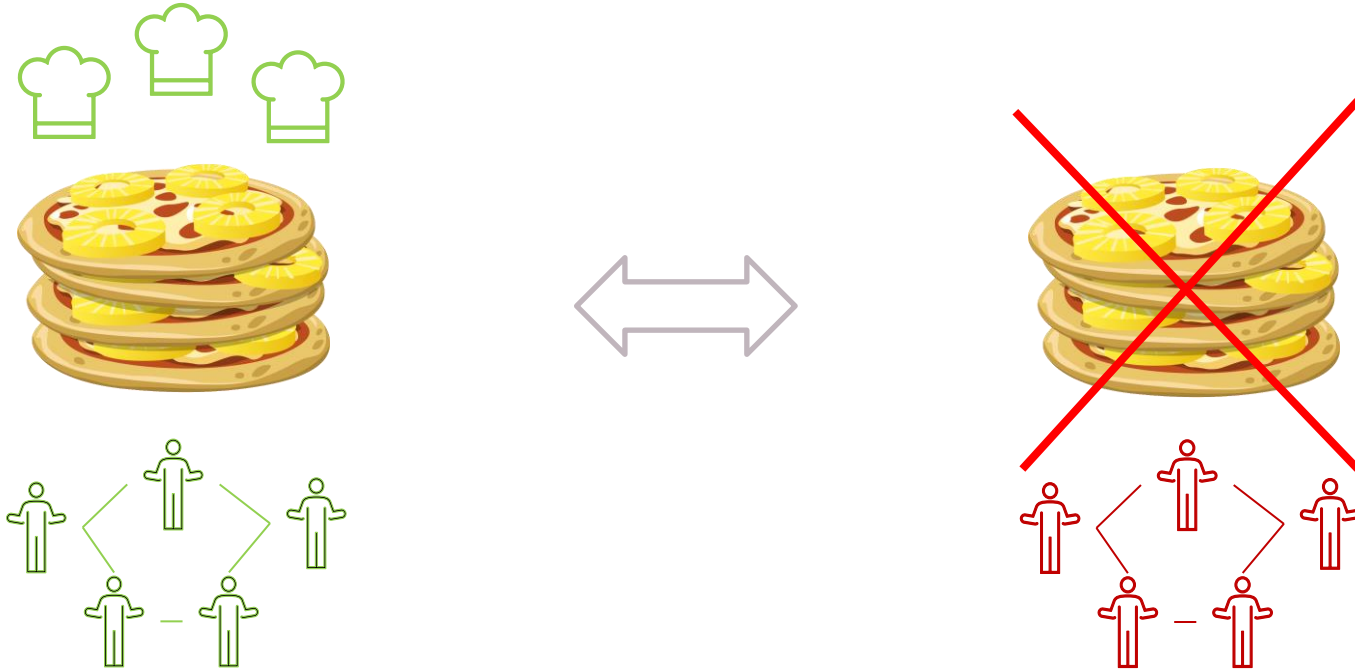Crowd: Margarita for me! Pizza Funghi here! …Capricciossa per favore!!

…Pizza Hawaii please!!!

Jimmy's Pizza Party 👓

Consensus as a basis for shared selfhood

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Consensus as a basis for shared selfhood

- Literature on "Opinion-Based Groups" suggests that shared (dis)agreement provides a solid basis for shared group membership (Bliuc et al. 2007)

- Attitude-sharing can (temporarily) unite people from different socio-demographic and/or ideological backgrounds to fight for a common cause (McGarthy et al. 2014; Lueders et al. 2021)

- Social identities stemming from attitude sharing are a better predictor for (online) collective action than group membership that is defined by stable social categories (Meta Analysis by Akfirat et al. 2021)

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Consensus as a basis for shared selfhood

- Attitude expression is a key element of online communication where it promotes community building (Lueders et al. 2022)

- A growing number of US Twitter users includes political attitudes as self-descriptions in profile bios (Jones & Rogers, 2021)

- Experimental evidence that attitude sharing increases the readiness for social identification (over minimal group assignment, O'Reilly et al. 2022)

#Hashtag

YUM

Attitude-Identity-Systems are dynamic!

- While communicating, people interactively define the meaning of the attitudes that unite them (Turner & Oakes, 1986)

- These processes often occur in the wider social context and include definitions of "ingroups" and "outgroups" (Postmes et al. 2005)

- **Attitudes become "charged" with identity and vice versa!**
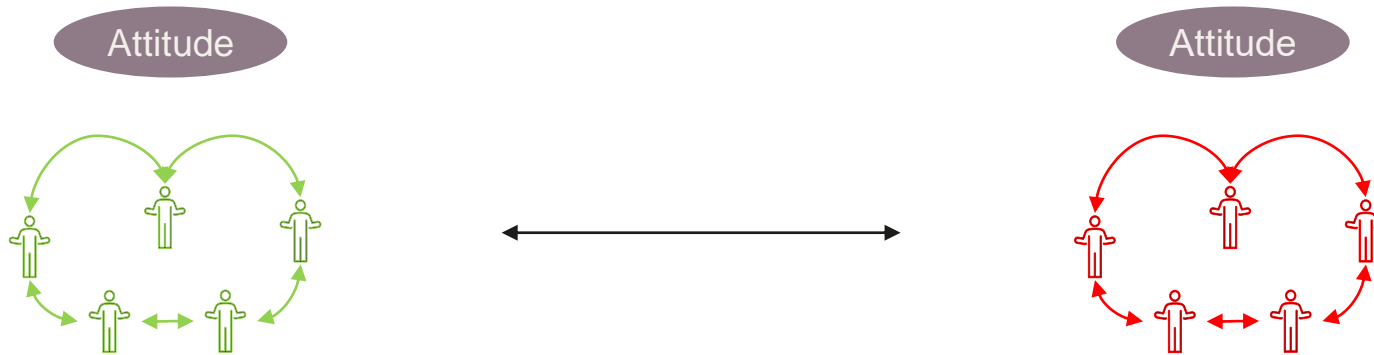
Attitude expression is identity expression!

- Individuals develop mental representations of existing attitude-identity relationships

- Individuals become *"recognizable"* as group members through the attitudes that they express

- Attitude change becomes synonymous with identity change
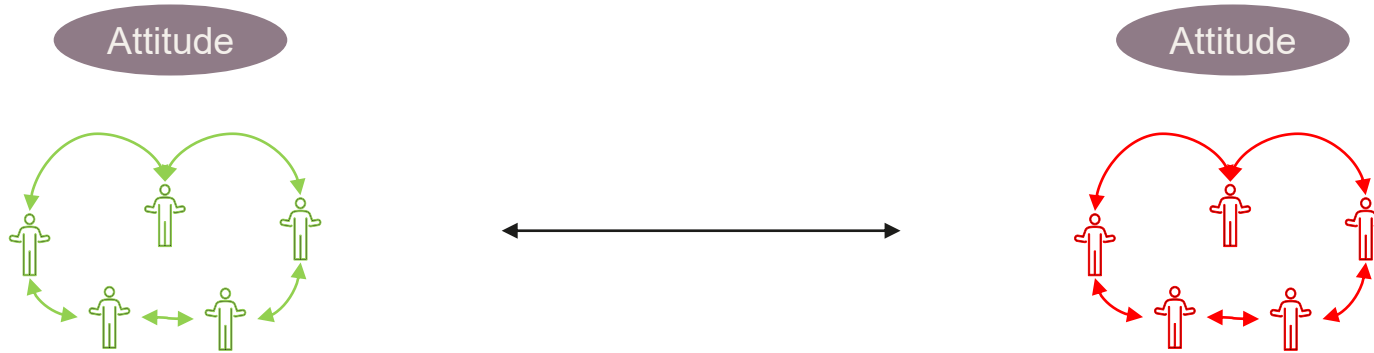
Complex Attitude-Identity-Systems

Problem: Often groups cannot be defined by a single "core" attitude (e.g. support vs opposition for an issue, candidate etc.); they are based on more complex attitude-identity relationships!
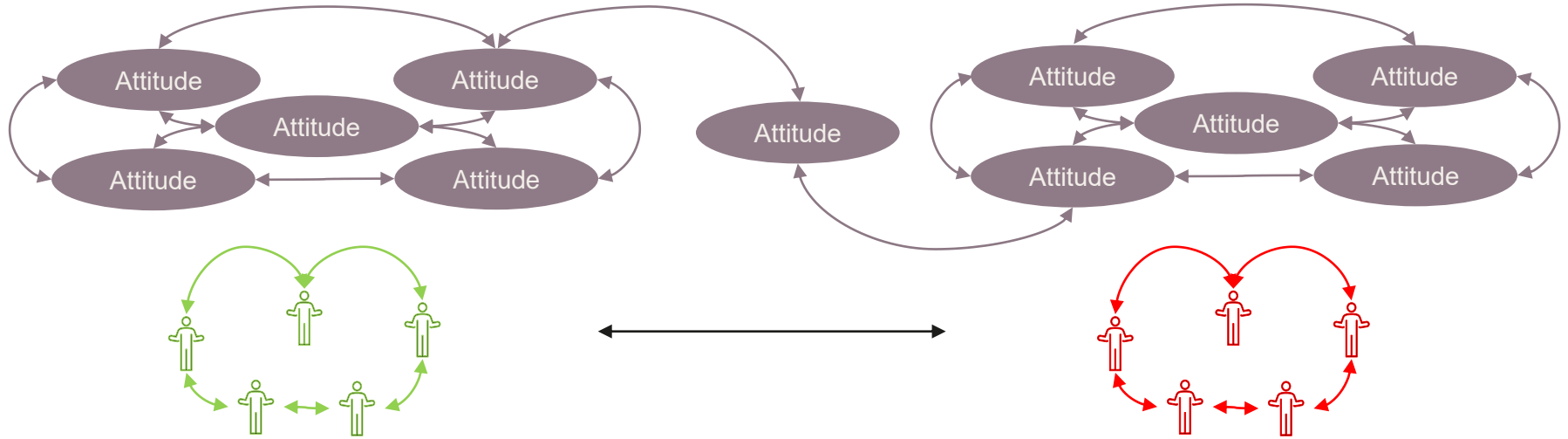
Complex Attitude-Identity-Systems

Accessible

Compact identity signifier (e.g. Hashtag, Symbol)

Inaccessible

Attitude Attitude Attitude Attitude
Attitude Attitude
Attitude Attitude Attitude Attitude
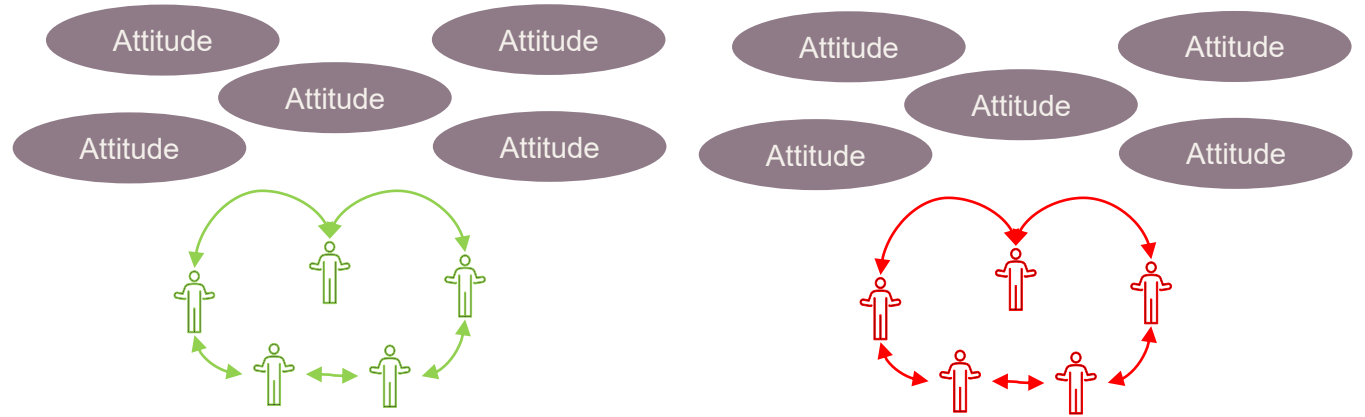
Accessible

Latent Identities (e.g. Democrat, Republican, Environmentalist, Capitalist)

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Complex Attitude-Identity-Systems

ResIN offers a solution to this research challenge by:

a) Modelling complex attitude-relationships across a sample as a spatial network and
b) Locating individual participants on a network-axis
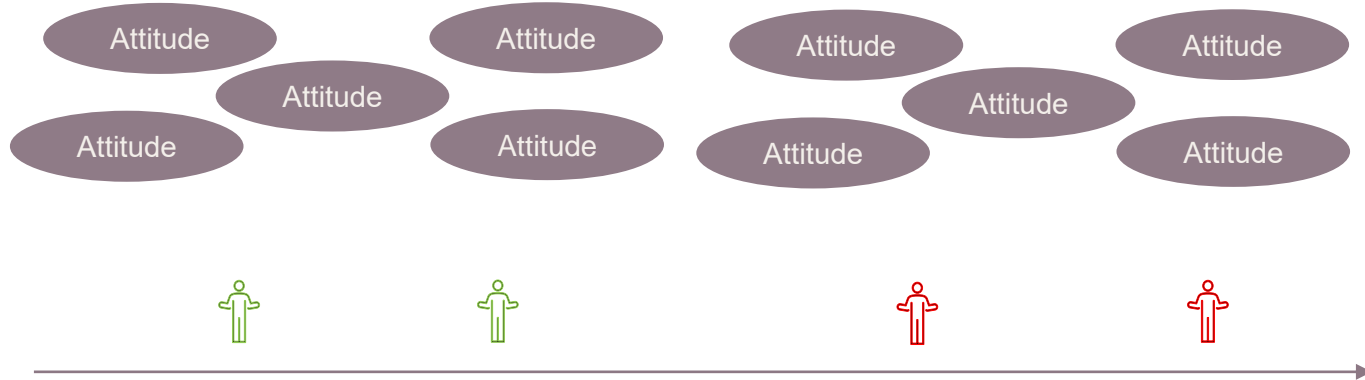
Response Item Network

(ResIN, Carpentras, Lueders, & Quayle, 2021)

Attitude Network
(Correlation of item responses across a sample)

Pro Choice

Pro Gun Control

Neutral Abortion

Neutral Gun Control
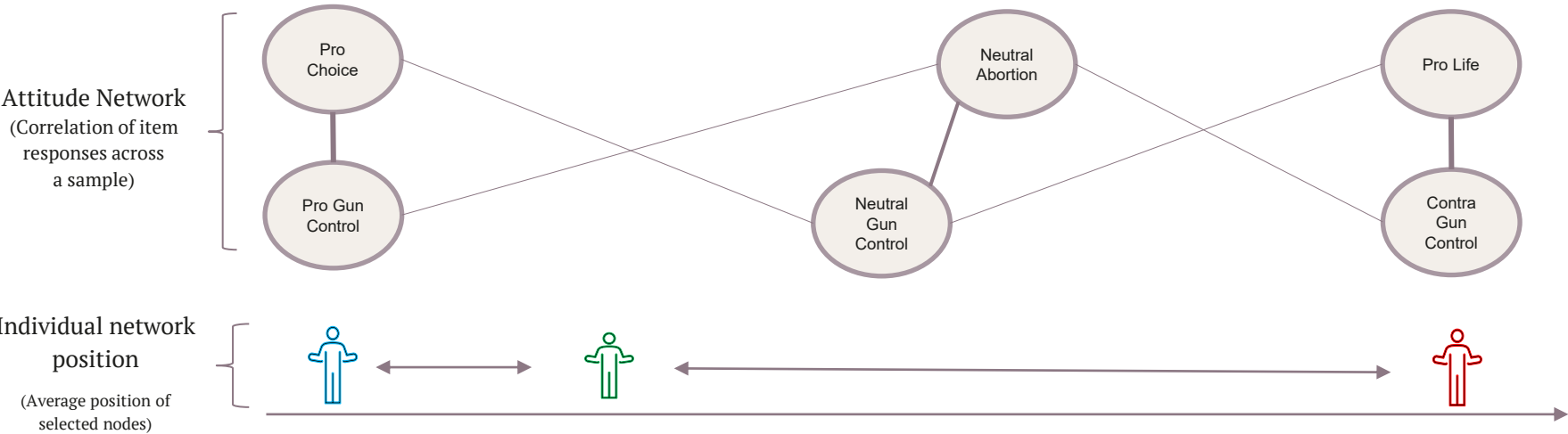
Pro Life

Contra Gun Control

Individual network position

(Average position of selected nodes)

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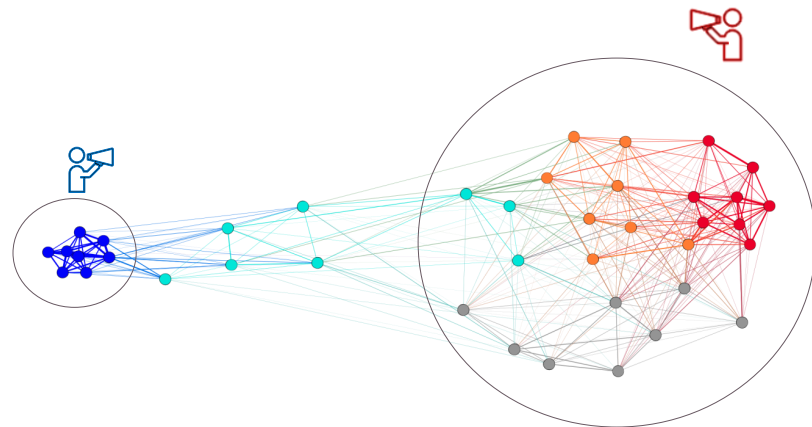OLLSCOIL LUIMNIGH

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Now let´s look at some data

Overview of Studies

2 Datasets test the following claims in the context of the US electorate:

- Study 1a) Attitude cluster in the ResIN Network correspond to latent group identities

- Study 1b) Attitudes signal identity, hence allowing *attitude observers* to categorize *attitude holders* as ingroup or outgroup members

- Study 2) Mental representations of attitude-identity relationships are shaped by group biases

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Study 1a: Predicting latent group identities from attitude structures

- Procedure

- Online recruitment of US partisans (N = 398, 48.7% female, 50.05% male, 18-81 years, 58,1% Democrats, 13.9% Republicans, 28% Independents)

- Modelling a ResIN network based on eight "hot-button issues" (8 items rated on a 5-point scale = 40 nodes)

- Predicting latent self-reported identities from participants' network positions
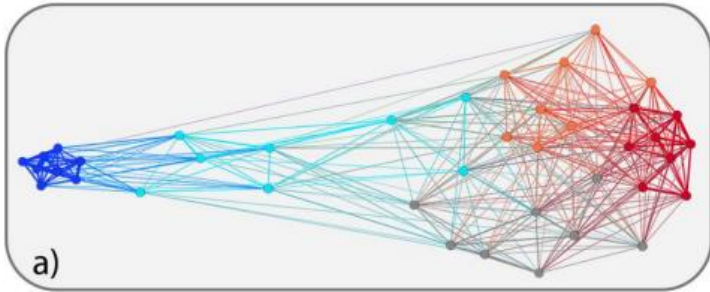
- Robustness Check with >8000 ANES participants

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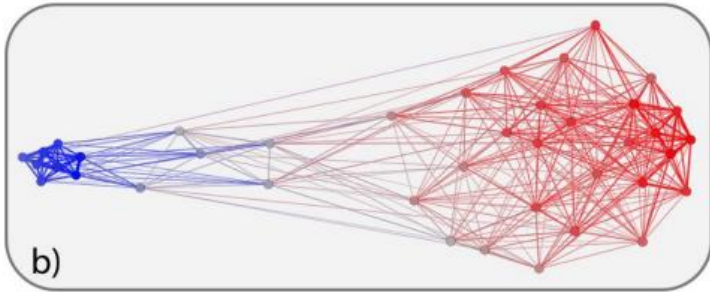Roinn na Síceolaíochta
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Thinking about the USA today, please indicate the extent to which you agree with each of the following statements:

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
Abortion should be illegal.	○	○	○	○	○
The government should take steps to make incomes more equal.	○	○	○	○	○
All unauthorized immigrants should be sent back to their home country.	○	○	○	○	○
The federal budget for welfare programs should be increased.	○	○	○	○	○
Lesbian, gay and trans couples should be allowed to legally marry.	○	○	○	○	○
The government should regulate business to protect the environment.	○	○	○	○	○
The federal government should make it more difficult to buy a gun.	○	○	○	○	○
The federal government should make a concerted effort to improve social and economic conditions for African Americans.	○	○	○	○	○

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Strongly Agree - **Weakly Agree** – Neutral - **Weakly Disagree** - **Strongly Disagree**

Democrat belief system
Republican belief system

H1: The position of a participant within the network correlates with
participants´ <u>partisan dentification</u>.

H2: The position of a participant within the network correlates with <u>ingroup bias/affective polarization</u>
(i.e. evaluation of democrats vs republicans on a feeling-thermometer).

H1: The position of a participant within the network correlates with participants´ partisan dentification.

r = .72***
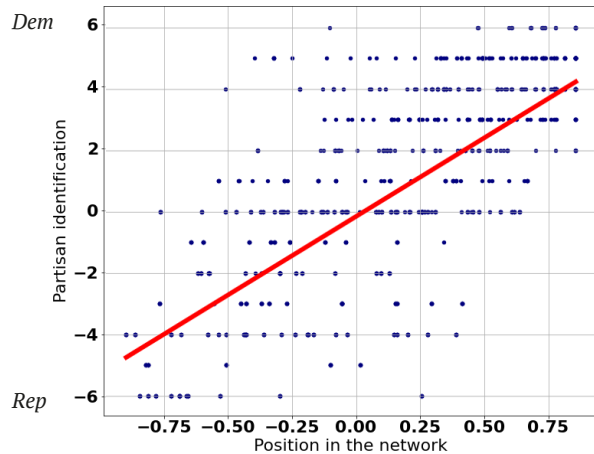
H2: The position of a participant within the network correlates with ingroup bias/affective polarization.

r = .73***
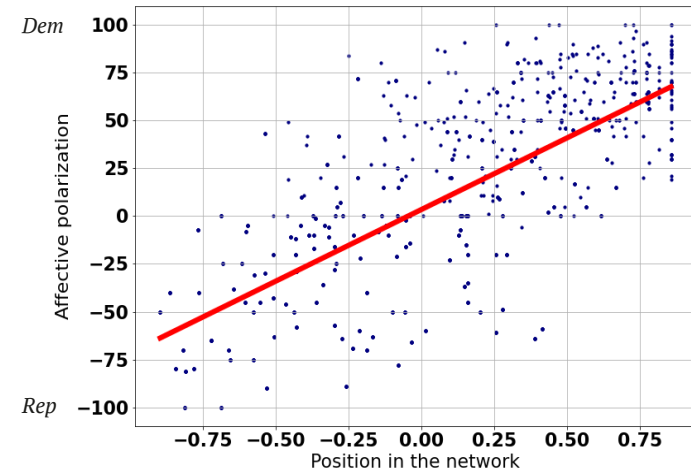
Robustness Check

Robustness check based on the representative 2020 ANES dataset (N = 8280) which included items that were equal or similar to the ones used in our study and obtained qualitatively similar results.

H1: The position of a participant within the network correlates with participants´ partisan dentification.

$r = .73^{***}$ (vs. r = .72)

H2: The position of a participant within the network correlates with ingroup bias/affective polarization.

$r = .79^{***}$ (vs. r = .73)

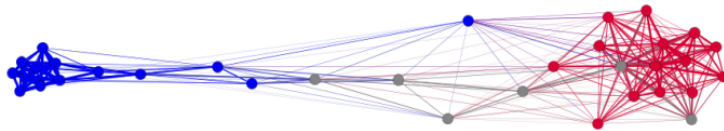Adrian.Lueders@ul.ie
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Discussion

- Evidence that attitude-structures and the people who are holding them are connected in complex <u>non-linear</u> attitude-identity systems.

- In highly structured (i.e. polarized) opinion spaces, group identities are reflected (and defined) in compact attitude clusters.

- Attitude-identity systems are no "cold" cognitive phenomena but can be accompanied by "hot" group-based emotions
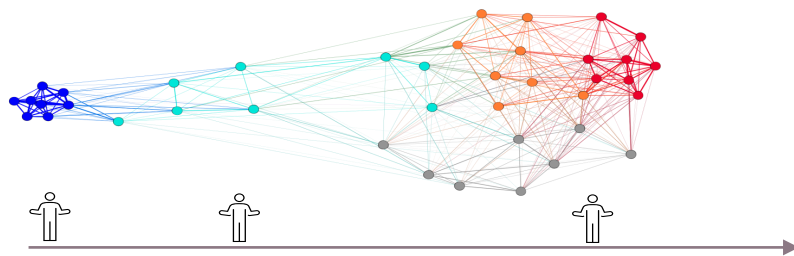
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Study 1b: Exploring attitudes as identity signals

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Aim: Testing whether people can categorize others into groups based on attitude observance

Procedure

- Same sample as in Study 1a (N = 398, 48.7% female, 50.05% male, 18-81 years, 58,1% Democrats, 13.9% Republicans, 28% Independents)

- Vignette study that exposes participants to a single attitude and ask them to 1) categorize and 2) emotionally evaluate a bogus persona who is holding that attitude

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Study 1b: Exploring attitudes as identity signals

All unauthorized immigrants should be sent back to their home country.
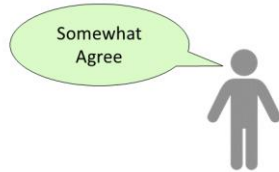
Somewhat Agree

Abortion should be illegal.

Fully Disagree

The government should regulate business to protect the environment.

Neutral
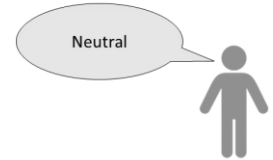
1) In terms of political orientation, this person is...

1 = "definitely not a Democrat" to 100 = "definitely a Democrat"
1 = "definitely not a Republican" to 100 = "definitely a Republican"

2) How do you feel towards this person?

1 = "cold/ unfavourable" to 100 = "warm/favourable"

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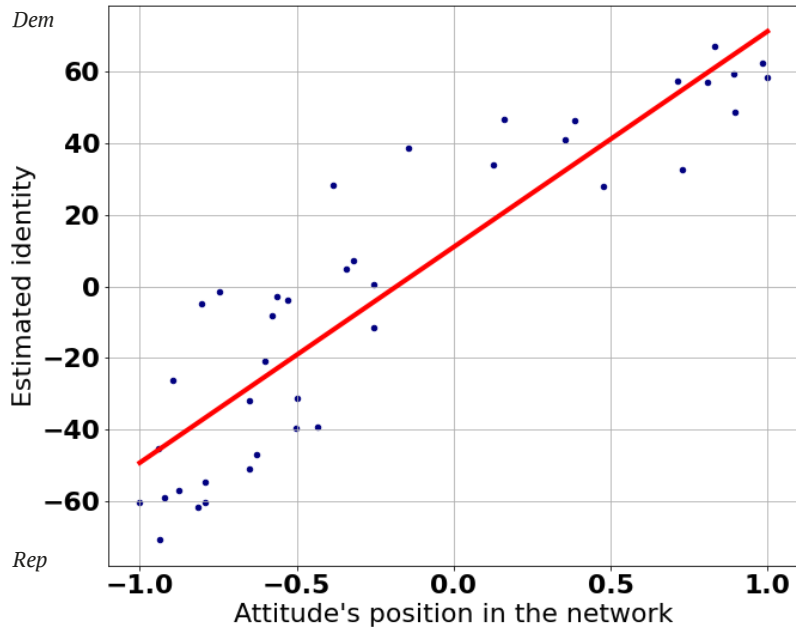
H3: The network position of an observed attitude corresponds to participants judgement of whether an attitude holder is a democrat or a republican.

r = .90***
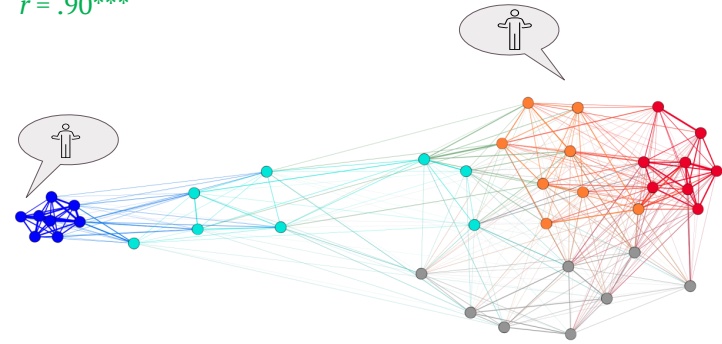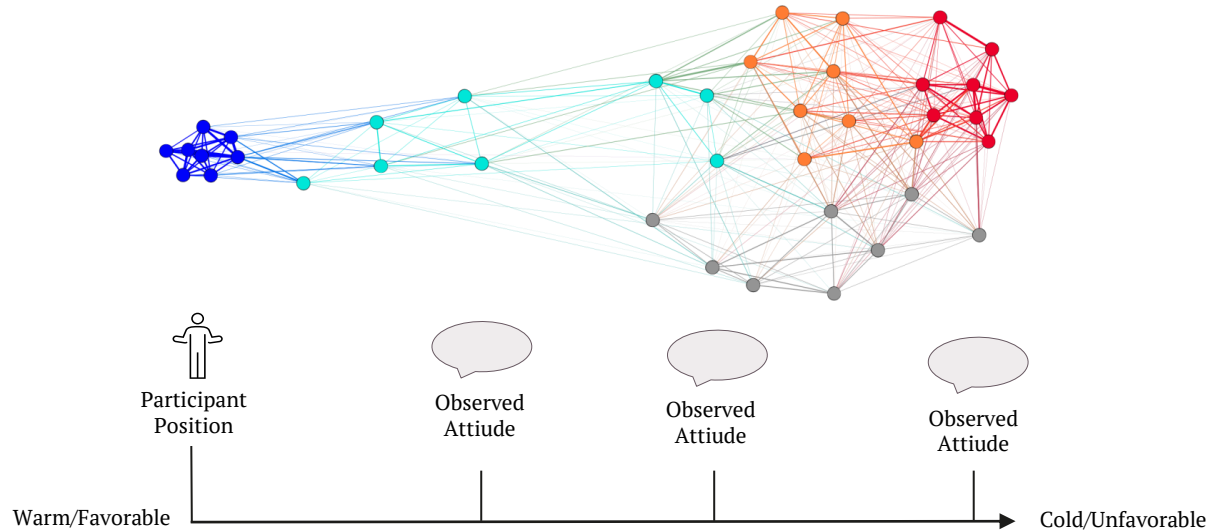
Participant Position

Observed Attiude

Observed Attiude

Observed Attiude

Warm/Favorable

Cold/Unfavorable

H3: The distance in the attitude space between a participants´ own position and the position of an attitude expressed on a vignette, correlates significantly with the evaluation of a bogus participant on a feeling thermometer.
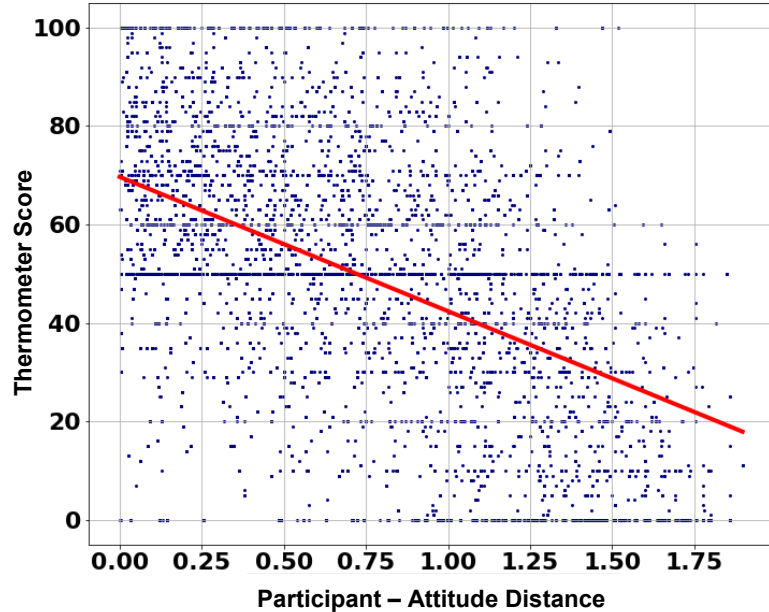
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H3: The distance in the attitude space between a participants´ own position and the position of an attitude expressed on a vignette, correlates significantly with the evaluation of a bogus persona on a feeling thermometer.

r. = 49***

Discussion

- People seem to have a good mental representation of the investigated pool of attitude-identity relationships: Knowing only a single attitude provides sufficient information to locate others within the network.

- The results corroborate the claim that attitudes are *socially functional* – expressing and observing attitudes allows people to navigate identities.

- Relative attitude distance offers a basis for social judgement; presumably because attitudes signal group identity (see also Lelkes & Dias, 2021).

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Some limitation addressed by follow-up study

- Using only highly polarized "hot button" issues may overestimate the accuracy of people´s mental representation of attitude-identity links

- Research suggests that individuals expect outgroups to be more extreme than they actually are (i.e. false polarization, Blatz & Mercier, 2018)

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Study 2

PRELIMINARY DATA

Exploring (errors in) representations of ingroup and outgroup belief-systems

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Aim: Advancing the understanding of how accurately attitude-structures are represented within the minds of individuals, and whether misrepresentations emerge as a function of group membership.

Sample:

N = 1007 US Partisans (48.4% female, 49.8% male, nb = 1.1; M(Age) =42.5 years; 41,5% Democrats, 35.7% Republicans, 20.4% Independents)

Design:

Step 1: Modelling a ResIN network based on self-reported attitudes
- 8 political hot-button issues (Study 1)
- 4 lifestyle-related issues (i.e. animal rights, modern art, divorce, science vs. religion, c.f. DellaPosta 2021)

Step 2: Building a represented attitude network based on an attitude-guessing game

Gamified vignette design:

Please now consider William.
William <u>mildly agrees </u>that the federal budget for welfare programs should be increased.

How do you think **William thinks about whether abortion should be illegal?**

(Select each answer that seems plausible to you by ticking one or multiple boxes)

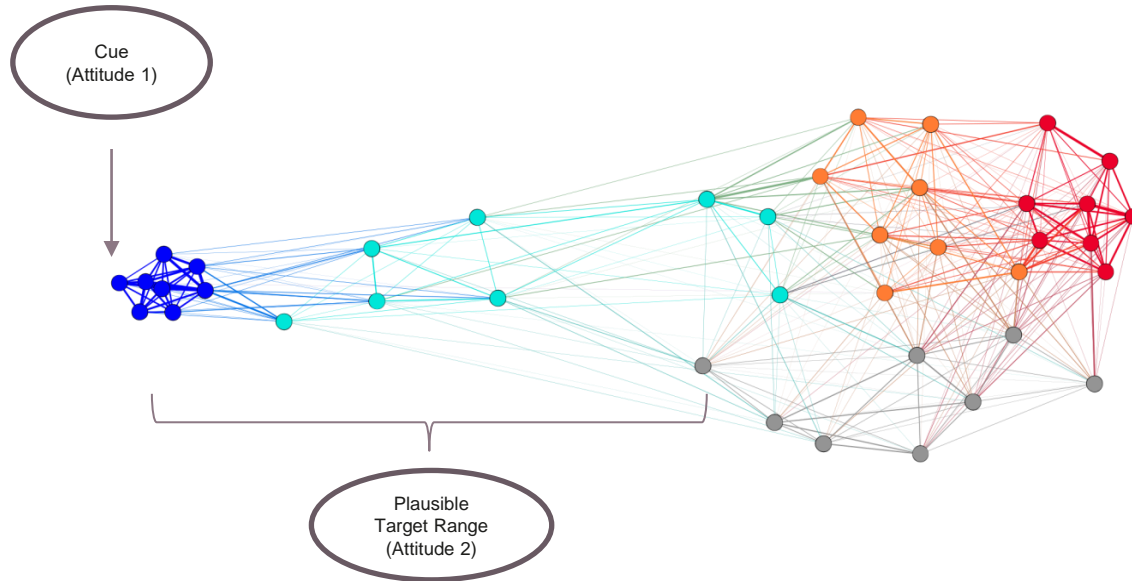*"William <u>strongly disagrees</u> that abortion should be illegal"*   Ⓧ

"William <u>mildly disagrees</u> that abortion should be illegal"   Ⓧ

"William <u>is neutral about whether </u>abortion should be illegal"   ⬤

"William <u>mildly agrees</u> that abortion should be illegal"   ⬤

"William <u>strongly agrees</u> that abortion should be illegal"   ⬤

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Cue
(Attitude 1)

Plausible
Target Range
(Attitude 2)

Research Question:
How accurate is participants' mental representations of the attitude space?

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H1: Both, the real attitude space and the perceived attitude space are roughly structured in form of two distinguishable clusters of partisan-specific belief-sets.
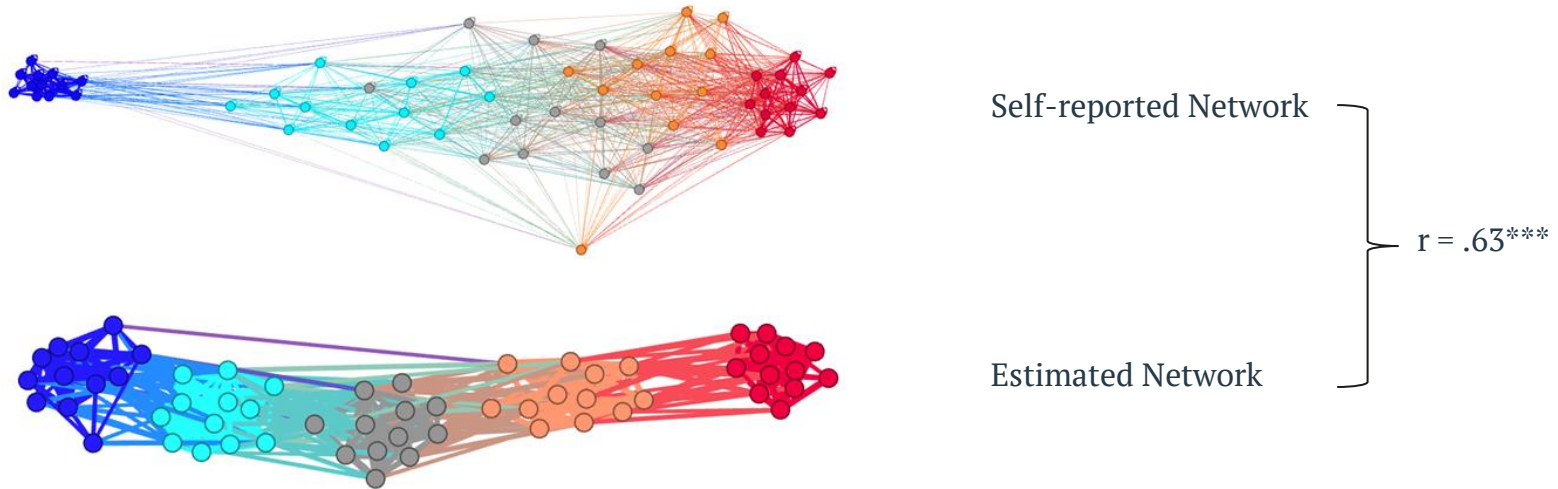

Self-reported Network

r = .63***

Estimated Network

H2: False Polarization: Participants should perceive outgroup positions to be more extreme than they actually are. Accordingly, we predict that participants should overestimate the extremity of outgroup belief systems.

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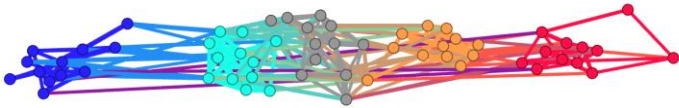Established by the European Commission

- We operationalize extremity as the <u>estimated relative distance</u> between neutral and extreme attitudes
- The extremity index was calculated as the average edge weight between extreme (blue and red) and neutral (grey) nodes
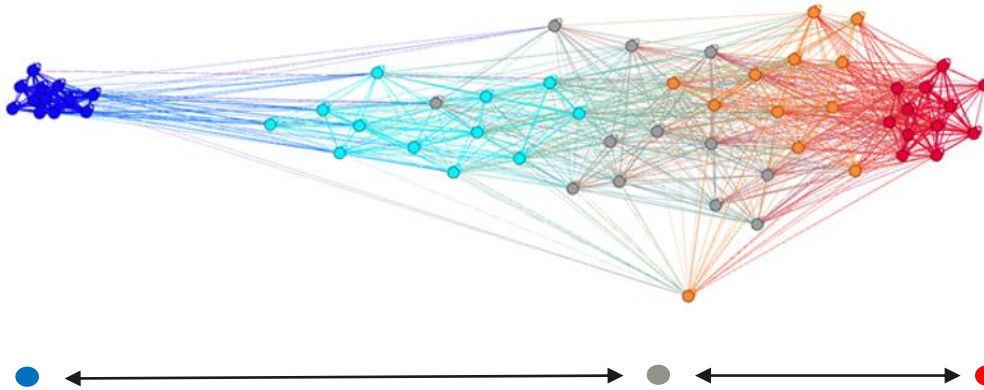
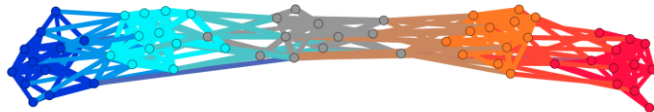**Exploring (errors in) representations of ingroup and outgroup belief-systems**
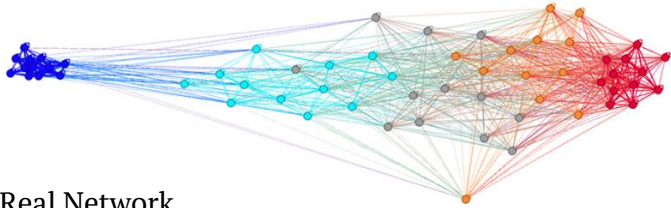
Real Network

Network estimated by Republicans

Democrat Extremety Index = .45
Republican Extremety Index = .77

Network estimated by Democrats

Democrat Extremety Index = .17
Republican Extremety Index = .81

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Discussion

- Despite the fact that people seem to have a good understanding of the attitudes that belong to different groups, there seem to be systematic biases underlying these mental representations.

- Preliminary data suggests that people tend to overestimate the extremity of outgroups (at least when compared to a group´s self-perception)

- Plausible attitude structures for one group, may seem implausible for another

- Future research with ecological valid materials (e.g. social media posts) will be used to replicate the effects

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Thank you!

Exploring Attitudes, Identity and Social Influence

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C) Attitude Network with Independents

In the following we report the network, where the nodes have been color coded based on their correlation with the self identification as "independents." Specifically, pink represents more identification as independent, while yellow represents less.

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Dino Carpentras
Mike Quayle

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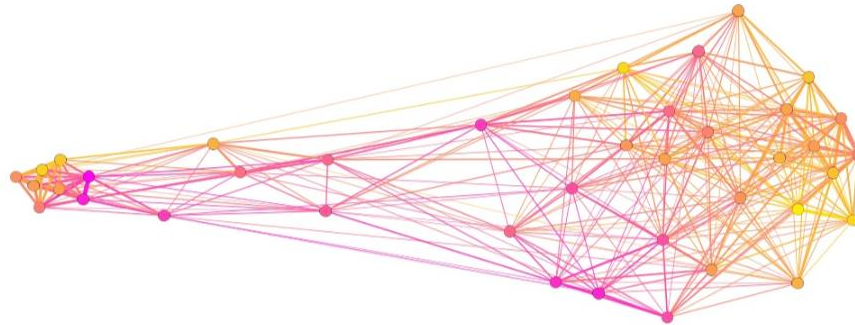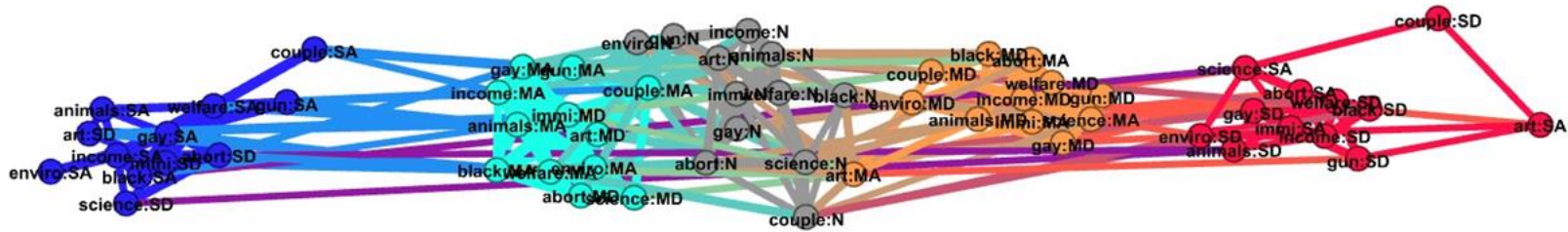
In the republican representation

Strong support for the idea that *"we trust too much in science and not enough in religious faith"* is associated with strong support for the idea that *"the federal government should make a concerted effort to improve social and economic conditions for African Americans"*.

Strong disagreement with the idea that *"we trust too much in science and not enough in religious faith"* is associated with strong disagreement that *"animals should have the same moral rights that human beings do"* and strong disagreement that *"abortion should be illegal".*

Adrian Lüders
Dino Carpentras
Mike Quayle

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