Research Article
Received: 10.05.2023
Accepted: 27.09.2023
Published: 30.09.2023

Journal of Disaster and Risk
6(3), 2023, (1202-1217)
e-ISSN: 2636-8390
DOI: 10.35341/afet.1295230

Psychological Distance in Climate Change: The Role of Climate Change Denial, Contact with Nature and Political Opinion

Gökhan Şahin[1]

Abstract

This study was designed to investigate the psychological distance perception of Turkish people and the role of their political views on climate change. Descriptive data were obtained on different aspects of psychological distance such as temporal, social, geographical and uncertainty. The study also evaluated the relationship between contact with nature through climate change and climate denial. The research is a descriptive study. Climate change denial scale and nature contact scales were used to measure the levels of climate change denial and contact with nature. Data were collected online from 123 people living in different geographical regions of Turkey. Group comparison findings based on individuals' assessments of their political views (left/right) are consistent with the literature. Significant differences in denial of climate change were observed among groups separated by political views. In addition, a significant relationship was found between age and denial of climate change. Our findings are important in terms of revealing some social and cognitive factors in the perception of the climate change problem in our country and helping to develop more effective strategies in combating climate change.

Keywords: Climate Change, Climate Change Denial, Contact with Nature, Political Opinion, Psychological Distance

1. INTRODUCTION

Climate change (CC) is a pressing issue that demands immediate attention and effective solutions. According to the definition put forth by the United Nations Framework Convention on Climate Change, climate change refers to the alterations in the Earth's climate system resulting from human activities, which disrupt the composition of the atmosphere, as well as the naturally occurring climate variations observed over comparable periods (UNFCCC, 1992). The severity of this global risk necessitates urgent action to mitigate its impacts and safeguard the future of our planet. The Earth's climate has been changing for millions of years for astronomical and geological reasons, but climate changes due to the global warming trend that has emerged in recent centuries are attributed to human-induced greenhouse gas emissions rather than to these natural causes (The Intergovernmental Panel on Climate Change (IPCC), 2022). With the Industrial Revolution, humanity undertook one of the greatest developmental leaps in history. However, it also caused global warming and associated climate change through unprecedented increases in greenhouse gas emissions. These changes, initially seen as the environmental cost of development, are now affecting natural and human systems in ways that threaten development itself. Climate change is now recognised as one of the most serious risks facing the world today. Climate change, which is occurring as a result of human activities, is causing significant environmental, economic and social

[1] Assist. Prof. Dr., Karadeniz Technical University, Faculty of Letters, Psychology Department, Trabzon
e-mail: gsahin@ktu.edu.tr, ORCID No: 0000-0002-6479-7018

To cite this article
Şahin, G. (2023). Psychological Distance in Climate Change: The Role Of Climate Change Denial, Contact With Nature And Political Opinion. J*ournal of Disaster and Risk,* 6(3), 1202-1217.

impacts. To combat climate change, scientific and political solutions are being developed and implemented.

To encourage people's involvement in addressing climate change, it is crucial to comprehend the perceptions of those primarily responsible for it. According to research on public perceptions, climate change is frequently viewed as distant in various aspects (Gifford, 2011). Perceptions and behaviors regarding climate change play a crucial role in our efforts to combat it. Understanding how individuals perceive climate change is essential for effective policy solutions, garnering social support, and promoting individual behavior change. Consequently, studies investigating the concept of psychological distance in relation to climate change have become increasingly significant. As the primary contributors to climate change, human beings often experience psychological distance that hinders their recognition of its environmental impact on an individual level (Spence et al., 2012). Psychological Distance (PD) is recognized as a barrier to addressing climate change because certain aspects of it may appear distant and challenging to prioritize in daily decision-making processes (Van Lange & Huckelba, 2021). Recognising and addressing this psychological distance is crucial to promote meaningful action and meet the challenges of CC. PD is related to the perceived distance between oneself and a goal, event, or problem, which may be temporal, spatial, social, or hypothetical (Keller, 2022). Conceptual Level Theory (CLT) by Trope and Liberman (2010) introduced the notion of PD, which proposes that mental interpretations allow us to think about objects, events, and things that we may not have direct experiences with.

The perception of an object as distant often leads to abstract thinking, whereas proximity fosters a more concrete understanding. This is also true for climate change, where psychological remoteness has four dimensions: geographic, social, time and insecurity. These dimensions are interrelated and positively correlated, indicating that individuals' perceptions and behaviors regarding climate change are influenced by multiple factors. Geographical distance refers to the perception of physical locations and how far removed they are from one's immediate surroundings. Social distance involves considering the interactions with others and who will be most affected by climate change. Temporal distance pertains to the perception of how far into the future the effects of climate change will extend. Uncertainty distance relates to the level of certainty or uncertainty surrounding climate change impacts. A noteworthy study conducted by Spence, Poortinga, and Pidgeon (2012) provided a comprehensive examination of the dimensions of psychological distance to climate change in the UK. The study shed light on how these dimensions are best characterized and their interrelationships, contributing to a deeper understanding of how individuals perceive and relate to climate change. Understanding psychological distance is crucial for addressing climate change effectively. When individuals perceive climate change as psychologically distant, they may struggle to recognize its immediate impact on their lives and prioritize it in decision-making processes. Hence, efforts should be made to reduce psychological distance by fostering a sense of proximity and concreteness. Educational campaigns and information materials can play an important role in bridging this gap by emphasising the realness of climate change, its man-made nature and its tangible impact on health, safety and well-being. Furthermore, the findings of the study highlight the influence of political opinion and climate change denial on perceptions and behaviors related to climate change. The influence of political views on perceptions of climate change is underlined by the correlation between rightwing political opinion and climate change denial. Conversely, increased contact with nature is associated with greater concern about climate change and willingness to take action. This suggests that promoting contact with nature and fostering environmental awareness can indirectly contribute to addressing climate change. To effectively combat climate change, it is essential to prioritize public awareness and participation. Efforts should be made to engage individuals who deny climate change, exhibit indifference towards it, or lack the willingness to take action. By increasing their awareness and understanding, and encouraging their active involvement, we can work towards collective action and sustainable solutions. In conclusion, psychology, and cognitive psychology in particular, has a vital part to play in addressing climate change - one of the most critical global challenges. Understanding the

dimensions of psychological distance and their impact on perceptions and behaviors can inform the development of effective strategies to mitigate climate change and promote environmental sustainability. By bridging the psychological gap between individuals and climate change, we can inspire action and create a more sustainable future.

Despite the overwhelming evidence supporting climate change, there still exists a subset of individuals who maintain skepticism or deny its reality and severity. Recent studies, including the work of Nartova-Bohaver et al. (2022), have uncovered concerning trends. For instance, there has been a decline in the proportion of respondents within the European Union who have consider climate change a significant issue since 2019. Additionally, some European countries have witnessed an increase in the proportion of individuals who perceive climate change as an insignificant problem. Furthermore, it is worth noting that many people perceive the responsibility for addressing climate change as primarily resting on social institutions rather than on individual actions. In the United States, researchers such as Leiserowitz et al. (2021), Nielsen et al. (2021), and Wong-Parodi & Feygina (2020) have observed a significant number of individuals who not only refuse to acknowledge the existence of climate change but also display an unwillingness to adopt environmentally sustainable practices. Nartova-Bochaver et al. (2022) propose that climate change denial encompasses a combination of beliefs, emotions, and behaviors, with "strong" deniers exhibiting all three characteristics, while "weak" deniers exhibit only one. These findings highlight the complexity of climate change denial and underscore the need to understand the underlying factors influencing individuals' attitudes and behaviors. By examining the psychological, social, and cultural aspects associated with climate change denial, researchers can gain a more comprehensive understanding of the phenomenon and develop targeted interventions to address it effectively. Fostering greater awareness, dispelling misinformation, and promoting sustainable behaviors are essential in bridging the gap between climate change evidence and public perception, ultimately facilitating collective action to mitigate its impacts. However, there is limited knowledge of the cultural and personal determinants linked to climate change denial, as previous research has focused primarily on political views and decision-making in WEIRD (Western, educated, industrialised, rich and democratic) countries. As a result, our knowledge of climate change denial in the rest of the world remains limited.

Further research is necessary to gain a more comprehensive understanding of climate change denial and its underlying factors. Exploring the cultural and personal dimensions associated with denial can provide valuable insights for developing effective strategies to address climate change skepticism and promote collective action on a global scale. Perceptions and attitudes towards climate change are strongly influenced by political ideology. Left-wing views tend to accept the fact of climate change and emphasise the necessity of urgent action as well as government intervention to mitigate its effects. (Hornsey et al., 2018). Right-wing views tend to deny that climate change exists or matters, downplay the role of human activity, and emphasise economic and personal freedoms (Kahan et al., 2012). This denial is often based on motivated reasoning, where individuals selectively process information that is compatible with their pre-existing beliefs and values (Kahan et al., 2011). In the literature, the concept of contact with nature has been studied in terms of its relationship with psychological conditions such as subjective well-being, positive affect (Nisbet & Zelenski 2011, McMahan & Estes 2015, Uçar, 2019), and psychological health (Özdemir & Semin-Fenkçi 2016). In this study, we also included a measure of the level of contact with nature, based on the view that increased contact with nature contributes to climate change awareness.

A comprehensive investigation of the psychological dimensions associated with climate change is the main purpose of this study. This study, which was conducted by Spence et al. (2012) on the psychological distance dimensions of climate change based on the research method conducted with a large participation in the British sample, aims to investigate how individuals in the Turkish sample perceive the psychological distance covering climate change and how they relate to it. There is no other study in the literature that examines the psychologic distancing from the issue

of the climate crisis in a Turkish sample. In this respect, the research findings will contribute to the literature.

The aim of this study is to investigate psychological distance perceptions of climate change with different dimensions in the Turkish sample. Four different aspects of psychologic distances (temporal distance, social distance, geographical distance, and uncertainty) were assessed. Finally, the finding in the literature that political view (left/right) can reveal different views on environmental and climate issues was also tested.

2. METHOD

2. 1. Ethical Aspect of Research

The ethical suitability of the study was approved by the Social and Humanities Ethics Committee of a public university in Turkey.

2. 2. Participants

The study is a descriptive study. The sampling technique is an easily available sampling technique. Power analysis was performed with the G*Power programme for sample size determination (Faul et al., 2007). A priori power analysis using G*Power (t tests, correlational: point bi serial model, Effect size |ρ|=0.3, α err prob =0.05 Power (1-β err prob)= 0.95) yielded a total sample size of 111. The study sample consists of a total of 123 people, 39 of whom are male, who voluntarily participated in the study via social media announcements. The mean age of the participants was 34.38 and the standard deviation was 10.90. Living in different geographical regions of Türkiye is the inclusion criterion for the sample. Although not numerically balanced, participants from 7 geographical regions of Turkey were included in the study. There are no exclusion criteria defined in the study.

2. 3. Procedure

Study data were collected through online forms in June 2023. Participants were recruited through various social media channels. Participants who reached the online form first read the study instructions and gave their consent to participate. First, they answered the socio-demographic questions. Then they answered the questions measuring the sub-dimensions of psychological distance related to climate change. After answering the political opinion information on a 7-point Likert scale (left/right), they answered the scale questions and completed the study. The entire study took an average of 5 minutes to complete. The data analysis involved employing Pearson correlation analysis to examine the relationships between the variables. Subsequently, a t-test was conducted to compare the sub-dimensions of psychological distance, climate change denial, and contact with nature. The sample was grouped based on political views (left, right) for the comparison. The data that was gathered underwent analysis through JASP version 0.17.3 (JASP Team, 2023).

2. 4. Measures

2. 4. 1. Psychological distance questions

The questions prepared by Spence, Portinga and Pidgeon (2012) to measure the dimensions of psychological distance, perceptual and behavioural intentions towards climate change in the UK sample were used with minor adaptations (originally Türkiye instead of the UK). The questions are Likert-type questions, answered in 4,5,6,7 dimensions, measuring the geographical, social and temporal dimensions of psychological distance towards climate change. It also includes questions on uncertainty/scepticism, fear, concerns and willingness to act. The level of concern regarding climate change was assessed using three similar questions. These questions inquired about general concerns, personal impacts, and societal consequences related to climate change. Combining these questions Cronbach's alpha (α) coefficient of 0.83, indicating a high degree of

internal consistency among them. For our study Cronbach's alpha found .85. The Cronbach Alpha value of the uncertainty skepticism dimension is .71. For our study Cronbach's alpha found .52. The entire survey consists of 14 questions. Survey questions related to psychological distance were used to obtain descriptive information in the local sample. See Appendix for all questions used.

2. 4. 2. Climate change denial scale

The climate change attitude scale developed by McCright and Dunlap (2011) comprises 5 questions, which are responded to on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree." The scale's scores showed that as they increased, the level of denial of climate change also increased. Researchers discovered that the scale exhibited both structural (with a comparative fit index [CFI] of .970 and a root mean square error of approximation [RMSEA] of .088) and metric invariance (with a CFI of .944 and an RMSEA of .091). This scale was designed to assess the level of climate change denial. In Nartova-Bochaver et al's (2022) cross-cultural study, Kıral Uçar adapted this scale into Turkish. In the Turkish adaptation study, the mean score was 1.62, the standard deviation was .58, and the reliability value was found to be ω (McDonald's omega).= 70. The Cronbach Alpha value of the scale for this study was found to be .80.

2.4. 3. Contact with nature scale

The scale was developed by Herzog and Strevey (2008). The scale is a 5-point Likert scale consisting of 9 questions ranging from 'never' to 'very often'. It includes questions such as how often people do activities such as enjoying nature and camping. The increase in the scores obtained from the scale indicates the increase in the level of contact with nature. The Turkish adaptation of the scale was carried out by Kıral Uçar (2019). The Cronbach Alpha value of the scale was found to be .90. For this study Cronbach Alpha value of the scale was found to be .88.

2. 4. 4. Politic opinion

In the one-question political opinion statement created by the researcher, the participants scored on a Likert type scale between 1-7. The left end of the scale is labeled with the left view, while the far right end is labeled with the right view.

2.4. 5. Statistical analysis

Distributions of response rates were used as descriptive statistics to illustrate dimensions of psychological distance in climate change. In statistical analysis, data were compared using t test and Pearson Correlation, and a 2-sided p value < 0.05 was considered statistically significant.

3. RESULTS

The findings obtained as a result of the analyzes made in line with the purpose of the study are given under the headings. The socio-demographic information of the sample is shown in Table 1.

Table 1. Descriptive statistics. (Numbers are presented in parentheses)

Age	19(min)	64(max)					
Gender	Women (84)	Men (39)					
Education	Highschool (22)	[12 years]	Undergraduate (50)	[16 years]	Graduate (51)	[18 years]	
Geographical area	Mediterranean (7)	Eastern Anatolia (10)	Aegean (9)	Southeastern Anatolia (5)	Central Anatolia (33)	Black Sea (29)	Marmara (30)
Politic view	Left (59)	Central (35)	Right (29)				

The minimum time spent in education is presented with year information.

3. 1. Plots for Psychological distance questions

Distribution of the answers given to the geographical distance questions by geographical regions is presented in Figure 1a and 1b. (On the horizontal axis 1-Strongly agree/5- Strongly disagree)

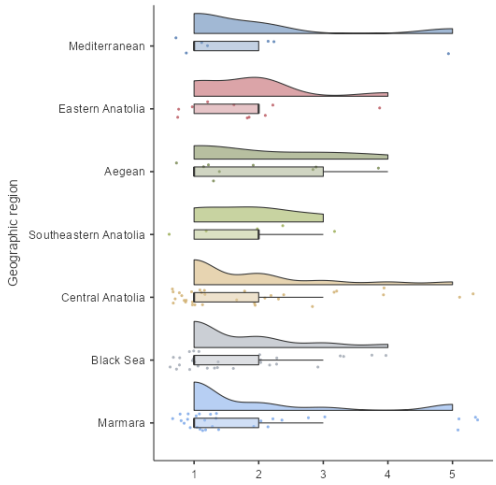

Figure 1a. ''My local area is likely to be affected by climate change"

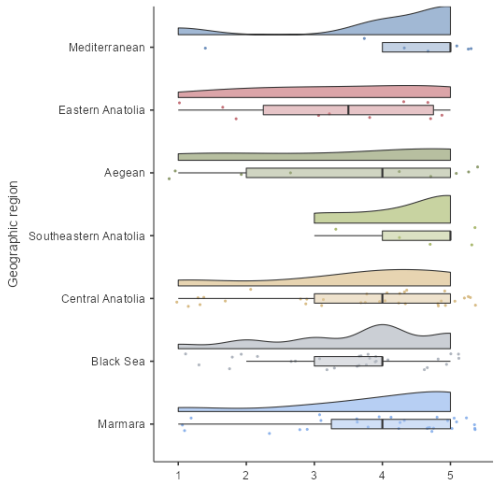

Figure 1b. " Climate change will affect regions further away from here"

Distribution of the answers given to the social distance questions by political opinion is presented in Figure 2a and b (On the horizontal axis 1-Strongly agree/5- Strongly disagree).

Distribution of the answers given to the temporal distance question by political opinion is presented in Figure 3 (7-point scale (We already feel the effects – never)).

Distribution of the answers given to the uncertainty/scepticism question by political opinion is presented in Figure 4 (5-point scale (Strongly agree–Strongly disagree).

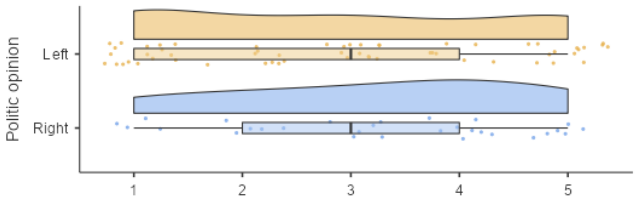

Figure 2a. ” Climate change will affect underdeveloped countries the most”

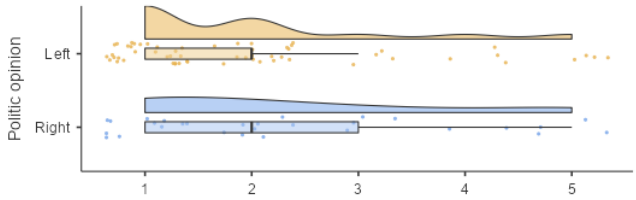

Figure 2b. ” Climate change is likely to have a huge impact on people like me”

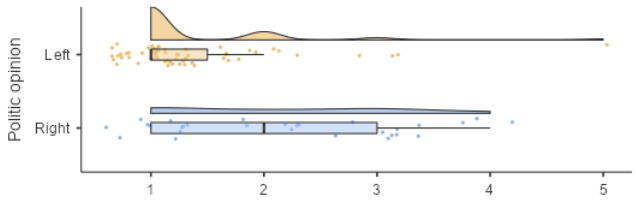

Figure 3. ” When do you think Turkey will start to feel the effects of climate change? ”

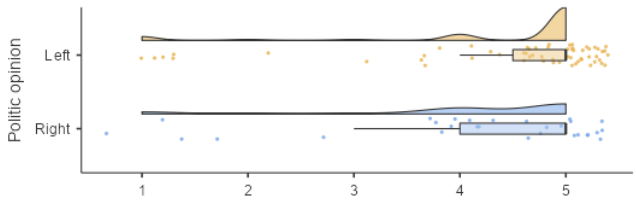

Figure 4a. ” I am uncertain that climate change is really happening”

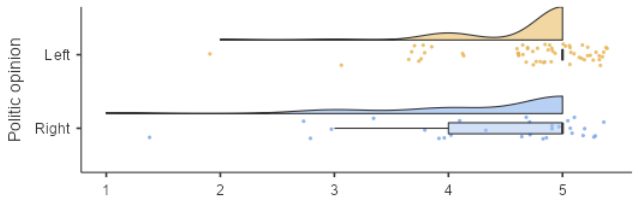

Figure 4b. ” The seriousness of climate change is exaggerated ”

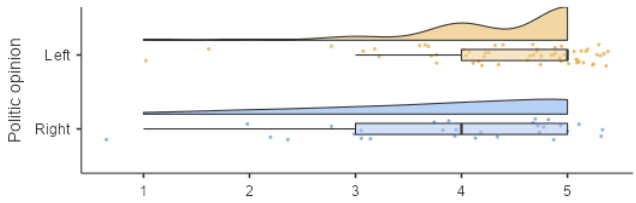

Figure 4c. ” Most scientists agree that humans are causing climate change”

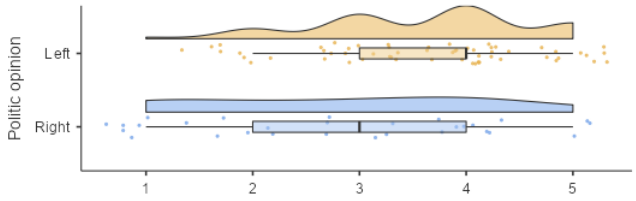

Figure 4d. ” It is uncertain what the effects of climate change will be”

Distribution of the answers given to the concern about CC questions by political opinion is presented in Figure 5. 4-point scale (Very concerned–Not at all concerned).

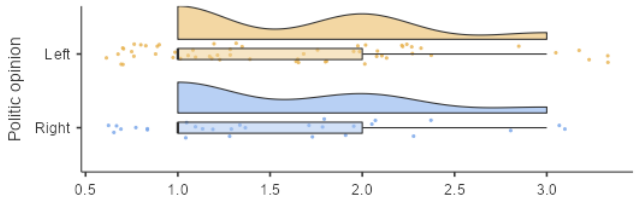

Figure 5a. ” How concerned, if at all, are you about climate change, sometimes referred to as global warming’’

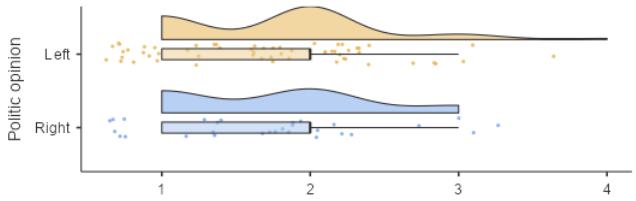

Figure 5b. ” Considering any potential effects of climate change which there might be on you personally, how concerned, if at all, are you about climate change? ”

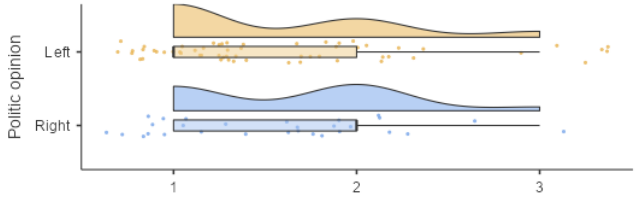

Figure 5c. ” Considering any potential effects of climate change there might be on society in general, how concerned are you about climate change? ”

Distribution of the answers given to the preparedness to act question by political opinion is presented in Figure 6 (5-point scale (Strongly agree–strongly disagree)).

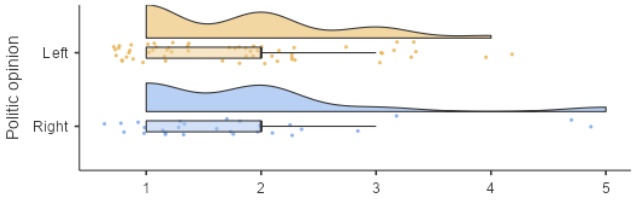

Figure 6. ''I am prepared to greatly reduce my energy use to help tackle climate change"

The response rates of participants to the question 'Which of the following best describes your view of the causes of climate change' in the questionnaire measuring their psychological distance towards CC are also shown in Table 2. It can be seen that 68% of the sample thought that climate change was entirely man-made. While the proportion of those who think it is partly natural and partly man-made is 26%, those who think it is a completely natural process represent 6% of the sample.

Table 2. Reference to climate change

Attribution group	Frequency	Percent
Entirely natural	7	5.691
Partly natural partly human	32	26.016
Entirely human	84	68.293
Total	123	100

3. 2. Correlation analysis results

Table 3 presents the results of the correlation analysis conducted to examine the relationships among the variables in the study. The findings indicate several noteworthy associations. Firstly, a negative relationship is observed between climate denial and age. (r=-.235, p <05). It has been observed that denial of climate change decreases with age. Secondly, there is a significant positive correlation between politic opinion and climate denial (r=-.263, p <05). Climate change denial seems to increase as we get closer to the right politically. There was no significant correlation between climate change denial and age with contact with nature.

Table 3. Correlations table

		Age	Climate denial	Contact with nature	Politic opinion
Age	Pearson's r	—			
	p-value	—			
Climate denial	Pearson's r	-0.235 **	—		
	p-value	0.009	—		
Contact with nature	Pearson's r	0.065	-0.085	—	
	p-value	0.475	0.350	—	
Politic opinion	Pearson's r	-0.148	0.263 **	0.117	—
	p-value	0.101	0.003	0.197	—

Note. * p < .05, ** p < .001, ***. Politic opinion, Left=1; Right=2

3. 3. Results of independent sample t test analysis

To create two groups (left and right) for this measure, which was answered on a 7-point Likert-type rating scale between left and right, those with a score below 4 were defined as the left group and those with a score above 4 as the right group. The two groups differ significantly in the degree of climate change denial [t(86) = -3.038, p = .003, d= -0.69]. Right-wingers are more likely to deny climate change than left-wingers. Descriptive statistics by group are shown in Table 4.

Table 4. Independent Samples t-test

		Statistic	df	p		Effect Size
Climate denial	Student's t	-3.04	86.0	0.003	Cohen's d	-0.689
Contact with nature	Student's t	-1.62	86.0	0.109	Cohen's d	-0.367

Note. H_a $\mu_{Left} \neq \mu_{Right}$

4. DISCUSSION

In this study, we embarked on an exploration of the psychological perception of distance among the Turkish populace, focusing particularly on how their political inclinations influence their perspectives on climate change. Our analysis encompassed various dimensions of psychological distance, including temporal, social, geographical, and uncertainty-related aspects. Additionally, we delved into the correlation between individuals' engagement with nature within the context of climate change and their disposition towards climate denial. The results unveiled noteworthy disparities in climate change denial across distinct political groups, shedding light on the pivotal role of political viewpoints. Furthermore, an association between age and climate change denial emerged from our analysis. Our study has provided an opportunity to explore perceptions of the human factor, the main driver of the problem, in terms of different psychological factors in 2023, when climate change will be making its effects felt more and more every day with extreme events such as floods, forest fires and droughts. While climate change may initially be perceived as a psychologically distant concept, its impacts are increasingly becoming tangible and felt in our everyday lives. Extreme weather events, rising sea levels, and the threats of food and water insecurity are just a few examples of how climate change directly affects people's health, safety, and overall well-being (Haines & Ebi, 2019). These imminent consequences underscore the urgency of taking action to address climate change.

Given the increasingly visible and impactful nature of climate change in today's world, a deeper understanding of the multidimensional aspects of individuals' perceptions is of great importance (Climate Change and Human Behavior - Nature Human Behavior, 2022). The study primarily focused on exploring the four components of PD, namely temporal, geographic, social, and climate change-related uncertainty. Additionally, the study examined the relationship between political views and individuals' perspectives on environmental and climate-related issues.

Political views were found to influence perceptions of climate change and denial behaviour. It has been observed that people who define themselves as right-wing (or more conservative) are not sufficiently convinced about climate change, or in other words, they deny climate change more than left-wing (or liberal) people. This finding is consistent with various previous studies. McCright, Dunlap, and Marquart-Pyatt (2015) investigates the connection between political ideology and climate change views in the EU. They find that while a pronounced left-right divide exists in Western European countries, with left-leaning citizens expressing stronger belief in and support for climate action, this divide is absent in former Communist countries due to lower political salience and differing left-right identification. Luo and Zhao (2019) introduces a "motivated attention framework," proposing that socio-political motivations influence how

people pay attention to climate change evidence, impacting their perception and subsequent actions. Through three experiments, the authors found that political orientation guides attention to climate evidence, shaping perceptions and actions differently for liberals and conservatives, suggesting a potential mechanism for ideologically motivated reasoning in climate change perception.

Since 2013, the concern about climate change as a major threat to nations has increased worldwide. In the survey conducted by the Pew Research Center (URL1), 56% of respondents across 23 countries viewed climate change as a major threat. However, in the most recent Global Attitudes survey by the same center, this percentage has risen to a median of 67% across these same countries. In 10 of these nations, the proportion of people perceiving global warming as a significant threat has surged by at least 10 percentage points. To illustrate, in France, 83% of the population regards climate change as a major threat, compared to 54% in 2013, marking a notable 29-point increase. Similarly, Mexico has witnessed a substantial rise, with 80% seeing it as a major threat, up from 52% in 2013, reflecting a 28-point increase. In the same study, it was observed that in the United States, there was a difference between Republicans and Democrats regarding climate change concerns. Only 27% of Republicans see climate change as a significant threat, while more than three-quarters of Democrats (83%) have this concern. Another finding of the poll is that while Democrats have become increasingly concerned about climate change over the past five years, Republicans' views on the issue have remained relatively stable.

It is commonly held that the concept of psychological distance poses a significant obstacle to climate action, as many individuals may lack motivation to take action when they perceive climate change as something that primarily impacts distant places and the distant future. To enhance climate action, one effective strategy often suggested is the reduction of psychological distance (van Valkengoed, Steg & Perlaviciute, 2023). There are studies in the literature showing that when a person has a closer psychological distance, they will be more aware of the risk of climate change (Spence et al., 2012; Loy & Spence, 2020; Keller et al., 2022). Or, when they feel that climate change is an event in the distant future, they are evaluated as lower personal risk and perceive a greater psychological distance (Leiserowitz et al., 2010, van Valkengoed, Steg & Perlaviciute, 2023). An alternative study suggests that individuals might create a psychological barrier when confronted with the suffering caused by climate change. This particular study delved into the concept of perceived psychological distance concerning climate change, the level of empathy individuals felt towards its victims, and their willingness to take action. The participants were exposed to short scenarios illustrating the impact of climate change on specific individuals, some closely resembling them in terms of geography and social context (indicating low psychological distance), while others involved scenarios featuring entities quite different, like animals (indicating high psychological distance). Intriguingly, the study revealed that framing climate change in a more psychologically proximate manner did not consistently reduce psychological distance or result in a greater inclination to take action (Manning et al., 2017).

In particular, the different aspects of psychological distance play a crucial role in shaping awareness of climate change. In this study, the distribution of the answers given in the Turkish sample to the questions asked about the sub-dimensions of psychological distance was examined. The Black Sea region gave the highest number of strongly agree responses among the geographical regions to the question "My local region is likely to be affected by climate change", which was asked about geographical distance. Of course, it should be reminded that these findings are not experimental findings and the number of participants by region is not balanced. However, when the distributions of the answers given are evaluated as descriptive data, the fact that the Black Sea region ranks first in the geographical distance sub-dimension can be interpreted as the fact that flood disasters, which are directly related to climate change, have recently been frequently experienced, may have affected the geographical distance of climate change in the people of the

region. Another question related to geographical distance, climate change will affect the regions far away from here, and the fact that the highest average response was observed in the southeastern Anatolia region can also be considered meaningful when the distribution of climate-related events according to regions is considered (Forest fires on the Mediterranean coast, floods in the Marmara and Black Sea regions).

The response distributions related to the social distance sub-dimension of psychological distance were grouped according to political views. In the response distributions, it was observed that people with right-wing views showed higher averages than people with left-wing views. These averages show that people with right-wing views have a higher social distance to climate change than people with left-wing views. This finding seems to be consistent with the finding of the study that political views are related to climate denial. It was also observed that political views differed in the distribution of responses in the temporal sub-dimension of psychological distance. While the left-wing participants responded much more intensely that the effects of climate change have already started, the responses of the right-wing participants showed a spread on the scale. When the responses to the uncertainty scepticism dimension are analysed, it is seen that the distribution of the responses of left-wing respondents at the end of the scale is more intense. In other words, it can be said that their scepticism about climate change is lower than that of right-wing respondents. Finally, similar distributions were observed between the groups in the responses given for the dimensions of anxiety and readiness for action. Therefore, it is essential to develop an understanding and acceptance of these diverse dimensions of psychological distance in order to effectively tackle climate change. Given the urgent and multifaceted nature of climate change, addressing it requires not only scientific and technological advancements but also a comprehensive understanding of human psychology. By considering the psychological dimensions of climate change perception, policymakers, scientists, and society as a whole can develop more targeted and effective strategies to combat climate change and work towards a sustainable future. These findings suggest that politicians should develop different strategies to combat climate change according to their political views.

Another important factor related to psychological distance is people's evaluations of who/what is responsible for the climate change problem. When the response rates to the question 'Which of the following best explains your view on the causes of climate change' are examined, it is seen that 68% of the sample thinks that climate change is entirely human-caused. While the rate of those who think it is partly natural and partly man-made is 26%, those who think it is a completely natural process represent 6% of the sample. Although this rate may seem low in the sample, it can be seen that it is of critical importance when it is generalized and considered on a global scale.

Understanding people's perceptions and behaviours is critical to address the challenges of climate change. The dimensions of psychological distance play a significant role in influencing how people perceive and act on climate change. Additionally, political views have been found to influence individuals' perceptions and the likelihood of climate change denial. Therefore, it is essential to prioritize efforts that increase public awareness and foster active engagement to effectively tackle climate change. This includes targeting individuals who deny climate change, display indifference, or lack the motivation to take action, with the aim of enhancing their understanding and encouraging their active involvement in climate change mitigation efforts. Many instances of environmentally harmful actions and choices can be attributed to cognitive biases and a lack of comprehension regarding climate change concerns. These factors encompass an inability to grasp the consequences of one's actions on the environment and various distortions in thinking and reasoning when it comes to issues related to climate change (Sörqvist & Marsh, 2019). In addressing climate change, it is important for psychology, particularly cognitive psychology, to contribute its expertise in collaboration with other disciplines. Climate change and global warming are critical issues of global scale that require collective efforts across various fields, including psychology, to drive meaningful and sustainable change.

5. CONCLUSIONS

As a result, our study has deeply examined the complex web of psychological perceptions surrounding climate change among the Turkish population and shed light on the multiple dimensions that influence individuals' views and reactions to this pressing global issue. By investigating temporal, geographic, social, and uncertainty-related aspects of psychological distance, we uncovered regional differences and relationships with political orientations. It is an important finding that participants from regions experiencing the effects of climate change more intensely "for now" show a lower perception of geographical distance.

The t test group comparison findings based on individuals' assessments of their political views (left/right) are consistent with the literature. Significant differences were observed in climate change denial among groups divided according to political views. Correlation analysis findings also confirmed the significant relationship between political opinion and climate change denial. Additionally, a significant relationship was found between age and climate change denial. As a result of comparing the responses to the psychological distance sub-dimensions with political opinion groups, it is a consistent finding that left-wing people with lower climate change denial levels also have lower social distance, temporal distance and concern dimensions.

Our findings are important in terms of revealing some social and cognitive factors in the perception of the climate change problem in our country and helping to develop more effective strategies to combat climate change. Identifying climate change as a critical problem and identifying its causes is crucial to shaping public attitudes and promoting effective mitigation strategies. In particular, although a small portion of our sample (6%) viewed the cause of climate change as entirely natural, the remainder evaluated it as partially natural, partially human-caused, and entirely human-caused.

The results of our study go beyond the Turkish context and highlight the universal importance of understanding the complex interplay between psychological factors, political ideologies, and climate change perceptions. As climate change continues to escalate and extreme weather events and climate change-induced disasters increase, the need for comprehensive, multidisciplinary approaches will become increasingly evident. In this context, our research underlines the critical role of psychology, particularly cognitive psychology, in contributing to global efforts to combat climate change. Effective climate action requires not only advances in science and technology but also a deep understanding of human behavior and cognition. By recognizing and addressing the various dimensions of psychological distance, policymakers, scientists, and society at large can tailor strategies and interventions to mobilize individuals across the spectrum of climate change perceptions and ultimately work together towards a sustainable and resilient future for all.

In future studies, it is important to use experimental scales and controlled studies to better understand the dimensions of psychological distance against climate change, and to reach a balanced and large-scale sample by region, for example, to reveal differences in groups in geographical regions that experience the effects of geographical distance and climate change to different extents. In a world where the effects of climate change are no longer distant or abstract but are felt in our daily lives, it is imperative that we continue to explore, understand and address the psychological foundations that shape our responses to this existential challenge. Only through collective action informed by knowledge from psychology and other disciplines can we hope to mitigate the devastating effects of climate change and secure a healthier planet for future generations.

REFERENCES

Climate change and human behaviour - Nature Human Behaviour. (2022, November 16). Nature. https://doi.org/10.1038/s41562-022-01490-9.

Gifford, R. (2011). The dragons of inaction: psychological barriers that limit climate change mitigation and adaptation. *Am. Psychol. 66*, 290–302. https://doi.org/10.1037/a0023566.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behavior Research Methods, 39(2), 175–191. https://doi.org/10.3758/ BF03193146.

Haines, A., Ebi, K. (2019). The Imperative for Climate Action to Protect Health. N Engl J Med. Jan 17;380(3):263-273. doi: 10.1056/NEJMra1807873. PMID: 30650330.

Herzog, T. R. & Strevey S. J. (2008). "Contact with Nature, Sense of Humor, and Psychological Well-Being". *Environment and Behavior 40*(6)747-776.

Hornsey, M. J., Harris, E. A., Bain, P. G., & Fielding, K. S. (2018). Meta-analyses of the determinants and outcomes of belief in climate change. *Nature Climate Change, 8(7)*, 614-620.

IPCC, 2022: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA, 3056 pp., doi:10.1017/9781009325844.

JASP Team, (2023). JASP (Version 0.17.3) [Computer software].

Kahan, D. M., Peters, E., Dawson, E. C., & Slovic, P. (2011). Motivated numeracy and enlightened self-government. Cultural Cognition Project, Yale Law School. https://doi.org/10.1017/bpp.2016.2

Kahan, D. M., Jenkins-Smith, H., & Braman, D. (2012). Cultural cognition of scientific consensus. *Journal of Risk Research, 15(2),* 139-147. Doi: 10.1080/13669877.2010.511246.

Keller, E., Marsh, J.E., Richardson, B.H., and Ball, L.J. (2022). A systematic review of the psychological distance of climate change: Towards the development of an evidence-based construct. *J. Environ. Psychol. 81*, 101822. https://doi.org/10.1016/j.jenvp.2022.101822.

Kıral Uçar, G. (2019). Kent kimliği, doğayla temas ve öznel iyi oluş. Akdeniz İnsani Bilimler Dergisi/Mediterranean Journal of Humanities, 9(2), 419-430. 10.13114/MJH.2019.499

Leiserowitz, A., Maibach, E., & Roser-Renouf, C. (2010) Climate change in the AmericanMind: Americans' global warming beliefs and attitudes in January 2010. Yale University and GeorgeMason University. New Haven, CT: Yale Project on Climate Change. http://environment.yale.edu/uploads/AmericansGlobalWarmingBeliefs2010.pdf

Leiserowitz, A, Maibach, E., Rosenthal, S., Kotcher, J., Carman, J., Wang, X.[X.], … Marlon, J. (2021). Public support for international climate action, March 2021. Yale University and George Mason University. https://www.climatechangecommunication.org/wp-content/uploads/2021/04/public-support-international-climate-action-march-2021.pdf.

Loy, L. S., & Spence, A. (2020). Reducing, and bridging, the psychological distance of climate change. Journal of Environmental Psychology, 67, 101388. https://doi.org/ 10.1016/j.jenvp.2020.101388.

Luo, Y. and Zhao, J. (2019) Motivated Attention in Climate Change Perception and Action. Front. Psychol. 10:1541. doi: 10.3389/fpsyg.2019.01541.

Manning, C. et al. (2018). Psychological Distance and Response to Human Versus Non-Human Victims of Climate Change. In: Leal Filho, W., Marans, R., Callewaert, J. (eds) Handbook of Sustainability and Social Science Research. World Sustainability Series. Springer, Cham. https://doi.org/10.1007/978-3-319-67122-2_8.

McMahan, E. A. & Estes, D. (2015) "The Effect of Contact with Natural Environments on Positive and Negative Affect: A Meta-Analysis". *The Journal of Positive Psychology 10*(6) 507-519.

McCright, A. M, & Dunlap, R. E. (2011). Cool dudes: The denial of climate change among conservative white males in the United States. *Global Environmental Change, 21(4*), 1163–1172.

McCright, A. M., Dunlap, R. E., & Marquart-Pyatt, S. T. (2015). Political ideology and views about climate change in the European Union. Environmental Politics, 24(5), 562-583.

Nartova-Bochaver, S.K.; Donat, M.; Ucar, G.K.; Korneev, A.A.; Heidmets, M.E.; Kamble, S.; Khachatryan, N.; Kryazh, I.V.; Larionow, P.; Rodríguez-González, D.; et al. (2022) The role of environmental identity and individualism/collectivism in predicting climate change denial: Evidence from nine countries. *J. Environ. Psychol. 84*, 101899.

Nielsen, K. S., Clayton, S., Stern, P. C., Dietz, T., Capstick, S., & Whitmarsh, L. (2021). How psychology can help limit climate change. *American Psychologist, 76(1*), 130–144. https://doi.org/10.1037/amp0000624

Nisbet, E. K. & Zelenski, J. M. (2011). "Underestimating Nearby Nature: Affective Forecasting Errors Obscure the Happy Path to Sustainability". *Psychological Science 22*(9) 1101-1106.

Özdemir A. & Semin-Fenkçi M. (2016). "The Role of Aural and Visual Landscape Perception in Patient Psychology". *Journal of Human Sciences 13(2)* 3022-3032.

Sörqvist, P., Marsh, J. E., eds. (2019). The Cognitive Psychology of Climate Change. Lausanne: Frontiers Media. Doi: 10.3389/978-2-88963-013-4.

Spence, A., Poortinga, W., and Pidgeon, N. (2012). The psychological distance of climate change. *Risk Anal. 32,* 957–972. https://doi.org/10. 1111/j.1539-6924.2011.01695.x.

Trope, Y., Liberman, N. (2010). Construal-level theory of psychological distance. *Psychol. Rev. 117,* 440–463. https://doi.org/10.1037/
a0018963.

Uçar, G. (2019). Kent Kimliği, Doğayla Temas ve Öznel İyi Oluş. *Akdeniz İnsani Bilimler Dergisi, 9(2),* 419 - 430. 10.13114/MJH.2019.499

UNFCCC, 1992: Birleşmiş Milletler İklim Değişikliği Çerçeve Sözleşmesi. Birleşmiş Milletler, FCCC/INFORMAL/84 GE. 05-62220 (E) 200705, Birleşmiş Milletler İklim Değişikliği Çerçeve Sözleşmesi Sekretaryası, Bonn, Almanya, 24 s., unfccc.int/resource/docs/convkp/conveng.pdf.

URL1, https://pewrsr.ch/2UpGcq7. (Last Date: 10.03.2023)

Van Lange, P.A.M., and Huckelba, A.L. (2021). Psychological distance: how to make climate change less abstract and closer to the self. *Curr.Opin. Psychol. 42,* 49–53. https://doi.org/10.1016/j.copsyc.2021.03.011.

van Valkengoed, A. M., Steg, L., & Perlaviciute, G. (2023). The psychological distance of climate change is overestimated. One Earth, 6(4), 362–391. https://doi.org/ 10.1016/j.oneear.2023.03.006

Wong-Parodi, G., & Feygina, I. (2020). Understanding and countering the motivated roots of climate change denial. *Current Opinion in Environmental Sustainability, 42*, 60–64. https://doi.org/10.1016/j.cosust.2019.11.008

Van Lange, P.A.M., and Huckelba, A.L. (2021). Psychological distance: how to make climate change less abstract and closer to the self. *Curr.Opin. Psychol. 42*, 49–53. https://doi.org/10.1016/j.copsyc.2021.03.011.

APPENDIX

Psikolojik Mesafe için Algıları ve Davranışsal Niyetleri Değerlendiren Sorular

Yapı	Soru	Yanıt seçenekleri
Coğrafi mesafe	"Yaşadığım bölgenin iklim değişikliğinden etkilenmesi muhtemel"	5'li Likert tipi ölçek (Kesinlikle katılıyorum–Kesinlikle katılmıyorum)
	''İklim değişikliği daha çok buradan uzaktaki bölgeleri etkileyecek."	
Sosyal mesafe	"İklim değişikliği en çok gelişmekte olan ülkeleri etkileyecek."	5'li Likert tipi ölçek (Kesinlikle katılıyorum–Kesinlikle katılmıyorum)
	"İklim değişikliğinin benim gibi insanlar üzerinde büyük bir etkisi olması muhtemel."	
Zamansal mesafe	"Türkiye'nin iklim değişikliğinin etkilerini ne zaman hissetmeye başlayacağını düşünüyorsunuz?"	7'li Likert tipi ölçek (Zaten etkilerini hissediyoruz–Hiçbir zaman)
Belirsizlik/Şüphecilik	"İklim değişikliğinin nedenleri hakkında düşündüğünüzde, eğer varsa, aşağıdakilerden hangisi sizin görüşünüzü en iyi şekilde tanımlar?"	6'lı Likert tipi ölçek (Tamamen doğal süreçler-Tamamen insan faaliyeti, bence böyle bir şey yok)
	"İklim değişikliğinin gerçekten olduğundan emin değilim."	5'li Likert tipi ölçek (Kesinlikle katılıyorum–Kesinlikle katılmıyorum)
	"İklim değişikliğinin ciddiyeti abartılıyor."	
	"Çoğu bilim adamı, insanların iklim değişikliğine neden olduğu konusunda hemfikir."	
	"İklim değişikliğinin etkilerinin ne olacağı belirsiz."	
İklim değişikliği ile ilgili endişe	"Bazen 'küresel ısınma' olarak anılan iklim değişikliği konusunda, eğer endişeleniyorsanız, ne kadar endişelisiniz?"	4'lü Likert tipi ölçek (Çok endişeleniyorum–Hiç endişelenmiyorum)
	"İklim değişikliğinin kişisel olarak sizin üzerinizde olabilecek olası etkilerini göz önünde bulundurarak, iklim değişikliği hakkında endişeleniyorsanız ne kadar endişe duyuyorsunuz?"	
	"İklim değişikliğinin genel olarak toplum üzerindeki olası etkilerini göz önünde bulundurursak, iklim değişikliği konusunda ne kadar endişelisiniz?"	
Harekete hazırlık	"İklim değişikliğiyle mücadeleye yardımcı olmak için enerji kullanımımı büyük ölçüde azaltmaya hazırım."	5'li Likert tipi ölçek (Kesinlikle katılıyorum – kesinlikle katılmıyorum)