The Psychology of Climate Disinformation

Short Report — An Overview and Concrete Recommendations for Action at COP30

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Live from COP30

ClimateMind

1. Executive Summary

Climate disinformation is no longer a peripheral challenge — it has become a structural threat to effective climate governance, public trust, and democratic resilience. The newly launched **Declaration on Information Integrity on Climate Change** at COP30 marks the first global political commitment to address this threat. Yet the Declaration's success will depend on whether its implementation incorporates insights from psychology — the science that explains *why* disinformation spreads, *how* it influences human judgment, and *which interventions truly work*.

This short report offers a concise, actionable overview of
(1) what makes climate disinformation psychologically effective,
(2) which evidence-based interventions reduce its impact, and
(3) what governments, multilateral actors, media, and technology platforms should prioritise as the Declaration moves into implementation.

Key Messages:

- Disinformation works because it exploits automatic cognitive processes, emotional triggers, and social identity needs.
- Psychological mechanisms — not factual accuracy — drive spread, belief, and behavioural impact.
- Effective countermeasures must target both the receiver (citizens, communities) and the sender (platforms, architectures, incentives).
- Prebunking, media literacy, platform design changes, and trusted messenger strategies consistently outperform reactive fact-checking alone.
- The global climate community needs a coordinated, evidence-based, and psychologically informed implementation plan for the Declaration.

ClimateMind proposes a **multilevel psychological framework** for strengthening information integrity across individual, community, institutional, and systemic layers.

2. Background: COP30 and the Declaration on Information Integrity

At COP30, Brazil and UNESCO launched the **Declaration on Information Integrity on Climate Change** — a landmark step recognising that climate disinformation undermines every aspect of climate action: ambition, policy design, public support, and implementation.

The Declaration calls for:

- responsible information ecosystems
- protection of journalists and researchers
- transparent platform governance
- improved public access to evidence-based information
- deeper cooperation across governments, private sector, civil society, and academia
- integration of information integrity into ACE (Action for Climate Empowerment)

Despite its historic nature, the Declaration leaves open a critical question:

How can the psychological factors that cause people to believe disinformation be specifically addressed?

The psychological dimension is currently missing — yet it is essential. Humans interpret climate information through emotion, identity, cognitive shortcuts, and trust dynamics. Ignoring these factors risks implementing measures that are well-intentioned but ineffective.

This short report fills that gap.

3. What is Disinformation — and Why Does It Undermine Climate Policy?

In 2023, the German government introduced a law to reduce emissions from buildings. A wave of public concern, fear, and anger followed. Retrospective analyses showed that organised disinformation significantly shaped public reactions — amplifying worries, stoking outrage, and eroding acceptance of necessary climate measures.[1]

This example illustrates a broader truth: **Climate action relies on public trust and informed decision-making — both of which are weakened by disinformation.**

Definition — Misinformation vs. Disinformation

- **Misinformation:** false or misleading information shared without intent to harm.
- **Disinformation:** misinformation distributed with intent to mislead, confuse, or cause harm.

Disinformation weakens climate action by:

- reducing public acceptance of climate policies
- undermining trust in science and institutions
- polarising societies and fueling identity-based conflict
- decreasing willingness to adopt sustainable behaviours
- destabilising democratic processes needed for long-term climate governance

Bottom line: Reliable, accessible, psychologically informed information ecosystems are not "nice to have" — they are preconditions for effective climate action.

4. The Psychology of Disinformation: How It Works

Disinformation does not succeed because it is logical, coherent, or evidence-based. It succeeds because it **exploits predictable cognitive and emotional mechanisms.**

4.1 Fast and Slow Thinking (System 1 & System 2)

Psychologist Daniel Kahneman distinguishes two modes of human thinking:

- **System 1 – Fast Thinking**
  Automatic, intuitive, effortless.
  Operates through shortcuts (heuristics).
  Easily swayed by emotion, repetition, and simplicity.
- **System 2 – Slow Thinking**
  Analytical, deliberate, effortful.
  Capable of verifying facts and correcting errors — but rarely activated.[2]

Disinformation is effective when people rely on System 1, as most daily judgments do.

4.2 Heuristics Exploited by Disinformation

Availability Heuristic
Information feels more true when it is familiar or frequently repeated.
→ The "Illusory Truth Effect" means repetition increases perceived truth.

Affect Heuristic
Strong emotions (fear, anger, outrage) bypass analytic reasoning.
→ Emotionalised climate content spreads faster and is less critically assessed.

Authority Heuristic
Statements from perceived experts, influencers, or authority figures are trusted — regardless of accuracy.
→ Disinformation actors intentionally co-opt authority cues.

4.3 Motivated Reasoning

Humans process information in ways that protect:

- self-worth
- worldview
- group identity

When disinformation supports these psychological needs, people become more likely to believe, defend, and share it — even against strong factual evidence.[3]

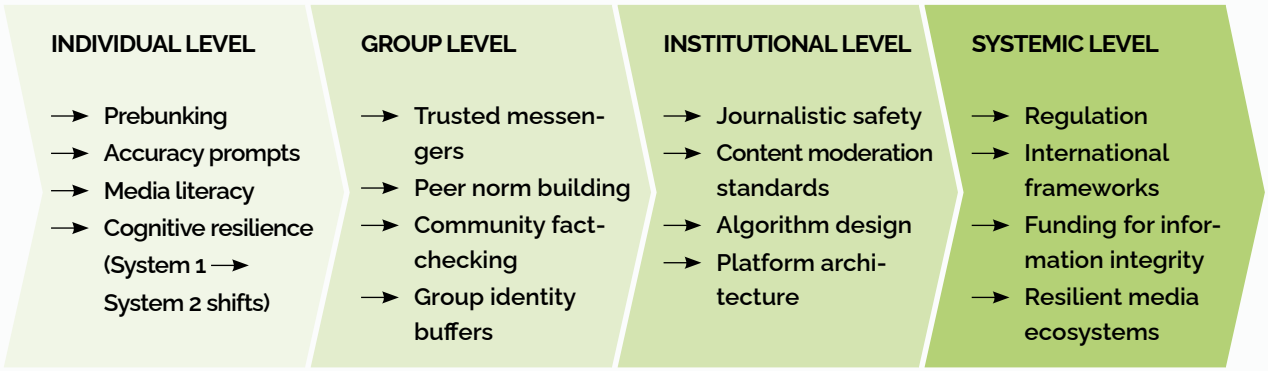
Conclusion:
Psychology provides a robust explanation of why disinformation works and where interventions must target.

5. Evidence-Based Approaches to Counter Disinformation

Climate disinformation can be effectively reduced through a set of interventions that target both **how people process information** and **how information spreads through digital ecosystems**. Psychological science provides robust evidence for four categories of interventions: **debunking, prebunking, media and information literacy**, and **platform architecture changes**. Each works through a different cognitive mechanism and is most effective when integrated into a coordinated strategy.

These categories operate at different cognitive and structural levels but reinforce each other. The ClimateMind Multilevel Disinformation Intervention Framework (Figure 1) synthesises how interventions interact and where they exert the strongest psychological impact.

Figure 1. ClimateMind Multilevel Disinformation Intervention Framework



This framework illustrates the four layers at which effective counter-disinformation measures operate: the individual level (cognitive resilience and literacy), the group level (social norms and trusted messengers), the institutional level (media, journalism, and platform governance), and the systemic level (regulation, funding, and international cooperation). Each layer targets distinct psychological mechanisms — from cognitive shortcuts and identity-driven reasoning to emotional arousal.

5.1 Debunking (Reactive)

Definition: Correcting misinformation after exposure. Commonly used by media and civil society.

Strengths:
- Keeps public awareness high
- Signals trustworthy sources
- Can rebuild trust over time

Limitations:
- No or only minor effects[4] if the recommendations below are not followed
- Requires high effort per false claim
- Corrections often fail to reach the exposed audience
- Residual influence persists (continued influence effect)

Recommendations:
- Issue corrections quickly
- Minimise repetition of the false claim
- Use trusted messengers for target groups

5.2 Prebunking (Proactive)

Definition: Immunising people *before* exposure by pre-emptively showing how disinformation works.

Strengths:
- Increases detection of false claims
- Reduces belief and sharing[5]
- Works across diverse populations

Limitations:
- Effects diminish over time
- Requires periodic reinforcement ("boosters")

5.3 Strengthening Media Literacy

Definition: Empowering individuals to distinguish reliable from unreliable sources.

Strengths:
- Meta-analyses indicate significant positive effects[6]
- Particularly powerful when interactive or game-based

Limitations:
- Effectiveness depends on design quality
- Needs broad, institutionalised implementation

5.4 Platform Architecture & Accuracy Prompts

Changes in platform design can interrupt automatic sharing behaviours.

Examples:
- "Are you sure this information is accurate?" pop-ups
- Slowing virality (friction)
- Clearer labelling of verified accounts
- Downranking clickbait
- Soft warnings on misleading content
- Interactive info-cards supporting source-checking skills

Strengths:
- Structural effect on millions simultaneously
- Evidence base provided[7]

Limitations:
- Requires platform cooperation
- Poor interface design undermines effectiveness

6. Recommendations for the COP30 Declaration

6.1 Strengthening and expanding the Declaration's measures

1. Develop a systematic psychological framework
The Global Initiative should support research that maps the psychological mechanisms influencing belief formation, trust, and susceptibility to disinformation — and use these to guide interventions.

2. Evaluate interventions by target-group profiles
Different audiences require different approaches:

- unexposed
- aware but sceptical
- exposed and rejecting
- heavily radicalised

Policies must be tailored accordingly.

3. Institutionalise Prebunking and literacy programmes
Embed in:

- school curricula
- public administration training
- media institutions
- civil society organisations
- youth and community programmes

4. Provide free, accessible training for organisations
Enable broad uptake through digital platforms, ministries, and educational networks.

6.2 Strengthening measures already contained in the Declaration

On Point 3d ("Call on technology companies")
The Declaration should not only request transparency — it should require concrete design changes:

- Accuracy prompts
- Clearer verification labels
- Algorithmic downweighting of misleading or sensationalist content
- Friction mechanisms for rapid sharing
- Warnings developed with behavioural science
- Optional "explain this claim" pop-outs

On Point 3e ("Promote campaigns on climate change")
Climate communication must be informed by psychology, including:

- emotional design
- framing and narrative research
- identity-sensitive messaging
- trusted messenger strategies
- cultural context
- mechanisms of meaning-making and agency

Campaigns built without psychological expertise risk being ineffective or counterproductive.

7. Implementation Pathways

The Declaration will only succeed if implementation proceeds across **four levels:**

1. Individual level

- Prebunking tools
- Literacy training
- Boosters
- Emotion regulation techniques
- Accuracy-prompts exposure

2. Group level

- Community fact-checking networks
- Peer norms against sharing harmful content
- Trusted messenger programmes
- Youth climate-information hubs

3. Institutional level

- Protection for journalists and researchers
- Ethical AI and recommender systems
- Standards for evidence-based content moderation
- Independent oversight mechanisms

4. Systemic level

- International coordination
- Funding via the Global Initiative
- ACE-integration
- Regional research nodes (e.g., SIDS, LAC, Africa)
- Long-term strengthening of media ecosystems

ClimateMind stands ready to support governments, UN agencies, and civil society partners in designing psychologically informed implementation steps.

8. Annex

8.1 Resource Access & Learning Paths

The following resources are optional reference points for readers who want to deepen their understanding of psychological mechanisms behind misinformation, evidence-based intervention strategies, and climate communication.

Key ClimateMind Resources

- ClimateMind website: https://climatemind.de/en
- *Psychology of Disinformation* explainer series (forthcoming)
- ClimateMind COP30 page (updates, methods, insights): https://go.climatemind.de/en/cop30
- Psychology of COPs blog series: https://go.climatemind.de/en/blog/psychology-cops
- Climate governance glossary (misinformation, narratives, trust): https://go.climatemind.de/en/blog/cop-glossary

Further learning & engagement

- ClimateMind Academy (courses, leadership programmes): https://academy.climatemind.de
- ClimateMind newsletter (updates, psychological insights): https://climatemind.de/en/#newsletter
- ClimateMind WhatsApp Community (daily insights): https://chat.whatsapp.com/D9SOLEJkZoW1C5cy3wGV0U

These resources are **optional learning pathways**, not operational requirements for applying the recommendations in this report.

8.2 Methodology & Evidence Base

This report integrates two complementary evidence streams:

1. Psychological science and behavioural research
Covering: cognitive processing (System 1/2), heuristics and biases, motivated reasoning, social identity, emotion and threat processing, narrative psychology, media literacy, and behavioural intervention design.

2. Applied insights from fieldwork and practitioner dialogue
Grounded in:

- Observation of information dynamics in climate politics
- Analysis of misinformation episodes in climate policy (e.g., Germany 2023)
- Discussions with disinformation researcher, and fact-checking experts and organisations
- Review of international research on misinformation interventions (debunking, prebunking, media literacy, platform architecture)

Approach:
We apply rigorous behavioural science while avoiding individual-level attribution. Insights focus on **patterns, mechanisms, and system-level vulnerabilities.**

8.3 Contact & Collaboration

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Collaboration & Requests

Governments, presidencies, international organisations, research institutions, media partners, and civil society actors interested in strengthening **information integrity through psychology** are invited to get in touch.

ClimateMind Community & Updates

- Website: https://climatemind.de/en
- Newsletter: https://climatemind.de/en/#newsletter
- Academy: https://academy.climatemind.de
- WhatsApp Community: https://chat.whatsapp.com/D9SOLEJkZoW1C5cy3wGV0U
- Next steps and resources: https://go.climatemind.de/en/next-steps

[1] Jost, P. und M. Mack; J. Hillje (2024). Aufgeheizte Debatte? Eine Analyse der Berichterstattung über das Heizungsgesetz – und was wir politisch daraus lernen können. Das Progressive Zentrum

[2] Kahneman, D. (2011). Thinking, fast and slow.

[3] Ziemer, C.-T., & Rothmund, T. (2024). Psychological underpinnings of misinformation countermeasures: A systematic scoping review.

[4] Chan, M.-p. S., & Albarracín, D. (2023). A meta-analysis of correction effects in science-relevant misinformation.

[5] Roozenbeek, J., van der Linden, S., Goldberg, B., Rathje, S., & Lewandowsky, S. (2022). Psychological inoculation improves resilience against misinformation on social media.

[6] Lu, C., Hu, B., Bao, M.-M., Wang, C., Bi, C., & Ju, X.-D. (2024). Can media literacy intervention improve fake news credibility assessment? A meta-analysis.

[7] Pennycook, G., & Rand, D. G. (2022). Accuracy prompts are a replicable and generalizable approach for reducing the spread of misinformation.

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