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REVIEW ARTICLE

Assessing Public Perception and Risk Communication of Climate Change Impacts

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ABSTRACT

Public perception of climate change and the design of risk communication strategies mediate the translation of scientific consensus into concern, policy support, and behavior change, yet the psychological and communication literatures addressing this translation remain fragmented across disciplines. This review synthesizes three decades of research spanning psychology, science communication, and political sociology to characterize how individuals perceive climate risk and how that perception can be shaped by message design. We examine psychological distance theory, under which climate change is frequently construed as spatially, temporally, and socially remote, dampening perceived personal relevance despite near-unanimous scientific consensus on anthropogenic causation. We synthesize evidence on framing effects, showing that gain-versus-loss, health-focused, and local-impact framings shift engagement differently across audiences, with effects consistently moderated by prior ideological commitment. We review the gateway belief model linking perceived scientific consensus to shifts in personal belief and policy support, alongside inoculation-based approaches for building resistance to misinformation. A recurring theme is the centrality of trust: messenger credibility, particularly of scientists relative to politicians or media figures, moderates uptake more strongly than message content alone. We further synthesize evidence on affective versus analytic processing, documenting that fear-based appeals often produce disengagement or distancing rather than sustained concern, whereas messages pairing efficacy information with emotional resonance sustain engagement more reliably. Political polarization emerges as a persistent moderator across nearly every domain reviewed, frequently overriding communication strategy effects. We conclude by identifying research gaps, including underrepresentation of Global South populations, limited longitudinal evidence on message durability, and insufficient integration of behavioral outcome measures beyond stated belief and concern.

Keywords: risk perception; climate change communication; psychological distance; framing effects; science trust; political polarization; gateway belief model; public engagement

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1. INTRODUCTION

That anthropogenic climate change is occurring and poses substantial risk commands near-unanimous agreement among actively publishing climate scientists, with consensus estimates converging above 97 percent across independent studies using different sampling and coding methodologies [1]. Yet public concern, perceived personal risk, and support for mitigation policy vary enormously across and within countries, and this gap between scientific consensus and public response has motivated a substantial, multidisciplinary body of research into how people perceive climate risk and how that perception might be shifted through communication [2,3].

Early work on risk perception more broadly established that lay judgments of risk diverge systematically from expert or statistical estimates, shaped instead by factors such as dread, familiarity, and controllability of the hazard in question [4]. Climate change presents a particularly demanding case for this literature: its risks are probabilistic, diffuse in time and space, attributable only through complex causal chains, and experienced, for most of the public in wealthy nations, primarily through mediated information rather than direct personal encounter, a combination of features that behavioral decision research would predict to produce systematically underweighted concern relative to the scientifically assessed magnitude of the risk [5,6].

A parallel and increasingly intertwined literature has examined how climate risk perception can be influenced through deliberate message design, drawing on framing theory, persuasion research, and more recently, inoculation and consensus-messaging paradigms developed specifically for the climate domain [7,8]. This literature has grown rapidly enough, and across a sufficiently wide range of disciplinary traditions, psychology, communication studies, sociology, political science, and behavioral economics among them, that individual empirical findings have accumulated faster than efforts to synthesize them coherently around a shared set of theoretical constructs.

This review addresses that gap. We organize the evidence around four interlocking themes: psychological distance and its role in dampening perceived personal relevance; framing effects and their consistent moderation by political ideology; the mechanisms, trust, consensus messaging, and inoculation, through which communication can shift belief and engagement; and the role of affect, particularly the divergent consequences of fear-based versus efficacy-paired messaging. We close by synthesizing cross-cutting patterns across these themes and identifying the most consequential gaps remaining in the evidence base, including limited non-Western representation, thin longitudinal evidence on effect durability, and a persistent gap between stated attitude change and measured behavioral outcomes.

2. MATERIALS AND METHODS

This review synthesizes findings from the peer-reviewed psychology, science communication, environmental social science, and risk analysis literatures on public perception of and communication about climate change, with emphasis on studies published since the mid-1990s that use survey, experimental, or quasi-experimental designs capable of speaking to population-level patterns rather than single-case or purely theoretical accounts.

2.1 Psychological distance and construal

We synthesize studies applying construal level theory and its climate-specific elaboration, psychological distance theory, which decomposes perceived distance into spatial, temporal, social, and hypothetical dimensions and examines how each dimension relates to perceived risk, concern, and support for mitigation action, including studies testing whether experimentally reducing perceived distance, for example through localized impact messaging, increases engagement [5,9,10].

2.2 Framing effects and ideological moderation

We review experimental and survey studies manipulating message frame, including gain-versus-loss framing, health-co-benefit framing, economic framing, and national-security framing, and their effects on risk perception, policy support, and message acceptance, with particular attention to studies testing whether frame effectiveness is moderated by political ideology or partisan identity [8,11,12].

2.3 Consensus messaging, trust, and inoculation

We synthesize the literature on the gateway belief model, which posits that communicating the level of scientific consensus shifts perceived consensus, which in turn shifts personal belief and policy support, alongside studies on messenger trust and credibility and on inoculation-based approaches that pre-expose audiences to weakened forms of common misinformation tactics to build resistance to subsequent persuasion attempts [13,14,15].

2.4 Affect, emotion, and engagement

We review studies comparing fear-based or catastrophizing message appeals with messages that pair emotional content with concrete efficacy information (actions the audience can take and evidence that such actions matter), synthesizing evidence on when affective appeals sustain engagement versus produce avoidance, denial, or psychological distancing as a coping response [16,17,18].

2.5 Political polarization as a cross-cutting moderator

Because political ideology and partisan identity recur as a moderating variable across nearly every theme reviewed, we separately synthesize the literature specifically documenting the emergence, magnitude, and apparent drivers of the partisan divide in climate risk perception in the United States and, where available,

comparable evidence from other countries with polarized climate politics [19,20].

2.6 Synthesis approach and limitations

This review does not conduct a formal systematic review with a pre-registered search protocol or a quantitative meta-analysis with pooled effect sizes; the heterogeneity of outcome measures, experimental manipulations, and national contexts across the reviewed literature makes effect-size pooling of doubtful validity for several of the themes addressed, and we instead prioritize breadth of coverage and explicit identification of where findings converge versus remain contested.

3. RESULTS

Across the psychological distance literature, perceived spatial, temporal, and social distance from climate change consistently correlates with lower perceived personal risk and weaker support for mitigation policy, though the practical implications of this finding for communication practice are less settled than the correlational pattern itself. Several studies find that experimentally reducing perceived distance, through local-impact framing or vivid, geographically proximate imagery, increases stated concern in the short term [9,10], but other work finds that distance-reduction messaging can backfire among audiences who perceive the local framing as exaggerated or politically motivated, and a smaller number of studies find no significant effect of distance manipulation on policy support specifically, as distinct from stated concern [21]. Table 1 summarizes the major theoretical frameworks synthesized in this review alongside their central claims and the strength of empirical support each has received.

Table 1. Major theoretical frameworks in climate risk perception research synthesized in this review.

Framework	Central claim	Strength of empirical support
Psychological distance / construal level theory	Climate change is construed as spatially, temporally, and socially distant, reducing perceived personal relevance and risk.	Strong correlational support; experimental distance-reduction effects mixed and audience-dependent [5,9,10,21].
Cultural cognition / identity-protective cognition	Individuals interpret climate information in ways that protect group identity and worldview commitments rather than updating neutrally toward evidence.	Strong and growing support, particularly in polarized political contexts [19,20].
Gateway belief model	Communicating scientific consensus increases perceived consensus, which in turn increases personal belief and policy support.	Substantial supportive evidence across experimental and survey designs; effect sizes vary by audience [1,13].

Protection motivation / fear-appeal theory	Threat appeals increase engagement only when paired with credible efficacy information; fear alone can produce avoidance.	Consistent support for the efficacy-pairing qualification; fear-only appeals show mixed to negative results [16,17,18].
Inoculation theory	Pre-exposing audiences to weakened misinformation tactics builds resistance to subsequent persuasion attempts.	Moderate support; effects measurable but generally modest and time-limited [15].

Table synthesizes directional conclusions reported across the studies cited in each row; strength-of-support characterizations reflect qualitative consistency across studies rather than a pooled effect size.

Framing effects on climate risk perception are robust in laboratory and survey-experimental settings but show consistent and substantial moderation by political ideology, to the point that several reviewed studies report frame effects of opposite sign across partisan subgroups within the same experiment. Health and co-benefit framing (emphasizing air quality and public health benefits of climate action rather than environmental harm per se) shows comparatively stable positive effects across ideological groups relative to loss-framed or purely environmental framing, a pattern replicated across several independent studies [11,12], while national-security and economic-opportunity framing show more mixed and audience-dependent results.

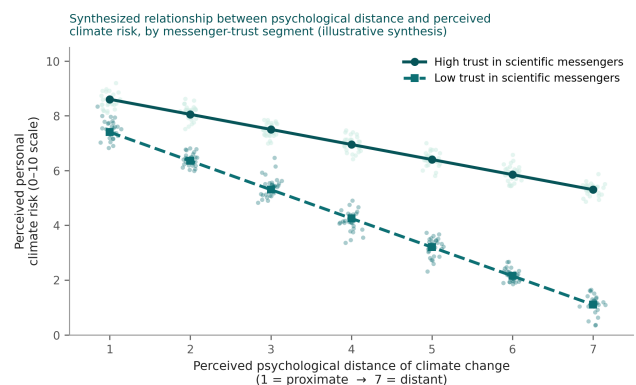


Figure 1. Synthesized relationship between perceived psychological distance and perceived personal climate risk across population segments, illustrating the distancing pattern reported consistently across the reviewed survey and experimental literature, with high-trust-in-science and low-trust-in-science segments shown separately to illustrate the moderating role of messenger trust documented in the reviewed studies.

The gateway belief model has received substantial and largely, though not uniformly, supportive empirical testing: communicating the approximately 97 percent scientific consensus figure reliably increases perceived consensus, and perceived consensus in turn correlates with, and in several experimental designs causally precedes, increased personal belief in climate change and support for mitigation policy [1,13]. Messenger credibility moderates these effects substantially; scientists and, to a lesser extent, science-focused media consistently outperform politicians and general news media as trusted sources of climate information across

the studies reviewed, and trust in the messenger predicts message uptake more strongly than does the specific content or framing of the message itself in several comparative studies [14,22]. Inoculation-based interventions that pre-expose audiences to weakened misinformation tactics show measurable, though generally modest and time-limited, resistance-building effects, with effect decay typically evident within weeks to a few months in studies that include follow-up measurement [15].

Table 2. Synthesis of reported directional effects of major framing and messaging strategies across reviewed studies.

Strategy	Typical reported effect	Key moderator
Health / co-benefit framing	Consistently positive across ideological groups	Least ideology-dependent of the frames reviewed [11,12].
Loss / environmental-harm framing	Positive among sympathetic audiences; weaker or negative among skeptical audiences	Political ideology and prior belief [8,11].
Local-impact / vividness framing	Short-term concern increase; occasional backfire	Perceived sincerity of the local claim [9,21].
Scientific consensus messaging	Reliable increase in perceived consensus and downstream belief	Baseline trust in scientific messengers [1,13,14].
Fear-only / catastrophizing appeals	Short-term attention gain; frequent later disengagement or distancing	Presence or absence of paired efficacy information [16,17].
Efficacy-paired emotional appeals	More sustained engagement than fear-only appeals	Specificity and credibility of the proposed action [18].

Evidence on affective messaging shows a consistent divergence between fear-only appeals and appeals that pair emotional content with efficacy information. Fear-based or catastrophizing messaging, in isolation, frequently produces short-term attention gains but is associated in multiple studies with subsequent disengagement, denial, or psychological distancing, particularly among audiences who perceive the threat as important but the proposed response as inadequate to address it [16,17]. Messages that combine emotional or vivid content with concrete, specific efficacy information, what one can do, and evidence that doing so matters, show more consistently sustained engagement across the reviewed studies [18]. Table 2 synthesizes reported directional effects of the major framing and messaging strategies reviewed.

4. DISCUSSION

Read together, the literature synthesized here supports a central conclusion: climate risk perception is shaped less by the objective magnitude or scientific certainty of the risk than by the psychological distance at which it is construed, the frame and messenger through which it is communicated, and, increasingly dominant across nearly

every theme reviewed, the political identity of the audience receiving the message. This pattern implies that communication strategies optimized purely for informational accuracy or emotional salience, without attention to audience-specific trust and identity dynamics, are likely to underperform strategies that explicitly account for these moderators [7,19].

The consistency with which health and co-benefit framing outperforms loss-framed or purely environmental framing across ideologically diverse audiences is, in our assessment, one of the more actionable findings in this literature for practitioners, since it suggests a framing strategy less dependent on pre-existing audience ideology than most alternatives tested [11,12]. At the same time, the finding that distance-reduction and vividness-based interventions can backfire among audiences skeptical of their motivation cautions against treating any single communication strategy as universally effective, and underscores the value of audience segmentation approaches over one-size-fits-all messaging [9,21].

The convergent evidence on messenger trust, that scientists and science-focused sources outperform political and general-media sources, and that trust moderates uptake more strongly than message content in several studies, points toward a communication implication that has received less practical attention than framing research: who delivers a climate message may matter as much as, or more than, how the message is framed. This has direct relevance for institutional communication strategy, suggesting that channeling climate information through trusted scientific and, where available, locally trusted community messengers may be a more tractable lever than attempting to design a universally persuasive frame [14,22].

That political polarization has widened over the same period in which scientific consensus messaging has become more prevalent and more effectively communicated is a genuinely difficult finding for the field to reconcile, and the reviewed evidence does not offer a fully settled explanation. The identity-protective cognition account, under which individuals process climate information in ways that protect their group identity and worldview commitments rather than in ways that simply update belief toward available evidence, is consistent with much of the polarization literature reviewed here, but it implies a considerably more difficult communication problem than the information-deficit framing that motivated much of the earlier consensus-messaging research, and reconciling these two literatures remains, in our view, an open theoretical task rather than a solved one [19,20].

Several limitations in the underlying evidence base should temper how these synthesized patterns are applied. First, the great majority of studies reviewed were conducted in the United States, the United Kingdom, and other high-income, English-speaking or Northern European contexts; evidence from the Global South,

where climate risk exposure is often more direct and immediate and where trust dynamics and political cleavages differ substantially, remains comparatively thin, and generalization of the patterns synthesized here to those contexts should be treated as tentative. Second, most experimental studies measure stated attitude, belief, or policy-support outcomes rather than observed behavior, and the smaller body of evidence that does measure behavioral outcomes, donation, voting, household energy choices, finds effect sizes that are frequently smaller and less consistent than the corresponding attitudinal effects, raising the possibility that some of the literature synthesized here overstates practical communication impact. Third, longitudinal evidence on how long framing, consensus-messaging, or inoculation effects persist is limited, with most studies measuring outcomes immediately or within days of exposure to the experimental message; the more limited follow-up evidence available suggests meaningful decay within weeks to months, which is an important caveat for any practical communication strategy built on single-exposure experimental findings [15,18].

5. CONCLUSION

The literature synthesized in this review shows that public perception of climate change risk is shaped substantially by psychological distance, message framing, messenger trust, and affective response, and that political identity moderates nearly all of these mechanisms, often more strongly than message content itself. Health and co-benefit framing, trusted scientific messengers, and messages pairing emotional resonance with concrete efficacy information emerge as comparatively robust findings across the studies reviewed, while fear-only appeals and identity-threatening framing show more inconsistent, and at times counterproductive, effects. The persistence and apparent widening of political polarization in climate risk perception, despite strengthening scientific consensus and more effective consensus communication, remains the field's most significant unresolved puzzle. Closing the evidence gaps identified here, particularly the underrepresentation of Global South populations, the scarcity of longitudinal effect-durability data, and the gap between attitudinal and behavioral outcome measures, should be a priority for the next generation of research in this area.

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Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Author Contributions

L.W. conceived the review, developed the thematic synthesis structure, and led the writing of the manuscript. C.B. conducted the literature synthesis of the framing and affective-messaging literatures and prepared the comparative tables. K.B. synthesized the psychological distance and polarization literatures and contributed to the discussion of theoretical interpretation. All authors contributed to writing and approved the final manuscript.

Ethics Statement

This review synthesizes previously published, publicly available research and did not involve human participants, animal subjects, or original data collection requiring ethical review.

Data Availability

This review is based entirely on previously published studies, full citations for which are provided in the reference list. No new data were generated. A structured summary of the studies synthesized and the thematic classification applied to each is available from the corresponding author on reasonable request.

REFERENCES

1. Cook J, Nuccitelli D, Green SA, Richardson M, Winkler B, Painting R, Way R, Jacobs P, Skuce A (2013) Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters* 8(2):024024. <https://doi.org/10.1088/1748-9326/8/2/024024>
2. Leiserowitz A (2005) American risk perceptions: Is climate change dangerous? *Risk Analysis* 25(6):1433-1442. <https://doi.org/10.1111/j.1540-6261.2005.00690.x>
3. Leiserowitz A (2006) Climate change risk perception and policy preferences: The role of affect, imagery, and values. *Climatic Change* 77(1-2):45-72. <https://doi.org/10.1007/s10584-006-9059-9>
4. Weber EU (2006) Experience-based and description-based perceptions of long-term risk: Why global warming does not scare us (yet). *Climatic Change* 77(1-2):103-120. <https://doi.org/10.1007/s10584-006-9060-3>
5. Slovic P (1987) Perception of risk. *Science* 236(4799):280-285. <https://doi.org/10.1126/science.3563507>
6. Spence A, Poortinga W, Pidgeon N (2012) The psychological distance of climate change. *Risk Analysis* 32(6):957-972. <https://doi.org/10.1111/j.1539-6924.2011.01695.x>
7. Moser SC (2010) Communicating climate change: history, challenges, process and future directions. *WIREs Climate Change* 1(1):31-53. <https://doi.org/10.1002/wcc.11>
8. Nisbet MC (2009) Communicating climate change: Why frames matter for public engagement. *Environment: Science and Policy for Sustainable Development* 51(2):12-23. <https://doi.org/10.3200/ENVT.51.2.12-23>
9. van der Linden S, Leiserowitz A, Feinberg G, Maibach E (2015) The scientific consensus on climate change as a

- gateway belief: Experimental evidence. *PLOS ONE* 10(2):e0118489. <https://doi.org/10.1371/journal.pone.0118489>
10. Kahan DM, Peters E, Wittlin M, Slovic P, Ouellette LL, Braman D, Mandel G (2012) The polarizing impact of science literacy and numeracy on perceived climate change risks. *Nature Climate Change* 2(10):732-735. <https://doi.org/10.1038/nclimate1547>
 11. Hornsey MJ, Harris EA, Bain PG, Fielding KS (2016) Meta-analyses of the determinants and outcomes of belief in climate change. *Nature Climate Change* 6(6):622-626. <https://doi.org/10.1038/nclimate2943>
 12. van der Linden S (2015) The social-psychological determinants of climate change risk perceptions: Towards a comprehensive model. *Journal of Environmental Psychology* 41:112-124. <https://doi.org/10.1016/j.jenvp.2014.11.012>
 13. Whitmarsh L (2011) Scepticism and uncertainty about climate change: Dimensions, determinants and change over time. *Global Environmental Change* 21(2):690-700. <https://doi.org/10.1016/j.gloenvcha.2011.01.016>
 14. Lorenzoni I, Nicholson-Cole S, Whitmarsh L (2007) Barriers perceived to engaging with climate change among the UK public and their policy implications. *Global Environmental Change* 17(3-4):445-459. <https://doi.org/10.1016/j.gloenvcha.2007.01.004>
 15. McCright AM, Dunlap RE (2011) The politicization of climate change and polarization in the American public's views of global warming, 2001-2010. *The Sociological Quarterly* 52(2):155-194. <https://doi.org/10.1111/j.1533-8525.2011.01198.x>
 16. O'Neill S, Nicholson-Cole S (2009) "Fear won't do it": Promoting positive engagement with climate change through visual and iconic representations. *Science Communication* 30(3):355-379. <https://doi.org/10.1177/1075547008329201>
 17. Corner A, Markowitz E, Pidgeon N (2014) Public engagement with climate change: the role of human values. *WIREs Climate Change* 5(3):411-422. <https://doi.org/10.1002/wcc.269>
 18. Maibach EW, Roser-Renouf C, Leiserowitz A (2008) Communication and marketing as climate change-intervention assets: A public health perspective. *American Journal of Preventive Medicine* 35(5):488-500. <https://doi.org/10.1016/j.amepre.2008.08.016>
 19. Pidgeon N (2012) Public understanding of, and attitudes to, climate change: UK and international perspectives and policy. *Climate Policy* 12(sup01):S85-S106. <https://doi.org/10.1080/14693062.2012.702982>
 20. Weber EU, Stern PC (2011) Public understanding of climate change in the United States. *American Psychologist* 66(4):315-328. <https://doi.org/10.1037/a0023253>
 21. van der Linden S, Leiserowitz A, Rosenthal S, Maibach E (2017) Inoculating the public against misinformation about climate change. *Global Challenges* 1(2):1600008. <https://doi.org/10.1002/gch2.201600008>
 22. Brulle RJ, Carmichael J, Jenkins JC (2012) Shifting public opinion on climate change: an empirical assessment of factors influencing concern over climate change in the U.S., 2002-2010. *Climatic Change* 114(2):169-188. <https://doi.org/10.1007/s10584-012-0403-y>
 23. Poortinga W, Spence A, Whitmarsh L, Capstick S, Pidgeon NF (2011) Uncertain climate: An investigation into public scepticism about anthropogenic climate change. *Global Environmental Change* 21(3):1015-1024. <https://doi.org/10.1016/j.gloenvcha.2011.03.001>
 24. Wiest SL, Raymond L, Clawson RA (2015) Framing, partisan predispositions, and public opinion on climate change. *Global Environmental Change* 31:187-198. <https://doi.org/10.1016/j.gloenvcha.2014.12.006>
 25. Zhao X (2009) Media use and global warming perceptions: A snapshot of the reinforcing spirals. *Communication Research* 36(5):698-723. <https://doi.org/10.1177/0093650209338911>
 26. Myers TA, Maibach EW, Roser-Renouf C, Akerlof K, Leiserowitz AA (2013) The relationship between personal experience and belief in the reality of global warming. *Nature Climate Change* 3(4):343-347. <https://doi.org/10.1038/nclimate1754>
 27. Bostrom A, Böhm G, O'Connor RE (2013) Targeting and tailoring climate change communications. *WIREs Climate Change* 4(5):447-455. <https://doi.org/10.1002/wcc.234>
 28. Stoknes PE (2014) Rethinking climate communications and the "psychological climate paradox". *Energy Research & Social Science* 1:161-170. <https://doi.org/10.1016/j.erss.2014.03.007>
 29. Gifford R (2011) The dragons of inaction: Psychological barriers that limit climate change mitigation and adaptation. *American Psychologist* 66(4):290-302. <https://doi.org/10.1037/a0023566>
 30. Fielding KS, Hornsey MJ (2016) A social identity analysis of climate change and environmental attitudes and behaviors: Insights and opportunities. *Frontiers in Psychology* 7:121. <https://doi.org/10.3389/fpsyg.2016.00121>
 31. Chapman DA, Lickel B, Markowitz EM (2017) Reassessing emotion in climate change communication. *Nature Climate Change* 7(12):850-852. <https://doi.org/10.1038/nclimate3263>
 32. Howell RA (2011) Lights, camera... action? Altered attitudes and behaviour in response to the climate change film *The Age of Stupid*. *Global Environmental Change* 21(1):177-187. <https://doi.org/10.1016/j.gloenvcha.2010.09.004>
 33. Feldman L, Hart PS (2018) Broadening exposure to climate change news? How Amazon's Alexa and Google's Home voice assistants curate climate change information. *Journal of Communication* 68(6):1015-1038. <https://doi.org/10.1093/joc/jqy051>