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The Climate Change Conspiracy Belief Scale: Development and Validation of a Multidimensional Measure

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Abstract

Climate change conspiracy beliefs are increasingly implicated in public resistance to climate action, yet their measurement remains conceptually imprecise and psychometrically limited. Existing work has relied on ad hoc instruments that blur conspiracist claims with broader forms of climate scepticism, distrust, or misinformation. In the current research, we developed and validated the *Climate Change Conspiracy Belief Scale* (CCCBS), a multidimensional measure designed to capture the defining and ideologically distinct structure of climate conspiracism. Across three studies, we tested the scale's dimensionality, reliability, and validity in both Western and non-WEIRD contexts. Study 1 generated and refined an initial item pool, identifying a three-factor structure comprising *denialist* (climate change is fabricated or deliberately exaggerated), *warmist* (climate evidence is suppressed or manipulated), and *alarmist* (catastrophic climate risks are concealed) climate conspiracy beliefs. Study 2a provided a preregistered test of this structure and demonstrated strong internal consistency, measurement invariance across gender groups, and construct validity. Study 2b further established temporal stability through test–retest reliability and longitudinal measurement invariance. Study 3 replicated the three-factor structure in Trinidad and Tobago, although weaker internal consistency and factor loadings suggested that climate conspiracism may be less ideologically consolidated in this non-Western context. These findings advance the conceptualisation and measurement of climate conspiracism as a multidimensional and context-sensitive belief system.

Keywords: Climate change conspiracy beliefs, conspiracy theories, climate scepticism, climate denial, scale development, psychometric validation

Introduction

Human societies have been forced to adapt to the growing environmental threat posed by climate change—defined as long-term alterations in global temperature and weather patterns largely driven by anthropogenic greenhouse gas emissions (IPCC, 2023). As mitigation efforts intensify and the international community mobilises through agreements and pro-climate policies (Iacobuta et al., 2018), public understanding and acceptance of the scientific consensus have become critical for effective collective action and legislative support (van der Linden et al., 2015). Public understanding of climate change, however, is shaped not only by scientific information but also by competing narratives that distort or misrepresent the nature of the threat (Cook, 2019).

Among the most consequential are conspiracy narratives, which pose a barrier to climate mitigation (de Gourville et al., 2026) and circulate across both Western and Global South contexts (Stockemer & Bordeleau, 2024). Climate change conspiracy beliefs have consequently attracted considerable multidisciplinary attention (see Biddlestone et al., 2022; Tam & Chan, 2023), with recent research further demonstrating that conspiracist narratives can emerge on both sides of the climate debate and correspond with divergent environmental responses (de Gourville et al., 2025; Douglas & Sutton, 2015). Despite these theoretical advances, however, progress has been constrained by a lack of comprehensively validated measures and limited investigation of the conceptual and dimensional structure of climate conspiracism. The present research addresses these limitations by developing and validating a multidimensional measure of climate change conspiracy beliefs designed to capture the structural features of conspiracist thinking across denialist, warmist, and alarmist variants.

Conspiracy Beliefs Within Climate Change Denial

Concomitant with rising scientific awareness of climate change in the 20th century, a range of actors—most notably industrial stakeholders and conservative think tanks—have

mobilised to undermine the perceived legitimacy of climate science and erode public acceptance (Cook et al., 2019; Dunlap & Brulle, 2020). Within this broader effort, conspiracy narratives have emerged as a particularly potent strategic tool (Cook, 2020) and have since diffused globally (Stockemer & Bordeleau, 2024; Tam & Chan, 2023). These narratives often portray climate change as fabricated or exaggerated by powerful actors for self-serving purposes (Douglas & Sutton, 2015; Uscinski et al., 2017), for example by alleging that scientists manipulate data for financial gain or that governments invoke climate change to justify political control (de Gourville et al., 2026). Their widespread circulation has, in turn, stimulated substantial research examining their antecedents, correlates, and consequences (e.g., Bertin et al., 2021; Chan et al., 2023, 2024; Haltinner et al., 2021; Jolley & Douglas, 2014a; van der Linden, 2015).

However, conspiracy narratives are only one of several rhetorical strategies employed by climate contrarians to contest mainstream scientific accounts (Cook, 2020; Diethelm & McKee, 2009; see also de Gourville et al., 2026). The broader climate discourse is also saturated with non-conspiracist sceptical claims that share a similar epistemic stance and co-circulate with these beliefs, including assertions that climate change is not occurring, not anthropogenically derived, or not harmful (Rahmstorf, 2004; see also Coan et al., 2021; Poortinga et al., 2011). Importantly, such narratives can undermine the credibility of climate science and its associated actors *without* invoking coordinated, clandestine actors and grand plots. This semantic overlap can blur the conceptual boundaries between scepticism and conspiracism, presenting an overlooked measurement challenge. For example, measures of general climate scepticism include items such as “concerns about climate change have been exaggerated” (de Graaf et al., 2023), yet such claims may inadvertently capture conspiracist thinking if respondents interpret the alleged exaggeration as the product of deliberate, coordinated deception. Similarly, underspecified conspiracist claims, such as “climate change

is a hoax" (Stockemer & Bordeleau, 2024), may also tap into broader sentiments of climate denial without clearly isolating the conspiracist explanation underlying them.

Scholars have recently theorised about the defining features of conspiracy theories that distinguish them from other forms of belief. For example, they typically concern events of public importance, are epistemically risky (prone to falsity), and oppose accepted narratives of those events (Douglas & Sutton, 2023). Although conspiracy theories emerge in response to diverse political, social, and environmental developments, they tend to follow a common narrative structure. Specifically, they involve three interrelated elements: *actors* with real or perceived power [1], who together take secret or deceptive *actions* [2], informed by self-serving *motives* that are likely at odds with public interests [3] (Bale, 2007; Douglas & Sutton, 2023; Douglas et al., 2017; Uscinski & Parent, 2014). This common structure therefore has important implications for measurement, as items intended to assess conspiracy beliefs must contain sufficient specificity to unambiguously capture a conspiracist explanation. This specificity need not always require explicit articulation of every component of the actor–action–motive structure. For example, established measures include items such as "The Apollo moon landings never happened and were staged in a Hollywood film studio" (Lewandowsky et al., 2013), which unambiguously invoke a widely recognised conspiracy despite leaving the actors or motives unspecified. Instead, the degree of specificity required may depend on the specific domain and the alternative forms of belief with which conspiracism coexists. This need is particularly acute in the climate domain, where closely related sceptical and non-conspiracist claims are commonplace (Coan et al., 2021). More closely approximating the actor–action–motive triad may therefore provide a useful means of preserving conspiracist distinction from adjacent climate misinformation. Supporting this approach, Piliousis and Gardikiotis (2026) found that underspecified climate conspiracy items overlapped with general climate denialism, while items more closely reflecting this

structure emerged as factorially distinct and exhibited different patterns of association with theoretically relevant correlates. Such specificity becomes even more important when extending measurement beyond climate-denying conspiracy beliefs, which capture only one facet of a multidimensional phenomenon spanning the ideological divide.

Denialist versus Warmist Climate Change Conspiracy Beliefs

Climate change is a highly politicised issue (Hornsey et al., 2016). Climate denialism, in particular, has long been shown to cluster disproportionately on the political right, where rejection of the scientific consensus is more prevalent (Dunlap et al., 2016). Climate change conspiracy beliefs are similarly politically charged (Douglas & Sutton, 2015). However, conspiracist thinking in this domain is not exhausted by narratives that deny or delegitimise climate change. Alongside these claims, counter-conspiracist narratives have emerged that affirm, or even amplify, the climate threat, often accusing powerful actors of suppressing climate science, concealing environmental harms, or deliberately obstructing mitigation efforts (Douglas & Sutton, 2015; de Gourville et al., 2026; Tam & Chan, 2023). Climate change conspiracy narratives are therefore not confined to one side of the climate debate, with distinct variants emerging across the political spectrum. Historically, research has focused primarily on *denialist* conspiracy beliefs—claims that climate change is fabricated, exaggerated, or manipulated by climate-aligned actors for ulterior purposes (e.g., Bertin et al., 2021; Chan et al., 2023). More recent work has shifted focus to the climate-affirming side of the climate conspiracy debate, identifying *warmist* conspiracy beliefs, which broadly accept the reality and anthropogenic basis of climate change while construing climate inaction, suppression of evidence, or environmental harm as the product of coordinated, self-serving deception by powerful actors (de Gourville et al., 2025; 2026; see also Douglas & Sutton, 2015).

The distinction between denialist and warmist conspiracy theories lies both in their epistemic orientation toward climate change and in the functional consequences of the alleged conspiracy. While denialist narratives portray climate change as fabricated or exaggerated, alleging deceptive actions that advances the climate agenda, warmist narratives accept the climate threat but depict coordinated deception as directly or indirectly impeding climate action. These contrasting epistemic positions are reflected in divergent behavioural profiles. Specifically, denialist beliefs are associated with disengagement, reduced policy support, and lower pro-environmental action (Biddlestone et al., 2022; de Gourville et al., 2025; Jolley & Douglas, 2014a), whereas warmist beliefs are linked to greater policy support and pro-environmental behaviour (de Gourville et al., 2025).

The emerging literature on warmist beliefs intersects with a wider perspective concerning the epistemic status of conspiracy beliefs. Although conspiracy theories studied in psychology are often implausible and inconsistent with mainstream opinion (Hattersley et al., 2022; Pummerer et al., 2025), neither implausibility nor unpopularity is inherent to their definition (Dentith, 2016; Douglas & Sutton, 2023; Nera & Schöpfer, 2023; Uscinski, 2018). Rather, conspiracist explanations vary in plausibility, ranging from claims requiring substantial departures from conventional standards of evidence to those grounded in suggestive evidence, historical precedent, or documented misconduct (Alper & Yilmaz., 2023; Hattersley et al., 2022). Conspiracy beliefs should therefore not be regarded as epistemically homogeneous. Warmist conspiracism appears to occupy the more plausible end of this spectrum. Claims that fossil-fuel interests have concealed climate evidence, financed misinformation, or obstructed mitigation draw upon documented historical precedents. Notably, for example, ExxonMobil internally anticipated anthropogenic warming while publicly undermining confidence in climate science (Supran et al., 2023). Although such evidence does not substantiate every warmist allegation, it provides these narratives with a

stronger evidential basis than many traditionally studied climate conspiracy theories (see de Gourville et al., 2026). Consistent with this comparatively norm-consistent position, warmist beliefs also attract relatively high levels of endorsement and show weaker associations with reasoning biases than denialist beliefs (de Gourville et al., 2025; cf. Hattersley et al., 2022). Thus, climate conspiracy beliefs may share a common conspiracist logic while differing substantially in their relationship to available evidence and conventional means of knowledge acquisition.

This epistemic heterogeneity compounds the measurement challenges surrounding climate conspiracism. Existing denialist and warmist measures have largely relied on ad hoc, study-specific item sets (e.g., Bolsen et al., 2022; Chan et al., 2024; de Gourville et al., 2025; Pummerer et al., 2025) that have not undergone comprehensive validation of their dimensionality, construct validity, and broader generalisability. Measures are therefore needed that capture the defining structure of conspiracism across ideological variants with comparable conceptual precision. Moreover, the breadth of climate-affirming conspiracist claims cautions against assuming that they constitute a single coherent belief dimension (see de Gourville et al., 2026). Determining whether meaningful distinctions exist within this broader and still nascent class of narratives is therefore necessary for greater conceptual and measurement precision.

The Case for Alarmist Conspiracism

While warmist conspiracy beliefs are an emerging area of study, existing work suggests that they broadly align with the scientific consensus in affirming the reality of climate change and often draw upon documented instances of corporate misconduct and obstruction (de Gourville et al., 2026). However, climate-affirming conspiracism encompasses a broader range of claims. Alarmist and apocalyptic framings have extensively permeated climate discourse, portraying climate change as an existential and irreversible

threat that is immune to human mitigation efforts (Albuquerque, 2026; Foust & O'Shannon Murphy, 2009; Lima et al., 2024). Within conspiracist contexts, such framings take on a distinct form, alleging that powerful actors—often governments, scientists, or international scientific organisations—are deliberately concealing catastrophic environmental realities or secretly acting in accordance with threats more severe than those publicly acknowledged (de Gourville et al., 2025; 2026). For example, such narratives may allege that governments are concealing how soon climate change could become catastrophic or deliberately underreporting the true rate of environmental collapse.

Alarmist conspiracy beliefs share much of the underlying logic of warmist conspiracism but entail a more specific epistemic commitment regarding the underlying climate reality, alleging not only conspiracist concealment but that the threats being concealed are substantially more severe, imminent, or irreversible than publicly acknowledged. Their endorsement may therefore be considered more epistemically specific, and consequently riskier, insofar as it depends upon both the alleged conspiracy and a particular account of the climate threat being correct (see Douglas & Sutton, 2023). This reasoning is congruent with a basic principle of formal epistemology whereby stronger propositions entail additional truth commitments and, consequently, a greater risk of falsehood (Weisberg, 2021), as well as more recent accounts describing a trade-off between semantic informativeness and epistemic security (Rodrigues, 2026). Crucially, this does not imply that catastrophic climate outcomes, or the possibility that climate change may prove more severe than currently anticipated, are inherently implausible. Indeed, some severe climate projections remain scientifically defensible, and evidence suggests that scientific assessments may sometimes err toward conservative rather than alarmist projections, having in some instances underestimated rather than exaggerated the magnitude or rate of climate change and its impacts (Brysse et al., 2013; Chen et al., 2021). However, the greater

epistemic risk of alarmist narratives, particularly where they definitively portray climate realities beyond those ordinarily presented in publicly communicated scientific consensus, may make them comparatively less plausible than warmist narratives.

Despite these differing epistemic commitments, warmist and alarmist beliefs share both an acceptance of climate change and a common conspiracist logic, making some empirical overlap theoretically likely. Their differing epistemic specificity may nevertheless produce distinct patterns of endorsement and association. Because alarmist beliefs require endorsement of both conspiracist conduct and a more specific account of the underlying climate threat, they impose a stricter set of epistemic commitments and may consequently attract lower levels of endorsement. Moreover, this greater epistemic specificity may correspond with a broader willingness to entertain epistemically risky beliefs (Douglas & Sutton, 2023), including conspiracy theories conventionally regarded as implausible (Hattersley et al., 2022). Thus, these potential differences provide a basis for examining warmist and alarmist conspiracism as potentially distinct belief dimensions rather than subsuming them within a broader category of climate-affirming conspiracy beliefs that may obscure meaningful variation in their endorsement and correlates.

The Present Research

Researchers have increasingly called for improved measurement of climate change conspiracy beliefs (Tam & Chan, 2023). In response, the present research develops and validates the *Climate Change Conspiracy Belief Scale* (CCCBS), a multidimensional measure designed to capture denialist, warmist, and alarmist forms of climate conspiracism using items that unambiguously reflect the defining structural features of conspiracy beliefs. Across three studies, we examine the scale's dimensionality, reliability, and construct validity, addressing limitations of existing measures that can blur conspiracism with adjacent climate attitudes. Moreover, validation of climate conspiracy measures across diverse geographic

contexts remains limited, particularly in the Global South, where less is known about the structure and consistency of climate conspiracism (e.g., Stockemer & Bordeleau, 2024). Accordingly, Study 1 develops the initial item pool and examines its dimensional structure in a U.S. sample; Study 2 provides a preregistered replication and further tests the scale's construct validity in an independent U.S. sample; and Study 3 examines its structure and validity in Trinidad and Tobago, providing an initial test of its generalisability beyond the Global North. These studies aim to provide a concise, psychometrically robust measure capable of distinguishing theoretically meaningful forms of climate conspiracism across different ideological and geographic contexts.

Study 1

The first stage of developing the *Climate Change Conspiracy Belief Scale* (CCCBS) involved examining endorsement trends across 75 different climate change conspiracy statements varying in actor, action, motive, and ideological leaning. All project materials and data for the three studies are available on OSF: https://osf.io/xav9h/overview?view_only=838e567d05874d73a06a604f595e500d

Methods

Item Development

Item generation followed three main steps, guided by Boateng et al. (2018)'s framework for Stage 1 of scale development.

Step 1: Domain Specification.

Climate change conspiracy theories are defined as narratives that allege covert coordination between two or more actors engaging in deceptive or harmful actions related to climate change for personal or collective gain (Douglas & Sutton, 2015). These beliefs extend beyond general climate scepticism by explicitly invoking deliberate deception or collusion and are distinct from general conspiracy beliefs in their domain-specific focus on

climate-related actors and institutions (e.g., scientific bodies, governments). Furthermore, they encompass conspiracist narratives of multiple ideological orientations (de Gourville et al., 2025). Unlike prior research, the actor-action-motive trifecta of conspiracism was embedded across all items to distinguish genuine conspiracist reasoning from mere scepticism (see Piliousis & Gardikiotis, 2026). Based on this framework, three potential dimensions were identified: denialist, warmist, and alarmist beliefs (see de Gourville et al., 2026).

Step 2: Item Generation.

A review of existing measures and literature (e.g., Jolley & Douglas, 2014a; Chan et al., 2023, 2024; de Gourville et al., 2025) informed the development of an initial pool of 75 items, comprising 32 denialist, 23 warmist, and 20 alarmist items. Items varied in actors, actions, motives, and plausibility, and were designed to systematically reflect diverse epistemic orientations while preserving conspiracist structure (see Supplementary Materials). Several denialist items were adapted from prior scales (e.g., van der Linden et al., 2015; Jolley & Douglas, 2014a; Bertin et al., 2021; Chan et al., 2023), with modifications to explicitly incorporate actor–action–motive components (see Supplementary Materials). Warmist and alarmist items were primarily newly developed, informed by recurring narratives in climate misinformation and literature on conspiracy discourse (e.g., Douglas & Sutton, 2015; Tam & Chan., 2023). All items were written to be simple, unambiguous, and free from leading or unnecessarily value-laden wording, consistent with best practices for item construction (Boateng et al., 2018). In line with scale development guidelines, the item pool exceeded twice the intended final scale length. Given our aim to develop a concise 12-item scale, the initial pool was constructed to exceed this threshold (Kline, 1993; Boateng et al., 2018; Schinka et al., 2012).

Step 3: Content Validation

Content validity was assessed via two rounds of expert review with four independent researchers with established expertise in climate change conspiracy beliefs (see Boateng et al., 2018). Items were iteratively revised, and agreement on construct relevance was evaluated using Gwet's AC1, a robust metric to prevalence bias (Gwet, 2008). Inter-rater agreement was excellent, AC1 = .96, SE = .02, 95% CI [.92, .99], indicating near-perfect reliability and strong confidence that the items adequately represented the three proposed dimensions of climate change conspiracism.

Following refinement, Stage 2 (Scale Development) proceeded with survey administration to a U.S. sample.

Participants and Procedure

U.S. participants were recruited via Prolific. Non-interlocked quotas were used to balance the sample by gender (50% male, 50% female), political affiliation (33.3% Republican, 33.4% Democrat, 33.3% Independent), and belief in climate change (33.4% believe, 33.3% do not believe, 33.3% unsure), ensuring diversity in ideological and epistemic positions. A total of 560 participants were recruited. After excluding incomplete responses and those failing at least one of two attention checks (e.g., "Please select strongly disagree"), the final sample comprised 510 participants (244 men, 261 women, 4 non-binary, 1 withheld; M_{age} = 43.75, SD_{age} = 12.87). This sample size is considered very good for scale development (Comrey & Lee, 1992; see also Boateng et al., 2018; Guadagnoli & Velicer, 1988). Regarding ethnic composition, most participants identified as White (69.2%), followed by Black/African American (18.0%), Hispanic/Latino (4.9%), and Mixed or Other (3.3%). Smaller proportions identified as East Indian (2.5%), South Asian (1.0%), Native American (0.6%), Middle Eastern (0.2%), or withheld their ethnicity (0.2%).

After providing informed consent, participants completed the 75 climate conspiracy items in the initial pool, rating their agreement with each item on a 7-point Likert-type scale

(1 = *strongly disagree*, 7 = *strongly agree*). Items were presented, along with the two attention checks, across eight blocks (seven blocks of 10 items and one block of 7), with content distributed to avoid clustering of items from the same theoretically assumed type. Block order was randomised. Participants then reported demographic information, including age, gender, education, subjective socio-economic status, and political conservatism. Finally, participants were debriefed and redirected to Prolific for payment.

Measures

Political Conservatism. Participants reported their self-identified political conservatism ($M = 4.36$, $SD = 1.78$) on a 7-point scale ranging from 1 (*extremely left/liberal*) to 7 (*extremely right/conservative*).

Educational Attainment. Participants were asked to respond to the question, "What is the highest level of school you have completed or the highest degree you have received?" Response options included no formal education, primary school, secondary school, university education/bachelor's degree, and postgraduate education ($M = 3.67$, $SD = 0.81$).

Subjective Socio-economic Status. The MacArthur Scale of Subjective Social Status (Adler et al., 2000) was used, whereby participants placed themselves on a ladder ranging from 1 (worst off) to 10 (best off) relative to other Americans ($M = 5.02$, $SD = 1.78$).

Other Demographic Variables. Age, gender, and ethnicity were also measured.

Results

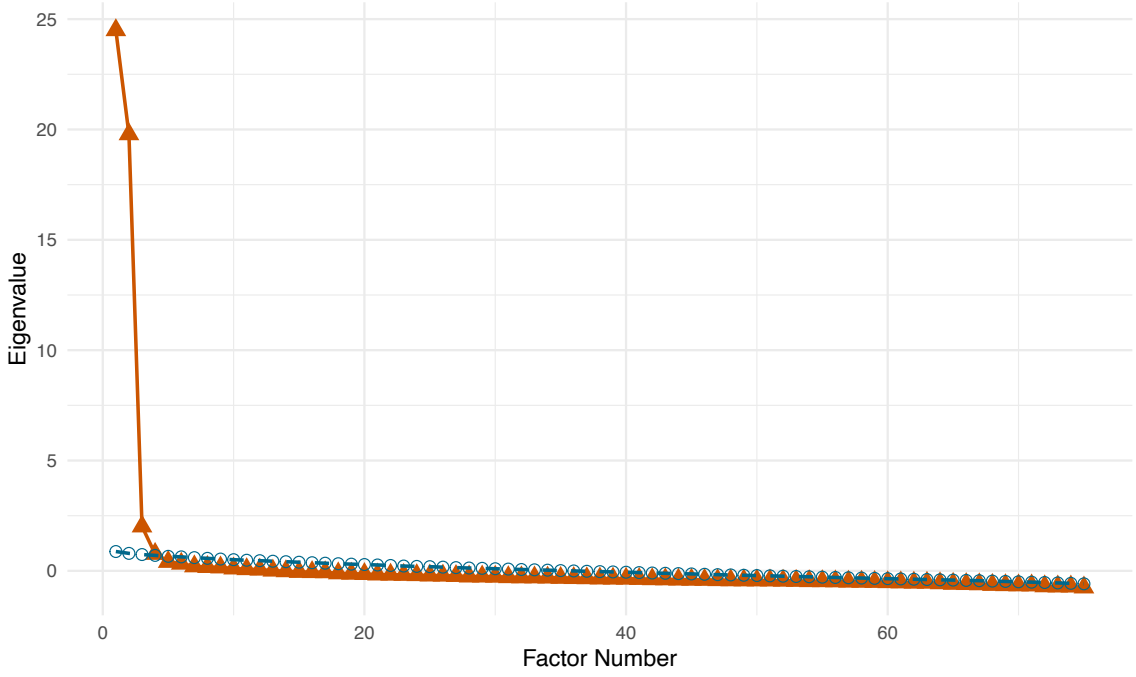
Exploratory Factor Analyses (EFA)

Bartlett's test of sphericity was significant, χ^2 (2775) = 38,450.67, $p < .001$, indicating that the inter-item correlations were sufficiently large for factor analysis. The Kaiser–Meyer–Olkin measure of sampling adequacy was excellent (KMO = 0.97), exceeding the recommended threshold of .60 (Kaiser, 1974), and confirming high suitability for factor extraction. Factor retention was guided by parallel analysis, scree plot inspection (Figure 1),

and eigenvalues. Although parallel analysis suggested four factors and the scree plot indicated three, an initial four-factor solution was estimated using oblimin rotation, consistent with expectations of correlated dimensions (de Gourville et al., 2025). However, inspection of loadings revealed that the fourth factor comprised only three geoengineering-related items with substantial cross-loadings (see Supplementary Materials). Consistent with principles of parsimony and iterative refinement (Boateng et al., 2018), a more parsimonious three-factor solution was retained. This model demonstrated comparable fit (see Supplementary Materials) and aligned more closely with the theorised denialist, alarmist, and warmist typology. In the final solution, 33 items loaded onto Factor 1 (denialist), 24 onto Factor 2 (alarmist), and 18 onto Factor 3 (warmist).

Figure 1

Scree Plot for all 75 items (Study 1).



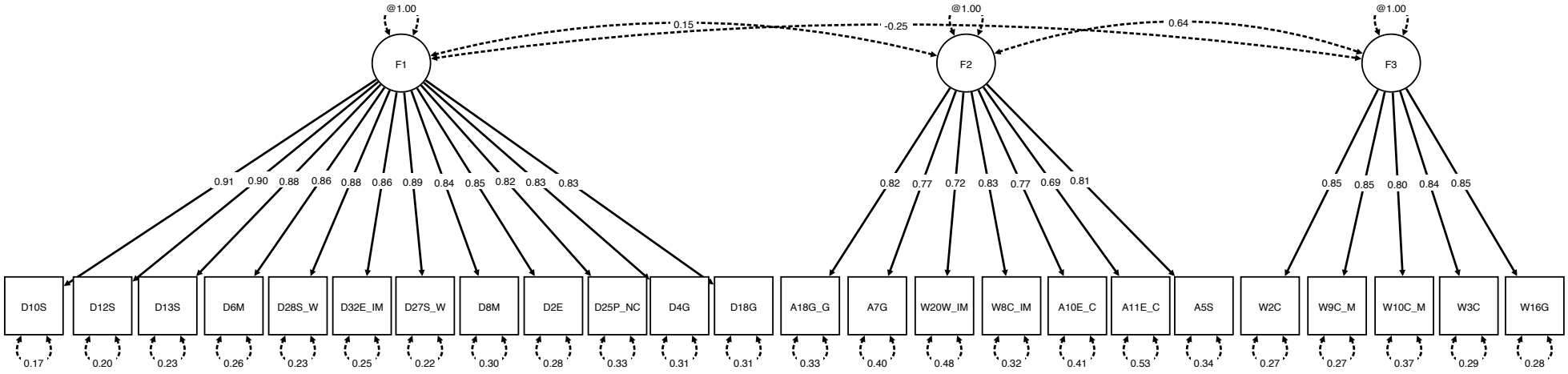
Model-Development Confirmatory Factor Analysis (CFA)

To evaluate the proposed three-factor structure, a preliminary CFA was conducted using the same sample as the initial item screening (see Figure 2). Following an iterative refinement process, 51 items were removed in sequential steps. First, 16 items with low

standardized loadings (< .60) on their designated factor, or cross-loadings > .30 on non-designated factors were removed. Second, 34 items were excluded due to problematic standardised residuals (>|.10|; see Supplementary Materials). Finally, one item (D11S) was removed due to high inter-item redundancy (r > .85 with D10S). This resulted in a final pool of 24 items (see Table 1), comprising 12 denialist, 7 alarmist, and 5 warmist items. The three-factor model demonstrated excellent fit, χ^2 (249) = 624.28, p < .001, CFI = .97, TLI = .96, RMSEA = .05, SRMR = .04. Although the chi-square test was significant, as expected with large sample sizes, alternative indices indicated good fit (Hu & Bentler, 1999). Factor loadings supported a well-defined and theoretically coherent three-factor structure, with clusters corresponding to the hypothesised dimensions of climate change conspiracism. The denialist factor captured beliefs that reject or delegitimise climate change (e.g., data manipulation by scientists). The warmist factor comprised beliefs that climate change is real but deliberately downplayed or obstructed by powerful actors (e.g., fossil fuel interests). The alarmist factor encompassed conspiracist interpretations involving more severe or catastrophic climate realities that are allegedly concealed by powerful actors (e.g., scientific institutions hide the worst climate forecasts to protect powerful elites).

Figure 2

Confirmatory Factor Analysis Plot for the Three-Factor Model (Study 1).



Note. Rectangles represent observed variables, and ellipses labelled F1, F2, and F3 represent the latent constructs Denialist, Alarmist, and Warmist beliefs, respectively. Single-headed arrows indicate standardised factor loadings, double-headed arrows represent correlations among latent factors, and small curved arrows denote residual variances (measurement errors).

Table 1

Standardized Factor Loadings for the Final 24-Item, Three-Factor CFA Model of Climate Change Conspiracy Beliefs

Original Item Code	Item	Factor 1: Denialist	Factor 2: Alarmist	Factor 3: Warmist
D10S	Climate scientists manipulate or falsify data to make climate change appear real and keep their funding.	0.91		
D12S	Many climate scientists are political activists in lab coats, exaggerating their findings to advance a left-wing environmental agenda.	0.9		
D27S_W	Scientists falsely blame normal weather events on climate change to keep the climate "hoax" alive and protect their funding.	0.89		
D13S	Climate scientists exaggerate their findings to secure research funding.	0.88		
D28S_W	Natural disasters are being falsely labelled as climate-related by scientists to advance their ideological agendas under the guise of science.	0.88		
D32E_IM	The idea of climate change was fabricated by elites as a psychological operation to manipulate the masses.	0.86		
D6M	The mainstream media exaggerates climate change threats to push a political agenda.	0.86		
D2E	Climate change is a fabricated crisis designed by environmental lobbies to deliberately crash the fossil fuel market.	0.85		
D8M	The mainstream media frames natural climate variability as a human-made crisis to promote progressive leftist ideologies.	0.84		
D18G	Climate change is a scam orchestrated by global governments to restrict the power of corporations.	0.83		
D4G	Human-caused climate change is a manufactured myth created by governments to expand regulation.	0.83		
D25P_NC	Climate change is part of Earth's natural cycle, but politicians have twisted the science to serve ideological agendas.	0.82		
W8C_IM	Oil executives are secretly funding underground bunkers while assuring the public that climate change is "manageable."		0.83	
A18G_G	Governments use secret geoengineering interventions to hide the severity of climate change and avoid blame for years of inaction.		0.82	
A5S	Scientific institutions hide the worst climate forecasts and release only sanitized predictions to protect the interests of powerful elites.		0.81	
A7G	Climate scientists who try to leak real, catastrophic climate change projections are imprisoned or mysteriously disappear under government orders.		0.77	
A10E_C	Environmental organizations know that vast regions may soon become uninhabitable due to climate change, but they remain silent to protect their funding.		0.77	
W20W_IM	Climate whistleblowers are erased from media archives and replaced with altered footage that supports fossil fuel interests.		0.72	

A11E_C	Time has already run out to stop catastrophic climate change, but the public is being allowed to "live normally" while elite groups prepare underground.	0.69	
W2C	Fossil fuel stakeholders suppress climate research that threatens their profits, secretly working to bury inconvenient truths.		0.85
W9C_M	Oil and gas corporations secretly finance misinformation campaigns to make the public doubt climate change and stall action.		0.85
W16G	Governments deliberately downplay climate change to protect their political allies in the fossil fuel industry.		0.85
W3C	Despite early knowledge of climate risks, fossil fuel leaders actively orchestrated campaigns of denial and deception to delay public concern.		0.84
W10C_M	Oil companies covertly fund conservative think tanks to spread climate misinformation on social media, masked as grassroots scepticism.		0.80

Note. Original item codes are retained to facilitate correspondence with the item-development materials detailed in the Supplementary Materials. These codes reflect *a priori* classifications assigned during item development and do not necessarily correspond to final factor membership.

12-Item Climate Change Conspiracy Belief Scale

To enhance cost-effectiveness, time efficiency, and practical applicability in research contexts, the 24-item pool was reduced to a shorter scale. Consistent with best practice guidelines (Boateng et al., 2018; Clark & Watson, 2016), refinement prioritized parsimony and functionality, reducing respondent burden while preserving conceptual coverage and psychometric integrity. Each subscale was constrained to a minimum of four items to ensure reliable representation of each latent dimension (Fabrigar et al., 1999), resulting in a 12-item measure comprising four denialist, four warmist, and four alarmist items. Item selection was guided by both quantitative and qualitative criteria. Quantitatively, items were evaluated based on CFA loadings, item–total correlations, changes in internal consistency following item deletion, distributional properties (including skew), and inter-item correlations to minimise conceptual redundancy. Qualitatively, items were retained to ensure breadth of content, capturing diverse actors, actions, and motives across dimensions. Selection decisions were based on the convergence of these criteria, yielding an interim 12-item CCCBS that was carried forward for further validation in Study 2 (see Supplementary Materials).

Discussion

Study 1 developed an initial measure of climate change conspiracy beliefs by generating a broad item pool and examining its latent structure. Exploratory and confirmatory analyses provided preliminary support for a three-factor solution distinguishing denialist, warmist, and alarmist narratives. This structure supports the conceptual argument that climate conspiracism is not ideologically homogenous but reflects distinct epistemic forms that reject the scientific consensus, broadly accept it while attributing climate obstruction to powerful vested interests, or advance more catastrophic interpretations of the climate threat. Through iterative psychometric refinement, the original 75-item pool was reduced to a parsimonious 12-item instrument comprising four indicators per dimension. The retained items demonstrated strong model fit and coherent item clusters, suggesting that the scale captures meaningful variation in conspiracist interpretations of climate change while maintaining practical efficiency for research applications. However, because item selection and model evaluation were conducted within the same dataset, the factor structure should be considered provisional. Independent validation is therefore required to assess the stability and reliability of the proposed measurement model.

Study 2A

This preregistered study further evaluates the dimensionality and psychometric robustness of the Climate Change Conspiracy Belief Scale (CCCBS) by addressing the key limitation of Study 1—testing the scale in an independent sample. Building on the previously identified three-factor structure (denialist, warmist, alarmist), we examine whether this solution replicates and assess its validity across theoretically relevant indicators.

The preregistration for Study 2A can be found at: https://osf.io/w7uja/overview?view_only=6de0b1b650df433b9185d267abdfa0c2

Methods

Participants and Procedure

A preregistered sample of 500 U.S. participants was recruited via Prolific (M_{age} = 43.39, SD_{age} = 13.00; 239 men, 255 women, 4 nonbinaries, 2 withheld). This sample size is considered very good for factor extraction (Comrey & Lee, 1992; see also Boateng et al., 2018). Most participants held a bachelor's or postgraduate degree (67.2%), with fewer reporting secondary (28.2%) or primary (4.6%) education. The sample was primarily White (72.6%), followed by Black or African American (10.4%), Hispanic or Latino (8.2%), East Asian (3.8%), and Other/mixed ethnicities (3.0%), with remaining categories each comprising less than 1% of the sample.

After providing informed consent, participants completed the 12-item CCCBS, which was configured as a standalone block, followed by the remaining 12 items from the refined 24-item pool. Items were mixed within both sets to avoid clustering by subtype. Participants then completed validation measures and demographic questions before they were debriefed and redirected to Prolific for compensation.

Measures

Climate Change Conspiracy Beliefs Scale (CCCBS). The preregistered 12-item CCCBS was included as the primary measure. The remaining 12 items from the refined pool were included for exploratory purposes only, to allow for scale refinement if any preregistered items exhibited problematic psychometric properties. Aggregate scores[1] were computed using the preregistered 12-item scale.

Specific Conspiracy Beliefs. Six items assessed endorsement of plausible and implausible conspiracies (Biddlestone et al., in preparation; α = .83), comprising three plausible (e.g., "COVID-19 was produced under laboratory conditions as a biological

[1] For all variables, aggregate scores were computed by averaging all items within each scale or subscale.

weapon") and three implausible conspiracy beliefs (e.g., "NASA secretly faked the Apollo moon landings"; 1 = *Strongly disagree* to 5 = *Strongly agree*). These widely used items were included to evaluate convergence with existing operationalisations of conspiracy beliefs. Positive associations with all CCCBS dimensions were expected (convergent validity).

General Conspiracy Belief. A single-item measure (Lantian et al., 2016) assessed general conspiracist ideation. Participants rated the statement "I think that the official version of events given by the authorities very often hides the truth" on a 1 (*Completely false*) to 9 (*Completely true*) scale. Positive associations with CCCBS dimensions were also expected (convergent validity).

Acceptance of Climate Science. Four items from Lewandowsky et al. (2013) assessed acceptance of mainstream climate science (e.g., "Burning fossil fuels increases atmospheric temperature to some measurable degree"; 1 = *Strongly disagree* to 4 = *Strongly agree*; $\alpha = .94$). Negative associations were expected for denialist beliefs, and positive associations for warmist and alarmist beliefs (convergent validity).

Pro-environmental Policy Support. Four items from Goldberg et al. (2021) assessed support for climate policy (e.g., "Regulate carbon dioxide as a pollutant"; 1 = *Strongly oppose* to 4 = *Strongly support*; $\alpha = .84$). Denialist beliefs were expected to predict lower support, whereas warmist and alarmist beliefs were expected to predict higher support (predictive validity).

Climate Change Conspiracy Beliefs. Six existing items assessed denialist (e.g., "Climate change is a hoax that the government uses to increase taxes paid by citizens"; Chan et al., 2023; $\alpha = .86$) and warmist (e.g., "Big corporations are suppressing alternative energy technologies"; 1 = *Strongly disagree* to 5 = *Strongly agree*; de Gourville et al., 2025; $\alpha = .79$) conspiracy beliefs. These established measures were included to benchmark the CCCBS against the existing climate conspiracism literature, notwithstanding the structural limitations

that motivated its development. Strong correspondence with CCCBS subscales was expected (concurrent validity).

Personality Traits. Extraversion (e.g., "…tends to be quiet"; 1 = *Strongly disagree* to 5 = *Strongly agree*; α = .81) and openness ("…has few artistic interests"; α = .78) were assessed using the Big Five Inventory (Soto & John, 2017). These two dimensions were selected because they have demonstrated the weakest associations with conspiracy beliefs in recent meta-analytic evidence (Bowes et al., 2023). Accordingly, weak or negligible associations were expected with all CCCBS dimensions (discriminant validity).

Political Conservatism. Political conservatism was measured on a 1 (*left/liberal*) to 7 (*right/conservative*) scale and was expected to be positively associated with denialist beliefs and negatively associated with warmist and alarmist beliefs (known-groups validity; see de Gourville et al., 2025).

Demographic Covariates. Age, gender, educational attainment, and subjective socioeconomic status (SES) were also measured[2].

Results

Dimensionality and Construct Validity

Internal Consistency. Reliability estimates were strong across all subscales. Both McDonald's ω and Cronbach's α indicated excellent internal consistency for the denialist (ω = .93; α = .93) and warmist (ω = .90; α = .90) dimensions, and very good internal consistency for the alarmist dimension (ω = .83; α = .83), exceeding our preregistered thresholds.

Confirmatory Factor Analysis (CFA). We then conducted a CFA to test the preregistered three-factor structure of the 12-item CCCBS (four items per dimension). Model fit was acceptable, χ^2 (51) = 299.96, $p < .001$, CFI = .94, TLI = .92, SRMR = .06, RMSEA =

[2] We also included catastrophizing (Green & Douglas, under review) as an exploratory variable; see Supplementary Materials.

.099 (90% CI [.088, .110]). Although RMSEA slightly exceeded conventional cutoffs, this is expected in low-df CFA models, whereas incremental indices and SRMR provide more reliable guidance in such contexts (Kenny et al., 2014). Consistent with this, both CFI/TLI and SRMR supported the adequacy of the model. All items loaded strongly and cleanly onto their intended latent factors (λ = .71 - .91; see Table 2). Latent correlations indicated that denialist beliefs were negatively associated with warmist beliefs (r = –.42), positively associated with alarmist beliefs (r = .24), and that warmist and alarmist beliefs were positively correlated (r = .54).

Table 2

Standardized Factor Loadings for the Initial 12-Item Climate Change Conspiracy Belief Scale (Study 2A)

Original Item Code	Item	Factor 1: Denialist	Factor 2: Alarmist	Factor 3: Warmist
D2E	1. Climate change is a fabricated crisis designed by environmental lobbies to deliberately crash the fossil fuel market.	0.91		
D10S	2. Climate scientists manipulate or falsify data to make climate change appear real and keep their funding.	0.87		
D32E_IM	3. The idea of climate change was fabricated by elites as a psychological operation to manipulate the masses.	0.86		
D8M	4. The mainstream media frames natural climate variability as a human-made crisis to promote progressive leftist ideologies.	0.85		
A18G_G	5. Governments use secret geoengineering interventions to hide the severity of climate change and avoid blame for years of inaction.		0.8	
W8C_IM	6. Oil executives are secretly funding underground bunkers while assuring the public that climate change is “manageable.”		0.74	
A5S	7. Scientific institutions hide the worst climate forecasts and release only sanitized predictions to protect the interests of powerful elites.		0.74	
A10E_C	8. Environmental organizations know that vast regions may soon become uninhabitable due to climate change, but they remain silent to protect their funding.		0.71	
W3C	9. Despite early knowledge of climate risks, fossil fuel leaders actively orchestrated			0.85

	campaigns of denial and deception to delay public concern.	
W9C_M	10. Oil and gas corporations secretly finance misinformation campaigns to make the public doubt climate change and stall action.	0.84
W2C	11. Fossil fuel stakeholders suppress climate research that threatens their profits, secretly working to bury inconvenient truths.	0.83
W16G	12. Governments deliberately downplay climate change to protect their political allies in the fossil fuel industry.	0.80

Note. Original item codes are retained to facilitate correspondence with the item-development materials and Supplementary Materials. Codes reflect *a priori* classifications assigned during item development and therefore do not necessarily correspond to factor membership.

Modification Indices. To evaluate localized model misfit, modification indices (MIs) were inspected. Values ≥ 10 were treated as indicative of potential strain and informed further evaluation of item performance (Brown, 2015). MIs quantify the expected reduction in model χ^2 if a previously fixed parameter were freely estimated, and we report the corresponding standardised expected parameter change (Std. EPC), to index the substantive size of the suggested modification. Several MIs reflected residual covariances between items with overlapping features (e.g., linguistic structure or thematics content). The largest involved A5S, which showed shared residual variance with A10E_C (MI = 38.81, Std. EPC = .38), W8C_IM (MI = 32.00, Std. EPC = –.36), W16G (MI = 19.99, Std. EPC = .24), W3C (MI = 16.84, Std. EPC = –.23), and D10S (MI = 21.68, Std. EPC = .26), indicating substantial item-level overlap inconsistent with a clean simple-structure solution. A smaller set of MIs suggested cross-loadings, including Warmist → W8C_IM (MI = 44.33, Std. EPC = .30), Denialist → A5S (MI = 26.18, Std. EPC = .19), Denialist → W8C_IM (MI = 25.44, Std. EPC = –.19), Warmist → A5S (MI = 17.83, Std. EPC = –.19), and Alarmist → D2E (MI = 13.30, Std. EPC = –.09). These effects were small-to-moderate (|.09|–|.30|) and did not exceed conventional thresholds for substantive misfit (i.e., |.30|–.40). Although W8C_IM showed a borderline cross-loading (MI = 44.33, Std. EPC = .30), it was retained given its theoretical centrality and the need to preserve sufficient indicators for the alarmist factor.

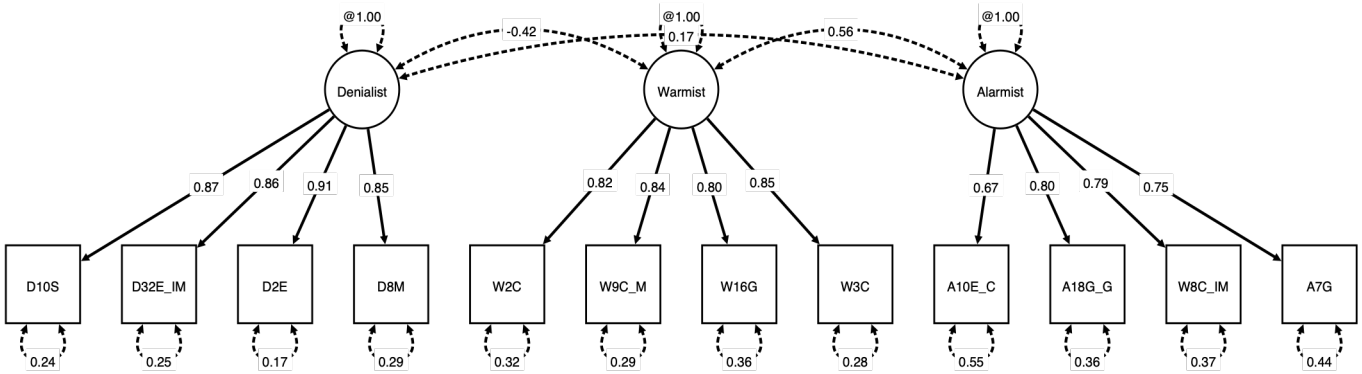
Overall, the MI profile identified A5S as the only item exhibiting consistent and substantial shared-error signals, likely due to its mixed content, simultaneously invoking scientific actors (overlapping with denialist themes) and emphasising climate change severity (overlapping with alarmist and warmist content). In contrast, overlap involving W8C_IM was limited (.30), theoretically interpretable (warmist and alarmist conspiracies both involve deception by powerful actors, oftentimes corporate entities), and isolated to a single cross-factor pathway, suggesting local rather than structural misfit. Given that the preregistered three-factor model already demonstrated acceptable incremental fit (CFI = .94; TLI = .92; SRMR = .06), no post-hoc modifications were implemented. Instead, to address the only consistent source of local misfit, A5S was removed and replaced with A7G, the remaining psychometrically sound alarmist item from the 24-item pool. The revised alarmist indicators (A10E_C, W8C_IM, A18G_G, A7G) showed strong loadings and no evidence of systematic cross-factor overlap. Full MIs (≥ 10) and Std. EPCs are reported in the Supplementary Materials.

Revised Confirmatory Factor Analysis (CFA). Following the removal of the problematic item A5S and its replacement with A7G, a follow-up CFA was conducted to reassess the stability of the three-factor structure while preserving a four-item Alarmist subscale. The revised 12-item model (see Figure 3) demonstrated strong fit, with excellent incremental indices (CFI = .96, TLI = .95), and good absolute fit (SRMR = .05 (excellent); RMSEA = .08 (acceptable, 90% CI [.07, .09]). Although information criteria (AIC = 20,008.47; BIC = 20,172.84) indicated a slightly less parsimonious solution than the model excluding A5S only (see Supplementary Material), A7G was retained on theoretical grounds. Specifically, it captures important content within the alarmist domain and contributes to a stable four-item subscale with strong factor loadings. Internal consistency for the alarmist

subscale remained very good (ω = .84; α = .84). Accordingly, the final 12-item configuration (see Table 3) was retained for subsequent analyses.

Figure 3

Confirmatory Factor Analysis Plot for the Final Three-Factor Model (Study 2A).



Note. Rectangles represent observed variables, and ellipses represent the latent constructs labelled Denialist, Alarmist, and Warmist beliefs. Single-headed arrows indicate standardised factor loadings, double-headed arrows represent correlations among latent factors, and small curved arrows denote residual variances.

Table 3

Final 12-Item Climate Change Conspiracy Belief Scale with Corresponding Item Typology

Item	Conspiracy Type
1. Climate scientists manipulate or falsify data to make climate change appear real and keep their funding.	Denialist
2. Climate change is a fabricated crisis designed by environmental lobbies to deliberately crash the fossil fuel market.	Denialist
3. The idea of climate change was fabricated by elites as a psychological operation to manipulate the masses.	Denialist
4. The mainstream media frames natural climate variability as a human-made crisis to promote progressive leftist ideologies.	Denialist
5. Fossil fuel stakeholders suppress climate research that threatens their profits, secretly working to bury inconvenient truths.	Warmist
6. Oil and gas corporations secretly finance misinformation campaigns to make the public doubt climate change and stall action.	Warmist
7. Governments deliberately downplay climate change to protect their political allies in the fossil fuel industry.	Warmist
8. Despite early knowledge of climate risks, fossil fuel leaders actively orchestrated campaigns of denial and deception to delay public concern.	Warmist

Environmental organizations know that vast regions may soon become uninhabitable due to climate change, but they remain silent to protect their funding.	Alarmist
Oil executives are secretly funding underground bunkers while assuring the public that climate change is "manageable."	Alarmist
Governments use secret geoengineering interventions to hide the severity of climate change and avoid blame for years of inaction.	Alarmist
Climate scientists who try to leak real, catastrophic climate change projections are imprisoned or mysteriously disappear under government orders.	Alarmist

Measurement Invariance across groups. As preregistered, we tested whether the three-factor CCCBS model operated equivalently across gender. The configural model showed strong fit, indicating that the three-factor structure replicated across groups. Metric invariance, imposing equality constraints on factor loadings, also demonstrated good fit, with virtually no change relative to the configural model (ΔCFI = .000), and a non-significant χ^2 difference test, $\Delta\chi^2$ (9) = 8.54, p = .481. Finally, scalar invariance was tested by additionally constraining item intercepts. This model also fit the data well, with negligible change in fit (ΔCFI = +.001), and a non-significant χ^2 difference test, $\Delta\chi^2$ (9) = 6.06, p = .733, well within accepted thresholds (ΔCFI ≤ .01). Considering the sensitivity of χ^2 difference tests to sample size (Meade et al., 2008), invariance decisions were based on a combination of χ^2 difference testing and changes in approximate fit indices, particularly ΔCFI. Together, these results support configural, metric, and scalar invariance of the CCCBS across gender, permitting meaningful comparisons of the latent factors (see Table 4).

Table 4

Multigroup CFA Results Testing Configural, Metric, and Scalar Invariance (Male vs. Female)

Model	CFI	RMSEA	SRMR	ΔCFI	Decision
Configural	.961	.078	.049	-	Supported
Metric	.961	.075	.052	.000	Supported
Scalar	.962	.072	.053	+.001	Supported

Further Validation of the CCCBS

To further evaluate the CCCBS, we examined associations between its subscales and a set of preregistered validity indicators to establish convergent, concurrent, discriminant, predictive, and known-groups validity. Full bivariate correlation matrices are provided in Table 5.

Table 5

Pearson's r Bivariate Correlations Among Primary Study Variables (Study 2A)

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1.	Denialist CB	-											
2.	Warmist CB	-.37**	-										
3.	Alarmist CB	.17**	.49**	-									
4.	Specific CB	.47**	.05	.46**	-								
5.	General CB	.32**	.20**	.42**	.55**	-							
6.	Acceptance of climate science	-.67**	.64**	.22**	-.22**	-.10*	-						
7.	Policy Support	-.62**	.58**	.23**	-.19**	-.08	.78**	-					
8.	Extraversion	.03	-.04	.02	-.02	-.04	.05	.09	-				
9.	Openness	-.19**	.12**	-.01	-.01	.02	.16**	.23**	.26**	-			
10.	Denialist (Chan et al., 2023)	.83**	-.34**	.16**	.50**	.32**	-.65**	-.60**	-.01	-.18**	-		
11.	Warmist (de Gourville et al., 2025)	-.19**	.73**	.57**	.27**	.35**	.50**	.46**	-.03	.076	-.16**	-	
12.	Conservatism	.59**	-.42**	.06	.27**	.12**	-.47**	-.48**	.10*	-.18**	.51**	-.27**	-
	M	3.22	4.45	3.34	2.73	6.07	.95	2.91	3.11	3.86	2.55	3.23	4.26
	SD	1.74	1.49	1.36	0.93	2.06	0.81	0.82	0.90	0.79	1.14	0.96	1.90

Note. p < .05 (*), p < .01 (**).

Convergent Validity. Convergent validity was assessed via bivariate Pearson correlations between CCCBS subscales and (1) general conspiracy belief, (2) endorsement of specific conspiracy beliefs, and (3) acceptance of anthropogenic climate change (ACC). As expected, general conspiracy beliefs correlated positively with all three subscales, with the strongest association for alarmist beliefs. Similarly, denialist and alarmist beliefs were positively related to overall endorsement of specific conspiracy beliefs. In contrast, warmist beliefs were unrelated to the aggregate index. However, disaggregated exploratory analyses revealed that warmist beliefs correlated positively with more plausible conspiracies (r = .11) but were unrelated to implausible conspiracies (r = –.02; see Supplementary Materials),

consistent with their evidence-linked epistemic basis (de Gourville et al., 2025). Consistent with our preregistration, robustness checks using a restricted sample (scores > 0 on all measures) yielded identical patterns of associations (see Supplementary Materials). Lastly, we examined associations with ACC to verify the epistemic foundations of each subtype: Denialist beliefs were strongly negatively related, whereas warmist and alarmist beliefs were positively related (weaker for alarmist), supporting convergent validity and epistemic differentiation across CCCBS dimensions.

Concurrent Validity. We next compared the CCCBS subscales with existing measures of climate-related conspiracism (Chan et al., 2023; de Gourville et al., 2025). As expected, denialist and warmist subscales showed strong positive associations with their corresponding measures. Alarmist beliefs were moderately associated with prior warmist items and weakly with denialist items, suggesting an intermediate position between plausible climate-affirming concerns and more grandiose, epistemically risky conspiracist claims.

Predictive Validity. To assess whether the CCCBS subscales meaningfully predict theoretically relevant outcomes, we examined their associations with support for pro-environmental policies, an established consequence of climate conspiracy beliefs (Biddestone et al., 2022; de Gourville et al., 2025). As hypothesised, denialist beliefs were strongly negatively associated with policy support, and warmist beliefs showed a strong positive association. Alarmist beliefs demonstrated a weaker but still positive association. These patterns align with theoretical expectations and support the predictive validity of our instrument.

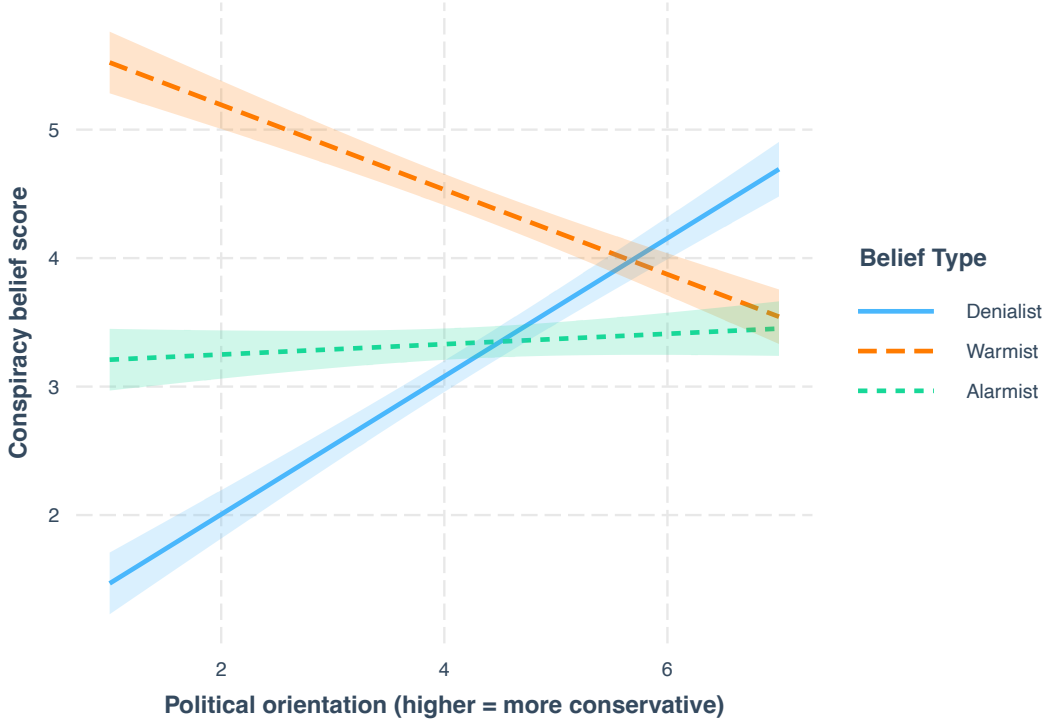
Discriminant Validity. We examined associations between CCCBS subscales and theoretically unrelated personality traits (extraversion, openness). As expected, all subscales showed negligible associations with extraversion (rs = –.04 to .03). Preregistered TOST analyses confirmed equivalence to zero for denialist (r = .03, 90% CI [–.048, .099], p_{TOST} =

.048) and alarmist (r = .02, 90% CI [–.057, .090], p_{TOST} = .031) beliefs, with the warmist association remaining trivially small (r = –.04, 90% CI [–.113, .034], p_{TOST} = .088). For openness, alarmist beliefs were also equivalent to zero (r = –.01, 90% CI [–.087, .060], p_{TOST} = .006), whereas denialist (r = –.19, 90% CI [–.258, –.116], p_{TOST} = .977) and warmist (r = .12, 90% CI [.047, .192], p_{TOST} = .674) beliefs fell outside equivalence bounds. However, this pattern mirrors that observed for existing climate-conspiracy measures (Chan et al., 2023; Table 5), suggesting these small effects reflect general features of climate-conspiracy cognition rather than scale-specific artefacts. Overall, results provide strong discriminant validity for the alarmist subscale and partial support for denialist and warmist subscales.

Known Groups Validity. Lastly, to establish known-groups validity, we examined bivariate associations between political conservatism and each conspiracy belief type. As expected, conservatism was positively associated with denialist beliefs, negatively associated with warmist beliefs, but showed no meaningful association with alarmist beliefs. As a robustness check, a preregistered linear mixed-effects model confirmed these differences, revealing significant main effects of belief type, F (2, 996) = 324.74, p < .001, political conservatism, F (1, 498) = 14.24, p < .001, and their interaction, F (2, 996) = 220.13, p < .001 (see Figure 4). Simple slopes indicated that conservatism strongly predicted higher denialist beliefs (b = 0.54, SE = 0.03, p < .001), lower warmist beliefs (b = –0.33; interaction b = –0.87, SE = 0.04, p < .001), and showed only a weak association with alarmist beliefs (b = 0.04; interaction b = –0.50, SE = 0.04, p < .001). These patterns support known-groups validity and indicate that denialist conspiracism is closely aligned with right-leaning ideology, warmist conspiracism is strongly left-leaning, and alarmist conspiracism exhibits a comparatively weak ideological profile.

Figure 4

Relationships between political conservatism and conspiracy endorsement across climate change conspiracy belief subtypes.



Study 2B

To assess the temporal stability of the CCCBS, we conducted a second survey approximately 60 days after Study 2A, inviting prior participants via Prolific. The survey remained open for two weeks. The preregistration for Study 2B can be found at: https://osf.io/qxmu9/overview?view_only=3a67c9e68a0c4a72b5326dc2a2a9b4aa

Methods

Participants and Procedure

A total of 268 participants from Study 2A completed the Time 2 survey (M_{age}=45.67, SD_{age}= 13.17; 122 men, 142 women, 3 non-binary, 1 withheld). Political affiliation included 108 Republicans, 83 Democrats, and 77 Independents. After providing informed consent, participants completed the CCCBS and were subsequently debriefed.

Measures

Climate Change Conspiracy Beliefs. Climate change conspiracism at Time 2 was measured using the 12-item CCCBS validated in Study 2A, comprising denialist (*M* = 3.12, *SD* = 1.86), warmist (M = 4.39, SD = 1.64), and alarmist (*M* = 3.23, *SD* =1.41) subscales.

Results

Dimensionality and Construct Validity

Internal Consistency. As expected, all subscales demonstrated excellent internal consistency at Time 2: denialist (ω = .95; α = .95), warmist (ω = .92; α = .92), and alarmist (ω = .83; α = .83).

Confirmatory Factor Analysis. A CFA model supported the three-factor structure, with good overall fit (CFI = .96, TLI = .94, SRMR = .05). Although RMSEA was slightly elevated (.09), this inflation in expected in low–df CFA models (Kenny et al., 2014). All standardized factor loadings were strong across subscales (.68 - .95; see Supplementary Materials).

Test-retest Reliability

Both the denialist ($r = .85$, $p < .001$), and the warmist ($r = .85$, $p < .001$) subscales demonstrated very strong correlations between Time 1 and Time 2, indicating very good test-retest reliability. The alarmist dimension also exhibited good temporal stability ($r = .67$, $p < .001$), consistent with test-retest stability observed for other belief-based constructs assessed over similar intervals (see Dagnall et al., 2023). Inter-item correlations further supported the test–retest reliability of the measure (see Supplementary Materials).

Measurement Invariance

We also examined longitudinal measurement invariance of the CCCBS using sequential CFA models across Time 1 and Time 2. The configural model demonstrated good global fit, χ^2 (225) = 474.40, $p < .001$, CFI = .96, TLI = .95, RMSEA = .06, SRMR = .05,

indicating that the three-factor structure (denialist, warmist, and alarmist) was consistent across time. Imposing equality constraints on factor loadings did not significantly worsen model fit, $\Delta\chi^2$ (12) = 14.80, p = .253, with fit indices remaining stable (CFI = .96, RMSEA = .06), supporting metric invariance. Further constraining item intercepts likewise did not reduce model fit, $\Delta\chi^2$ (12) = 4.89, p = .962, and was accompanied by slight improvements in information criteria (AIC and BIC), supporting scalar invariance. Overall, these results support configural, metric, and scalar invariance of the CCCBS across time (see Supplementary Materials), consistent with pre-registered criteria.

Discussion

Study 2A provided a preregistered test of the dimensionality and construct validity of the CCCBS in an independent sample. The results supported the three-factor structure identified in Study 1, indicating that denialist, warmist, and alarmist beliefs form a stable and internally consistent framework. Inspection of modification indices identified one problematic item (A5S), which showed localized misfit likely due to overlapping thematic content. However, replacing this item with an alternative from the refined pool improved model fit while preserving the conceptual coverage of the alarmist dimension. Additionally, the CCCBS also demonstrated strong construct validity. All three belief types were positively associated with general conspiracist thinking and endorsement of other specific conspiracy beliefs, consistent with the view that climate conspiracism is embedded within a broader conspiracist belief system. However, although warmist beliefs were positively associated with general conspiracist thinking, they were unrelated to endorsement of more implausible conspiracy beliefs and instead showed small positive associations with comparatively plausible conspiracy claims. Naturally, this follows from their epistemically more plausible nature, resting on suggestive evidence and historical precedent, unlike the denialist and alarmist dimensions which carry greater epistemic risk, albeit for different reasons (see de

Gourville et al., 2026; Hattersley et al., 2022; Pummerer et al., 2025). Rather than reflecting indiscriminate conspiracist thinking, the current findings lend support to the idea that warmist beliefs represent a more selective form of conspiracist reasoning that remains embedded within a broader conspiracist worldview while preferentially aligning with conspiracy narratives possessing less epistemic risk (see Douglas & Sutton, 2023). These findings thus reinforce that climate-affirming conspiracy beliefs are not epistemically homogeneous. Distinguishing comparatively plausible warmist narratives from more epistemically risky alarmist claims may therefore prove important when examining the antecedents and consequences of climate-affirming conspiracism, consistent with recent theoretical perspectives distinguishing broad conspiracist predispositions from endorsement of specific conspiracy narratives that vary in plausibility (Fock et al., 2025). Furthermore, replicating prior findings (de Gourville et al., 2025), denialist beliefs were associated with lower acceptance of climate science, reduced policy support, and greater political conservatism, and warmist beliefs showed the opposite pattern. Alarmist conspiracism, into which this study provides the first empirical insight, exhibited a relatively diffuse nomological profile. Although alarmist beliefs were positively associated with climate science acceptance and warmist conspiracism as expected, they also showed small positive associations with established denialist beliefs. Accordingly, although alarmist conspiracism constitutes a distinguishable dimension, it may not represent a similarly coherent ideological belief system and may instead partly reflect a broader tendency to endorse more epistemically risky conspiracist interpretations, allowing them to coexist with conspiracist narratives across opposing ideological positions. These beliefs exhibited weak associations with environmental engagement and no clear relationship with political ideology, distinguishing it from the more politically embedded profiles observed for denialist and warmist conspiracism. As the first empirical examination of alarmist climate conspiracism, the present findings identify this

belief dimension while simultaneously highlighting the need for further research to clarify its psychological structure, antecedents, and behavioural consequences.

Beyond establishing the dimensionality and construct validity of the CCCBS, Study 2B demonstrated its strong temporal stability. Across a two-month interval, all three subscales showed good test–retest reliability, indicating that these beliefs reflect relatively stable belief systems. Longitudinal measurement invariance further confirmed that the three-factor structure remained consistent over time, supporting the reliability and structural stability of the tripartite typology.

Study 3

The previous studies validated the Climate Change Conspiracy Belief Scale (CCCBS) in Western samples. However, research on climate change conspiracism has remained heavily concentrated on Western, Educated, Industrialised, Rich, and Democratic (WEIRD) contexts, with comparatively little attention devoted to populations in the Global South (see Tam & Chan, 2023; e.g., Stockemer & Bordeleau, 2024). This imbalance limits understanding of whether the structure and correlates of climate change conspiracy beliefs generalise across different political, cultural, and environmental settings. The present study extends validation of the CCCBS to Trinidad and Tobago, an underrepresented, non-WEIRD nation that is highly vulnerable to climate impacts (IPCC, 2022). Specifically, we examine whether the three-factor structure (denialist, warmist, alarmist) replicates in this context and further evaluate the scale's construct validity through its associations with general conspiracy beliefs, environmental concern, environmental policy support (general and Trinidad and Tobago-specific), and pro-environmental behavioural intentions. Consistent with prior studies, all three dimensions were expected to be positively associated with general conspiracy beliefs. However, they were hypothesised to diverge in their associations with climate engagement

variables. Specifically, denialist beliefs were expected to show negative associations, whereas warmist and alarmist beliefs were expected to show positive associations.

The preregistration for Study 3 can be found at: https://osf.io/6rdkw/overview?view_only=0150b2087de54411819b15c6acc6f847

Methods

Participants and Procedure

A total of 659 participants were recruited from Trinidad and Tobago (M_{age} = 32.63, SD_{age} = 9.72; 292 men, 365 women, 2 withheld) via geo-targeted social media advertisements on LinkedIn, Facebook, and Instagram. The sample size exceeded recommended thresholds for scale validation (Comrey & Lee, 1992; Boateng et al., 2018). Educational attainment was relatively low (27.9% no formal education, 19.9% primary, and 26.7 % secondary), with fewer participants holding undergraduate (16.8%) or postgraduate (8.6%) qualifications. The sample was ethnically diverse, including Black/Afro-Trinidadian (22.2%), White (21.9%), Indigenous (17.5%), Mixed (16.8%), and Syrian/Lebanese (15.8%), with smaller proportions identifying as Indo-Trinidadian (4.1%), Chinese (0.3%), or Other (1.2%). A small number of participants (0.3%) withheld.

After providing informed consent, participants completed the 12-item CCCBS, followed by randomly ordered validity measures and demographic questions, and were finally debriefed and entered into a USD 200 Amazon voucher draw.

Measures

The 12-item CCCBS was administered as in previous studies. Political conservatism and general conspiracy beliefs were measured as in Study 2A (Lantian et al., 2016).

Environmental Concern. Six items from Tam and Chan (2017; e.g., “There are more important things to do in life than protect the environment”) were rated on a 5-point Likert scale 1 = *Strongly disagree* to 5 = *Strongly agree*; α = .55).

General environmental policy support. Six items adapted from Goldberg et al. (2021) measured support for environmentally friendly policies (e.g., "Regulate carbon dioxide as a pollutant"), and were rated on a 4-point scale (1 = *Strongly oppose* to 4 = *Strongly support*; $\alpha = .58$). Items not relevant to the Trinidad and Tobago context were excluded (e.g., "Expand offshore drilling for oil and natural gas off the U.S. coast").

Trinidad and Tobago–specific environmental policy support. Six items were developed to capture context-specific policy attitudes (e.g., "Ban new coastal developments in environmentally sensitive areas…", and were rated on a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*; $\alpha = .63$).

Pro-environmental behavioural intentions (PEBIs). Fourteen items adapted from Mateer et al. (2022) assessed propensity to engage in pro-environmental behaviours. Items were modified to reflect intentions rather than past behaviours (e.g., "Buy environmentally friendly and/or energy-efficient products", rated on a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*; $\alpha = .73$).

Demographic Covariates. Age, gender, educational attainment, and subjective socioeconomic status (SES) were also measured[3].

Results

Dimensionality and Construct Validity

Internal Consistency. Contrary to expectations, internal consistency was relatively low in this sample. Reliability estimates indicated only modest internal consistency for the denialist ($\omega = .51$; $\alpha = .51$) and warmist ($\omega = .51$; $\alpha = .52$) subscales, and poor internal consistency for the alarmist subscale ($\omega = .31$; $\alpha = .31$).

[3] The survey also included measures of national collective narcissism and secure national identification, which were administered for an independent research project.

Confirmatory Factor Analysis (CFA). We next conducted a CFA to test the preregistered three-factor structure of the 12-item CCCBS. The model demonstrated excellent fit, χ^2 (51) = 63.64, p = .11, CFI = .97, TLI = .96, SRMR = .03, and RMSEA = .02, strongly supporting the tripartite structure. All items loaded in the expected direction onto their intended latent factors, with no evidence of cross-loadings.

However, standardized factor loadings were attenuated relative to Western samples (λ = .23 - .59; see Table 6), with particularly weak loadings for alarmist items. This pattern may suggest that, although the latent structure of climate change conspiracy beliefs replicates, the extent to which individual items reflect tightly integrated ideological belief dimensions is reduced in this context. Factor correlations broadly mirrored prior findings: denialist beliefs were strongly negatively associated with warmist beliefs (r = −.69, p < .001), weakly and non-significantly related to alarmist beliefs (r = .09, p = .32), and warmist and alarmist beliefs were moderately positively correlated (r = .40, p < .001).

Table 6
Standardized Factor Loadings for the 12-Item Climate Change Conspiracy Belief Scale (Study 3)

Original Item Code	Item	Factor 1: Denialist	Factor 2: Alarmist	Factor 3: Warmist
D2E	1. Climate change is a fabricated crisis designed by environmental lobbies to deliberately crash the fossil fuel market.	0.59		
D10S	2. Climate scientists manipulate or falsify data to make climate change appear real and keep their funding.	0.52		
D32E_IM	3. The idea of climate change was fabricated by elites as a psychological operation to manipulate the masses.	0.45		
D8M	4. The mainstream media frames natural climate variability as a human-made crisis to promote progressive leftist ideologies.	0.23		
A7G	5. Climate scientists who try to leak real, catastrophic climate change projections are imprisoned or mysteriously disappear under government orders.		0.40	

A18G_G	6.	Governments use secret geoengineering interventions to hide the severity of climate change and avoid blame for years of inaction.	0.33	
A10E_C	7.	Environmental organizations know that vast regions may soon become uninhabitable due to climate change, but they remain silent to protect their funding.	0.29	
W8C_IM	8.	Oil executives are secretly funding underground bunkers while assuring the public that climate change is “manageable.”	0.27	
W16G	9.	Governments deliberately downplay climate change to protect their political allies in the fossil fuel industry.		0.59
W2C	10.	Fossil fuel stakeholders suppress climate research that threatens their profits, secretly working to bury inconvenient truths.		0.52
W3C	11.	Despite early knowledge of climate risks, fossil fuel leaders actively orchestrated campaigns of denial and deception to delay public concern.		0.45
W9C_M	12.	Oil and gas corporations secretly finance misinformation campaigns to make the public doubt climate change and stall action.		0.36

Note. Original item codes are retained to facilitate correspondence with the item-development materials detailed in the Supplementary Materials. These codes reflect a priori classifications assigned during item development and do not necessarily correspond to final factor membership.

Further Validation of the CCCBS

To further validate the CCCBS, we examined associations between its subscales and preregistered validity indicators to assess convergent and predictive validity in a Caribbean context (see Table 7). Although the three-factor structure replicated with excellent fit, subscale reliability and item loadings were weaker than in prior WEIRD samples. Accordingly, the associations reported below should be interpreted cautiously, as construct validity may be attenuated in this context.

Table 7

Pearson’s r Bivariate Correlations Among Primary Study Variables (Study 3)

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Denialist CB	-								
2. Alarmist CB	.05	-							
3. Warmist CB	-.34**	.17**	-						
4. General CB	-.13**	.12**	.10*	-					
5. General Policy	-.51**	-.00	.38**	.15**	-				

6.	Trini Policy	-.50**	.09*	.39**	.22**	.59**	-			
7.	PEBIs	-.48**	.05	.35**	.20**	.54**	.61**	-		
8.	Envi Concern	-.45**	-.03	.31**	-.12**	-.48**	-.50**	-.50**	-	
9.	Conservatism	.12**	.01	-.08*	-.05	-.17**	-.10**	-.09*	.11**	-
	M	3.55	4.05	4.36	5.47	2.75	4.54	4.37	2.75	3.83
	SD	1.29	1.07	1.22	2.42	0.62	1.19	0.93	0.78	1.76

Note. $p < .05$ (*), $p < .01$ (**). General Policy = general environmental policy support; Trini Policy = Trinidad-specific environmental policy support; PEBIs = pro-environmental behavioural intentions; Envi Concern = Environmental concern.

Convergent Validity. To situate climate change conspiracy beliefs within a broader conspiratorial ecosystem, we examined associations between CCCBS subscales and general conspiracy belief. Consistent with expectations, warmist and alarmist beliefs were positively related to general conspiracism. However, contrary to our hypothesis, denialist beliefs were negatively associated with general conspiracy belief.

Predictive Validity. To assess whether the CCCBS subscales meaningfully predict theoretically relevant outcomes in this underexplored context, we next examined their associations with environmental concern, general and Trinidad-specific policy support, and pro-environmental behavioural intentions. As hypothesised, denialist conspiracy beliefs were consistently and strongly negatively associated with all outcomes. In contrast, warmist conspiracy beliefs exhibited modest positive associations across these variables (see Table 7). Against expectations, alarmist conspiracy beliefs were largely unrelated to environmental outcomes, showing only a small positive association with Trinidad-specific policy support. Overall, these patterns were broadly consistent with predictions, particularly for denialist and warmist beliefs. However, given weaker reliability and item loadings in this sample, findings should be interpreted cautiously. At the same time, the weak and inconsistent associations for alarmist beliefs further suggest a more ideologically ambivalent profile, with weaker links to environmental engagement—a pattern observed across studies.

Discussion

Study 3 provides preliminary evidence that the three-factor structure of the CCCBS extends beyond Western contexts, with the denialist, warmist and alarmist typology

remaining empirically distinguishable in a Caribbean sample. However, important differences emerged relative to the Western validation studies. Although the three-factor model showed excellent global fit, standardized loadings and internal consistencies were substantially lower across all three dimensions. Thus, despite the maintenance of three distinct dimensions, the present findings suggest that climate change conspiracy beliefs may exhibit weaker internal coherence in this context, reflecting a more diffuse pattern of attitudinal organisation, rather than the tightly consolidated belief networks typically observed among conspiracy beliefs sharing common substantive content (see Enders et al., 2021). This raises important questions regarding the cross-cultural structure of climate conspiracism.

Previous research has demonstrated satisfactory internal consistencies for established psychological measures, including the Big Five personality dimensions, in Trinidad and Tobago (Alea et al., 2015), suggesting that the weaker internal consistencies observed here are unlikely to simply reflect an inherent limitation of psychological measurement in this context. Instead, climate conspiracism itself may be organised differently, particularly in light of emerging evidence that the broader climate-related belief systems within which such beliefs are embedded tend to be more loosely interconnected in many Global South settings than in the Global North (Lee et al., 2025). Existing research has been conducted primarily in Western societies, where climate attitudes and conspiracy beliefs are embedded within relatively stable ideological and informational environments (Fisher et al., 2022; Stockemer & Bordeleau, 2024). Trinidad and Tobago differs in several potentially important respects. Political competition often revolves around social cleavages other than conventional left–right ideological divisions (e.g., ethnic identification; Premdas, 2004; see also Bishop et al., 2020), while colonial legacies and continued economic dependence on the fossil fuel sector shape climate policy and environmental governance (Fuentes-George, 2023; Scobie, 2017; Sealey-Huggins, 2017). At the same time, disproportionate exposure to climate-related threats

makes climate concern regionally normative (Drewry et al., 2022; Mildenberger et al., 2025). Climate beliefs therefore emerge within a context in which environmental concerns coexist with competing economic and developmental priorities (Bush, 2018).

These dynamics may influence the extent to which individual climate conspiracy narratives coalesce into coherent belief dimensions. In contexts where fossil fuel industries remain economically and politically salient, climate attitudes may be negotiated alongside competing environmental, political, and economic interests (see Chan & Tam, 2023). Actors commonly implicated in climate-affirming conspiracy narratives, such as governments and industrial corporations, may therefore occupy more ambivalent or multifaceted roles, complicating their consistent interpretation as conspiracist agents. Rather than functioning as interchangeable indicators of a tightly integrated conspiracist worldview, individual beliefs may consequently be evaluated more selectively according to the specific actors implicated, propositions advanced, and their compatibility with local political, economic, and environmental realities. Such selective endorsement could produce weaker inter-item correlations despite the retention of a common underlying factor structure. The findings may therefore point to an important contingency in existing understandings of climate conspiracism, suggesting that the internal coherence of these beliefs may itself vary across sociopolitical contexts.

Several environmental measures likewise exhibited acceptable, albeit somewhat lower internal consistencies than are typically reported in Western samples (αs = .55–.73), consistent with previous research in Caribbean samples (Renaud, 2022). Our findings therefore highlight the broader challenge of applying climate-related psychological constructs developed primarily in Western contexts to populations facing different political, economic, and environmental conditions. Such a perspective speaks to longstanding arguments in cross-cultural psychology that measures developed predominantly in Western contexts cannot be

assumed to capture equivalent underlying constructs elsewhere (Cheung et al., 2011; see also Berry, 1989). Future qualitative and mixed-methods research could therefore clarify how climate conspiracism—and environmental attitudes more generally—are conceptualised and organised across diverse, particularly climate-vulnerable, settings and inform the development of more culturally grounded measures.

The negative association between denialist beliefs and general conspiracist ideation may similarly reflect this context-specific organisation. Given high levels of climate acceptance in Trinidad and Tobago (LAPOP Lab, 2023), denialist narratives may sometimes reflect issue-specific scepticism toward climate science or environmental policy rather than forming part of a broader conspiracist worldview. This possibility warrants further investigation before assuming that the relationships between climate conspiracism and general conspiracist ideation established predominantly in Western contexts generalise cross-culturally. Finally, extending Study 2A, alarmist conspiracy beliefs again appeared comparatively less ideologically structured and only weakly associated with environmental outcomes, further reinforcing the need for future research to clarify the conceptual boundaries and functional significance of this emerging dimension of climate conspiracism.

Ultimately, these findings support the presence of distinct denialist, warmist, and alarmist belief dimensions in a non-Western context, while providing preliminary evidence that their structure and coherence may be culturally contingent.

Eight-Item Denialist-Warmist CCCBS

Across studies, the denialist and warmist subscales demonstrated particularly consistent psychometric performance, while the novel alarmist dimension exhibited greater variability across samples. We therefore additionally provide a parsimonious eight-item version of the CCCBS comprising the four denialist and four warmist items (see Table 8). This version is intended for researchers specifically interested in the established distinction

between climate-denying and climate-affirming conspiracism, or where inclusion of the emerging alarmist dimension is not theoretically required. The psychometric performance of this reduced configuration is reported in the Supplementary Materials.

Table 8
Eight-Item Denialist–Warmist Climate Change Conspiracy Belief Scale with Corresponding Item Typology

Item	Conspiracy Type
1. Climate scientists manipulate or falsify data to make climate change appear real and keep their funding.	Denialist
2. Climate change is a fabricated crisis designed by environmental lobbies to deliberately crash the fossil fuel market.	Denialist
3. The idea of climate change was fabricated by elites as a psychological operation to manipulate the masses.	Denialist
4. The mainstream media frames natural climate variability as a human-made crisis to promote progressive leftist ideologies.	Denialist
5. Fossil fuel stakeholders suppress climate research that threatens their profits, secretly working to bury inconvenient truths.	Warmist
6. Oil and gas corporations secretly finance misinformation campaigns to make the public doubt climate change and stall action.	Warmist
7. Governments deliberately downplay climate change to protect their political allies in the fossil fuel industry.	Warmist
8. Despite early knowledge of climate risks, fossil fuel leaders actively orchestrated campaigns of denial and deception to delay public concern.	Warmist

General Discussion

In this research we advance the conceptualisation and measurement of climate change conspiracy beliefs by developing and validating the Climate Change Conspiracy Belief Scale (CCCBS), a multidimensional instrument designed to capture the defining structural and ideological variation of climate conspiracism. The CCCBS provides a concise and psychometrically robust tool for assessing distinct forms of climate conspiracy beliefs, particularly within Western contexts. Across three studies, we provide converging evidence for a tripartite framework comprising existing denialist and warmist belief dimensions,

alongside initial evidence supporting alarmist conspiracism as a distinguishable belief category. In doing so, we move beyond the dominant treatment of climate conspiracism as a monolithic, predominantly denialist construct (Chan et al., 2023; Jolley & Douglas, 2014a; see also Douglas & Sutton, 2015), instead positioning it as a multidirectional belief system that varies meaningfully in both content and potential consequence.

Across Western samples (Studies 1–2), the CCCBS demonstrated strong psychometric performance, with clear factor structure, high internal consistency, and robust evidence of construct validity. These findings support the theoretical distinction between denialist and climate-affirming conspiracist narratives (Douglas & Sutton, 2015; de Gourville et al., 2025), while providing preliminary support for the distinction between warmist and alarmist forms of climate-affirming conspiracism. Importantly, these dimensions were not only factorially distinguishable but also exhibited divergent patterns of association with political ideology, climate change beliefs, and environmental engagement. Consistent with prior research, denialist beliefs were consistently associated with political conservatism, reduced acceptance of climate science, lower policy support, and inhibited pro-environmental intentions (Biddlestone et al., 2022). In contrast, warmist beliefs were associated with more left-leaning ideologies, greater acceptance of climate science and stronger support for pro-environmental policies, aligning with emerging evidence that not all strains of climate conspiracy beliefs are environmentally maladaptive (de Gourville et al., 2025). These findings therefore corroborate prior work demonstrating that denialist and warmist conspiracism are anchored in distinct epistemic foundations and ideological orientations, resulting in sharply divergent environmental linkages (de Gourville et al., 2026).

Alarmist conspiracy beliefs, however, emerged as the least theoretically resolved of the three dimensions. Although the findings support its distinction from denialist and warmist conspiracism, they also suggest that its psychological organisation remain comparatively

diffuse and less ideologically structured. While these beliefs were positively associated with general conspiracist ideation and acceptance of climate science, their links to environmental engagement were weak and inconsistent across studies, and they showed no clear association with political ideology in either Western or non-Western contexts. This relative ideological neutrality contrasts with other forms of climate conspiracism, which are more strongly anchored in political worldviews (Biddlestone et al., 2022; de Gourville et al., 2025; Stockemer & Bordeleau, 2024).

One possible explanation for their limited behavioural relevance regards the psychological consequences commonly associated with conspiracism more broadly. A substantial body of research shows that conspiracy beliefs are linked to heightened feelings of powerlessness, disillusionment, and reduced perceived efficacy (Ardèvol-Abreu et al., 2020; Coelho et al., 2022; Jolley & Douglas, 2014a, 2014b), and that exposure to conspiracy narratives can undermine intentions to engage in climate action through these mechanisms (Jolley & Douglas, 2014a). Similarly, feelings of powerlessness, helplessness, and climate efficacy have been shown to inhibit pro-environmental behaviour (Jugert et al., 2016; Landry et al., 2018). By amplifying the scale, immediacy, and perceived inevitability of environmental collapse, alarmist conspiracism may heighten negative climate emotions, attenuate perceived agency and potentially lead to engagement paralysis (see Innocenti et al., 2023), thus weakening the translation of concern into action.

An alternative, though not mutually exclusive, possibility is that this dimension partly captures a conspiracist form of climate doomism. Lamb et al. (2020) describe doomism as a form of climate delay characterised by the belief that catastrophic climate change is effectively unavoidable and that mitigation efforts are therefore futile. To the extent that alarmist beliefs portray climate collapse as substantially more imminent or irreversible than current scientific evidence suggests, they may similarly encourage resignation rather than

mobilisation. This may help explain the comparatively diffuse nomological profile of alarmist conspiracism observed here. Accordingly, although the present findings provide initial evidence that alarmist conspiracism constitutes a distinguishable dimension of climate conspiracism, they also suggest that its underlying psychological character remains incompletely understood. Future research is needed to determine the extent to which this dimension reflects conspiracist thinking, catastrophic climate amplification, doomist climate cognition, or some combination of these processes.

The Caribbean findings (Study 3) further suggest that the organisation of climate conspiracism may be context dependent. Although the same tripartite structure was recoverable, the weaker loadings and reduced internal consistency indicate that these belief dimensions may not always operate as the tightly constrained ideological systems observed in Western contexts. This may, in part, reflect the distinctive political, economic, and environmental specificities of Small Island Developing States, where climate change experiences, fossil fuel dependence, and environmental governance intersect in ways that may complicate how individuals interpret, integrate, and prioritise conspiracist claims (Bush, 2018; Hosein, 2021). These findings align with broader evidence that belief systems are not uniformly coherent but vary in their structure and organisation depending on the specific content of each specific belief and the psychological and contextual factors shaping them (Enders et al., 2021; Federico & Malka, 2023; see also Lee et al., 2025). Rather than assuming psychometric equivalence across populations, the present findings suggest that climate conspiracism may represent a context-dependent belief system, with common underlying dimensions exhibiting different degrees of coherence across cultural settings. Clarifying the mechanisms responsible for this contextual variation will be an important avenue for future cross-cultural research.

Limitations, and Future Directions

Several limitations of the current research should be acknowledged. Most notably, the reduced internal consistency and weaker factor loadings observed in the Trinidad and Tobago sample limit the interpretability of associations involving CCCBS subscales in this context. While these patterns likely reflect meaningful differences in the internal organisation of climate conspiracy beliefs, they also introduce measurement attenuation that may limit the precision with which the relationships with other variables can be estimated. Additionally, although the CCCBS captures a wide range of climate-specific conspiracist narratives, it does not account for broader intergroup or geopolitical conspiracy beliefs that may intersect with environmental issues, such as narratives involving global power dynamics or international blame attribution regarding climate change (see Chan & Tam, 2025). Next, although alarmist conspiracism emerged as a distinguishable dimension, its comparatively weak associations with theoretically relevant outcomes and less consistent performance across contexts highlight the need for further research to clarify its conceptual boundaries and broader significance. Finally, the reliance on predominantly cross-sectional data limits causal inference, particularly with respect to the relationships between forms of climate change conspiracy beliefs and environmental outcomes.

These limitations open avenues for several directions for future research. First, future research should further delineate the nature and significance of alarmist conspiracism. Greater attention is needed to its conceptual boundaries, antecedents, and consequences, including the conditions under which these beliefs become consequential for environmental engagement. Examining potential mechanisms, such as perceived efficacy and powerlessness, may also help establish whether and how alarmist conspiracism translates into environmental action. Second, while considerable work has examined the antecedents and consequences of denialist beliefs (Biddlestone et al., 2022; Chan et al., 2023), comparatively little is known

about the causal dynamics of warmist and alarmist conspiracism. Longitudinal and experimental studies are needed to determine how these beliefs develop over time and how they influence environmental attitudes and behaviour. Third, further cross-cultural research is essential to better understand the variability observed in the Caribbean context. Future studies should examine how climate conspiracy beliefs are structured across diverse cultural and socio-political environments, particularly in Global South and small island contexts where environmental threats are salient and immediate. Complementary qualitative approaches may be valuable in capturing the ways in which individuals interpret and engage with conspiracist narratives in these settings.

Conclusion

The present research advances the study of climate conspiracism by developing and validating the Climate Change Conspiracy Belief Scale (CCCBS), a multidimensional measure designed to capture its defining structural logic and ideological variation. Across three studies, the findings validate a three-factor structure of climate change conspiracism—denialist, warmist, and alarmist—and support the CCCBS as a concise instrument capable of capturing theoretically meaningful variation in the content and correlates of climate conspiracy beliefs in Western contexts. At the same time, the weaker coherence observed in Trinidad and Tobago suggests that the organisation and ideological consolidation of these beliefs may vary across cultural contexts and warrant further investigation. By departing from monolithic conceptualisations of climate conspiracism, these findings provide a stronger conceptual and psychometric foundation for understanding it as a structured, context-sensitive belief system and for advancing research on its antecedents, functions, and consequences across diverse settings.

Ethics Statement

Ethical approval for all studies was granted by the University of Kent Ethics Committee (Ethics IDs: 2025175138054010048, 2025176285790510177, 2026176909129710349, 2026176883309810341).

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References

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, White women. Health psychology, 19(6), 586. https://psycnet.apa.org/doi/10.1037/0278-6133.19.6.586.

Albuquerque, D. (2026). "Why so alarmist?" or An Ecolinguistic Approach to Apocalyptic Discourses on Climate Change. In M. Mliless , L. Belfakir & H. Laabidi (Ed.). Apocalypse in Media, Literature, and Linguistics: Narratives of Despair and Hope (pp. 53–72). New York London: Bloomsbury Academic. http://dx.doi.org/10.5040/9798216380269.ch-2

Alea, N., Bluck, S., & Ali, S. (2015). Function in context: Why American and Trinidadian young and older adults remember the personal past. Memory, 23(1), 55–68. https://doi.org/10.1080/09658211.2014.929704

Alper, S., & Yilmaz, O. (2023). What is wrong with conspiracy beliefs? Routledge Open Research, 2, 28. https://doi.org/10.12688/routledgeopenres.17926.1

Ardèvol-Abreu, A., Gil de Zúñiga, H., & Gámez, E. (2020). The influence of conspiracy beliefs on conventional and unconventional forms of political participation: The mediating role of political efficacy. The British journal of social psychology, 59(2), 549–569. https://doi.org/10.1111/bjso.12366

Bale, J. M. (2007). Political paranoia v. political realism: on distinguishing between bogus conspiracy theories and genuine conspiratorial politics. Patterns of Prejudice, 41(1), 45–60. https://doi.org/10.1080/00313220601118751

Bertin, P., Nera, K., Hamer, K., Uhl-Haedicke, I., & Delouvée, S. (2021). Stand out of my sunlight: The mediating role of climate change conspiracy beliefs in the relationship

between national collective narcissism and acceptance of climate science. Group Processes & Intergroup Relations, 24(5), 738–758. https://doi.org/10.1177/1368430221992114

Berry, J. W. (1989). Imposed etics-emics-derived etics: The operationalization of a compelling idea. International Journal of Psychology, 24(6), 721–735. https://doi.org/10.1080/00207598908247841

Biddlestone, M., Azevedo, F., & van der Linden, S. (2022). Climate of conspiracy: A meta-analysis of the consequences of belief in conspiracy theories about climate change. Current Opinion in Psychology, 46, Article 101390. https://doi.org/10.1016/j.copsyc.2022.101390

Biddlestone, M., Toribio Florez, D., Green, R., de Gourville, D., Sutton, R. M., & Douglas, K. M. (in preparation). The Conspiracist Worldview Scale (CWS): The two dimensions of conspiracy believers' worldviews and self-concepts.

Bishop, M.L., Corbett, J. and Veenendaal, W. (2020) Labor movements and party system development: Why does the Caribbean have stable two-party systems, but the Pacific does not? World Development, 126. 104719. ISSN: 0305-750X. https://doi.org/10.1016/j.worlddev.2019.104719

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best Practices for Developing and Validating Scales for Health, Social, and Behavioral Research: A Primer. Frontiers in public health, 6, 149. https://doi.org/10.3389/fpubh.2018.00149

Bolsen, T., Palm, R., & Kingsland, J. T. (2022). Effects of Conspiracy Rhetoric on Views About the Consequences of Climate Change and Support for Direct Carbon Capture. Environmental Communication, 16(2), 209–224. https://doi.org/10.1080/17524032.2021.1991967

Bowes, S. M., Costello, T. H., & Tasimi, A. (2023). The conspiratorial mind: A meta-analytic review of motivational and personological correlates. Psychological bulletin, 149(5-6), 259–293. https://doi.org/10.1037/bul0000392

Brysse, K., Oreskes, N., O'Reilly, J., & Oppenheimer, M. (2013). Climate change prediction: Erring on the side of least drama? Global Environmental Change, 23(1), 327–337. https://doi.org/10.1016/j.gloenvcha.2012.10.008

Brown, T. A. (2015). Confirmatory factor analysis for applied research (2nd ed.). Guilford Press.

Bush, M. J. (2018). Climate change adaptation in small island developing states. Wiley-Blackwell.

Chan, H.-W., Tam, K.-P., & Hong, Y.-y. (2023). Does belief in climate change conspiracy theories predict everyday life pro-environmental behaviors? Testing the longitudinal relationship in China and the U.S. Journal of Environmental Psychology, 87, 1–7. https://doi.org/10.1016/j.jenvp.2023.101980

Chan, H. W., Wang, X., Tam, K. P., Hong, Y. Y., & Huang, B. (2024). Hotter weather, less of a hoax? Testing the longitudinal association between experience of temperature anomalies and belief in climate change conspiracy theories. Journal of Environmental Psychology, 98, Article 102409. https://doi.org/10.1016/j.jenvp.2024.102409

Chan, H., & Tam, K. (2025). Beyond the Hoax Narratives: Understanding Climate Change Conspiracy Beliefs Through the Lens of the US–China Conflicts. Journal of Social Issues. https://doi.org/10.1111/josi.70015

Chan, H.-W., & Tam, K.-P. (2023). Political divide in climate change opinions is stronger in some countries and some U.S. States than others: Testing the self-expression hypothesis and the fossil fuel reliance hypothesis. Journal of Environmental Psychology, 87, 1–14. https://doi.org/10.1016/j.jenvp.2023.101992

Chen, D., M. Rojas, B.H. Samset, K. Cobb, A. Diongue Niang, P. Edwards, S. Emori, S.H. Faria, E. Hawkins, P. Hope, P. Huybrechts, M. Meinshausen, S.K. Mustafa, G.-K. Plattner, & Tréguier, A. M. (2021). Framing, Context, and Methods. In Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change[Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 147–286, doi:10.1017/9781009157896.003.

Cheung, F. M., van de Vijver, F. J., & Leong, F. T. (2011). Toward a new approach to the study of personality in culture. The American psychologist, 66(7), 593–603. https://doi.org/10.1037/a0022389

Clark, L. A., & Watson, D. (2016). Constructing validity: Basic issues in objective scale development. In A. E. Kazdin (Ed.), Methodological issues and strategies in clinical research (4th ed., pp. 187–203). American Psychological Association. https://doi.org/10.1037/14805-012

Coan, T. G., Boussalis, C., Cook, J., & Nanko, M. O. (2021). Computer-assisted classification of contrarian claims about climate change. Scientific reports, 11(1), 22320. https://doi.org/10.1038/s41598-021-01714-4

Coelho, P., Foster, K., Nedri, M., & Marques, M. D. (2022). Increased belief in vaccination conspiracy theories predicts increases in vaccination hesitancy and powerlessness: Results from a longitudinal study. Social Science & Medicine, 315, 1–6. https://doi.org/10.1016/j.socscimed.2022.115522

Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis* (2nd ed.). Lawrence Erlbaum Associates, Inc.

Cook, J. (2019). Understanding and countering misinformation about climate change. In I. E. Chiluwa & S. A. Samoilenko (Eds.), Handbook of research on deception, fake news, and misinformation online (pp. 281–306). Information Science Reference/IGI Global. https://doi.org/10.4018/978-1-5225-8535-0.ch016

Cook, J. (2020). Deconstructing Climate Science Denial. In Holmes, D. & Richardson, L. M. (Eds.) Edward Elgar Research Handbook in Communicating Climate Change (pp. 62–78). Cheltenham, UK: Edward Elgar.

Cook, J., Supran, G., Lewandowsky, S., Oreskes, N., & Maibach, E., (2019). America Misled: How the fossil fuel industry deliberately misled Americans about climate change. Fairfax, VA: George Mason University Center for Climate Change Communication. Available at https://www.climatechangecommunication.org/america-misled/

Dagnall, N., Denovan, A., & Drinkwater, K. G. (2023). Longitudinal assessment of the temporal stability and predictive validity of the Revised Paranormal Belief Scale. Frontiers in Psychology, 13, Article 1094701. https://doi.org/10.3389/fpsyg.2022.1094701

de Gourville, D., Douglas, K., & Sutton, R. (2025). Denialist vs Warmist Climate Change Conspiracy Beliefs: Ideological Roots, Psychological Correlates, and Environmental Implications. British Journal of Psychology. Advance online publication. https://doi.org/10.1111/bjop.70035

de Gourville, D., Ecker, U., Green, R., Biddlestone, M., Spearing, E., Cook, J., & Douglas, K. M. (2026). The impact of misinformation and conspiracy theories on climate denial and resistance to mitigation. [Manuscript in press]. In M. Vlasceanu & S. van der Linden (Eds.), The Psychological Foundations of Climate Solutions. Cambridge University Press.

de Graaf, J. A., Stok, F. M., de Wit, J. B. F., & Bal, M. (2023). The climate change skepticism questionnaire: Validation of a measure to assess doubts regarding climate change. Journal of Environmental Psychology, 89, 102068.

Dentith, M. R. X. (2016). When inferring to a conspiracy might be the best explanation. Social Epistemology, 30(5–6), 572–591. https://doi.org/10.1080/02691728.2016.1172362

Diethelm, P., & McKee, M. (2009). Denialism: what is it and how should scientists respond?. European journal of public health, 19(1), 2–4. https://doi.org/10.1093/eurpub/ckn139

Douglas, K. M., & Sutton, R. M. (2015). Climate change: Why the conspiracy theories are dangerous. Bulletin of the Atomic Scientists, 71(2), 98-106. https://doi.org/10.1177/0096340215571908

Douglas, K. M., & Sutton, R. M. (2023). What are conspiracy theories? A definitional approach to their correlates, consequences, and communication. Annual Review of Psychology, 74, 271–298. https://doi.org/10.1146/annurev-psych-032420-031329

Douglas, K. M., Sutton, R. M., & Cichocka, A. (2017). The Psychology of Conspiracy Theories. Current directions in psychological science, 26(6), 538–542. https://doi.org/10.1177/0963721417718261

Drewry, J., Oura, C. A. L., Adams, S., Bayley, L., Kotcher, J., & Ivey, M. (2022). Public understanding of climate change and health in the Caribbean: Results and recommendations from a 10-country perceptions survey. The Journal of Climate Change and Health, 6, Article 100155. https://doi.org/10.1016/j.joclim.2022.100155

Dunlap, R. E., & Brulle, R. J. (2020). Sources and amplifiers of climate change denial. In D. C. Holmes & L. M. Richardson (Eds.), Research Handbook on Communicating Climate Change (pp. 49–61). Edward Elgar Publishing.

Dunlap, R. E., McCright, A. M., & Yarosh, J. H. (2016). The Political Divide on Climate Change: Partisan Polarization Widens in the U.S. Environment: Science and Policy for Sustainable Development, 58(5), 4–23. https://doi.org/10.1080/00139157.2016.1208995

Enders, A. M., Uscinski, J. E., Klofstad, C. A., Seelig, M. I., Wuchty, S., Murthi, M. N., Premaratne, K., & Funchion, J. R. (2021). Do conspiracy beliefs form a belief system?

Examining the structure and organization of conspiracy beliefs. Journal of Social and Political Psychology, 9(1), 255–271. https://doi.org/10.5964/jspp.5649

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. Psychological Methods, 4(3), 272–299. https://doi.org/10.1037/1082-989X.4.3.272

Federico, C. M., & Malka, A. (2023). The psychological and social foundations of ideological belief systems. In L. Huddy, D. O. Sears, J. S. Levy, & J. Jerit (Eds.), The Oxford handbook of political psychology (3rd ed., pp. 601–648). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780197541302.013.16

Fisher, S. D., Kenny, J., Poortinga, W., Böhm, G., & Steg, L. (2022). The politicisation of climate change attitudes in Europe. Electoral Studies, 32(1), 100–113. https://doi.org/10.1016/j.electstud.2022.102499

Fock, L., Winter, S., Pummerer, L., & Imhoff, R. (2025). Blinded by the lies or lifting the blinds? Using signal detection theory to examine correlates of belief in plausible vs. implausible conspiracy theories [Preprint]. https://osf.io/preprints/psyarxiv/k3chf_v1

Foust, C. R., & O'Shannon Murphy, W. (2009). Revealing and Reframing Apocalyptic Tragedy in Global Warming Discourse. Environmental Communication, 3(2), 151–167. https://doi.org/10.1080/17524030902916624

Fuentes-George, K. (2023). "The Legacy of Colonialism on Contemporary Climate Governance". Georgetown Journal of International Affairs, 24, 91 - 98. https://doi.org/10.1353/gia.2023.a897706

Goldberg, M. H., Gustafson, A., Ballew, M. T., Rosenthal, S. A., & Leiserowitz, A. (2021). Identifying the most important predictors of support for climate policy in the United States. Behavioural Public Policy, 5(4), 480–502. https://doi.org/10.1017/bpp.2020.39

Green, R., Douglas, K. M. (under review). Catastrophizing life's problems: On the relationship between attachment anxiety and belief in conspiracy theories. Manuscript submitted for publication.

Guadagnoli, E., & Velicer, W. F. (1988). Relation of sample size to the stability of component patterns. Psychological bulletin, 103(2), 265–275. https://doi.org/10.1037/0033-2909.103.2.265

Gwet, K.L. (2008). Computing inter-rater reliability and its variance in the presence of high agreement. *British Journal of Mathematical and Statistical Psychology*, 61, 29-48. https://doi.org/10.1348/000711006X126600

Haltinner, K., Sarathchandra, D., & Ptak, T. (2021). How Believing That Climate Change Is a Conspiracy Affects Skeptics' Environmental Attitudes. Environment: Science and Policy for Sustainable Development, 63(3), 25–33. https://doi.org/10.1080/00139157.2021.1898900

Hattersley, M., Brown, G. D. A., Michael, J., & Ludvig, E. A. (2022). Of tinfoil hats and thinking caps: Reasoning is more strongly related to implausible than plausible conspiracy beliefs. Cognition, 218, 104956. https://doi.org/10.1016/j.cognition.2021.104956

Hornsey, M. J., Harris, E. A., Bain, P. G., & Fielding, K. S. (2016). Meta-analyses of the determinants and outcomes of belief in climate change. Nature Climate Change, 6, 622-626. https://doi.org/10.1038/nclimate2943

Hosein, R. (2021). Oil and gas in Trinidad and Tobago: Managing the resource curse in a small petroleum-exporting economy. Palgrave Macmillan. https://doi.org/10.1007/978-3-030-77669-5

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling: A Multidisciplinary Journal, 6(1), 1–55. https://doi.org/10.1080/10705519909540118

Iacobuta, G., Dubash, N. K., Upadhyaya, P., Deribe, M., & Höhne, N. (2018). National climate change mitigation legislation, strategy and targets: a global update. Climate Policy, 18(9), 1114–1132. https://doi.org/10.1080/14693062.2018.1489772

Innocenti, M., Santarelli, G., Lombardi, G. S., Ciabini, L., Zjalic, D., Di Russo, M., & Cadeddu, C. (2023). How Can Climate Change Anxiety Induce Both Pro-Environmental Behaviours and Eco-Paralysis? The Mediating Role of General Self-Efficacy. International journal of environmental research and public health, 20(4), 3085. https://doi.org/10.3390/ijerph20043085

Intergovernmental Panel on Climate Change (IPCC). (2023). Climate Change 2021 – The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press. https://doi.org/10.1017/9781009157896

Jolley, D., & Douglas, K. M. (2014a). The social consequences of conspiracism: Exposure to conspiracy theories decreases intentions to engage in politics and to reduce one's carbon footprint. British Journal of Psychology, 105(1), 35–56. https://doi.org/10.1111/bjop.12018

Jolley, D., & Douglas, K. M. (2014b). The effects of anti-vaccine conspiracy theories on vaccination intentions. PloS one, 9(2), e89177. https://doi.org/10.1371/journal.pone.0089177

Jugert, P., Greenaway, K. H., Barth, M., Büchner, R., Eisentraut, S., & Fritsche, I. (2016). Collective efficacy increases pro-environmental intentions through increasing self-efficacy. Journal of Environmental Psychology, 48, 12–23. https://doi.org/10.1016/j.jenvp.2016.08.003

Kaiser, H. F. (1974). An index of factorial simplicity. Psychometrika, 39(1), 31–36. https://doi.org/10.1007/BF02291575

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2014). The Performance of RMSEA in Models With Small Degrees of Freedom. Sociological Methods & Research, 44(3), 486-507. https://doi.org/10.1177/0049124114543236

Kline, P. (1993). *A handbook of psychological testing* (2nd ed.). Routledge, Taylor & Francis Group.

Lamb, W.F., Mattioli, G., Levi, S., Roberts, J.T., Capstick, S.B., Creutzig, F., Minx, J.C., Müller-Hansen, F., Culhane, T., & Steinberger, J.K. (2020). Discourses of climate delay. Global Sustainability, 3. doi:10.1017/sus.2020.13

Landry, N., Gifford, R., Milfont, T. L., Weeks, A., & Arnocky, S. (2018). Learned helplessness moderates the relationship between environmental concern and behavior. Journal of Environmental Psychology, 55, 18–22. https://doi.org/10.1016/j.jenvp.2017.12.003

Lantian, A., Muller, D., Nurra, C., & Douglas, K. M. (2016). Measuring belief in conspiracy theories: Validation of a French and English single-item scale. International Review of Social Psychology, 29(1), 1-14. https://doi.org/10.5334/irsp.8

LAPOP Lab. (2023). AmericasBarometer Trinidad and Tobago 2023 (Version 4.0) [Data set]. Center for Global Democracy, Vanderbilt University. www.vanderbilt.edu/lapop

Lee, S., Vu, H.T., Thaker, J., Verner, M., Goldberg, M.H., Carman, J.P., Rosenthal, S.A., & Leiserowitz, A. (2025). Variations in climate change belief systems across 110 geographic areas. Nature Climate Change, 15, 947 - 953. https://doi.org/10.1038/s41558-025-02410-1

Lewandowsky, S., Oberauer, K., & Gignac, G. E. (2013). NASA faked the moon landing – therefore, (climate) science is a hoax: An anatomy of the motivated rejection of science. Psychological Science, 24(5), 622–633. https://doi.org/10.1177/0956797612457686

Lima, R., Belem, A. L., Lycarião, D., Oliveira, T., Evangelista, S., Massarani, L. and Alves, M. (2024). (Un)certainty in science and climate change: a longitudinal analysis (2014–2022)

of narratives about climate science on social media in Brazil (Instagram, Facebook, and Twitter) JCOM 23(09), A07. https://doi.org/10.22323/2.23090207

Mateer, T. J., Melton, T. N., Miller, Z. D., Lawhon, B., Agans, J. P., & Taff, B. D. (2022). A multi-dimensional measure of pro-environmental behaviour for use across populations with varying levels of environmental involvement in the United States. PloS one, 17(10), e0274083. https://doi.org/10.1371/journal.pone.0274083

Meade, A. W., Johnson, E. C., & Braddy, P. W. (2008). Power and sensitivity of alternative fit indices in tests of measurement invariance. Journal of Applied Psychology, 93(3), 568–592. https://doi.org/10.1037/0021-9010.93.3.568

Mildenberger, M., Constantino, S. M., Mahdavi, P., Bergquist, P., De Roche, G., Franzblau, E., Martinez-Alvarez, C., & Sturm, I. (2025). How publics in small-island states view climate change and international responses to it. Proceedings of the National Academy of Sciences of the United States of America, 122(30), e2415324122. https://doi.org/10.1073/pnas.2415324122

Nera, K., & Schöpfer, C. (2023). What is so special about conspiracy theories? Conceptually distinguishing beliefs in conspiracy theories from conspiracy beliefs in psychological research. Theory & Psychology, 33(3), 287-305.

Piliousis, A. & Gardikiotis, A. (2026). The role of the conspiracy narrative triad in operationalizing conspiracy beliefs. *Current Psychology*, 45, 799. https://doi.org/10.1007/s12144-026-09351-8

Poortinga, W., Spence, A., Whitmarsh, L., Capstick, S., & Pidgeon, N. F. (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

Premdas, R. R. (2004). Elections, identity and ethnic conflict in the Caribbean. Pouvoirs dans la Caraïbe, 14. https://doi.org/10.4000/plc.246

Pummerer, L., Ditrich, L., Winter, K., & Sassenberg, K. (2025). Belief in a norm-consistent climate policy conspiracy theory and non-normative collective action. Journal of Applied Social Psychology. Advance online publication. https://doi.org/10.1111/jasp.13094

Rahmstorf, S. (2004). rahmstorf_climate_sceptics_2004. http://www.pik-potsdam.de/~stefan/Publications/Other/rahmstorf_climate_sceptics_2004.pdf.

Renaud, S. (2022). Knowledge, attitudes and practices (KAP) regarding the role of ecosystems in disaster risk reduction and climate change adaptation in vulnerable coastal communities in Trinidad and Tobago. Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC). https://www.ccrif.org/publications/student-papers/knowledge-attitudes-and-practices-kap-vulnerable-coastal-community?language_content_entity=en

Rodrigues, T.V. (2026). Less is more: on how reasoning increases epistemic status. Synthese, 208, 32. https://doi.org/10.1007/s11229-026-05672-0

Schinka, J. A., Velicer, W. F., & Weiner, I. R. (Eds.). (2012). *Handbook of psychology: Vol. 2. Research methods in psychology.* John Wiley & Sons, Inc.

Scobie, M. (2017). Fossil fuel reform in developing states: The case of Trinidad and Tobago, a petroleum producing small Island developing State. Energy Policy, 104(C), 265-273. https://doi.org/10.1016/j.enpol.2017.02.008

Sealey-Huggins, L. (2017). '1.5°C to stay alive': climate change, imperialism and justice for the Caribbean. Third World Quarterly, 38(11), 2444–2463. https://doi.org/10.1080/01436597.2017.1368013

Soto, C. J., & John, O. P. (2017). Short and extra-short forms of the Big Five Inventory–2: The BFI-2-S and BFI-2-XS. Journal of Research in Personality, 68, 69–81. https://doi.org/10.1016/j.jrp.2017.02.004

Stockemer, D., & Bordeleau, J.-N. (2024). Understanding climate change conspiracy beliefs: A comparative outlook. Harvard Kennedy School (HKS) Misinformation Review. https://doi.org/10.37016/mr-2020-162

Supran, G., Rahmstorf, S., & Oreskes, N. (2023). Assessing ExxonMobil's global warming projections. Science (New York, N.Y.), 379(6628), eabk0063. https://doi.org/10.1126/science.abk0063

Tam, K.-P., & Chan, H.-W. (2023). Conspiracy theories and climate change: A systematic review. Journal of Environmental Psychology, 91, 1–15. https://doi.org/10.1016/j.jenvp.2023.102129

Tam, K.-P., & Chan, H.-W. (2017). Environmental concern has a weaker association with pro-environmental behavior in some societies than others: A cross-cultural psychology perspective. Journal of Environmental Psychology, 53, 213–223. https://doi.org/10.1016/j.jenvp.2017.09.001

Uscinski, J. E., & Parent, J. M. (2014). American conspiracy theories. Oxford University Press.

Uscinski, J. E., Douglas, K., & Lewandowsky, S. (2017). Climate change conspiracy theories. In H. von Storch (Ed.), Oxford research encyclopedia of climate science. Oxford University Press. https://doi.org/10.1093/acrefore/9780190228620.013.328

Uscinski, J. E. (Ed.). (2018). Conspiracy theories and the people who believe them. Oxford University Press. https://doi.org/10.1093/oso/9780190844073.001.0001

van der Linden, S. L., Leiserowitz, A. A., Feinberg, G. D., & Maibach, E. W. (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

van der Linden, S. (2015). The conspiracy-effect: Exposure to conspiracy theories (about global warming) decreases pro-social behavior and science acceptance. Personality and Individual Differences, 87, 171–173. https://doi.org/10.1016/j.paid.2015.07.045

Weisberg, J. (2021). Formal epistemology. In E. N. Zalta (Ed.), The Stanford encyclopedia of philosophy (Spring 2021 ed.). Metaphysics Research Lab, Stanford University. https://plato.stanford.edu/archives/spr2021/entries/formal-epistemology/