Note: The accepted version of this paper has been published in the Journal of Environmental Psychology. Please refer to https://doi.org/10.1016/j.jenvp.2023.101980

Does Belief in Climate Change Conspiracy Theories Predict Everyday Life Pro-Environmental Behaviors? Testing the Longitudinal Relationship in China and the U.S.

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Acknowledgments: This research is partially funded by the start-up grant conferred to H-W Chan by the Department of Applied Social Sciences, The Hong Polytechnic University, and a General Research Fund (Ref No. 14621920) by Research Grant Council of Hong Kong SAR government, China conferred to Y. Hong.

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Abstract

While the harmful effects of climate change have become more observable and tangible, there are still conspiracy theory narratives suggesting that climate change is a hoax and invented to mislead the public. Previous research has shown that belief in or exposure to such conspiracy narratives has negative downstream consequences for addressing climate change, including stronger climate skepticism, weaker climate policy support, and weaker pro-environmental behavioral intention. Yet, the literature is limited in terms of understanding the impact of belief in climate change conspiracy theories on everyday life pro-environmental behaviors longitudinally and outside the U.S. context. The present research thus advances the literature by examining the longitudinal relationship between belief in climate change conspiracy theories and everyday life (i.e., private-sphere) pro-environmental behaviors in mainland China (Study 1: $N = 1200$; two-waves) and the U.S. (Study 2: $N = 1001$; five-waves). In both studies, we found consistent evidence that belief in climate change conspiracy theories was related to less engagement in everyday life pro-environmental behaviors concurrently and longitudinally. Our findings suggest that belief in climate change conspiracy theories could have a negative consequence on daily pro-environmental behaviors and highlight the need to understand the impact of such belief beyond the U.S. context.

Keywords: climate change, conspiracy theories, pro-environmental behavior, longitudinal design

1. Introduction

While active climate scientists consensually agree upon the happening, harm, and human cause of climate change (Cook et al., 2016), conspiracy theory narratives suggesting that climate change is a hoax and invented to mislead the public persist (aka the great global warming conspiracy theory; for reviews, see Douglas & Sutton, 2015; Uscinski et al., 2017). Climate change conspiracy theory is rife on the internet and social media platforms. For example, Allgaier (2019) found that in a sample of 200 climate change-related YouTube videos, 91 (45.5%) of them were related to conspiracy theories, while 89 (44.5%) of them were related to the scientific consensus on climate change. Logically and APCO Worldwide (October 2021) reported that there is a surge in climate change conspiracy theories and misinformation on social media platforms since 2019, with narratives linking to COVID-19-related conspiracy theories (e.g., the great reset and anti-vaccine). Importantly, previous studies based on the U.S. participants suggested that around 20% to 40% of Americans believed climate change was a hoax (Uscinski et al., 2017). According to the recent YouGov-Cambridge international survey, on average 17% of people in a country believed this conspiracy theory to be true or probably true (YouGov, 2021); this percentage number varied across countries, with the lowest in Denmark (7%) and the highest in India (31%).

Previous studies have suggested that belief in conspiracy theories could have negative consequences on oneself, others, and society (for reviews, see Douglas et al., 2019; Jolley et al., 2022). For example, belief in COVID-19 as a hoax was related to less compliance with COVID-19 disease preventive measures (e.g., Bierwiaczonek et al., 2020; Chan et al., 2021; Imhoff & Lamberty, 2020), which could pose a health risk to the self and make it more difficult to contain the virus. In the context of climate change, studies have shown that exposure to or belief in climate change conspiracy theories was related to a stronger anti-science attitude, less environmental concern, stronger climate skepticism, and weaker

intention to engage in pro-environmental actions (e.g., Jolley & Douglas, 2014; Haltinner & Saranthchandra, 2022; Lewandowsky et al., 2013). In a recent meta-analysis, Biddlestone et al. (2022) reported that on average, there was a moderate to large correlation between belief in climate change conspiracy theories and these outcome variables. Together, these studies have suggested that belief in climate change conspiracy theories could have dangerous consequences for addressing climate change (Douglas & Sutton, 2015).

However, researchers have raised concerns about the strength of evidence on the negative consequences of belief in conspiracy theories and misinformation (e.g., Moskalenko & McCauley, 2021; Simon & Camargo, 2021; Uscinski et al., 2022). There are three noteworthy limitations of previous research on the topic of climate change conspiracy theories specifically. First, the majority of the previous studies have examined either behavioral intention or policy support (except Haltinner & Saranthchandra, 2022). It is still uncertain to what extent belief in climate change conspiracy theories influences people's everyday life pro-environmental behaviors (aka. private-sphere pro-environmental behavior; Stern, 2000), which is also critical to the mitigation of climate change (Dietz et al., 2009). While one may expect that the negative effect discussed earlier should be extended to private-sphere pro-environmental behaviors, studies suggested that climate skeptics do not necessarily behave less pro-environmentally in their private sphere than do climate change believers (e.g., Hall et al., 2018). Thus, it is imperative to investigate whether belief in climate change conspiracy theories would have a downstream influence on everyday life pro-environmental behaviors.

Second, previous studies either adopted a cross-sectional survey design or a one-shot experimental design. In a one-shot experimental design, researchers often investigate how people who are exposed to climate change conspiracy theory materials (versus neutral materials) responded to climate policy (Bolsen et al., 2022), intention to reduce carbon

footprint (Jolley & Douglas, 2014), and signing a petition for addressing climate change (van der Linden, 2015). Yet, it is uncertain to what extent such a one-shot exposure to climate change conspiracy theories or temporarily increased belief would translate into real-life behaviors over time. Longitudinal studies can address this limitation. A longitudinal design can capture the changes in people's daily pro-environmental behaviors and allow researchers to investigate how these changes are related to individuals' initial belief in climate change conspiracy theories. It thus can advance the literature by offering evidence for the longer-term effect of such conspiracy beliefs on real-life daily life pro-environmental behaviors.

Lastly, the majority of the studies were based on the U.S. sample. According to Biddlestone et al. (2022), 19 out of the 22 studies included only American participants. Of the remaining three studies, two were from France and one was from the U.K. Given the relevance of climate change conspiracy theories to the whole world, it is crucial to examine the effect of climate change conspiracy theories beyond the American context. Recent studies have suggested that cultural and socio-ecological contexts influence how people respond to climate change (e.g., Chan & Tam, 2021b; Chan, 2020; Tam & Chan, 2017; Tam & Milfont, 2020). Indeed, in a large-scale cross-national study covering 25 countries, Hornsey et al. (2018) found that the association between conspiracist thinking and climate change belief was significant only in Singapore and the U.S., flagging the alarm of over-generalization of findings from the U.S. to other countries. Accordingly, it is crucial to examine the link between belief in climate change conspiracy theories and pro-environmental behavior in different cultural contexts.

The present research addresses the three limitations by examining the longitudinal relationship between belief in climate change conspiracy theories and self-reported private-sphere pro-environmental behavior in mainland China (Study 1) and the U.S. (Study 2). Examining the impact of belief in climate change conspiracy theories in these two countries

is imperative, as they are the top two emitters of greenhouse gases historically and annually. Based on past studies, we expected a negative relationship between belief in climate change conspiracy theories (that climate change is a hoax) and private-sphere pro-environmental behaviors. The data was collected between February and April 2020 in mainland China (with two time points) and between March and May 2020 in the U.S (with five time points). Both datasets were from a larger project that aims at examining COVID-19 disease preventive behaviors.[1, 2]

2. Study 1 (mainland China)

2.1 Methods

Participants. In total, 1,200 mainland Chinese participated in this study, with a mean age of 31.10 years (SD = 8.86). All participants were recruited from Wenjuanbao (https://www.justvoting.com/) – a platform resembling the Amazon Mechanical Turk. The data was originally from a larger project that examined people's responses to the COVID-19 pandemic. Time 1 and Time 2 data were collected during the outbreak (February to March 2020) and after the disease had been largely contained in China (April 2020), respectively. The average time lag between the Time 1 and Time 2 data collection was 1.88 months (ranged from 0.98 months to 2.64 months; SD = .42). The sample size was determined a priori for having a statistical power of 80% for detecting a small effect (r = .10) at .05 alpha level. A minimum sample size of 782 is sufficient. We oversampled to (1) protect against potential data loss due to failure in attention check and (2) fulfill the need of the larger project. None of the participants failed the attention check.

Procedures and Measures. Participants completed an online survey at each of the two time points. At both time points, participants indicated the extent to which they considered three climate change conspiracy theory statements to be true or false on a 11-point

scale (0 = completely false to 10 = completely true; e.g., “Climate change is a hoax that the government uses to increase taxes paid by citizens”; α_{T1} = .67; α_{T2} = .64). They also reported how frequently they performed a list of seven pro-environmental behaviors in the past week on a five-point scale (1 = Never to 5 = always; e.g., “Take a shower shorter than 5 minutes to conserve water”; α_{T1} = .75; α_{T2} = .75). Participants also reported their gender, age, household income, and education level. We included these demographic factors as covariate variables because they have been found to predict pro-environmental behaviors in past studies (for a review, see Gifford & Nilsson, 2014). The data collection procedures and research materials were reviewed and approved by the research ethics committee of the university affiliated with the authors. All measures and instructions were presented in simplified Chinese. We presented the items and instructions in Supplementary Materials. Supplementary Table S1 shows the percentage of participants who believed in climate change conspiracy theories.

2.2 Results

We conducted two sets of regression analyses. First, we examined the concurrent association between belief in climate change conspiracy theories and private-sphere pro-environmental behaviors at each time point. Second, we examined the longitudinal association between the two constructs. More specifically, we included Time 1 belief in climate change conspiracy theories as the predictor variable, Time 1 private-sphere pro-environmental behaviors as the covariate, and Time 2 private-sphere pro-environmental behaviors as the outcome variable. In all analyses, we controlled for the effects of gender, age, household income, and education level. Table 1 shows the results. As expected, belief in climate change conspiracy theories was negatively related to engagement in private-sphere pro-environmental behaviors concurrently at both time points and longitudinally. That is, belief in climate change conspiracy theories at Time 1 predicted less private-sphere pro-environmental behaviors at Time 2. It is noteworthy that although the negative associations

were statistically significant, the effect sizes were very small in general (*standardized beta*s ranged from .05 (longitudinal) to .17 (Time 1 concurrent)).

3. Study 2 (U.S. Sample)

3.1 Methods

Participants. We recruited 1,001 participants from the Amazon Mechanical Turk (MTurk) via the CloudResearch platform (Litman et al., 2017). Participants completed an online survey at each of the five time points (from March to May 2020), with a two-week separation between each pair of time points. From Time 2 to Time 5, 818, 690, 599, and 511 participants participated, respectively; the average attrition rate was 15.45% at each consecutive time point. Same as Study 1, the data was from a larger project that aims at understanding people's response to the COVID-19 pandemic. We did not determine our sample size a priori; we aimed at retaining all participants who completed the Time 1 survey. Our final sample size has a statistical power of 80% for detecting a small effect size (r = .12) at .05 alpha level.

Procedures and Measures. Participants completed an online survey at each time point. We used the same measures for belief in climate change conspiracy theories and private-sphere pro-environmental behaviors as in Study 1. Additionally, considering the strong political divide in climate change issues within the U.S. (Hornsey et al., 2018), we included political orientation as a covariate. Participants reported the extent to which they supported the ideologies of being liberal and conservative, respectively, on a 7-point scale (1 = not at all to 7 = very much). We computed an overall score of political orientation by reversing and averaging the two items (r = .77), with higher scores indicating higher levels of conservative orientation. Lastly, participants also reported their gender, age, education level, and household income. The data collection procedures and research materials were reviewed

and approved by the research ethics committee of the university affiliated with the authors. We presented the items and instructions in Supplementary Materials. Table 2 shows the mean, standard deviation, and Cronbach's α of the key measures. Supplementary Table S1 shows the percentage of participants who believed in climate change conspiracy theories.

3.2 Results

We first examined the zero-order correlations between belief in climate change conspiracy theories and private-sphere pro-environmental behaviors at each time point. As expected, the two constructs were negatively correlated (*rs* ranged from -.10 to -.21; see Table 2). Next, we constructed a series of latent growth models to examine (1) the change in private-sphere pro-environmental behavior over time and (2) how this change was related to the initial level of belief in climate change conspiracy theories. Missing data was handled using full-information maximum-likelihood estimation (Arbuckle, 1996; Enders, 2010). This estimation method included all participants in the analysis, even though some of them did not complete all five surveys. Our analysis remained consistent when we restricted our analysis to only those that completed all five waves of surveys. The univariate linear growth model showed a good fit (Chi-square = 15.79, df = 10, p = .106; CFI = .998, TLI = .998; RMSEA = .024, SRMR = .019). The latent slope of private-sphere pro-environmental behaviors was positive and significant (*est.* = .02, *SE* = .01, *Wald Z* = 3.32, *p* = .001, *standardized est.* = .22), indicating a slight increase in such behaviors over time. The variances of the latent intercept and latent slope were also significant (latent intercept: *est.* = .50, *SE* = .03, *Wald Z* = 20.20, *p* = .000; latent slope: *est.* = .01, SE = .002, *Wald Z* = 2.72, *p* =.006), indicating that the initial level (i.e., latent intercept) and the change (i.e., the latent slope) of private-sphere pro-environmental behaviors varied between individual participants. Lastly, the correlation between the latent intercept and latent slope was non-significant (*est.* = -.002, *SE* = .01, *Wald*

Z = -.32, p = .751), indicating that the change in such behaviors over time was unrelated to its initial level.

Next, we included Time 1 belief in climate change conspiracy theories as the predictor of the latent intercept and latent slope of private-sphere pro-environmental behaviors. To control for the influence of the initial level of private-sphere pro-environmental behaviors, we included its latent intercept as the covariate. Table 3 shows the results. As expected, Time 1 belief in climate change conspiracy theories was a negative and significant predictor of the latent intercept of private-sphere pro-environmental behaviors (b = -.03, SE = 01, *Wald Z* = -3.13, p = .002, *standardized est.* = -.12) and its latent slope (b = -.01, SE = 002, *Wald Z* = -2.62, p = .009, *standardized est.* = -.18). It indicated that the initial level of belief in climate change conspiracy theories was related to less frequent engagement in private-sphere pro-environmental behaviors initially (latent intercept) and longitudinally (latent slope). We also attempted to control for the effect of political orientation. The effect of Time 1 belief in climate change conspiracy theories became non-significant when the effect of political orientation was included in the latent slope. In fact, neither political orientation nor Time 1 belief in climate change conspiracy theories was significant. The model could be overly constrained as both predictors were non-significant. We thus opted for interpreting the model without controlling for political orientation.

Lastly, we also considered if the initial level of pro-environmental behavior had an effect on the change in belief in climate change conspiracy theories. We thus constructed a multivariate latent growth model to simultaneously examine the longitudinal effect of the initial level (i.e., latent intercept) of private-sphere behaviors on the change (i.e., latent slope) of belief in climate change conspiracy theories and the effect of the initial level (i.e., latent intercept) of belief in climate change conspiracy theories on the change (i.e., latent slope) of private-sphere behaviors. Consistent with our main analysis, the latent intercept of belief in

climate change conspiracy theories negatively related to the latent slope of private-sphere pro-environmental behaviors (*est.* = -.01, *SE* = .002, *Wald Z* = -2.53, *p* = .011, *standardized est.* = -.19), indicating that the initial level of belief in climate change conspiracy theories was related to less frequent private-sphere pro-environmental behaviors over time. The latent intercept of private-sphere pro-environmental behavior was unrelated to the latent slope of belief in climate change conspiracy theories (*est.* = .01, *SE* = .02, *Wald Z* = .25, *p* = .250, *standardized est.* = .04). This result suggests that the change in belief in climate change conspiracy theories was unrelated to the initial level of private-sphere pro-environmental behavior. The covariance between the two latent slopes was also non-significant (*est.* = .002, *SE* = .002, *Wald Z* = .93, *p* = .350, *standardized est.* = .26), indicating that the changes between the two were unrelated.

4. General Discussion

The present research examined if belief in climate change conspiracy theories would reduce people's engagement in everyday life pro-environmental behaviors. In two longitudinal studies, we found supporting evidence that people who had a stronger belief in climate change conspiracy theories also reported less frequent private-sphere pro-environmental behaviors concurrently and longitudinally. These findings are consistent with previous research that suggests a harmful effect of such a belief on addressing climate change (Biddlestone et al., 2022; Douglas & Sutton, 2015). Our findings extend the literature by demonstrating the harmful effects of belief in climate change conspiracy theories in a longer-term (one to two months) and with both mainland Chinese and American samples. These findings thus suggest that climate change conspiracy theories are relevant to countries beyond the U.S. Also, they signify the need to understand the effects of belief in climate change conspiracy theories in different parts of the world, especially regions wherein such belief is more prevalent (e.g., India).

Although our findings do support the negative effect of belief in climate change conspiracy theories, we would like to raise the caution that the observed effect sizes were very small to small, especially when considered longitudinally. These findings are in contrast with the moderate to strong effect reported in Biddlestone et al.'s (2022) meta-analysis. There are several possible explanations for this discrepancy. First, it is possible that the effect of belief in climate change conspiracy theories is weaker when it comes to everyday behaviors, which should be jointly determined by multiple personal factors and situations. Indeed, in Hornsey et al.'s (2016) meta-analysis, climate change belief had a weak effect on private-sphere pro-environmental behaviors but a moderate effect on behavioral intention and policy support. Second, the difference between our findings and the meta-analysis by Biddlestone et al. (2022) may simply reflect the gap between behavioral intention and actual behaviors. It could be the case the belief in climate change conspiracy theories can predict behavior intention pretty well but it is not a very important determinant of actual behavior. Third, it is possible that belief in climate change conspiracy theories only bears a distal effect. For example, it may influence pro-environmental behaviors through not only rejection of climate science but also reduced concern about the environment and lower levels of trust in general; these factors in turn serve as more proximal determinants of pro-environmental behaviors. In this case, belief in climate change conspiracy theories may still play a prominent role in shaping pro-environmental behaviors through other psychological factors. Fourth, our research was conducted during the COVID-19 pandemic. The disease outbreak may have influenced people's daily life behaviors in general. For example, it may have made people prioritize personal health over environmental issues. Accordingly, the influence of environmental concerns and beliefs (including climate change conspiracy theories) on daily behavioral decision-making may have weakened. It follows that the influence of belief in

303 climate change conspiracy theories could become stronger when the pandemic is over. Future
304 studies are needed to scrutinize these possibilities.

305 The above discussion signifies two potentially fruitful directions for future research.
306 The first direction is to identify what mediates the effect of belief in climate change
307 conspiracy theories on pro-environmental behaviors. Recent studies suggest that social
308 beliefs may influence pro-environmental decisions indirectly through more specific attitudes
309 (e.g., attitudes toward specific behaviors) and beliefs (e.g., efficacy beliefs) (e.g., Chan &
310 Tam, 2021a). Extrapolating from this observation, future studies are suggested to examine the
311 extent to which conspiracy beliefs shape pro-environmental behavior through the mediation
312 of such factors as climate change beliefs, trust toward climate science, attitudes toward
313 specific climate action, and self-efficacy and action efficacy beliefs. The second direction is
314 to consider the possibility that the effect of belief in climate change conspiracy theories is
315 moderated by contextual and situational factors. Recent studies have revealed that the
316 strength of the relationship between personal attributes (e.g., values, beliefs, environmental
317 concern) and pro-environmental behavior tend to vary systematically along with broader
318 socio-ecological factors (e.g., culture; Chan, 2020) and situational factors (e.g., sense of
319 control; Eom et al., 2018). With belief in climate change conspiracy theories regarded as a
320 personal attribute, it is conceivable to expect that its effect on pro-environmental behavior is
321 subject to the influence of these factors. Future research examining the possible moderating
322 role of contextual factors will resonate well with recent calls for the expansion of
323 geographical representation in environmental psychology research (e.g., Tam et al., 2021;
324 Tam & Milfont, 2020).

325 The present research has two limitations. First, we only included climate change
326 conspiracy theories that suggested climate change is a “hoax.” Media studies have uncovered
327 other climate change conspiracy theories, including those suggesting that climate change is a

"western imperialism" (e.g., Liu, 2015) or a plan for resetting the economies (Logically and ACPO Worldwide, 2021 October). For example, "western imperialism" conspiracy theories involve at least two aspects – constraining the development of the developing world (e.g., China) and a scam for financial gain (e.g., forcing other countries to purchase expensive green technologies from western countries; see Liu, 2015). Our items only captured the first but not the second aspect. Some climate change conspiracy theories also accept the existence of climate change but suggest that oil industries bribe scientists and politicians to downplay its severity (Uscinski et al., 2017). Future studies will benefit from examining the influences of different types of climate change conspiracy theories on pro-environmental behaviors and climate change policy support. Second, we measured only self-reported behaviors instead of actually observing behaviors. Our participants may have overreported or underreported their behaviors as people may adjust their responses owing to social desirability, impression management, or bad memory (Kormos & Gifford, 2014; Lange & Dewitte, 2019). Notwithstanding its limitation, we believe that our self-report measure is useful in the present research context, as some private-sphere behaviors are difficult for researchers to observe in real-life settings (e.g., taking a shower shorter than five minutes to conserve water).

To conclude, our findings suggest that belief in climate change conspiracy theories can negatively affect everyday life pro-environmental behaviors. Importantly, such negative effects were observed among samples of mainland Chinese and American participants. Our research thus speaks to the need to investigate the impact of climate change conspiracy theories in different parts of the world.

Endnote

1. Study 1 was conducted between February 2020 and April 2020 in mainland China. The Time 1 data collection took place between February 2020 and March 2020. During this period, the infected cases have been surging in mainland China, with an average of 939 new cases confirmed per day during this period (total confirmed cases ranged from 40,171 to 81,470). The Time 2 data collection took place in late April 2020, when the virus has been largely contained in mainland China, with an average of 11 new cases confirmed per day (total confirmed cases ranged from 82,788 to 82,862). During the Time 1 data collection, there were lockdowns in multiple cities and regions, and therefore, may have influenced individuals' daily behaviors (including pro-environmental behaviors). Yet, at Time 2, most of these restrictions have been removed (including Wuhan city, Hubei – the city that has most severely influenced by the disease outbreak during this period); thus, individuals' behaviors are more likely to be based on their personal discretion. Our data is deemed to be suitable for testing the effect of belief in climate change conspiracy theories on the change in private-sphere pro-environmental behavior over time.
2. Study 2 was conducted between late March 2020 and late May 2020 in the United States. The data collection took place during the surge of COVID-19 cases in the United States. At Time 1, the average number of new confirmed cases per day was 18,874 (with the total number of confirmed cases ranging from 85,356 to 239,279). At Time 5, the average number of new confirmed cases raised to 22,793 cases per day (with the total confirmed cases ranging from 1,528,235 to 1,678,843). During the data collection period, different states issue different lockdown orders (Status of lockdown and stay-at-home orders, 2020). Importantly, these orders did not restrict outdoor activities, although they prohibited non-essential travel and gathering in public places. Public transportation was not suspended during this period. Accordingly, in the United States, although the lockdown orders imposed restrictions on individuals' daily behaviors, we believe that they still have sufficient opportunities to make everyday life pro-environmental decisions. Our data is deemed appropriate for testing the longitudinal effect of belief in climate change conspiracy theories on private-sphere pro-environmental behavior.

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Table 1. Results of regression analysis with private-sphere pro-environmental behavior as the outcome variable (Study 1)

	Time 1 Private-sphere PEBs				Time 2 Private-sphere PEBs				Time 2 Private-sphere PEBs			
	b (SE)	*β*	*p*-value	95% *CI*	*b* (SE)	*β*	*p*-value	95% *CI*	*b* (SE)	*β*	*p*-value	95% *CI*
Intercept	3.64 (.10)	-	.000	[3.45, 3.83]	3.49 (.09)	-	.000	[3.31, 3.68]	1.51 (.11)	-	.000	[1.29, 1.73]
Gender	-.06 (.04)	-.05	.113	[-.14, .01]	-.03 (.04)	-.03	.384	[-.11, .04]	.00 (.03)	.00	.936	[-.06, .06]
Age	.00 (.00)	.01	.736	[-.00, .01]	.00 (.00)	.01	.849	[-.00, .01]	.00 (.00)	-.004	.854	[-.00, .00]
Education	-.01 (.02)	-.02	.450	[-.05, .02]	-.01 (.02)	-.03	.383	[-.05, .02]	-.01 (.01)	-.02	.531	[-.04, .02]
Income	-.00 (.01)	-.01	.768	[-.02, .02]	.03 (.01)	.07	.014	[.01, .04]	.03 (.01)	.08	.001	[.01, .04]
Time 1 Belief in CCCTs	-.06 (.01)	-.17	.000	[-.08, -.04]					-.02 (.01)	-.05	.045	[-.03, -.0004]
Time 2 Belief in CCCTs					-.04 (.01)	-.11	.000	[-.05, -.02]				
Time 1 Private-sphere PEBs									.56 (.02)	.57	.000	[.51, .60]
R-squared	.034				.019				.344			
R-squared by Belief in CCCTs	.030				.011				.002			

Note. CCCTs = climate change conspiracy theories. PEBs = pro-environmental behaviors. *β* = standardized beta coefficient. Belief in climate change conspiracy theories remained a significant predictor of private-sphere pro-environmental behavior without controlling for the effect of demographic covariates (see Supplementary Table S2).

Table 2. Descriptive statistics and zero-order correlation between belief in climate change conspiracy theories and private-sphere behaviors at the five time-points (Study 2)

	N	Mean (SD)	α	1	2	3	4	5	6	7	8	9
1. Time 1 Belief in Climate Change Conspiracy Theories	1001	2.71 (2.63)	.81	-								
2. Time 2 Belief in Climate Change Conspiracy Theories	818	2.56 (2.64)	.82	.81***	-							
3. Time 3 Belief in Climate Change Conspiracy Theories	690	2.44 (2.59)	.82	.85***	.86***	-						
4. Time 4 Belief in Climate Change Conspiracy Theories	599	2.30 (2.58)	.82	.85***	.83***	.88***	-					
5. Time 5 Belief in Climate Change Conspiracy Theories	511	2.30 (2.60)	.81	.84***	.83***	.87***	.88***	-				
6. Time 1 Private-sphere Pro-environmental Behaviors	1001	2.90 (.77)	.73	-.10**	-.13***	-.19***	-.13**	-.16***	-			
7. Time 2 Private-sphere Pro-environmental Behaviors	818	2.91 (.78)	.74	-.17***	-.14***	-.18***	-.17***	-.19***	.81***	-		
8. Time 3 Private-sphere Pro-environmental Behaviors	690	2.92 (.78)	.75	-.20***	-.17***	-.19***	-.17***	-.19***	.82***	.84***	-	
9. Time 4 Private-sphere Pro-environmental Behaviors	599	2.97 (.76)	.74	-.21***	-.19***	-.19***	-.18***	-.20***	.78***	.82***	.87***	-
10. Time 5 Private-sphere Pro-environmental Behaviors	511	3.02 (.77)	.75	-.22***	-.22***	-.21***	-.22***	-.21***	.80***	.81***	.85***	.88***

Note. *** $p < .001$. * $p < .01$.

Table 3. Results of univariate latent growth model (Study 2)

	Model 1						Model 2 (with political orientation as a covariate)					
	Latent Intercept of PEBs			Latent Slope of PEBs			Latent Intercept of PEBs			Latent Slope of PEBs		
	Est. (SE)	*p*-value	95% *CI*	*Est.* (SE)	*p*-value	95% *CI*	*Est.* (SE)	*p*-value	95% *CI*	*Est.* (SE)	*p*-value	95% *CI*
Intercept	2.98 (.03)	.000	[2.92, 3.05]	,05 (.04)	.163	[-.02, .12]	3.15 (.05)	.000	[3.05, 3.25]	.06 (.04)	.115	[-.02, .14]
Latent Intercept of PEBs				-.01 (.01)	.518	[-.03, .01]				-.01 (.01)	.487	[-.03, .01]
Time 1 Belief in Climate Change Conspiracy Theories	-.03 (.01)	.002	[-.05, -.01]	-.01 (.002)	.009	[-.01, -.001]	-.003 (.01)	.786	[-.03, .02]	-.003 (.002)	.147	[-.01, .001]
Political Orientation							-.07 (.02)	.000	[-.10, -.04]	-.004 (.003)	.231	[-.01, .002]
Variances	.49 (.03)	.000	[.44, .54]	.01 (.002)	.006	[.001, .01]	.48 (.03)	.000	[.43, .53]	.01 (.002)	.007	[.001, .01]
Model Info												
Chi-square (df)	16.78 (13)	.210					20.63 (16)	.193				
CFI	.999						.999					
TLI	.999						.998					
AIC	4810.15						4786.92					
BIC	4869.06						4855.64					
RMSEA	.017						.017					
SRMR	.017						.015					

Note. PEBs = private-sphere pro-environmental behaviors. Results remained consistent with gender, age, education, and income included as covariate variables.