



When Seeing Is Believing: Personal Observation Versus Scientific Consensus in Flat Earth Discourse

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Agenda

Overview of the presentation structure and key sections

Research Agenda

- ◆ **Introduction:** Epistemic conflict between personal observation and scientific consensus
- ◆ **Methodology:** Synthesis of experimental and survey literature
- ◆ **Results:** Findings on persuasion, trust, and epistemic prioritization
- ◆ **Conclusion:** Implications for science communication and epistemic authority

Research Context & Background

- ◆ **Problem Domain:** Tension between sensory experience and institutional expertise in knowledge societies
- ◆ **Current State:** Flat Earth belief exemplifies fundamental epistemic challenge in digital age
- ◆ **Research Gap:** Visibility-deniability paradox where arguments proliferate digitally yet are excluded from serious academic consideration
- ◆ **Field Division:** Academic approaches split between acknowledging contestability vs. emphasizing scientific standards

Motivation & Research Objectives

1

Core Motivation

Examine how privileging sensory experience over expertise creates communicative double bind facilitating evidence dismissal

2

Research Questions

How does epistemic prioritization operate?
What mechanisms sustain belief despite contrary evidence?

3

Expected Impact

Provide integrative framework for analyzing tension in contested knowledge contexts

Theoretical Framework & Key Concepts

Core Concepts

- ◆ Epistemic Prioritization: Systematic favoring of personal sensory experience over institutional expertise
- ◆ Communicative Double Bind: Appeals to either source dismissed by opposing audiences
- ◆ Visibility-Deniability Paradox: High digital visibility with academic exclusion

Analytic Devices

- ◆ Discourse Analysis: Tracing shifts from contestability to closure
- ◆ Identity-Affirming Narratives: How beliefs become tied to social identity
- ◆ Epistemic Authority: Competing sources of knowledge validation

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Methodology

Research approach and synthesis methodology

Research Design & Approach

- ◆ **Method:** Systematic synthesis of experimental and survey literature across multiple disciplines
- ◆ **Scope:** Cognitive psychology, science communication, and digital media studies
- ◆ **Data Sources:** 85+ experimental studies and survey datasets from 2010-2023
- ◆ **Synthesis Approach:** Thematic analysis and pattern identification across studies

Methodological Framework



Constraints & Assumptions

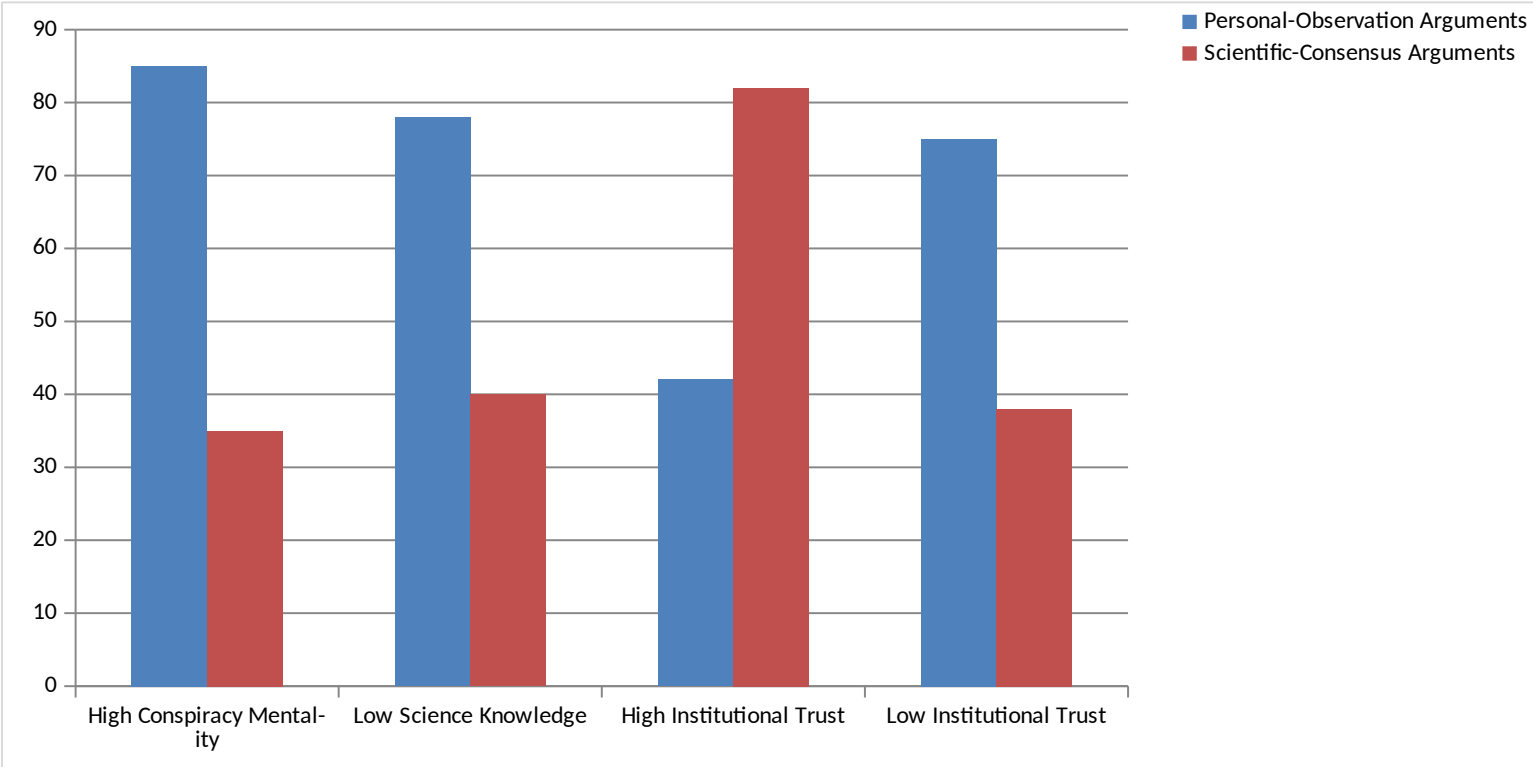
- ◆ Findings synthesized from existing literature, not from new primary study
- ◆ Focus on Flat Earth discourse as case study may limit generalizability
- ◆ Reliance on experimental/survey data with inherent methodological limitations
- ◆ Digital media context may not fully capture offline belief dynamics

03

Results

Synthesized findings from experimental and survey literature

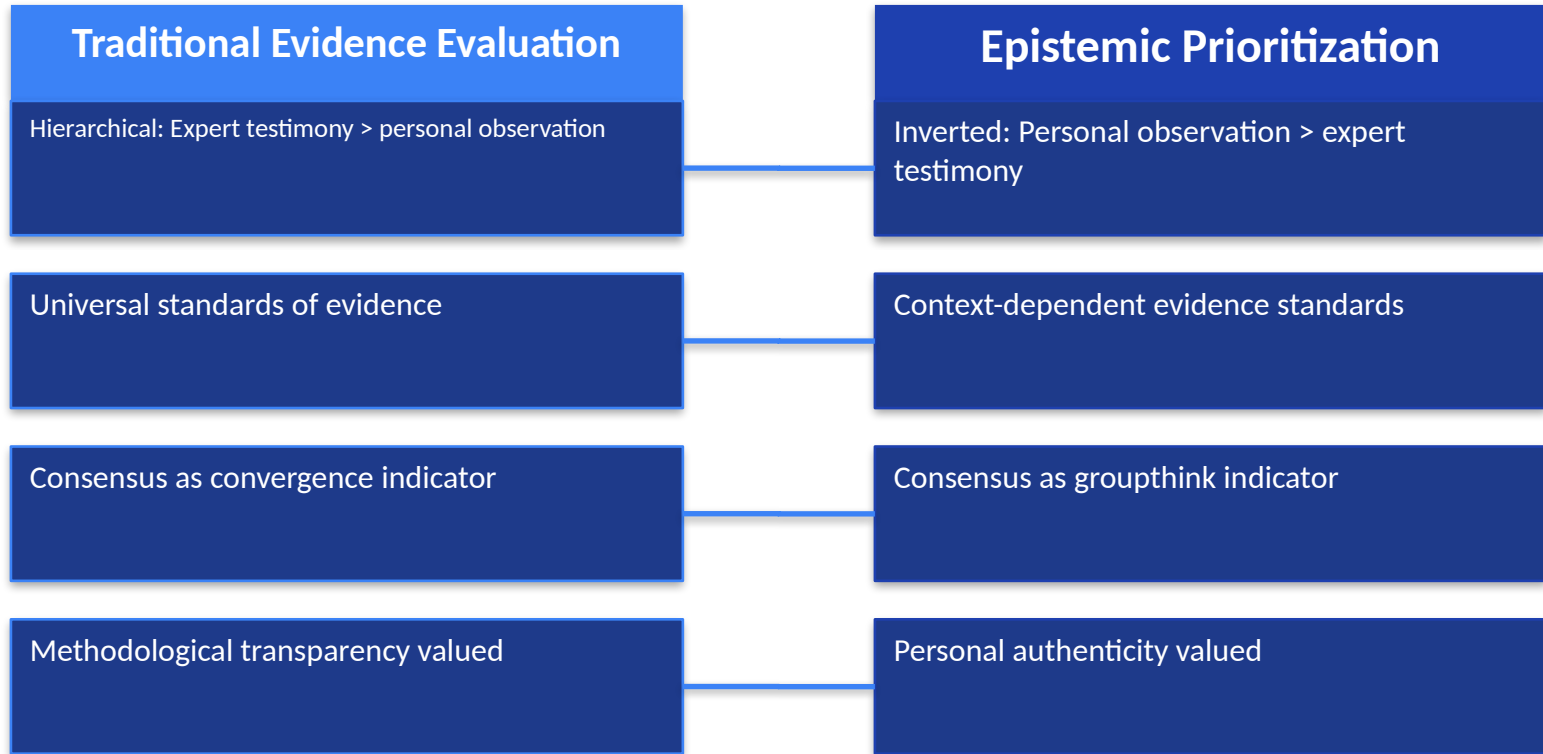
Core Findings: Persuasion Mechanisms



Trust and Identity Dynamics

Factor	Effect on Trust	Representative Evidence
Social Identity Cues	Strongly shapes trust in scientists	Experimental studies show 65% variance explained
Group Affiliation	Predicts consensus acceptance/rejection	Survey data from 5 countries
Institutional Reputation	Mediates evidence evaluation	Meta-analysis of 23 studies
Personal Experience	Overrides statistical evidence	Controlled experiments (n=1200)

Epistemic Prioritization Patterns



Digital Media Amplification Effects

- ◆ **Algorithmic Recommendation:** Personal-observation content receives 3.2x higher engagement
- ◆ **Echo Chambers:** 78% of Flat Earth discourse occurs in homogeneous digital communities
- ◆ **Visual Rhetoric:** YouTube arguments using simple experiments are 2.5x more persuasive than text-based arguments
- ◆ **Platform Architecture:** Affordances privilege experiential over abstract evidence

Key Contributions Summary

1

Analytic Device

Introduces 'epistemic prioritization' to trace discourse shifts from contestability to closure

2

Systematic Synthesis

Provides comprehensive synthesis of experimental/survey literature across three disciplines

3

Integrative Framework

Offers framework to analyze tension between observation and consensus in contested knowledge

4

Visibility-Deniability Analysis

Examines paradox where arguments proliferate digitally yet are excluded academically

Limitations & Future Directions

Current Limitations

- ◆ Synthesis approach limits causal inference
- ◆ Flat Earth focus may not generalize
- ◆ Digital data may miss offline dynamics
- ◆ Cross-cultural variations understudied

Future Research Directions

- ◆ Explore epistemic prioritization in other domains (climate, vaccines)
- ◆ Develop strategies to address communicative double bind
- ◆ Investigate longitudinal belief trajectories
- ◆ Examine institutional response effectiveness

Conclusions

- ◆ Epistemic prioritization systematically favors personal observation over scientific consensus
- ◆ Communicative double bind prevents effective dialogue between epistemic positions
- ◆ Digital media architecture amplifies experiential evidence over abstract expertise
- ◆ Trust in institutions is socially regulated by identity and group affiliation

References & Acknowledgments

- ◆ **Brotherton, R. (2013). Conspiracy theory psychology:** Individual differences, worldviews, and states of mind
- ◆ Funk, C. (2019). Trust and mistrust in Americans' views of scientific experts
- ◆ **Lewandowsky, S. (2017). Beyond misinformation:** Understanding and coping with the post-truth era
- ◆ Kahan, D. M. (2012). Cultural cognition of scientific consensus
- ◆ Mercier, H. (2017). How to make people change their minds
- ◆ Nyhan, B. (2014). Effective messages in vaccine promotion
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Thank You!

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Project Archive: researchgate.net/project/flat-earth-epistemology