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Climate Change in Your Backyard: When Climate is Proximate, People Become Activists

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Scientific warnings about climate change continue as climate disasters strike all around the world. There is increasing public support for climate mitigation policies, and major mass protests shed light on the issue. How does climate change impact increase climate activism? I build on a conventional understanding of activism by adding the insight of construal level theory. When climate change is experienced more directly, people are more likely to act because they care more and can link concern to specific actions. Among a sample of Californians (MTurk; n = 604) as climate was perceived as more proximate, respondents were more likely to take action. A survey-experiment conducted using a US sample (MTurk; n = 609) demonstrated that as issues become more psychologically proximate, respondents were more likely to take political action. These results suggest that organizers can activate proximity to mobilize supporters.

Keywords: political participation, environmental activism, experiment, climate change, political psychology

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INTRODUCTION

The 2018 UNFCC report on climate change made a clear scientific case that rapid de-carbonization of the global economy must take place by 2030 to prevent worst case scenarios. The impacts are already evident in the US, wildfires rage in the West, the Southeast is battered by hurricanes, and the Midwest experiences historic catastrophic flooding. The scientific reports and extreme weather events have led to a rising belief among the US public that climate change is already happening and there is an increase in the level of support for federal climate policy (Leiserowitz et al., 2019).

Research has shown that experience with climate change-driven weather events can influence public opinion, policy support, and behavior (Howe et al., 2019). How does direct experience with the impacts of climate change influence activism in support of climate solution policies? A potential explanation is the way an individual's psychology changes with their direct experience with climate change and how that can cause behavioral changes. This can be understood using construal level theory (CLT; Trope and Lieberman, 2003). The psychological proximity and activism theory developed in this paper predicts that when an issue is directly experienced, it leads to concrete thinking about the issue and higher levels of activism.

I build the psychological proximity and activism theory into a comprehensive model of political activism using the framework of the Civic Voluntarism Model (Verba et al., 1995). The CVM is constructed from three pieces: "resources, psychological engagement, and access to networks" for political action (p. 267). Another key factor in political participation is membership in an issue public (Han, 2009). Issue publics are groups of individuals that pay close attention to an issue and are quite knowledgeable about it (Converse, 1964). This helps to explain why people are active on one issue, and not another.

The psychological proximity and activism theory suggests that when climate change is proximate, an individual is more likely to care a lot about it, which provides motivation to act on it. Further, when climate change is proximate, people tend to construe the issue concretely and are more likely to take a specific action when presented with the option because they are able to perceive the link between a concrete problem and a specific action that addresses it. These causal processes form the basis of my theory of climate activism. One major claim of CLT is that an individual experiences a political issue on a continuum of psychological distance, from direct experience to very distant (Trope and Lieberman, 2010). Derived from this claim is the first hypothesis: when a political issue is more directly experienced, an individual is more likely to care deeply about it, which prior research has shown leads to higher levels of activism (Han, 2009). I call this the issue public hypothesis. The second major claim of CLT is that the psychological distance of an issue causes the individual to construe the issue from concrete, when the issue is proximate, to abstract, when the issue distant (Trope and Lieberman, 2010). Based on this claim is the second hypothesis: when an individual thinks concretely about a political problem, they are more likely to take action to address it. I call this the concrete thinking hypothesis.

The paper proceeds as follows. First, I briefly review the literature on political participation and climate activism. I then describe construal level theory and how it relates to climate politics. Results from two convenience internet samples are presented to test the theory of psychological proximity and activism. Study 1 looks specifically at climate activism in California. Study 2 tests the theory more generally based on which issue the respondent selected as most important among 14 issues facing the country. I conclude with implications for climate organizations.

CLIMATE ACTIVISM

The Civic Voluntarism Model (CVM; Verba et al., 1995) is a foundational theory of political participation. As mentioned above, the CVM is constructed of three main factors, resources, recruitment, and psychological engagement with politics. Political participation involves an individual engaging in behaviors that are aimed at expressing political voice. In addition to voting, there is attending public meetings, joining civic organizations, signing petitions, attending rallies or protests, giving money to campaigns, and writing to an elected official. Because of the costliness of these activities, political voice is often dependent on resources (Verba et al., 1995; Schlozman and Brady, 2012). Barkan (2004) uses the CVM to specifically explain environmental activism. In line with resource-driven activism, people are motivated to act with regards to the climate when they perceive the benifits of acting to outweigh the costs (Lubell, 2002; Lubell et al., 2006; Lubell et al., 2007). And, when values align to form a pro-environmental worldview, people are more likely to engage in environmental action (Stern et al., 1999; Stern, 2000).

Although psychological engagement is a component of the CVM, the psychological mechanisms driving action are not the focus. Roser-Renouf et al. (2014) provide a strong psychological theory explaining climate activism. Their social-cognitive model of political activism for climate change mitigation proposes two-stages of information processing. Values inform the first stage of issue appraisal wherein people consider climate beliefs, collective efficacy, and risk perception. High risk perception and a strong sense of collective efficacy cause people to develop a belief that society should take action and an emotional connection to become personally involved. In the second stage, those with high response efficacy and high self-efficacy are more likely to engage in political activism aimed at mitigating climate change (Roser-Renouf et al., 2014, p. 167).

Building on this idea of collective efficacy, recent research examines how familiarity with the prominent teen activist Greta Thunberg motivates climate activism (Sabherwal et al., 2021). This work demonstrated a simple theory, first that familiarity with Greta Thunberg increased collective action intentions, moderated by political ideology. Second, familiarity also increased collective efficacy beliefs, moderated by age and ideology, which predicted collective action intentions. Although pre-registered, this study is observational, so it is difficult to determine causal pathways.

To summarize, people engage in activism when they have the resources, are recruited, and are psychologically engaged (Verba et al., 1995; Barkan 2004). Psychological engagement can be driven by issue public membership (Han, 2009) and cognitive assessment of risk and perceptions of efficacy (Roser-Renouf et al., 2014) which can be enhanced with familiarity with prominent climate activists (Sabherwal et al., 2021). Further, environmental organizations also play an important role in engaging members in activism (Han et al., 2017). Michelson and DeMora, (2021) show with field experimental evidence that negative message framing is more effective in promoting activism than positive messages. Additionally, risk perception of climate change can be caused by experiencing extreme weather events (see Zanocco et al., 2018 for a recent example). This literature review suggests a few remaining questions: How does experience with climate change alter how people think about the issue? How does this change in thinking shift how people think about responding to it with activism? More specifically, does experience with climate change correspond to caring more deeply about it and thus becoming a member of the climate issue public? If so, does climate issue public membership predict climate activism? Does thinking concretely about climate change, because it is directly experienced, lead to more climate activism? I aim to answer these questions with the concept of psychological proximity which is derived from construal level theory (Trope and Lieberman, 2010).

PSYCHOLOGICAL PROXIMITY AND CLIMATE ACTIVISM

I in this paper, I argue that psychological proximity often precedes the decision to act on a specific political issue. This is obvious in one sense; an issue typically becomes personally important before one is motivated to act. Consider several

examples. One may be part of a conservative Christian social group and see that her peers are active on the abortion issue and so become active herself (Munson, 2010). A close friend could be diagnosed with AIDS, and then you may become an AIDS activist (Jennings and Andersen, 2003). A nuclear plant could be slated for approval nearby, and then one may become an anti-nuclear activist. A school shooting may occur, which results in many that were affected to become advocates for a stricter gun access law. In all these examples, an event that is psychologically proximate preceded political action.

To understand this fully, it is important to examine the two core theoretical claims of construal level theory. The first core claim posits that a referent object, that is, an event, political issue, problem, or thing, is perceived on a continuum of psychological distance or proximity (Trope and Liberman 2003; 2010). There are four types of distance: spatial, temporal, social, and hypothetical. Spatial distance is literally geographic distance (Trope and Liberman, 2010). For example, for a person living in Santa Barbara, CA, the site of the Dakota Access Pipeline protests is approximately 1,600 miles away. Spatial distance is a spectrum, moving from proximate, direct experience, to very distant.

Temporal distance is the amount of time until the problem occurs, or the consequence of the problem must be faced (Trope and Liberman, 2010). For example, climate change is often spoken of in terms of future impacts. Consider the difference between a person who hears that continuing carbon emissions will cause a 2°F increase in temperature in 100 years in comparison to a person who hears that climate change is already causing an increase in extreme weather events.

Social distance is the perceived distance for how a problem affects people different from the individual (Trope and Liberman 2010). That is, how far removed, socially, is the individual from those affected by the problem. An example of this relates to climate impacts. Imagine a wildfire made worse by climate change. There is a continuum of how similar to you the people who are most affected by the fire are, from total strangers to close friends or family.

Hypothetical distance is the probability a person assigns to whether or not a problem will affect him or her (Trope and Liberman 2010). In other words, when given a potential event or impact, the individual will assess how likely it is to impact him or her. Again, an appropriate example comes from climate change. The inherent uncertainty associated with predicting specific events, such as a hurricane, tends to convey a lower likelihood of a storm affecting people in a hurricane prone area. An opposite case would be the high degree of certainty a person has that if she drops a ball, gravity will cause the ball to fall to the ground.

The second core claim of CLT is that the spectrum of proximate to distant tends to map onto a continuum of concrete to abstract thinking about the referent object (Trope and Liberman 2010). Generally, psychologically proximate issues are construed concretely and distant issues are construed abstractly. Concrete thinking is more detail-oriented (Trope and Liberman 2010). For example, people who live closer to the Keystone XL pipeline tweet about the issue using more concrete language and people living farther away use more abstract language (Hodges and Stocking, 2016).

Abstract ways of thinking are less detail-oriented, and instead rely on thinking in terms of worldviews or ideology (Fujita, 2008; Trope and Liberman 2010). As such, CLT is an important causal mechanism explaining how public opinion is formed on political issues. For example, if you are a liberal and live in Minnesota, you may reason from a liberal perspective about how an ocean oil spill may be prevented by additional regulation or better enforcement of existing regulations. Or, instead, if you are a conservative you may reason that oil companies have an economic incentive to prevent oil spills and will thus take action to self-regulate.

The psychological proximity and activism theory states that when an issue is proximate, people are more likely to engage in political activism on the issue. As the path diagram in **Figure 1** illustrates, there are two causal mechanisms or hypotheses, relating to the two core claims of CLT, at play with psychological proximity leading to activism. The first mechanism, what I call the issue public mechanism, relies on issue public membership to moderate the relationship. When an issue is proximate, people tend to care more about it. Once their concern reaches a certain threshold, specified by membership in the issue public, they are sufficiently motivated to act. Given the research on participation leading to policy (Griffin and Newman, 2005), psychological proximity then is an important factor affecting policy outcomes.

The second mechanism, what I call the concrete mechanism, connects proximity directly to activism. When an issue is proximate, people tend to construe the issue concretely and are more likely to take a specific action when presented with the option because they are able to perceive the link between a concrete problem and a specific action that addresses it.

Thus, in terms specific to climate change, the psychological proximity of climate issues is theorized to predict membership in the climate change issue public which in turn predicts climate activism. Second, the concrete mechanism: when climate change is proximate, people are more likely to take action because they tend to perceive climate change in concrete terms and thus directly link the concrete problem to a specific action to mitigate it. These causal processes, in addition to the CVM (Verba et al., 1995; for the model applied to environmental activism see; Barkan 2004) explain climate activism.

Direct experience with climate change could also generate other attitudinal responses that may cause public opinion change and activism. Seeing negative climate impacts may highlight one's own economic dependence on climate stability. Also, seeing climate effects hurt other people (eg.,: lose a home in a flood or fire), may cause empathy for those affected which could motivate behavior. Close experience with climate change may also increase one's knowledge of climate which can motivate action. While these relate to psychological proximity, they are distinct, and thus these factors are controlled for in my model.

HYPOTHESES

Based on this theory of psychological proximity and activism, I present and test several hypotheses.

TABLE 1 | MTurk CA sample descriptive statistics and U.S. Comparisons (study 1).

Sample	Sample			U.S.
Variable	**Mean**	**Std. Dev.**	**Percent**	
Education (1–6)	4.24 some college	1.23		Some college
Income (1–6)	2.55	1.23		
Democrats			47%	46%
Women			48%	51%
White			55%	61%
Age	35.9	12.25		38
Ideology (Lib-Con)	3.24 slightly liberal	1.66	43% (liberal)	5, slightly conservative

NOTE—Sources of U.S. data: Party and Ideology are from the 2016 American National Election Studies. All other data are from the U.S. Census.

TABLE 2 | Summary statistics and correlations of key measures (Study 1).

Variable	Mean	Std. Dev.	Cronbach's alpha
Likely action	41.88	28.78	0.90
Observed action	0.55	0.5	NA
MES	4.11	0.62	0.95
Proximity	0	0.8	0.81
Issue Public (0,1)	0.26	0.44	NA

TABLE 3 | Correlations between key measures (Study 1).

Variable	Likely action	Obs. action	MES	Proximity
Likely action	—			
Observed action				
MES	0.32	—		
Proximity	0.39*	0.13*	—	
Issue Public (0,1)	0.45*	0.17*	0.51*	—
	0.42*	0.18*	0.44*	0.40*

*NOTE—Pearson's correlations: *p < 0.05.*

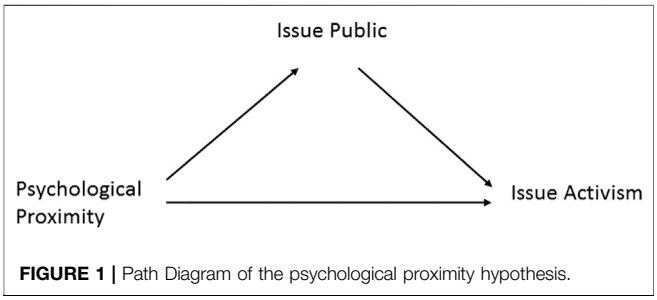

FIGURE 1 | Path Diagram of the psychological proximity hypothesis.

Issue public hypothesis A: When climate change is more psychologically proximate, an individual is more likely to be in the climate change issue public.

Issue public hypothesis B: Membership in the climate change issue public is associated with an increase in climate activism.

Concrete thinking hypothesis: An increase in the psychological proximity of climate change is associated with an increase in climate activism.

STUDY 1

Materials and Methods

I tested the psychological proximity and activism theory on climate activism among survey respondents in California. To carry out this study, I recruited 604 participants in California through Amazon's Mechanical Turk service (MTurk). I limited the sample to California because of the experiment embedded within the survey which is described below. Sample size was determined by budget constraints. MTurk workers are not as representative as those recruited from a national sample, but they are a major improvement over undergraduate students (Berinsky et al., 2012).

The sample is relatively well educated (see **Table 1**), with the average participant having a two-year college degree. The sample is young, racially diverse, and balanced between Democrats and Republicans, liberals and conservatives. Slightly more men participated than women. The demographic characteristics of the sample are found in **Table 1**.

Psychological proximity was measured using five items written to tap into the four dimensions of CLT. To measure social distance, I asked, "Do any of your friends and/or family members care about climate change?" To measure spatial distance, I asked, "for the most part, is climate change a local, state, regional, national, or global issue?" To measure temporal distance, I asked, "does climate change affect you currently, in the near future, or the more distant future?" To measure hypothetical distance, I asked, "how likely is climate change to affect you personally?" As a general measure of distance, I also asked, "does climate change affect your everyday life?" Because these items have different numbers of response categories, I standardized each before creating an index. The standardized values for hypothetical distance, social distance, affecting everyday life, and temporal distance were averaged to create the index, $M(SD) = 0$ (0.8), with a Cronbach's alpha of 0.81. The item for geographic distance weakened the index's internal reliability and was thus excluded from the index. It is included as a separate independent variable in the model.

Issue public membership was measured using the same wording that is used in the National Election Studies; "How important is climate change to you personally?" Respondents selected from a five-point scale, ranging from not important at all, to extremely important. I created a dummy variable by coding each respondent answering extremely important as a member of the issue public (per Han, 2009). Twenty-six percent of participants were in the climate change issue public, $M(SD) =$

TABLE 4 | Impact of psychological proximity on climate change issue public while controlling for alternative explanations.

	Climate change issue public	
	Model 1	**Model 2**
Climate affects everyday life	−0.09 (0.06)	−0.07 (0.05)
Social proximity	0.05 (0.05)	−0.03 (0.05)
Hypothetical proximity	0.15*** (0.02)	0.09 *** (0.02)
Temporal proximity	0.07** (0.03)	0.05** (0.03)
Geographic proximity	−0.05** (0.02)	−0.01 (0.02)
MES		0.18*** (0.04)
Knowledge about climate		0.06*** (0.01)
Gain economically		0.01 (0.01)
Empathy for those affected		−0.001 (0.02)
Observations	601	598
Adjusted R^2	0.20	0.29

Note: *OLS regression coefficients. Standard errors in parentheses.* ∗p < *0.1.* ∗∗p < *0.05.* ∗∗∗p < *0.01; 2017MTurk data.*

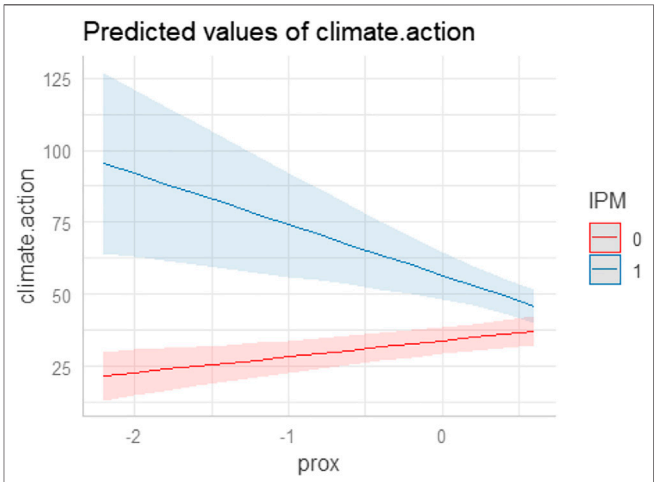

FIGURE 2 | Plot of interaction term proximity * issue public membership on likelihood of taking climate action (Study 1).

0.26 (0.44). I will note that this item for issue public membership is similar to the item measuring hypothetical proximity by asking about the personal connection to climate change. However, the hypothetical proximity item asks about likelihood of being impacted, while the issue public item is more broadly about the importance of the issue. They are conceptually distinct and worded differently.

Environmental attitudes were measured with a 27 item Moral Environmentalism Scale (MES; Sparks et al., 2021)[1]. The scale was highly reliable with an alpha of 0.95. I averaged responses to each five-point item to create an index. The measure ranged from 1.3 to 5, *M(SD)* = 4.11 (0.62). Item wording can be found in the **Supplementary Material**.

Empathy for those affected by climate change, was measured by the question, "I feel sorry for people who are affected by climate change." Respondents selected from a seven-point scale on how much they agreed with that statement, *M(SD)* = 5.55 (1.39). I measured financial connection to climate change by asking, "Solutions to climate change will help me financially." This variable ranges from 1 to 7, *M(SD)* = 3.94 (1.6). Knowledge about climate change was measured with a single, self-report item: "I know a lot about climate change." The variable ranged from one to seven, *M(SD)* = 4.5 (1.5).

This survey employed two separate measures of climate activism. The first was the self-reported likelihood of engaging in a particular action. Participants answered four questions on a sliding scale from zero (very unlikely) to 100 (very likely). They were: "How likely are you to join an organization or group that is working politically on climate change?" "How likely are you to attend a political rally or protest about climate change?" "How likely are you to give money to an organization that focuses on climate change?" And, "How likely are you to post on social media about climate change?" Responses were averaged to create the index with a range of 0–100, *M(SD)* = 41.9 (28.78). The measure was highly reliable with a Cronbach's alpha of 0.90.

The second measure of climate activism was an observation of climate activism. All participants were given the opportunity to write their member of congress a letter regarding climate change. If the participant did not write a letter, he or she was asked why they did not. If the participant selected the choice, "I would prefer to contact my elected official directly," they were given an opportunity to click on a link to get the contact information for their representative. Thirty-six of the participants wrote a message. An additional 114 participants clicked on the link to get contact information. Overall, 55% of participants took action. Summary statistics for these main variables can be found in **Table 2** and the correlations can be found in **Table 3**.

Results

I test the psychological proximity and activism theory in two main steps corresponding to the path diagram presented above. First, I examine how psychological proximity of climate change predicts membership in the climate issue public. Then I look at how both psychological proximity and issue public membership predict climate activism. I turn first to the drivers of membership in the climate change issue public. I used each of the variables for psychological proximity to estimate a linear model of issue public membership. In addition to psychological proximity, I control for alternative explanations by including indicators of self-reported climate knowledge, gaining economically from climate policy, and empathy for those affected by climate change. Results are presented in **Table 4**. The results show that some dimensions of psychological proximity motivated issue public membership more than others. Not all the items used to measure psychological proximity had significant effects on issue public membership. Only temporal proximity (b = 0.07, se = 0.03) and hypothetical proximity (b = 0.15, se = 0.02) had positive and significant effects. Geographic proximity had a negative effects, probably because most people who were in the issue public think

[1]Sparks, A. C., Ehret, P. J., and Brick, C. (2021). Measuring Pro-Environmental Orientation: Testing and Building Scales. Political Science and Policy Studies, Elon University. Unpublished Manuscript

TABLE 5 | Impact of psychological proximity, issue public membership, and environmental attitudes on climate activism, controlling for other factors.

	Likely activism (1)	Likely activism (2)	Likely activism (3)	Write MC
Proximity (low to high)	4.22* (1.66)	4.39 **(1.67)	5.57*** (1.67)	0.05 (0.03)
Climate issue public	11.45*** (2.63)	11.29 *** (2.64)	22.60 *** (3.83)	0.11*(0.05)
Prox * issue public			−23.28*** (5.87)	
Geographic proximity	1.92 (1.55)	1.97 (1.56)	1.89 (1.53)	0.07* (0.03)
California treatment		2.90 (2.45)		−0.06 (0.05)
Global treatment		0.43 (2.38)		−0.08 (0.05)
MES	3.09 (2.42)	3.01 (2.43)	3.23 (2.39)	0.02 (0.05)
Know about climate	2.32** (0.72)	2.29**(0.72)	2.67 *** (0.71)	0.04** (0.01)
Gain economically	2.16 **(0.72)	2.23** (0.72)	2.32 *** (0.71)	−0.01 (0.02)
Empathy for those affected	1.41 (0.99)	1.34 (1.0)	1.31 (0.98)	−0.01 (0.02)
Democrat (0,1)	1.76 (2.45)	1.68 (2.45)	2.10 (2.42)	−0.02 (0.05)
Ideology (7 pt, Lib-Con)	−2.17 ** (0.83)	−2.18** (0.83)	−1.94** (0.82)	−0.01 (0.02)
Education	−0.68 (0.86)	−0.69 (0.86)	−0.58 (0.85)	−0.01 (0.02)
Income	0.75 (0.84)	0.80 (0.84)	0.62 (0.83)	0.03 (0.02)
Recruited previously (0,1)	5.30* (2.07)	5.20* (2.07)	4.61** (2.05)	0.18*** (0.04)
General empathy	1.87* (0.89)	1.92* (0.89)	1.98** (0.88)	0.01 (0.02)
Efficacy	2.03 **(0.70)	2.00** (0.70)	1.74** (0.69)	0.01 (0.01)
Man (0,1)	−7.66*** (2.05)	−7.72 ***(2.05)	−7.58*** (2.02)	−0.01 (0.04)
Observations	555	555	555	557
Adjusted R^2	0.39	0.39	0.40	0.09

Note: *Unstandardized OLS regression coefficients. Standard errors in parentheses. *p < 0.1. **p < 0.05. ***p < 0.01; 2017MTurk data.*

TABLE 6 | US MTurk sample descriptive statistics.

Variable	Mean	Std. Dev.	Percent (%)
Education (1–6)	4.15 some college	1.30	
Income (1–6)	2.41	1.18	
Democrats			42
Women			57

climate change is a global problem rather than merely a local one. One reason why some of the factors are significant and others are not may be because of the correlation with the other variables in the model. Any independent effect that social proximity or the climate affecting everyday life have was masked by the other variables with stronger effects such as hypothetical proximity. Yet, variance inflation factors show that hypothetical proximity was the only proximity variable above two, at 2.28.

A second test (model 2, in **Table 4**), included other potential causes of issue public membership, demonstrated that self-reported knowledge about climate change and environmental attitudes were also positive and significant predictors of being in the climate change issue public membership. Even with these additional variables, temporal proximity ($b = 0.05$, $se = 0.03$) and hypothetical proximity ($b = 0.09$, $se = 0.02$) remained positive and significant predictors of membership in the issue public. Geographic proximity was not a significant predictor.

Next, I test if climate change issue public membership and psychological proximity of climate change predict climate activism. This analysis tests issue public hypothesis, and the concrete thinking hypothesis of the psychological proximity and activism theory simultaneously. Support for this part of the theory would be demonstrated by positive and significant coefficients on the issue public and psychological proximity variables. Model one and two regresses the climate action index on psychological proximity, issue public membership and the control variables. Model two expanded this by adding dummy variables for the California treatment and the global treatment. Model three is the expanded model using the observed climate action as the dependent variable. None of the variance inflation factors exceed two indicating no cause for concern about multicollinearity. Results from three separate regressions are presented in **Table 5**. Results from three separate regressions are presented in **Table 4**.

I tested the concrete thinking hypothesis in two ways. First, the four-item index measuring psychological proximity is positive and significant in both likely action models ($b = 4.22$, $se = 1.66$; $b = 4.39$, $se = 1.67$), providing support for the hypothesis. When looking at the climate action index, a one-unit change in proximity is associated with 4.2% (model 2) to 4.39% (model 1) increase in the likelihood of participating.

The second way I tested the concrete thinking hypothesis was by including each experimental condition, a projected temperature map of California and the globe, as an independent variable in the regression (see appendix for these images). The expectation was that the psychologically proximate condition-the California treatment - would yield the highest level of activism and the psychologically distant condition will have a lower impact in relation to the control group. However, neither treatment conditions had significant effects on either the climate action index or the observed climate action variable. The experimental module was included after asking respondents the proximity items and before asking how likely they are to engage in the various activist behaviors, and before giving them the opportunity to write their member of congress. The null effects still allow for seeing how the observed measures of psychological proximity and issue public membership were related to the likely action index and writing a member of congress.

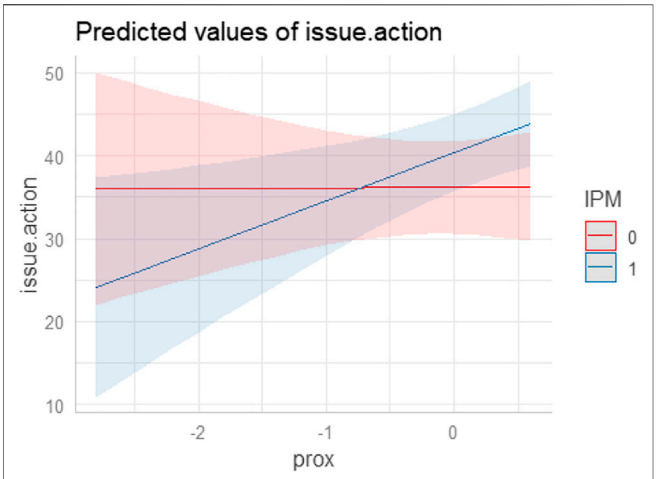

FIGURE 3 | Plot of interaction term proximity * issue public membership on likelihood of taking political action (Study 2).

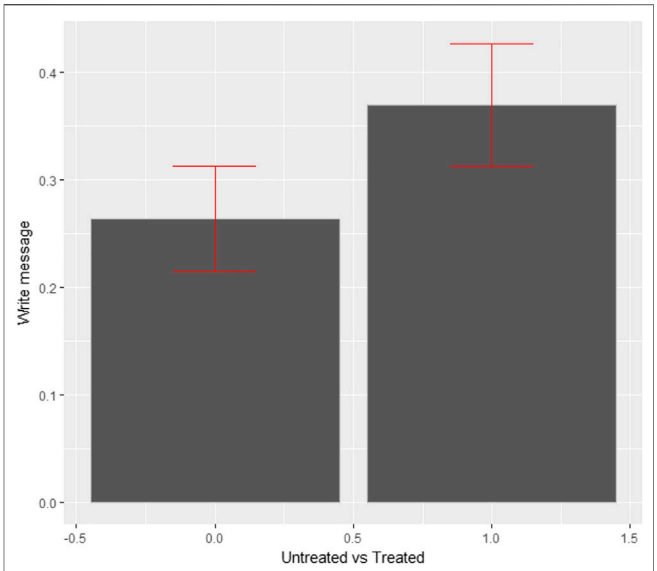

FIGURE 4 | Bar chart of treated vs untreated mean of writing a message to member of congress.

I also looked at how being a member of the climate change issue public was associated with higher levels of climate activism. Expectations were supported across all three models (b = 11.45, se = 2.63; b = 11.29, se = 2.64; b = 0.11, se = 0.05). Being a member of the climate issue public was related to a 11.3–11.5% increase in the self-reported likelihood of engaging in climate related political activism thus supporting the issue public hypothesis part of the theory.

Model 3 includes an interaction term to test the moderating effect of climate change issue public membership and psychological proximity on the climate activism index. With the interaction term included in the regression, the coefficient on both the proximity and the issue public variables increases. **Figure 2** plots this interaction effect and shows that for respondents not in the issue public, proximity is a positive indicator of activism. On the other hand, for respondents in the issue public, proximity is associated with a decrease in the likelihood of taking climate action. A word of caution is necessary when interpreting between-subjects moderation because it is likely underpowered, as Gelman (2018) shows that interaction effects require a much larger sample size to determine an effect in comparison to main effects.

Additionally, environmental attitudes, measured with the MES, had no relation to climate activism. In line with expectations from the CVM (Verba et al., 1995; Schlozman and Brady 2012), being recruited to participate previously, being empathetic, and having efficacy all positively predicted climate action. Men were less likely to take action than women. Conservatism negatively related to the climate action index, but interestingly had no effects on the observed action variable. Income and party identification had no effect.

Discussion

These results provide support for the issue public hypothesis of the psychological proximity and activism theory. People who perceived climate change to be psychologically proximate were more likely to be in the climate change issue public. And, being a member of the climate issue public predicted climate activism. The concrete thinking hypothesis was also supported by the finding that proximity predicted activism while controlling for other factors.

There are a couple possible reasons why the experiment had null effects. It may be because the treatment was in the middle of the survey, after participants had already answered several questions relating to climate change. The preceding questions in the survey may have primed the participants to think about climate change and thus attenuated the effect of the treatment. Another reason could be that because the condition also primes an increase in temporal distance, it negates the effects of reducing spatial distance by focusing on California.

STUDY 2

Materials and Methods

I examined the psychological proximity and activism theory across 14 potential issues using a national internet sample recruited through MTurk (n = 609). Sample size was determined by budget constraints. Some basic demographics of the sample are in **Table 6**. The main purpose of this survey was to experimentally test the effect of psychological proximity on participation and a representative sample is not necessary. Random assignment assures group equivalency, and thus treatment effects can be inferred from the differences in the outcomes for each experimental condition. The survey was designed to ask respondents about the political issue they reported as being the most important selected from a dropdown menu of 14 issues. Whichever issue the respondent selected then appeared in the items that follow. The list of political issues was generated using the Gallup Most Important Problem (Gallup and Newport, 2010) as a guide and included unemployment, economic inequality, racial inequality, the tax rate, terrorism, gun control, crime, immigration, healthcare, foreign policy, education, the environment (including climate change), and poverty. Respondents who did not select an issue as most important were excluded from this study.

TABLE 7 | Summary statistics of key measures (Study 2).

Variable	Mean	Std. Dev.	Cronbach's alpha
Likely action	42.29	27.85	0.81
Write message	0.31	0.46	
Proximity	0	0.7	0.65
Issue Public (0,1)	0.64	0.48	

TABLE 8 | Correlations of key measures (Study 2).

Variable	Likely action	Write message	Proximity
Likely action	—		
Write message	0.08	—	
Proximity	0.19*	0.05	—
Issue Public (0,1)	0.19*	0.10*	0.18*

NOTE—Pearson's correlations. *p < .05.

Psychological proximity was measured the same way as in Study 1 based on which issue the respondent chose as the most important problem facing the country. As in Study 1, geographic proximity did not load with the other items and was excluded from the index. The other items were standardized and averaged to create the variable for psychological proximity, *M(SD)* = 0 (0.7), with a Cronbach's alpha of 0.66.

I used an experiment to prime respondents into thinking about the issue as it directly affects them–that is, a prime of psychological proximity. Survey participants were randomly assigned to two groups. The treatment group received the following message, "You are making great progress! Thank you for carefully answering our questions! Up next, we will give you the opportunity to write a short message to your member of Congress. Please tell them how [selected issue] affects you personally." The placebo group saw the same message, without the final sentence. Thus, the issue is tied to a specific, concrete action along with a psychological proximity prime to get the respondents to think about how the issue affects them personally.

I measured issue activism, before the experiment module, with a battery of items that ask about the likelihood of engaging in acts of political participation that were averaged to create an index. Specifically, I asked "How likely are you to: join an organization; attend a political rally or protest; give money to an organization; vote in an upcoming election; and post on social media." In each case, with the exception of voting, respondents were asked about the specific issue that they reported to be the most important political problem. This index had a range of 0–100, *M(SD)* = 42.29 (27.85), and a Cronbach's alpha of 0.81.

A second activism measure was embedded within the experiment. For this dependent variable, respondents were given the opportunity to write a message to their member of Congress as explained above in the description of experimental conditions. This was a text box within the survey, limiting ecological validity. The variable was coded as 1 if a message was written and 0 if there was no message written. Of the 609 respondents, 31% wrote a message to their member of Congress.

TABLE 9 | Impact of psychological proximity, issue public membership, and other individual factors on issue activism (Study 2).

	Likely action (1)	Likely action (2)
Psychological Proximity	3.29 * (1.68)	0.08 (2.44)
Member of issue public (dummy)	3.81 (2.42)	4.13* (2.43)
Proximity * issue public		5.70* (3.15)
Geographic proximity	−1.07 (1.24)	−1.05 (1.24)
Information on issue	4.5*** (0.90)	4.58***(0.90)
Personal economic connection	0.87*(0.61)	0.70 (0.62)
Empathy for people affected	0.78 (0.82)	0.76 (0.82)
Democrat	7.42 *** (2.22)	7.55*** (2.21)
Education	−0.74 (0.84)	−0.74 (0.84)
Income	−0.70 (0.94)	−0.68 (0.94)
Recruited (dummy)	5.99** (2.21)	5.84 *** (2.21)
Empathy	3.16*** (0.84)	3.14*** (0.84)
Efficacy	1.06 (0.74)	1.08 (0.73)
Man (dummy)	1.48 (2.18)	1.12 (2.18)
Observations	559	559
Adjusted R^2	0.21	0.21

Note: *Unstandardized OLS regression coefficients; Standard errors in parentheses.* *p < 0.1. **p < 0.05. ***p < 0.01.

Table 7 contains summary statistics and **Table 8** contains correlations between the independent and dependent variables.

Results

As in Study 1, I use regression analysis to examine the relationship between psychological proximity, issue public membership, and activism across various issues in Study 2. These results are more mixed than Study 1 and can be found in **Table 9**. Model 1 shows only the main effects and model 2 adds the proximity and issue public interaction term to the regression. In model 1, proximity had a positive and significant relationship (b = 3.29, se = 1.68) to activism, supporting the concreting thinking hypothesis. However, issue public membership had no effect, probably because there is limited variation because all respondents in the analysis had at least indicated one of the issues as being the most important.

The main effects in model 2 show the opposite of model 1. There was no relationship between proximity and activism, and issue public membership had a positive and significant correlation (b = 4.13, se = 2.43). Interpreting the interaction term allows for some parsing of this relationship. The interaction term in model 2 had a positive and significant effect on the likely action index. The interaction is plotted in **Figure 3** and shows that there is no impact of proximity on activism when the respondent is not in the issue public. And, when the respondent is in the issue public, as proximity increases so does the likelihood of engaging in activism on that issue. As in Study 1, interaction effects should be cautioned against over-interpretation in a small sample size (Gelman, 2018).

The embedded survey-experiment showed that priming psychological proximity had a positive impact on writing a message to Congress. This is shown in **Figure 4**. Respondents in the control group wrote a message 26% of the time compared to 37% of the time for respondents in the treatment condition, a difference of 11%. To formally test the hypothesis I used a chi square test which showed that this 11% difference was statistically significant, χ^2 = 7.88, p <0 .01. Chi-square is the appropriate statistical test for comparing the means between two groups.

Discussion

The concrete thinking hypothesis was supported in two ways, first proximity correlated to higher levels of likely action while controlling for other factors. Second, the experimental prime linked personal connection to the issue, or psychological proximity, to the specific action of writing a member of Congress. This finding is strong evidence for the concrete thinking hypothesis of the psychological proximity and activism theory. When a respondent thought concretely about the issue by thinking about how it affects them personally, they engaged in higher levels of a specific action on that issue than respondents in the placebo group.

The real, observable action of writing a message to a member of congress is an improvement over self-reported likelihood of engaging in certain behaviors because it requires the respondent to take more time to complete the survey, a real cost. However, this is still an action taken entirely within the survey platform which limits the ecological validity of the design. It approximates the same level of time commitment that is similarly required when organizations email members to get them to write a letter to elected officials and takes them to a form letter where they can choose to individualize the message. But, this is not the same as a real world opportunity to engage in activism.

Further discussion of the differing results of the interaction analysis is warranted. In Study 1, the main effects of proximity and issue public membership were strengthened with the inclusion of the interaction term. Study 2 showed only issue public membership being significant when in the interaction was included. The interaction shows opposite effects from Study 1 in Study 2. In Study 1, climate activism increased with proximity for non-issue public members and decreased for issue public members. In Study 2, activism increased with proximity for members of the issue public with no effect for non-issue public members.

What could explain these differing results? For one, as mentioned in the results section for each study, the interaction analysis was likely under-powered meaning these effects may not be robust (Gelman, 2018; Giner-Sorolla, 2018). Second, the studies were designed differently. Study 1 only asked about climate change whereas Study 2 asked about 14 different issues. Climate activism may just be different than other issue-based activism and this merits further exploration in other studies. Moreover, respondents in Study 2 had to indicate one of the problems as being the most important, otherwise they were excluded from the analysis because of the text piping in subsequent items relying on input from the answer to the most important problem question. This may have reduced variation in issue public membership variable. In spite of the mixed results of the interaction term, the experimental findings still hold.

CONCLUSION

This paper provides some causal support for the concrete thinking hypothesis of the psychological proximity and activism theory and correlational support for both the concrete thinking hypothesis and the issue public hypothesis. In the California sample, the issue public hypothesis was supported by first demonstrating that when climate change is psychologically proximate, people were more likely to be in the climate change issue public and issue public membership predicted higher levels of climate activism. Furthermore, evidence suggested that proximity positively covaried with climate activism in support of the concrete thinking hypothesis. In the national sample, I found similar results looking generally at issue activism. Experimental results showed an 11% increase in message writing among the treated with a prime to encourage proximate perception of the issue vs. the placebo group. With survey measures, I found that psychological proximity was a predictor of issue public membership and activism.

This research has important implications for environmental organizations trying to motivate people to take action on climate change. A mobilization strategy should include messaging to frame climate change as an issue that is happening here and now. This should be done without making climate change too negative because that can lead to de-motivation by reducing efficacy (Feinberg and Willer, 2011). Instead organizations should frame climate change using the present tense and focus on the concrete actions that will help solve the problem. Fixing entrenched socio-political problems is an extremely difficult task and organizations should use an all-of-the-above approach to do so. Reducing distance to motivate activism is one such tool organizers have available, and perhaps the future will reveal that when climate change is in the backyard, more people will take action to address it.

DATA AVAILABILITY STATEMENT

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and accession number(s) can be found below: https://osf.io/e5j8r/?view_only=f801c8fa54b8476bb01f5b57fdd6c097.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Human Subjects Committee, University of California Santa Barbara. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpos.2021.666978/full#supplementary-material

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