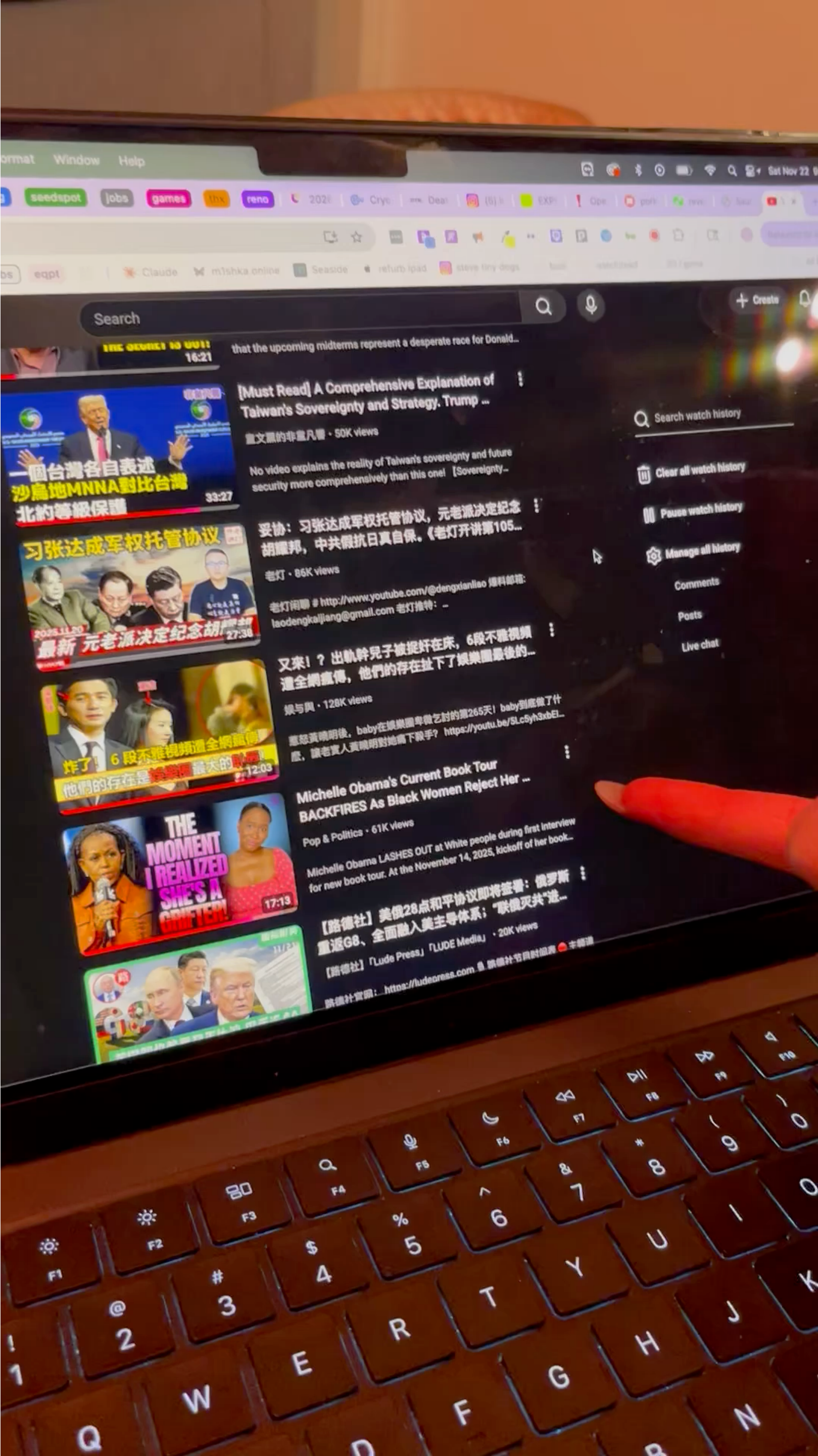


# AI susceptibility

An experimental study of memetic vulnerability  
patterns among online communities

# Context





### Comments



hidden\_\_place 21h

I can't tell what is real anymore.. is anything real?

Reply

View 6 more replies



zebraprawn2 13h

To be fair that's a fucking good looking tomato

Reply

View 14 more replies



darkbluern 17h

Is this a fruit

Reply

View 1 more reply



arca.so

Suggested for you

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Arca

Digital Landscape

terrifying how much of the content we consume was created within the last 24hrs

— Blake Robbins

@blakeir

how much of the content we consume was created within the last 24 hours

# Hypothesis

**For younger generations (Gen Z/ Millennials):** Online network position and community membership are stronger predictors of fake image susceptibility than traditional demographics

**For older generations (Gen X/ Boomers):** Traditional demographic factors (education, political affiliation, geographic location) remain primary predictors, with online network effects playing a secondary role

# The relationship between online network position and memetic vulnerability is influenced by:

## 1. Generation × Education

- Gen Z/Millennials: Education correlates with platform literacy but not skepticism
- Gen X/Boomers: Education directly predicts skepticism levels

## 2. Network position × Isolation paradox

- **Bridges** (high connectivity): More exposure but also more correction mechanisms
- **Isolated users**: Less exposure but fewer corrective social signals
- Prediction: U-shaped curve where moderately connected users are most vulnerable

## 3. Topic-Specific Vulnerabilities by Generation

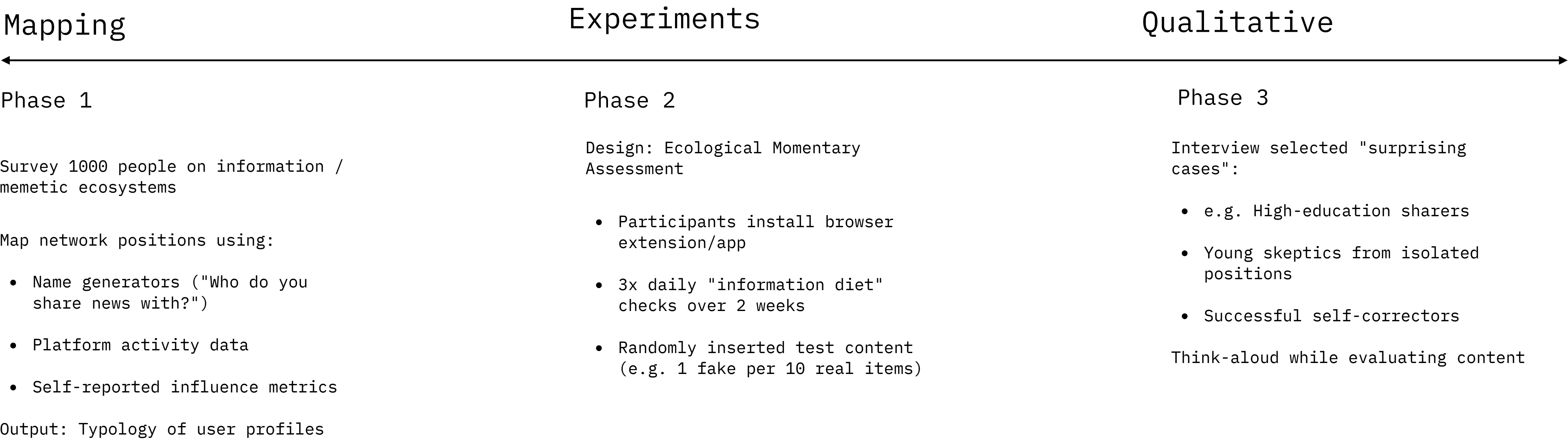
- Gen Z: Climate, social justice, celebrity, emotional triggers override network effects
- Millennials: Economic, health, parenting, peer validation
- Gen X: Political, financial scams, institutional trust
- Boomers: Health, family safety, fear-based content

# Methodology

## **Experimental Design:**

- Develop controlled sets of AI-generated images across 4-5 topic categories (politics, health, celebrity, disaster, economic)
- Randomized controlled trial with 3 conditions: image only, text only, image+text
- Measure three key outcomes: belief acceptance, skepticism activation, sharing intention

# Process Sketch



## **Key Measurements:**

- 1. Baseline susceptibility** (control for individual differences)
- 2. Topic-matched content** (pre-test 20 topics, 5 images per person's "blind spots"). Test fake content in both vulnerable and resistant topics
- 3. Network correction speed + exposure** (do they see fact-checks?)
- 4. Sharing context: who** (public vs private), **why** (motivation: informative, warning, funny, outrage), **how** (as-is, with comment, skepticism)
- 5. Believability ladder:** "definitely fake - probably fake - unsure - probably real - definitely real"

# Analysis Plan

## Power Analysis:

- Effect size: Expect medium ( $d=0.5$ ) for main effects
- Interaction effects: Need  $n=800$  for 80% power to detect small interactions
- Cluster adjustment: Add 20% for network clustering effects

## Analysis Strategy:

1. Multilevel models (person nested in network communities)
2. Causal mediation: Network  $\rightarrow$  Exposure  $\rightarrow$  Belief  $\rightarrow$  Sharing
3. Machine learning: Random forests to identify unexpected predictor combinations
4. Network simulation: Project spread patterns based on findings

# Sampling

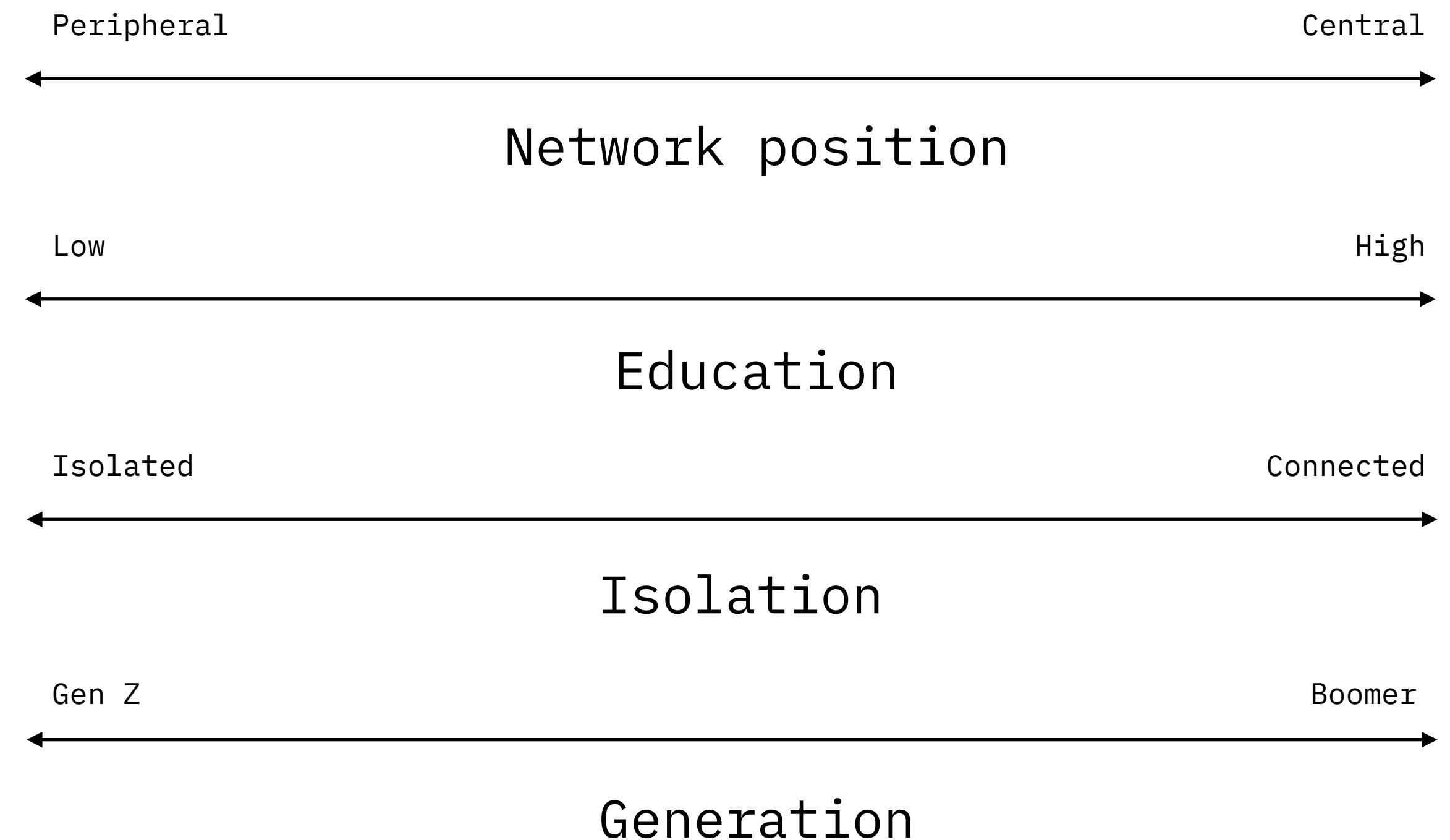
## **Population Sampling:**

- Map participants across both demographic dimensions and network positions
- Target specific network roles: community bridges, central nodes / influencers, peripheral users / lurkers
- Track cross-platform behaviour patterns

# Other confounding factors

## Sub-hypothesis

- **Education levels** predicts skepticism for users  $> 50$  y.o., but show weak correlation for users  $< 35$  y.o.
- **Network centrality** correlates with sharing behaviour for users  $< 35$  y.o. but not  $> 50$  y.o.
- **Cross-platform** users  $< 35$  y.o. will demonstrate higher fake image detection than single-platform users



|                    | High Education                           | Low Education                         |
|--------------------|------------------------------------------|---------------------------------------|
| Isolated + Gen Z   | High susceptibility (no peer correction) | Moderate (platform-native skepticism) |
| Connected + Gen Z  | Low (network correction)                 | High (viral exposure)                 |
| Isolated + Boomer  | Low (traditional skepticism)             | High (no verification sources)        |
| Connected + Boomer | Moderate (mixed signals)                 | Highest (echo chambers)               |

# Potential Issues

- Sampling bias: self selection  
(people worried about misinformation more likely to participate)
- Digital divide: recruitment of isolated older users
- Desirability bias: no one will admit to sharing fake news
- Cross platform identity: same person behaves differently on different platforms
- Artificial skepticism: study context triggers unnatural vigilance
- Ethical issues: fake content might cause potential harm, must show fake content without initial disclosure, study materials could spread beyond participants