

# **Earth & Mind**

---

Research Project

## ***Earth and Mind: A comparative analysis of the Polish and the British societies in the context of climate change and mental health***

### **Abstract**

Climate change and its influence on mental health is currently a widely discussed topic due to its profound impact on modern society. A growing body of research has shown alarming results about phenomena such as climate change anxiety as well as other negative climate emotions and mental states. What is highlighted by the researchers is the urgency to examine different societies in that area, as climate change attitudes and mental states can differ due to the unique context of each society's functioning, ways of facing environmental problems, and climate change awareness (Vercammen, Yatirajula, et al., 2023). The research project Earth and Mind is a scientific effort aimed at comparative analysis of the Polish and British societies in the context of their attitudes towards the issue of climate change and its connection to mental health. As part of the project, expert interviews were conducted to explore each country's situation. The research also included the design and dissemination of a research questionnaire in two countries: Poland and the United Kingdom (N = 214, Polish sample = 110, British sample = 104). A wide range of ages (18-65+) as well as the additional variables such as gender, level of education, and current occupation were included. Both questionnaires consisted of exactly the same questions examining the awareness, feelings, beliefs, and climate action of the participants. The findings revealed differences between the countries, but also demographic variables such as age or level of education, which can be further explained by theories and the contextual background described in the paper. Main emotions experienced in both countries included, but were not limited to anxiety and frustration. It can be concluded that the society in the United Kingdom showed a bit more pro-environmental behaviour than the society in Poland. Additionally, it was found out that there is more awareness of mental health in the context of climate change in the United Kingdom than in Poland with denial of anthropological causes of climate change being more prevalent in Poland. Nevertheless, both societies showed a lot of pro-environmental behaviour and many similar emotions in connection to climate change.

## Introduction

The recently published data have shown that the year 2023 was the hottest since the global records began in 1850. The ten warmest years in history occurred in the last decade (NOAA National Centers for Environmental Information, 2024). 99.9 percent of scientists agree on the anthropogenic causes of climate change (Lynas et al., 2021). It is a widely discussed topic, due to its profound impact on society with people naming it among other threats, the most serious problem currently faced by the world (European Commission, 2021).

Apart from the physical impacts, one must remember about the societal influence of ongoing climate change: its influence on global economy, policy, and daily life of every individual. Extreme weather conditions and natural disasters can lead to severe health consequences, including higher susceptibility to a range of conditions in children (Schapiro et al., 2024) and mental health problems like post-traumatic stress disorder, anxiety, and depression (Lawrance, Thompson, et al., 2022; Morgenstein & Ursano, 2020). However, in places which are not affected by climate change in such severe ways, more indirect exposure to it through media, social campaigns, and observable changes in surroundings can also have adverse effects on mental health (Lawrance, Jennings, et al., 2022; Ogunbode et al., 2021; Clayton et al., 2014).

Therefore, what is highlighted by the researchers is the urgency to examine different societies in that area, as climate change attitudes and mental states can differ due to the unique context of each society's functioning, level of direct exposure to negative effects of climate change, awareness and the overall situation in the region (Vercammen, Yatrājula, et al., 2023). Understanding the condition of people can help with implementing effective psychosocial support strategies and equipping specialists with tools needed in their practice to better help individuals suffering.

Moreover, research on climate change attitudes and emotions in relation to mental health can provide useful insight to environmental educators, social scientists, and policy-makers, who need to navigate the process of mobilising the society to take greater action and tackle the problem of climate change and global warming.

Due to the seriousness of the climate change situation and the importance of environmental psychology, this work was created. Its aim is comparative analysis of the Polish and British societies in the context of their attitudes towards the issue of climate change and its connection to mental health. It included conducting 4 expert interviews and the design and dissemination of exactly the same research questionnaire in two countries: Poland and the United Kingdom (N = 214, Polish sample = 110, British sample = 104). It examined the emotions, beliefs, and opinions of the participants on climate change and mental health. The first sections of this work are dedicated to literature review and background, shaping a contextual framework of the paper, including the climate actions taken in both countries and the current status of research regarding both the presence of different mental states in the countries, as well as the theoretical side of the mechanisms behind them. Afterwards, the methods of the research are highlighted. Finally, a statistical analysis of the results is performed and presented as well as discussion of the findings with attention given also to both strengths and weaknesses of the study, potential directions for future explorations, and practical implications.

## **Literature review and background**

Environmental and climate psychology involves a variety of topics dealing with mental health and human responses to nature and climate change. This literature review is aimed at presenting the current state and findings of this research area as well as analysing specific academic endeavours undertaken in the context of two countries compared in the study: Poland and the United Kingdom.

What is highlighted by researchers in the context is that humans and nature are in a mutual relationship. Spending time in nature is assessed as an important part of human well-being and it can positively affect mental health (Dittmer et al., 2023; Chandekar, 2024; Alavi et al., 2021). Moreover, it was shown that people who spend time in nature are able to care more about the environment, so spending time in natural environments also promotes pro-environmental behaviour (Richardson & Hamlin, 2021).

Therefore, the disturbance of the natural environment can evoke negative feelings in individuals. The concept of eco-anxiety and environmental distress are two among many terms used to describe the negative mental states present in today's societies, due to climate change. Interestingly, daily challenges do not inhibit these reactions. A study conducted by Lawrence, Jennings, et al. revealed that even during the COVID-19 pandemic, climate change induced significantly bigger amounts of distress in young people than the pandemic itself. One of the possible interpretations is that climate change "represents a more enduring existential threat" (Lawrence, Jennings, et al., 2022, p. 734). As a matter of fact, while people keep being engaged in daily life challenges and problems, eco-anxiety, and environmental distress do not go away as climate change keeps surrounding us continuously.

It is important to understand the characteristics of these various climate change mental states and their causes. Reactions to climate change are varied and it was shown may include all: cognitive, emotional, and behavioural responses (Schwartz et al., 2022). There is a range of mental responses identified in the literature, starting from anxiety, worry, distress, hope, positivity, interest, engagement to guilt, shame, sadness, fear, powerlessness, grief, despair, anger and disgust (Lawrence, Jennings, et al., 2022; Schwartz et al., 2022, Hickman et al., 2021; Clayton et al., 2022).

Unfortunately, if the worries, negative emotions, and distress are persistent and quite severe, they can lead to functional impairment, disabling an individual to engage in daily activities. There is a strong negative correlation between climate change and mental health (Ogunbode et al., 2021; Ogunbode et al., 2022; Charlson et al., 2021). Negative climate-related emotions showed a significant positive correlation with insomnia symptoms (Ogunbode et al., 2021). A study conducted in Germany by Trost et al. revealed that 72% of psychotherapists see patients, who experience climate change-related concerns. It is hypothesised that people who already experience mental health problems can have them exacerbated, due to these concerns. Although the majority of the specialists felt confident with their knowledge, half of them still reported the need to have more information and training on how to deal with such concerns in therapy (Trost et al., 2024)

Learning how to deal with mentioned mental states can be very beneficial for both individual wellbeing and the planet. Another array of research deals with finding which mental states

and methods can increase the chance of supporting climate change policies and implementing personal action in the context of climate change. It is important to understand the emotional spectrum present in each of the countries and socioeconomic settings, keeping their context in mind as it can help climate change educators and psychologists foster emotions which can lead to more engagement and support for global warming policies and actions. Worry is potentially the strongest predictor. The most worried people were the most likely to support national climate and energy policies. It can be explained by the fact that ecological worry is rather adaptive and boosts reflection and critical thinking about the topic. It is also a state evoked mainly by personal events with people valuing the environment, feeling very worried and personally responsible to tackle the problem. As mentioned in a work by Bouman et al. - "Applied to the context of climate change, worry about climate change signals that an individual is actively and emotionally engaged with the topic of climate change and feels personally bothered by its consequences, making this person seemingly motivated to act upon the issue." (Bouman et al., 2020, p. 2). However, other emotions such as fear, guilt, shame, and sadness can sometimes be counterproductive and we should eliminate them. Due to the abstractness, distance, scale and difficulty in understanding the issue of climate change many people might distance themselves from the issue or feel very overwhelmed with what they could do to change the situation, therefore remaining inactive (Bouman et al., 2020, Clayton, et. al., 2014). As written by Hayes et al. - "The overarching threats of a changing climate, can also incite despair and hopelessness as actions to address the 'wicked problem' of climate change seem intangible or insignificant in comparison to the scale and magnitude of the threats" (Hayes et al., 2018, p. 2). Being afraid of something which is individually uncontrollable may result in higher levels of anxiety and distancing, being an observed mental response as well. The positive emotions such as interest and hope were found to be strongly associated with greater policy support - "feeling good about doing the right thing can be an important motivator of behaviour change" (Smith & Leiserowitz, 2013, p. 945). This conclusion was repeated in a number of other research articles (Smith & Leiserowitz, 2013; Bouman et al., 2020; Vercammen, Oswald et al., 2023).

While some studies showed that people who were more distressed were also more likely to report greater level of agency, the research was also produced which did not indicate a correlation between climate anxiety measured using scale, and personal engagement (Morganstein & Ursano, 2020). Importantly, recent research published by Vercammen, Oswald et al. suggest that distress is a multidimensional experience, as while it could evoke feelings of guilt, shame, lack of action and agency, at the same time participants with higher levels of distress are more likely to derive fulfilment and wellbeing benefits from climate action (Vercammen, Oswald, et al., 2023). Importantly, only very strong mental responses should be seen as pathological or maladaptive as mentioned before.

One of the activities that could protect mental health is taking action (Vercammen, Oswald, et al., 2023). According to research in that area, climate activism showed opportunities for protecting mental health and lowering symptoms of both general anxiety disorder and major depression disorder (Schwartz et al., 2022). Interestingly collective action can also lead to constructive hope, which in turn can lead to more action and policy support (Smith & Leiserowitz, 2013; Steg, 2023). What is highlighted by many is therefore the urge to emphasise the importance of collective support and framing positive narratives and behaviour to protect mental health and promote climate change action. Social norms and

behaviours are also an important aspect indicating that positive role models and the narration in a given society are also important indicators of action (Hickman et al, 2021). What can be demotivating and negative for mental health to a large extent is the failure of government and local organisations to acknowledge and fight against climate change. Positive youth development frameworks and the BUC(k)ET model of core social motives are also objects under investigation (Pereira & Freire, 2021; Brick et al., 2021), which can prove useful in promoting practices that would serve local communities.

Interestingly not every individual responds in the same way, multiple studies revealed that people of younger age, women, and better educated people are more prone to experiencing negative mental states, due to climate change (Searle & Gow, 2010, Vercamen, Oswald, et al., 2023; Watts & Campbell, 2020). In a study by Clayton et al. young women were more likely to report emotions such as: sadness, helplessness, anxiety, fear, anger, guilt, shame, hurt, despair, grief, and powerlessness, whereas men were more likely only to report positivity or indifference (Clayton et al., 2022). Another study revealed that women were also less likely to be climate change deniers (Nartova-Bochaver, 2022). Half of child psychiatrists in the UK say patients have symptoms of environmental anxiety and that it is more common in them than in older and not educated people (Royal College of Psychiatrists, 2020; Watts & Campbell, 2020).

The scientists dedicated themselves to looking at different world's populations and individuals. The studies concerned both countries, gender and age. When it comes to climate change psychology research specifically conducted in countries examined, a big disproportion of amount of research can be found. While in the UK lots of literature is produced in the area, in Poland climate psychology is still a new area without a lot of research and scientific articles which makes the topic even more important to examine in the Polish context and see whether the conclusions from the studies regarding the UK can be applied to the Polish context and whether there will be significant differences between the countries analysed in the study. In order to establish the context, below is a summary of current research conducted specifically in Poland and the UK can be found.

As already mentioned, in Poland, climate psychology is a very new concept and a developing field with many people still neglecting the issue. However, some articles and scientific work still can be found in the field. In "Climate depression. Critical analysis of the concept" Magdalena Budziszewska and Weronika Kałwak come to their conclusions based on literature review and studies performed. Participants declared depressive symptoms, anxiety, and resignation, some of them even referred to different mental phenomena such as climate change depression. The topic was present in groups of adolescents, students, activists, and psychotherapy patients. However, although the studies can provide valuable insight regarding the topic, as the authors inform "most of them are still in progress" (Budziszewska and Kałwak, 2022, p. 172). Another study found that Polish women are more likely to develop an environmental identity and engage in pro-environmental behaviour than men (Le Hai & Larionow, 2022). A literature review "Climate change and its influence of the chosen sectors in Poland" showed that Polish people were generally less worried about climate change, with more climate deniers being present in the country in comparison to other EU countries, however the review comes from 2017 itself and is based on mainly old studies, which might not reflect the current situation in Poland (Kundzewicz et al., 2017). Fortunately, the most recent report developed outside of academia gave important insights

into the beliefs and emotions of Polish society. The attitudes in the country are divided (UN Global Compact Network Poland et al., 2022). 50 percent of the participants marked climate change and environmental pollution as one of the biggest dangers for the world we live in. On the other hand, there are more people who do not take action in comparison to 2019 thinking that the environmental situation is either not that bad or ecology is a figment, they account for almost half of the sample. 18 percent of respondents think that human actions do not influence the environment negatively and even help it, which confirms the large percentage of deniers of the anthropogenic causes of the environment present in the country (UN Global Compact Network Poland et al., 2022).

Also, lack of agency and a more negative outlook of the younger generation is observed by the researchers. According to the report, 3 in 10 people think that they are not influential enough to impact the counteraction against climate change. The youngest age group (18 – 25) is twice as likely to think that it is too late to prevent climate change. 23 percent of young people agree with this claim: “Others are responsible for the ecological disaster, and I am not going to do anything about it”. (UN Global Compact Network Poland et al., 2022, p. 12). . In comparison to 18 percent of people in the whole Polish society (UN Global Compact Network Poland et al., 2022).

When it comes to the UK, in one of the studies, sadness, anxiety, and fear were the top three reported emotions (Clayton et al., 2022). Another international comparative analysis revealed that the UK was leaning towards hope (Böhm et al., 2023). Variety of both national and cross-national research including UK as a participating country has been conducted (Lawrance, Jennings, et al., 2022; Verplanken & Roy, 2013; Clayton et al., 2022, Böhm et al., 2023, Ogunbode et al., 2022, Hickman et al., 2021, Vercammen, Oswald, et al., 2023). A study conducted by KCL Policy Institute, showed that 46 percent of Britons think climate change is an important problem with the youngest age group seeing it as even more serious (Ipsos, 2023). The most frightened group were once again the youngest people, who also were more likely to think that climate change is beyond control, representing the same more pessimistic outlook just like young people in Poland (YouGov, 2023). In the study performed by YouGov UK 73 percent of people thought that climate is changing because of human activity (YouGov, 2023), whereas another study, although quite old (from 2010) revealed that 89 percent of Britons believed that human activity played a causal role in climate change (Reser et al., 2012), both of these studies account for a bigger number of people believing in anthropogenic causes of climate change than in Poland (comparing it with the previously mentioned report). A high percentage of dissatisfaction with the government can be seen with 48 percent of respondents being not satisfied with its climate action (YouGov, 2024) and 49 percent think the government is incompetent (PERITIA, 2022b). Once again young people indicated a higher percentage with 68 percent of young people not agreeing that their government is doing enough (YouGov 2024). Similarly, in another study Polish people were very dissatisfied with their government with 6 in 10 people believing that the government is dishonest and incompetent when it comes to dealing with climate change, acts in their own interest and is closed to new ideas when it comes to dealing with climate change (PERITIA, 2022b). Unfortunately, as mentioned previously, it is argued that failure of governments to adequately reduce climate change is contributing to psychological distress (Hickman et al., 2021).

Relevant to one of the questions I have constructed for this study, 35 percent of young people in the UK found to be dismissed or ignored by others while talking about climate change (Hickman et al., 2021). People in Poland were most likely to say that the central government and businesses should work to prevent environmental catastrophe (UN Global Compact Network Poland, 2022)

A specific type of research is so-called “cross-national” study, where many countries are analysed at once. There are lots of different cross-national studies where the UK (Clayton et al., 2022; Böhm et al., 2023; Ogunbode et al., 2022; Hickman et al., 2021; Vercammen, Oswald, et al., 2023) has been included, and far fewer studies with Polish people being participants.

The only two studies conducted by the same institution found with the UK and Poland together were “Public perceptions on climate change.” and “Public perceptions on institutions tackling climate change”. The results showed that more Polish people were worried about the impact of climate change on their country, humanity, and for themselves than people in the UK. UK people were also more pessimistic than Polish people with 27 percent agreeing that there is no point in changing their behaviour as it won’t make any difference anyway. A strong feeling of lack of agency (already pointed out by previously discussed studies) with 55 percent of Polish people thought it is too difficult for someone like them to do much about climate change is visible (PERITIA, 2022). However, it is still important to acknowledge that the differences observed in this study were based on percentage seen, rather than a statistical test, which would confirm significance of the differences. Moreover, no comparative study which would include only Poland and the UK was found.

## **Background - country analysis**

In order to understand the situation further, this section is dedicated to a deeper analysis of the situation in both states. In the UK the year 2022 has been the hottest on the record with the temperatures exceeding 40 degrees Celcius for the first time (Department for Energy Security and Net Zero, 2023). Nevertheless, the UK has been considered to be a global leader in action against climate change for a long time. The discussion about climate change in this country has started back in the 20st century with Margaret Thatcher becoming one of the early leaders in the world to mention climate change (Kishinani and Smith, 2020). The majority of British coal mines were shut at the time. Afterwards the Blair government and 2010 coalition have both introduced some positives such as Tyndall Centre or the Climate Change Levy (Kishinani & Smith, 2020). Moreover, in 2008, the UK became the first country in the world to create a legal commitment, in order to reduce the greenhouse gases emissions (Greenpeace, 2023). The Climate Change Act, included the creation of a special Climate Change Committee, which deals with carbon budgets among other strategies to cope with climate change (Greenpeace, 2023). In 2015 the UK signed the world’s largest policy, the Paris agreement on climate change (Greenpeace, 2023). The country is also the heart of multiple famous climate change activism organisations with the Extinction Rebellion being one of the few. The United Kingdom is also the place of many leading academic institutions, researchers, and specialists dealing with the topic. With all of these actions, the UK has become a “global climate leader” being highly ranked regarding climate actions by various organisations (ClimateTrade, 2023). Recently however, it started losing its title, which can be indicated by falling from the 11<sup>th</sup> to the 20<sup>th</sup> position in the “Climate change



performance Index” just in one year (Climate Change Performance Index, 2023). It is attributed to the election of a conservative party, which contributed to several policy changes. Many claim that UK has currently worse environmental laws than the European Union Countries (Pearce, 2023; Niranjana, 2024). The Guardian has found that dozens of chemicals and pesticides are still allowed in the UK, whereas the EU has already banned them. “On the world stage, these policy changes show that the U.K. is turning its back on a global leadership position,” wrote Joeri Rogelj, director of research at the Grantham Institute for Climate Change and Environment at Imperial College London, quoted in the recent Guardian article (Pearce, 2023, p. 1). On the other hand the current government and some UK citizens believe that the UK goes beyond the EU and that nothing in particular has changed (Niranjana, 2024). This recent political tension might be therefore reflected in the answers of the UK participants in the study.

Up to 1989 Poland was a communist country (Polish People’s Republic) with a centrally controlled economy. After the change of regime, there was an intensive period of transformation and economic growth including modernization of the energy sector. In 1998 Poland signed the Kyoto Protocol with the goal of decreasing greenhouse gases emission and successfully completed the goal between 2008 and 2012 (Instytut Ochrony Środowiska Państwowy Instytut Badawczy, 2019). Moreover Poland joined the European Union in 2004, which also marked the start of important action against climate change. The country also hosted COP conferences three times (Instytut Ochrony Środowiska Państwowy Instytut Badawczy, 2019). Over the years the overall energy production coming from coal fell from 95 percent to 60 percent with the coal mining industry being still active (Instytut Ochrony Środowiska Państwowy Instytut Badawczy, 2019) contrary to the UK with coal accounting for only one percent of total energy production (Electricity Explained, 2024). The former Polish government, PiS (Law and Justice), did not support many of the EU policies with the leader of the ruling party calling them “madness” (Wilczek, 2021). In 2021 report produced by EU showed that carbon intensity of Poland was the second highest in EU accounting for EU’s largest coal deposits (European Parliament, 2021). CCPI ranking noted the domination of coal in Poland’s energy mix as well (Poland ranked 55, 35 places worse than the UK) (Climate Change Performance Index, 2023). In comparison to UK with its 112 place, Poland occupying the 74th position has worse air quality (IQAir, 2024). On 10<sup>th</sup> of January 2024 three Polish cities were in the top 10 polluted in the world according to the World Air Quality Index (Wojcieszek, 2024). However at the same time, the renewable energy sources became more popular, with the share of them being doubled between 2005 and 2019 (Instytut Ochrony Środowiska Państwowy Instytut Badawczy). Sadly, the most popular source of renewable energy is biomass contributing to extensive forest harvesting and a conflict of interest in maximising the profits of wood sales and protecting the forests at the same time (Climate Change Performance Index, 2023). Another important aspect is lack of intensive climate change psychology research in the country with only a couple of papers found in the discipline and beginning of the discussion about mental health in the context. On the positive side Poland met EU’s 2020 environmental targets and is among the leading countries in terms of heat pump sales (Climate Change Performance Index, 2023). The current new government claims to be more supportive and has ambitions to become “a green player” in Europe (Kurmayer, 2024). However, there are still many people against the EU green deal policy with Polish farmers’ strikes against “Green Poison” being one of the most visible (Stężycki, 2024). Thus, once again like in the case of the UK a range of responses can be visible and to tackle climate change effectively a more coherent vision of transformation should be seen in the country. European Union Membership is definitely one of the most

important aspects of climate change action and policy in Poland, however, there are still several aspects of climate change action that are needed to be taken care of and range of responses regarding it.

## ***Methodology***

The following section is dedicated to the description of methodology. In order to check the hypotheses established and fulfil the aims of this research both qualitative and quantitative methods were chosen. The latter one was exemplified by the development of the online survey. Thanks to it, data about respondents and their views concerning climate change and mental health was gathered. The questions of the survey can be seen in Appendix 1 and Appendix 2. The research concerned two countries - the United Kingdom and Poland and therefore the same survey was distributed in both of them. In order to facilitate the process, the survey distributed in Poland was translated from English to Polish. In the end, the survey was answered by 214 respondents in total (110 respondents from Poland and 104 respondents from the United Kingdom). The selection of the two given countries was influenced by the fact that, as shown in the background section, they are differing in their characteristics, history, trajectory and the current geopolitical affiliation.

The first group of questions of the survey considered the age, gender, education level and employment status to establish the profile of the respondents and later on include demographic variables in analysis of the results. Afterwards, the questions were dedicated to the issues of climate change. Some of them were open-ended questions in order to give respondents more flexibility in their answers. Additionally, to facilitate it even further, the final question was an open-ended one prompting the respondents to share all the thoughts on the topic that the person might have had. For the other questions the respondents could select answers from the provided list (e.g. emotions) or choose their opinion on a 5-level scale. Thanks to choosing the survey as a method and selecting a wide range of questions, a number of topics connected to mental health and climate change were covered and could be researched. Afterwards, the statistical analysis was performed using the open source GNU PSPP software. Student's t-test and Levene's Test For Equality of Variances were used. Apart from that, the values will be compared and visually presented. Furthermore, a qualitative method was used in the form of 4 expert interviews (3 video-calls and 1 written exchange) with psychologists, researchers, psychoanalysts, ecologists. These were semi-structured and considered the topics of climate change from the given perspective and in a given country as the interviewees came from a number of backgrounds and both analysed countries (3 from the United Kingdom, 1 from Poland). They were selected based on their profiles and willingness to participate. The interviews provided interesting insights useful for the research and discussion.

### **Data analysis**

Based on the literature review and background analysis, 4 different research questions were developed:

- Is society in the United Kingdom more ecological and showing more pro-environmental behaviour than the society in Poland?
- Do more negative emotions prevail in the United Kingdom, in the context of climate change, than in Poland?
- Is there more awareness of mental health in the context of climate change in the United Kingdom than in Poland?
- Is there a greater sensitivity of the younger generation to climate change and emotions connected to it?

Connected to that, six null and six research hypotheses were developed:

First set:

- There is no significant difference in the amount of pro-environmental attitudes demonstrated in the countries studied.
- There is a statistically significant difference in the amount of pro-environmental attitudes demonstrated in the countries studied.

Second set:

- There is no significant difference in the type of emotions present in the countries studied.
- There is a statistically significant difference in the type of emotions present in the countries studied.

Third set:

- There is no significant difference in awareness related to mental health in the context of climate change in the countries studied.
- There is a statistically significant difference in awareness related to mental health in the context of climate change in the countries studied.

Fourth set:

- There is no significant difference between age groups
- There is a statistically significant difference between age groups

#### Fifth set

- There is no significant difference between people with different educational backgrounds
- There is a statistically significant difference between people with different educational backgrounds

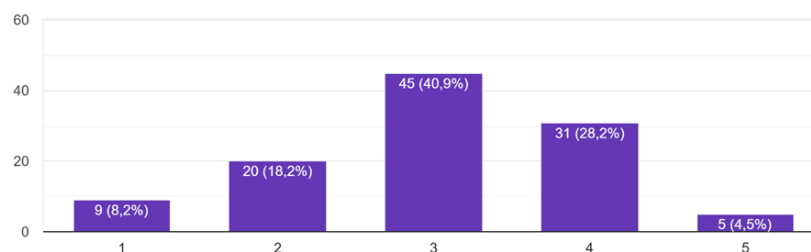
#### Sixth set

- There is no significant difference between genders
- There is a statistically significant difference between genders

In the first question of the survey (apart from the ones dedicated to demographic aspects) the respondents answered the open-ended question about the ways in which they care about the environment. The responses varied and respondents listed plenty of activities, however some trends could be seen when analyzing the answers. In case of the respondents from the UK answers involved "recycling" in 40 cases, transport connected measures were mentioned 24 times, issues connected to diet 18 times, avoiding plastic 16 times, not overconsuming 8 times, saving water 8 times, taking political action/voting for ecologically-friendly parties 8 times, saving energy 7 times. In case of Poland, sorting/segregating waste was by far the most common answer, listed by 78 out of 110 respondents (71%), often as the only activity, saving water was listed 31 times, avoiding plastic or using reusable bags 20 times, saving energy 19 times and actions connected to transport 14 times.

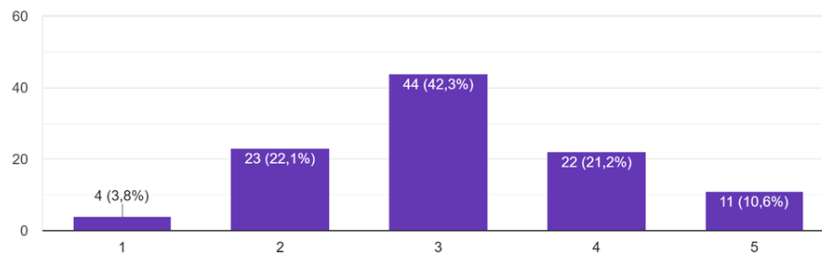
In the next question the participants indicated how they assess the influence of their activities connected with environmental protection. We can see that in both countries the responses were similar with most people (roughly 40%) choosing the middle option (Fig. 1, Fig. 2).

Jak oceniasz sprawczość swoich działań związanych z ochroną środowiska?  
110 odpowiedzi



**Fig. 1 How do you assess the influence of your activities connected with environmental protection? (Responses from Poland)**

How do you assess the influence of your activities connected with environmental protection?  
104 odpowiedzi



**Fig. 2 How do you assess the influence of your activities connected with environmental protection? (Responses from the United Kingdom)**

A Student's t-test for independent samples was then used in relation to that question.

Group	N	Average	Standard deviation	Standard error of the mean
Poland	110	3,03	0,99	0,09
United Kingdom	104	3,13	1	0,1

**Table 1. Average, standard deviation and standard error of the mean in relation to the question “How do you assess the influence of your activities connected with environmental protection?”**

The difference between the averages in the compared groups was found to be statistically insignificant ( $t=-0.72$ ;  $p>0.05$ ).

	Levene's Test For Equality of Variances	T-test for Equality of Means
--	---	------------------------------

	F	p	t	df	Sig. (2-tailed)	Difference in averages	Standard error of difference	95% confidence interval for the difference	
								Lower limit	Upper limit
Equal variances assumed	0,19	0,662	-0,72	212	0,474	-0,1	0,14	-0,37	0,17
Equal variances not assumed			-0,72	211,03	0,474	-0,1	0,14	-0,37	0,17

**Table 2. T-test for the question “How do you assess the influence of your activities connected with environmental protection?”**

The Student's t statistic was also used to test the hypothesis of a difference between the inhabitants of Poland and Great Britain in terms of how serious the problem of climate change is.

The data presented in the table below shows that UK residents rate the problem of climate change as more serious than Poles.

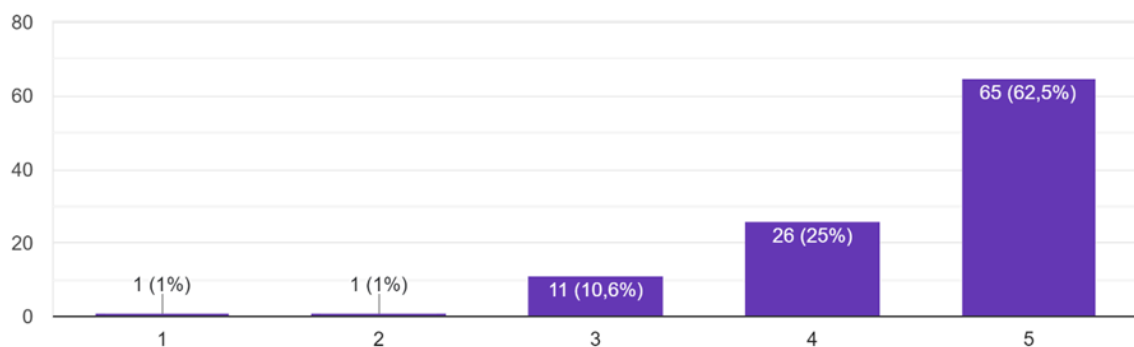
Group	N	Average	Standard deviation	Standard error of the mean
Poland	110	3,95	1,16	0,11
United Kingdom	104	4,47	0,8	0,08

**Table 3. Answers to “How serious do you think the issue of climate change is?”**

This is also visible on the bar charts below (fig. 3 and fig. 4). 62.5% of the British respondents chose the highest level of severity (extremely serious), meanwhile in case of Poland it was only 42.7%. Additionally, 6 respondents from Poland (5.5%) thought that the issue of climate change is not serious at all with only 1 person choosing the same answer in case of the British survey (~1%).

How serious do you think the issue of climate change is?

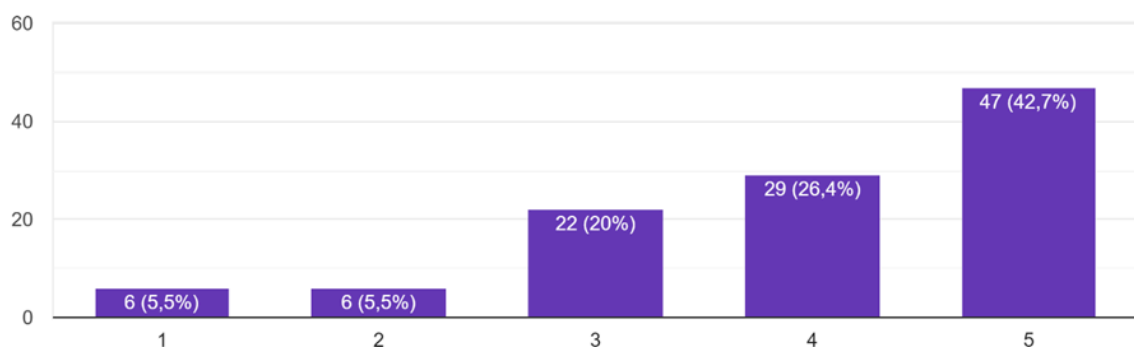
104 odpowiedzi



**Fig. 3 How serious do you think the issue of climate change is? (Responses from the United Kingdom)**

Jak poważny jest według Ciebie problem zmian klimatu?

110 odpowiedzi



**Fig. 4 How serious do you think the issue of climate change is? (Responses from Poland)**

Statistical analysis using Student's t method for independent samples confirms the significance of the aforementioned difference. It can therefore be concluded that the British assess the problem of climate change as more serious than the Poles ( $t=-3.81$ ;  $p<0.001$ ).

	Levene's Test For Equality of Variances		T-test for Equality of Means						
	F	p	t	df	Sig. (2-tailed)	Difference in averages	Standard error of difference	95% confidence interval for the difference	
								Lower limit	Upper limit
Equal variances assumed	9,972	0,002	-3,77	212	0,000	-0,52	0,14	-0,79	-0,25
Equal variances not assumed			-3,81	194,2	0,000	-0,52	0,14	-0,78	-0,25

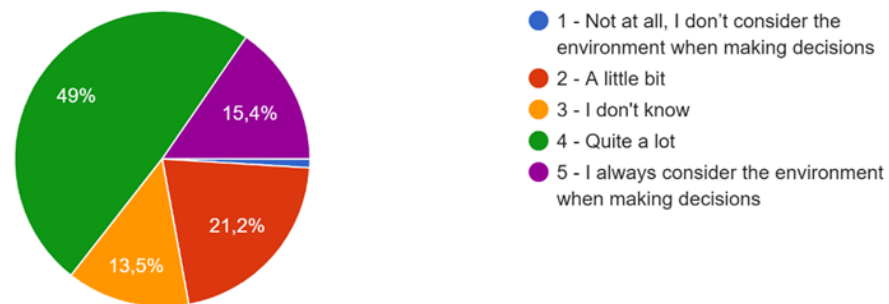
**Table 4. T-test for the question “*How serious do you think the issue of climate change is?*”**

The next question also confirms more ecological approach of the British respondents, 15.4% of whom always consider the environment when making decisions (Fig. 5). Meanwhile, only 5.5% respondents from Poland have chosen this answer.



To what extent do you consider ecological choices when making daily decisions?

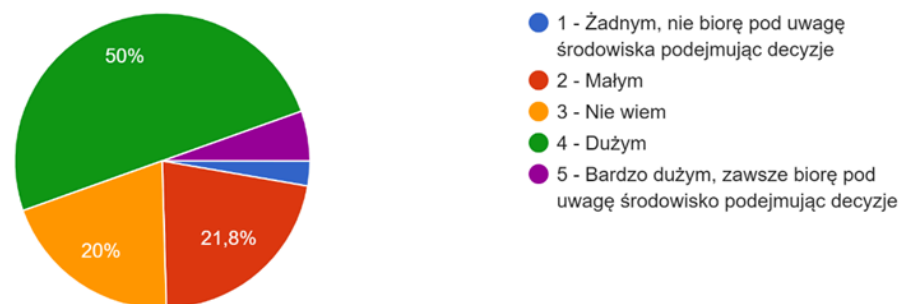
104 odpowiedzi



**Fig. 5 To what extent do you consider ecological choices when making daily decisions? (Responses from the United Kingdom)**

W jakim stopniu bierzesz pod uwagę aspekty ekologiczne podejmując decyzje na co dzień?

110 odpowiedzi



**Fig. 6 To what extent do you consider ecological choices when making daily decisions? (Responses from Poland)**

The relationship between nationality and the degree to which decisions are determined by ecological aspects was then analysed.

The largest number of respondents declared that they are very much guided by environmental aspects in their decision-making. In contrast, the fewest admitted that they do not consider these issues at all in their decision-making.

To what extent do you take ecological aspects into account when making decisions on a daily basis?		Country		Total
		Poland	United Kingdom	
None	Numbers	3	1	4
	Number expected	2,06	1,94	0,02
	%	2,7	1	1,9
Small	Numbers	24	22	46
	Number expected	23,64	22,36	0,21
	%	21,8	21,2	21,5
I don't know	Numbers	22	14	36
	Number expected	18,5	17,5	0,17
	%	20	13,5	16,8
Large	Numbers	55	51	106

	Number expected	54,49	51,51	0,5
	%	50	49	49,5
Very large	Numbers	6	16	22
	Number expected	11,31	10,69	0,1
	%	5,5	15,4	10,3
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

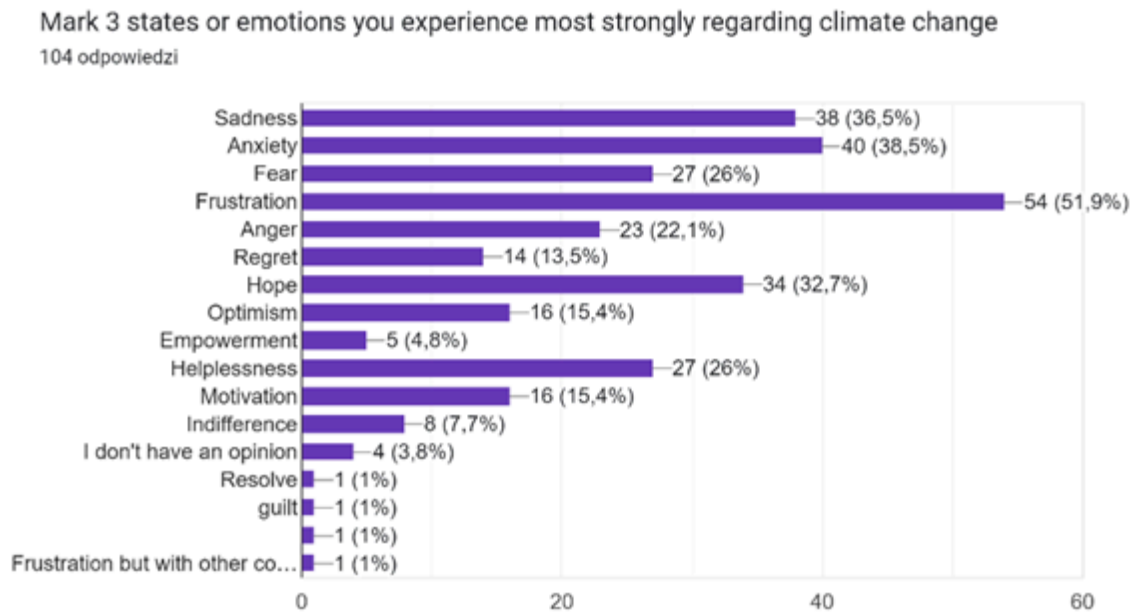
**Table 5. The choice of “optimism” as an emotion experienced the most strongly by the respondents.**

Based on the results of the chi-square test ( $\chi^2 = 7.4$ ;  $p > 0.05$ ), we do not have sufficient evidence to conclude that there is a statistically significant relationship between the study variables. This means that the differences between observed and expected frequencies are likely to be the result of random chance rather than a true relationship between the variables. The null hypothesis of no relationship between the variables was not rejected.

The frequency of different emotions in relation to climate change was also assessed and statistically analysed.

As visible on the figures 7 and 8 below, in case of the UK the frustration was the only emotion chosen by more than 50% of respondents. Interestingly, in case of Poland

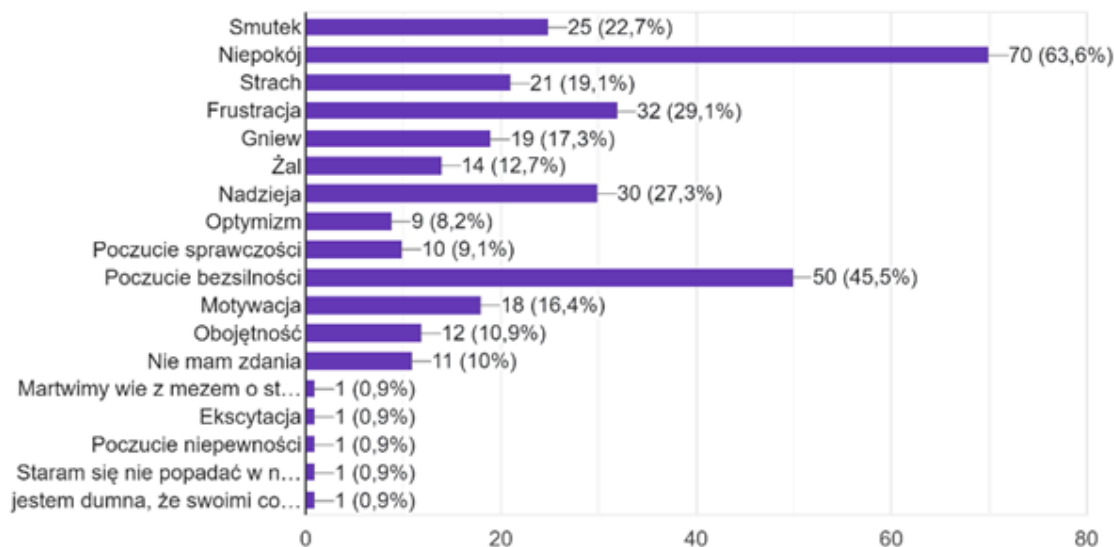
frustration was the third most common choice, preceded by helplessness (45.5%) and anxiety (63.6%). In case of the UK anxiety was selected in 38.5% cases.



**Fig. 7 Mark 3 states or emotions you experience most strongly regarding climate change (Results from the United Kingdom)**

Zaznacz 3 stany lub emocje, które najczęściej towarzyszą Ci w odniesieniu do zmian klimatu.

110 odpowiedzi



**Fig. 8 Mark 3 states or emotions you experience most strongly regarding climate change (Results from Poland)**

Afterwards, the emotions or states were grouped based on their potential to cause mental health issues.

It was found out that emotions typically assessed as “positive” being hope, optimism, empowerment, motivation and pride, were chosen 71 times (22.9% of choices) in case of the United Kingdom and 67 times (20.7% of choices) in case of Poland. The other category were the emotions typically assessed as “negative” - sadness, anxiety, fear, frustration, anger, regret, helplessness, guilt, uncertainty, worry. These constituted 72.5% choices in the United Kingdom and 71.2% of choices in Poland. The remaining percentage of answers were of “I don’t know” or “Indifference” as well as the ones proposed by participants and classified as neutral.

As already mentioned, frustration was indicated more often by the British than by the Polish.

Frustration	Country	Total
-------------	---------	-------

		Poland	United Kingdom	
no	Numbers	78	49	127
	Number expected	65,28	61,72	0,59
	%	70,9	47,1	59,3
yes	Numbers	32	55	87
	Number expected	44,72	42,28	0,41
	%	29,1	52,9	40,7
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 6. The choice of “frustration” as an emotion experienced the most strongly by the respondents.**

To determine whether there is a statistically significant relationship between nationality and feelings of frustration in relation to climate change, a chi-square test of independence was used. The statistically significant result of the chi-square test ( $\chi^2 = 12.54$ ;  $p < 0.001$ ) confirms the relationship between nationality and feelings of frustration in relation to climate change.

Anger was chosen slightly more often by Poles than by UK residents.

Anger		Country		Total
		Poland	United Kingdom	
no	Numbers	91	81	172
	Number expected	88,41	83,59	0,8
	%	82,7	77,9	80,4
yes	Numbers	19	23	42
	Number expected	21,59	20,41	0,2
	%	21,59	20,41	19,6
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 7. The choice of “anger” as an emotion experienced the most strongly by the respondents.**

However, the statistically insignificant result of the chi-square test ( $\chi^2 = 0.79$ ;  $p > 0.05$ ; ni.) does not confirm the relationship between nationality and feelings of anger towards climate change.

Poles were also more likely than UK residents to identify regret as one of the emotions associated with climate change.

Regret		Country		Total
		Poland	United Kingdom	
no	Numbers	96	81	177
	Number expected	90,98	86,02	0,83
	%	87,03	77,9	82,7
yes	Numbers	14	23	37
	Number expected	19,02	17,98	0,17
	%	12,7	22,1	17,3
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1



	%	100	100	100
--	---	-----	-----	-----

Based on the non-statistically significant result of the chi-square test ( $\chi^2 = 3.29$ ;  $p > 0.05$ ; ni.), the hypothesis of a relationship between nationality and feelings of regret in relation to climate change can be rejected.

Poles were more likely than the British to indicate anxiety as an emotion they feel towards climate change.

Anxiety		Country		Total
		Poland	United Kingdom	
no	Numbers	40	64	104
	Number expected	53,46	50,54	0,49
	%	36,4	61,5	48,6
yes	Numbers	70	40	110
	Number expected	56,54	53,46	0,51
	%	63,6	38,5	51,4
Total	Numbers	110	104	214

	Number expected	0,51	0,49	1
	%	100	100	100

**Table 8. The choice of “anxiety” as an emotion experienced the most strongly by the respondents.**

Based on the statistically significant result of the chi-square test ( $\chi^2 = 13.56$ ;  $p < 0.001$ ), it can be concluded that there is a relationship between nationality and feelings of anxiety in the face of climate change.

Feelings of powerlessness were more often associated with climate change by Polish than British residents.

Sense of powerlessness		Country		Total
		Poland	United Kingdom	
no	Numbers	60	77	137
	Number expected	70,42	66,58	0,64
	%	54,5	74	64
yes	Numbers	50	27	77

	Number expected	39,58	37,42	0,36
	%	45,5	26	36
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 9. The choice of “powerlessness” as an emotion experienced the most strongly by the respondents.**

The statistically significant result of the chi-square test of independence of the two variables ( $\chi^2=8.82$ ;  $p<0.05$ ) confirms the relationship between nationality and experience and experience of feeling powerless in relation to climate change.

Some respondents indicated positive emotions in relation to climate change. One of these was hope, which was indicated by a comparable number of Poles and Britons.

Hope		Country		Total
		Poland	United Kingdom	
no	Numbers	80	70	150

	Number expected	77,1	72,9	0,7
	%	72,7	67,3	70,1
yes	Numbers	30	34	64
	Number expected	32,9	31,1	0,3
	%	27,3	32,7	29,9
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 10. The choice of “hope” as an emotion experienced the most strongly by the respondents.**

Statistical analysis based on the chi-square test confirmed that there was no relationship between nationality and the experience of hope in the face of climate change ( $\chi^2 = 0.75$ ;  $p > 0.05$ ; ni.).

Sadness in the context of climate change was indicated more often by Poles than the British.

Sadness	Country	Total
---------	---------	-------

		Poland	United Kingdom	
no	Numbers	85	66	151
	Number expected	77,62	73,38	0,71
	%	77,3	63,5	70,6
yes	Numbers	25	38	63
	Number expected	32,38	30,62	0,29
	%	22,7	36,5	29,4
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 11. The choice of “sadness” as an emotion experienced the most strongly by the respondents.**

A statistically significant chi-square test result confirms the relationship between nationality and the experience of sadness in the face of climate change ( $\chi^2 = 4.91$ ;  $p < 0.05$ ).

Fear appears to be an emotion that is felt to a comparable degree by Poles and UK residents in the face of climate change. The majority of survey participants did not identify this emotion as accompanying climate change.

Fear		Country		Total
		Poland	United Kingdom	
no	Numbers	89	77	166
	Number expected	85,33	80,67	0,78
	%	80,9	74	77,4
yes	Numbers	21	27	48
	Number expected	24,67	23,33	0,22
	%	19,1	26	22,4
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 12. The choice of “fear” as an emotion experienced the most strongly by the respondents.**

The non-significant result of the chi-square test ( $\chi^2 = 1.45$ ;  $p > 0.05$ ; n.i.) confirms the absence of a relationship between nationality and feelings of fear in the face of climate change.

Optimism was slightly more frequently associated with climate change by UK residents than Poles. However, the data presented in the table below shows that this emotion was indicated by a minority of respondents.

Optimism		Country		Total
		Poland	United Kingdom	
no	Numbers	101	88	189
	Number expected	97,15	91,85	0,88
	%	91,8	84,6	88,3
yes	Numbers	9	16	25
	Number expected	12,85	12,15	0,12
	%	8,2	15,4	11,7
Total	Numbers	110	104	214

	Number expected	0,51	0,49	1
	%	100	100	100

**Table 13. The choice of “optimism” as an emotion experienced the most strongly by the respondents.**

The result of the chi-square test of independence of the two variables was found to be statistically insignificant ( $\chi^2 = 2.69$ ;  $p > 0.05$ ; ni.), which allows us to reject the hypothesis of a relationship between nationality and feelings of optimism towards climate change.

A comparable number of people surveyed from both countries also indicated motivation as an emotion accompanying climate change. The vast majority of survey participants did not associate this emotion with climate change.

Motivation		Country		Total
		Poland	United Kingdom	
no	Numbers	92	88	180
	Number expected	92,52	87,48	0,84
	%	83,6	84,6	84,1



yes	Numbers	18	16	34
	Number expected	17,48	16,52	0,16
	%	16,4	15,4	15,9
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 14. The choice of “motivation” as an emotion experienced the most strongly by the respondents.**

The result of the chi-square test of independence of the two variables was found to be statistically insignificant ( $\chi^2 = 0.04$ ;  $p > 0.05$ ; ni.). On this basis, the hypothesis of a relationship between nationality and feelings of optimism towards climate change can be rejected.

Few of those surveyed indicated a feeling of indifference in the context of climate change. A comparable number of respondents from both groups associated this emotion with the problem of climate change.

Indifference		Country		Total
		Poland	United Kingdom	
no	Numbers	98	96	194
	Number expected	99,72	94,28	0,91
	%	89,1	92,3	90,7
yes	Numbers	12	8	20
	Number expected	10,28	9,72	0,09
	%	10,9	7,7	9,3
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 15. The choice of “indifference” as an emotion experienced the most strongly by the respondents.**

The result of the chi-square test of independence of the two variables was found to be statistically insignificant ( $\chi^2 = 0.65$ ;  $p > 0.05$ ; ni.). On this basis, the hypothesis of a relationship between nationality and indifference to climate change can be rejected.

The last emotion surveyed in the context of climate change was a feeling of empowerment. This feeling was also indicated by a small number of survey participants.

Empowerment		Country		Total
		Poland	United Kingdom	
no	Numbers	100	99	199
	Number expected	102,29	96,71	0,93
	%	90,9	95,2	93
yes	Numbers	10	5	15
	Number expected	7,71	7,29	0,07
	%	9,1	4,8	7
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1

	%	100	100	100
--	---	-----	-----	-----

**Table 16. The choice of “optimism” as an emotion experienced the most strongly by the respondents.**

The result of the chi-square test of independence of the two variables was found to be statistically insignificant ( $\chi^2 = 1.5$ ;  $p > 0.05$ ; ni.). On this basis, the hypothesis of a relationship between nationality and sense of agency towards climate change can be rejected.

Another characteristic of Poles and the British analysed was the extent to which they try to use methods to support their functioning in the face of climate change.

Exactly the same number of Polish and British respondents admitted to not introducing any methods. Using such methods sometimes was declared by more Poles, while introducing them “frequently” by more British.

To what extent are you trying to apply methods that would help you to function better in the face of climate change?		Country		Total
		Poland	United Kingdom	
I do not implement any methods	Numbers	30	30	60
	Number expected	30,84	29,16	0,28
	%	27,3	28,8	28

I try implementing some methods	Numbers	26	10	36
	Number expected	18,5	17,5	0,17
	%	23,6	9,6	16,8
I am not sure	Numbers	38	18	56
	Number expected	28,79	27,21	0,26
	%	34,5	17,3	26,2
I often introduce some methods	Numbers	12	37	49
	Number expected	25,19	23,81	0,23
	%	10,9	35,6	22,9
I always introduce a variety of methods	Numbers	4	9	13
	Number expected	6,68	6,32	0,06
	%	3,6	8,7	6,1

Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 17. Answers to the question “To what extent are you trying to apply methods that would help you to function better in the face of climate change?”**

Based on the results of the chi-square test ( $\chi^2 = 28.79$ ;  $p < 0.001$ ), we have sufficient evidence to conclude that there is a statistically significant relationship between nationality and the extent to which people try to use methods to support their functioning in the face of climate change. This means that the differences between observed and expected frequencies are so large that they are unlikely to be the result of random chance. Therefore, the null hypothesis of no relationship between the variables is rejected at the 0.001 significance level. Based on a detailed count analysis, the likely direction of the relationship can be determined. Poles are more likely to be unsure about using the methods mentioned or to use them rarely. The British, on the other hand, are more likely to declare that they use such methods frequently.

Afterwards, the respondents were asked what methods exactly do they implement, if any. In general, the biggest share of methods was dedicated either to avoiding bad news, concentrating on positive ones or engaging in climate actions. The responses which illustrate the issue are “I try to do everything I can to support/speak up for green issues, I do ‘my bit’ eg wildlife gardening, recycling, no car etc. I avoid the news, just listen to headlines as this makes me depressed which demotivates me.” or “- Stopped viewing everyday media- too conflicting and negative! Want a measured view. Started reading positive news blog. Encourage others and listened to the way friends have adopted change in everyday life. Finding/following positive change activities on my social media channels that give tangible solutions.”.

The relationship between nationality and what reactions people face when they share their thoughts on climate change was also analysed.

The answer "People say that I overreact" was marked by a minority of survey participants. This group was slightly outnumbered by Polish residents.

People say that I overreact		Country		Total
		Poland	United Kingdom	
no	Numbers	90	93	183
	Number expected	94,07	88,93	0,86
	%	81,8	89,4	85,5
yes	Numbers	20	11	31
	Number expected	15,93	15,07	0,14
	%	18,2	10,6	14,5
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 18. Answers "people say that I overreact"**

Based on the results of the chi-square test ( $\chi^2 = 2.5$ ;  $p > 0.05$ ; ni.), we do not have sufficient evidence to conclude that there is a statistically significant relationship between the study variables. This means that the differences between the observed and expected frequencies are likely to be the result of random chance rather than a true relationship between the variables. The null hypothesis of no relationship between the variables was not rejected.

Respondents responded in a similar way to the sentence 'People make me think that what I feel is not important'. The vast majority of respondents disagreed with this statement.

People make me think that my thoughts and emotions are not significant		Country		Total
		Poland	United Kingdom	
no	Numbers	96	85	181
	Number expected	93,04	87,96	0,85
	%	87,3	81,7	84,6
yes	Numbers	14	19	33
	Number expected	16,96	16,04	0,15
	%	12,7	18,3	15,4
Total	Numbers	110	104	214



	Number expected	0,51	0,49	1
	%	100	100	100

**Table 19. Answers “people make me think that my thoughts and emotions are not significant”**

Again, based on the results of the chi-square test ( $\chi^2 = 1.26$ ;  $p > 0.05$ ; ni.), there is insufficient evidence to conclude that there is a statistically significant relationship between the study variables. This implies that the differences between observed and expected frequencies may be the result of random chance rather than a true relationship between the variables. The null hypothesis of no relationship between the variables cannot be rejected.

Respondents were more divided on the statement "People share my feelings and thoughts". A slightly higher number of respondents from each group responded positively to this statement.

People share my thoughts and emotions		Country		Total
		Poland	United Kingdom	
no	Numbers	48	49	97
	Number expected	49,86	47,14	0,45

	%	43,6	47,1	45,3
yes	Numbers	62	55	117
	Number expected	60,14	56,86	0,55
	%	56,4	52,9	54,7
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 20. Answers “people share my thoughts and opinions”**

Statistical analysis based on the chi-square test ( $\chi^2 = 0.26$ ;  $p > 0.05$ ; ni.), however, did not provide sufficient evidence to conclude that there is a statistically significant relationship between the variables under study. This implies that differences between observed and expected frequencies may be the result of random chance rather than a true relationship between the variables. The null hypothesis of no relationship between the variables cannot be rejected.

The last of the statements that dealt with other people's perceived reactions to opinions on climate change was "People are supportive and empathetic to me". The vast majority of survey participants responded negatively to this statement, with the following among the Poles, the number of people who chose the answer 'no' was higher than among UK residents.

People support me and are empathetic		Country		Total
		Poland	United Kingdom	
no	Numbers	102	87	189
	Number expected	97,15	91,85	0,88
	%	92,7	83,7	88,3
yes	Numbers	8	17	25
	Number expected	12,85	12,15	0,12
	%	7,3	16,3	11,7
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

The results of the chi-square test ( $\chi^2 = 4.27$ ;  $p < 0.05$ ), provide evidence to conclude that there is a statistically significant relationship between the study variables. This means that the

differences between the observed and expected frequencies are so large that they are unlikely to be the result of random chance. Therefore, the null hypothesis of no relationship between the variables is rejected at the 0.05 significance level. It can therefore be assumed that there is a relationship between nationality and the fact that expressing opinions on climate change is met with support and empathy. It is more common for the British to experience this type of response than for residents of Poland.

To the question "Have you ever used forms of support such as articles, organisations, psychological support dealing with mental health in the context of climate change?" the majority of people surveyed answered "No, because I don't need them". In contrast, the least frequent response was "No, but I need them".

Have you ever used forms of support such as articles, organisations, psychological support dealing with mental health in the context of climate change?		Country		Total
		Poland	United Kingdom	
Yes	Numbers	6	18	24
	Number expected	12,34	11,66	0,11
	%	5,5	17,3	11,2
No, but I need them	Numbers	5	6	11
	Number expected	5,65	5,35	0,05
	%	4,5	5,8	5,1

No, because I don't need them	Numbers	65	64	129
	Number expected	66,31	62,69	0,6
	%	59,1	61,5	60,3
No, as I did not know such forms existed	Numbers	34	16	50
	Number expected	25,7	24,3	0,23
	%	30,9	15,4	23,4
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 21. Answers to the question “Have you ever used forms of support such as articles, organisations, psychological support dealing with mental health in the context of climate change?”**

Based on the results of the chi-square test ( $\chi^2 = 12.42$ ;  $p < 0.01$ ), it can be concluded that there is a statistically significant relationship between the study variables. This means that the differences between observed and expected frequencies are so large that they are unlikely to be the result of random chance. The null hypothesis of no relationship between the variables in question can be rejected.

A detailed analysis of the number of individual answers given by Poles and the British indicates that residents were slightly more likely to declare having used various forms of support in the context of climate change. Among Poles, on the other hand, the more frequent answer given was "No, as I did not know that such forms existed", which may indicate a lower awareness of the existence of the forms of support referred to in the question.

The next question was an open one - "What emotions does public climate discussion evoke in your country?" Both in the case of Poland and the United Kingdom the responses were similar. The most common responses included frustration and indifference. It is often noted that different groups have different opinions on the topic and therefore there are both dedicated climate activists and climate denialists or those who are sceptics.

When asked about the extent to which there is a discussion on climate change in the respondents' country, the largest number of respondents answered "None/not much" and "Not enough". Slightly less numerous was the group of respondents who declared a lack of knowledge on the subject. A significant minority of respondents gave a positive assessment of the extent to which climate change was discussed in their own country.

To what extent do you think there is a discussion in your country related to mental health in the context of climate change?		Country		Total
		Poland	United Kingdom	
Not at all	Numbers	32	39	71
	Number expected	36,5	34,5	0,33
	%	29,1	37,5	33,2

Not enough	Numbers	37	28	65
	Number expected	33,41	31,59	0,3
	%	33,6	26,9	30,4
I am not sure	Numbers	33	21	54
	Number expected	27,76	26,24	0,25
	%	30	20,2	25,2
Heading in the right direction	Numbers	7	14	21
	Number expected	10,79	10,21	0,1
	%	6,4	13,5	9,8
Sufficient discussion	Numbers	1	2	3
	Number expected	1,54	1,46	0,01
	%	0,9	1,9	1,4

Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 22. Answers to question “To what extent do you think there is a discussion in your country related to mental health in the context of climate change?”**

Based on the results of the chi-square test ( $\chi^2=7.11$ ;  $p>0.05$ ; ni.), we do not have sufficient evidence to conclude that there is a statistically significant relationship between the study variables. This means that the differences between observed and expected frequencies are likely to be the result of random chance rather than a true relationship between the variables. The null hypothesis of no relationship between the variables is not rejected.

It can be assumed that in both countries, the level of discussion on climate change is rated as negligible or insufficient. A large proportion of Poles as well as Brits are unable to assess the level of discussion on this topic.

When asked about satisfaction with the government's climate action, the largest number of respondents chose the option “hard to say”. Apart from this, both groups were dominated by responses indicating dissatisfaction or strong dissatisfaction. However, in case of Poland the option “hard to say” was by far the most popular - 52.7% compared to 32.7% in case of the United Kingdom. This is visible on figures 9 and 10.



Are you satisfied with the climate action taken in your country?  
104 odpowiedzi

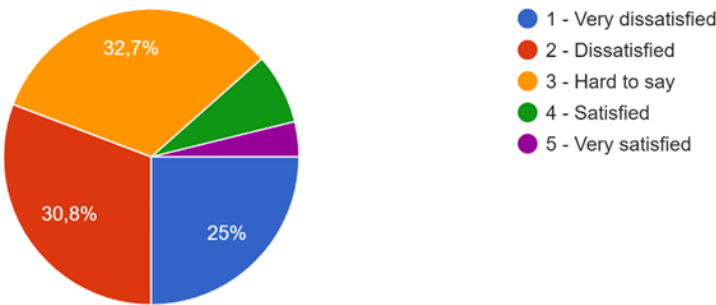


Figure 9 Responses to the question “Are you satisfied with the climate action taken in your country” (United Kingdom)

Czy jesteś zadowolona/y z działań na rzecz klimatu podejmowanych w Twoim kraju?  
110 odpowiedzi

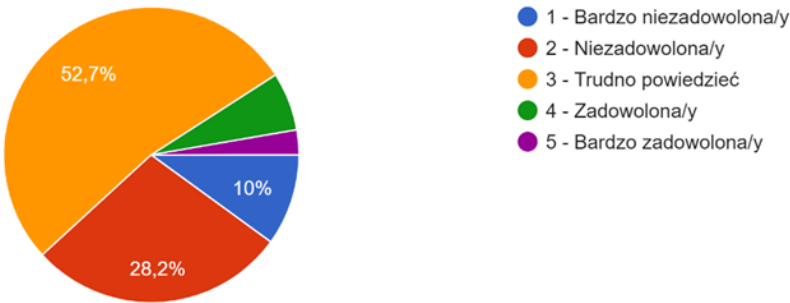


Figure 10 Responses to the question “Are you satisfied with the climate action taken in your country” (Poland)

Are you satisfied with the climate action taken in your country?	Country	Total
--	---------	-------

		Poland	United Kingdom	
Very dissatisfied	Numbers	11	26	37
	Number expected	19,02	17,98	0,17
	%	10	25	17,3
Dissatisfied	Numbers	31	32	63
	Number expected	32,38	30,62	0,29
	%	28,2	30,8	29,4
Hard to say	Numbers	58	34	92
	Number expected	47,29	44,71	0,43
	%	52,7	32,7	43
Satisfied	Numbers	7	8	15
	Number expected	7,71	7,29	0,07

	%	6,4	7,7	7
Very satisfied	Numbers	3	4	7
	Number expected	3,6	3,4	0,03
	%	2,7	3,8	3,3
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 23. Answers to question “Are you satisfied with the climate action taken in your country?”**

Based on the results of the chi-square test ( $\chi^2 = 12.41$ ;  $p < 0.05$ ), we have sufficient evidence to conclude that there is a statistically significant relationship between the study variables. This means that the differences between observed and expected frequencies are large enough that they are unlikely to be the result of random chance. Therefore, the null hypothesis of no relationship between the variables is rejected at the 0.05 significance level.

Based on an analysis of the number of responses, it can be concluded that among Poles, there is a more numerous group of people who avoid explicitly assessing the government's actions on climate change than among the British. At the same time, the latter seem to assess their country's government's actions in this context more harshly. This is evidenced by the clearly higher number of those who are very dissatisfied.

The next two questions were open-ended and asked “What do you think can motivate active people to take greater climate action?” and “What do you think can be done to mobilize

passive people to take climate action?”. In connection to the former question the responses were diverse, however, an interesting theme could be identified. Many UK respondents pointed out that more evidence of the success of their actions and giving them a bigger platform or stronger associations could motivate already active people to engage even further. One example answer reads as follows: “Making them more aware of the direct impact of every single little action, also encourage to motivate others (through making them realise how much impact they can make as positive role models)”. Responses from the Polish participants were similar and also pointed to the aforementioned issues, for example in the comment “Demonstrating the potential of their actions, if possible, to encourage them to continue their activities.”. In case of the questions concerning passive people by far the most popular answer in both countries included education. In neither of the two questions major differences in the responses between the countries was reported.

The respondents were also tasked with identifying the cause of climate change.

Respondents most often identified human activities and a mix of nature and human activities as factors leading to climate change.

Climate change is the result:		Country		Total
		Poland	United Kingdom	
Human activities	Numbers	44	55	99
	Number expected	50,89	48,11	0,46
	%	40	52,9	46,3
Nature	Numbers	7	1	8

	Number expected	4,11	3,89	0,04
	%	6,4	1	3,7
Mixture of both	Numbers	59	48	107
	Number expected	55	52	0,5
	%	53,6	46,2	50
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

**Table 24. Answers to question “Climate change is the result of...?”**

Based on the results of the chi-square test ( $\chi^2=6.69$ ;  $p<0.05$ ), it can be concluded that there is a statistically significant relationship between the study variables. This means that the differences between observed and expected frequencies are so large that they are unlikely to be the result of random chance. The null hypothesis of no relationship between the variables in question can be rejected.

Based on the numbers shown in the table above, it can be concluded that the tendency to link climate change to human activity is more common among Britons. Poles, on the other hand, are more likely than the UK population to believe that these changes are the result of natural factors and human activities.

Responsibility for tackling climate change was most often placed by those surveyed on the government and least often on environmental organisations and associations and local governments.

On whose side is the greatest responsibility for addressing climate change?		Country		Total
		Poland	United Kingdom	
government	Numbers	42	54	96
	Number expected	49,35	46,65	0,45
	%	38,2	51,9	44,9
local authorities	Numbers	6	4	10
	Number expected	5,14	4,86	0,05
	%	5,5	3,8	4,7
companies and concerns	Numbers	41	24	65
	Number expected	33,41	31,59	0,3
	%	37,3	23,1	30,4

individuals	Numbers	16	20	36
	Number expected	18,5	17,5	0,17
	%	14,5	19,2	16,8
pro-environmental organisations and associations	Numbers	5	2	7
	Number expected	3,6	3,4	0,03
	%	4,5	1,9	3,3
Total	Numbers	110	104	214
	Number expected	0,51	0,49	1
	%	100	100	100

Table 25. **Answers to question on whose side is the greatest responsibility for addressing climate change?**

Based on the results of the chi-square test ( $\chi^2 = 7.91$ ;  $p > 0.05$ ; ni.), we do not have sufficient evidence to conclude that there is a statistically significant relationship between the study variables. This means that the differences between observed and expected frequencies are likely to be the result of random chance rather than a true relationship between the variables. The null hypothesis of no relationship between the variables is not rejected.

It can be concluded that the British and the Poles do not differ significantly in terms of attributing responsibility for solving climate change problems.

The last question of the survey was an open-ended one - "Would you like to share something relevant to the topic of climate change and the attitudes connected to it?". Some respondents used this occasion to share their various thoughts on the situation. It was visible that while there were also hopeful comments, big corporations and too extreme activists were criticised. Some responses which capture the emotions of the British participants are:

- "Understanding that whilst individual choices matter a bit, only significant political action to curb industrial practices will make a difference"
- "It is important to make sure that individual people stay motivated to combat climate change. This might be hard as many people might (rather rightfully) believe that their actions are insignificant because Asian countries, celebrities or oil companies are too powerful and too climate polluting to even care."

In case of Poland more comments which can be assessed as sceptical to the issue of climate change were identified such as for example:

- "Isn't it the case that East Asia doesn't care anyway and is actually dragging us to the bottom when it comes the climate?"
- "I believe that the topic of climate change is very much abused to introduce irrational laws, to burden people with excessive charges (taxes) and to restrict their freedom."

However proecological comments were also present.

- As a person of older than 30 years old, I have a lot of optimism and hope, because when I was your age, climate issues, ecology were a total niche and NO ONE of the young people were interested in them, now it is standard and children already in kindergarten learn how to take care of our common home.
- I believe that the responsibility for solving the problem of climate change lies with individuals, businesses and corporations, local governments as well as the government. In order to improve the environment, pro-environmental behaviour cannot be ceded to one group of people as it will not be effective and comprehensive. Actions must be integrated and complementary and permeate each other. This ranges from individual, local community awareness to top-down legislation.

Data about demographic variables were also collected and analysed. In the Polish sample significant differences were found in terms of gender regarding two emotions, fear and anxiety and the level of satisfaction in terms of climate change action in the country, with more women being unsure about it. In the British sample it was in terms of frustration and



fear as well. The study did not confirm the previous findings with women being more likely to mark almost all emotional states like found in previous research. However, the bigger chance of being anthropological causes of climate deniers confirmed in the Polish sample with 5 out of six people, who claim that climate change is caused by nature being men, but in the British sample one individual marking nature as cause for climate change being a woman.

In terms of level of education there were significant differences found in Poland in terms of anger, anxiety, indifference and optimism. In the UK sample the differences were found in: indifference, sufficiency of discussion in the country and the responsibility for tackling climate change.

In terms of age one difference was found in the Polish sample regarding the question about responses when sharing thoughts on climate change with others.

### *Interviews*

In order to gather additional knowledge 4 interviews were performed. Their transcripts are gathered in the Appendix section. The experts who took part were:

- Dr Agnieszka Klimska (Doctor of Humanities in the field of philosophy, Assistant Professor at the Polish Institute of Philosophy and the Institute of Pedagogy) - Appendix 3
- Dr Caroline Hickman (lecturer at the University of Bath in social work and climate psychology) - Appendix 4
- Ben Hart (Head of Operations at Nattergal, Natural Capital Specialist, ESOS Lead Assessor and Chartered Energy Manager) - Appendix 5
- Anouchka Grose (psychoanalyst and writer) - Appendix 6

### **Discussion**

This investigation aimed at being a comparative analysis of attitudes, emotions and thoughts of people regarding climate change in two countries: United Kingdom and Poland. The importance of this research was emphasised, due to lack of comparative analysis of the countries found in literature and little research in the area in Poland in general. Below a summary of findings in relation to currently available literature, both strengths and limitations as well as opportunities and directions for further research can be found.

There was a significant difference regarding the assessed seriousness of climate change with UK participants rating climate change as more serious. Six Polish participants assessed climate change as not serious at all, in comparison to only one UK participant, which in line

with the literature analysed earlier, confirms that in Poland, there are quite few people, who do not find the climate situation extremely bad (UN Global Compact Network Poland et al., 2022). Denial of anthropological causes of climate change and ignorance in Poland is further confirmed by 7 people claiming that climate change is the result of nature activity in comparison to just one person in the UK. This finding shows the presence of deniers of the anthropological causes of climate change in Poland.

Fortunately, the majority of people in both countries consider ecological choices when making decisions, however at the same time the majority of participants in both countries assessed the influence of their actions regarding environmental protection at a moderate level. So while many individuals try caring for the environment, they are not very confident with the impact of their actions. Further research should be performed to find potential causes for that phenomenon. One potential explanation could be that, while people do care and do protect the environment on a daily basis, they still are overwhelmed with the issue, presenting itself as an “enduring existential threat” (Lawrance, Jennings, et al., 2022, p. 734) and therefore can potentially be pessimistic about their actions and distance themselves from them. They might not assess their actions as having great impact, feel overwhelmed by the issue and therefore some can remain inactive (Bouman et al., 2020; Clayton et al., 2014) which is also a topic discussed in the interview with Dr Caroline Hickman and Anouchka Grose. The majority of participants in both countries think that the government and big companies have the greatest responsibility to address the issue of climate change, perhaps people think in this way because of the already mentioned cause: because of feeling overwhelmed and thinking that the actions undertaken by individuals are insignificant. However, according to Caroline Hickman legal action is important in itself and we need to see the collective action taken place, so perhaps the participants share the expert’s view.

The three most common chosen emotions in the UK were frustration, anxiety and sadness. The commonness of sadness and anxiety can be confirmed by a previously conducted study (Clayton et al., 2022) and the expert interviews. In Poland the most commonly chosen emotions were anxiety, helplessness and frustration, which can be also supported by the expert interview. Sadly as seen in the results negative emotions dominate the positive ones. Giving people chances to act on climate change should be a top priority regarding high levels of these emotions detected as it could potentially evoke more positive emotions and bring constructive hope to the society (Smith & Leiserowitz, 2013; Steg, 2023) and have a positive influence on mental health of the participants. There was a significant difference found between countries in terms of the following emotions: frustration, anxiety, helplessness, sadness. The feelings of helplessness, sadness and anxiety being more frequently pointed out by Polish people.

There is a significant difference between the frequency of using methods, which would support mental health in context of climate change. Poles are more likely to be unsure about using the methods, which would support them mentally in the context of climate change or use them rarely. Moreover, there was a significant difference between the extent to which people seek psychological support in terms of climate change with three in ten Polish people claiming that they did not know something like that even existed. This can be reflected in overall lower awareness and resources in the country with climate psychology being a very new field in Poland. What supports this claim even further is the fact that people in Poland are less likely to share their thoughts on climate change with others, which shows that the

topic itself is less frequent in the public debate. Moreover, although not a statistically significant difference was found, Poles were more likely to experience situations in which people said they overreact in comparison to Britons.

The majority of both Poles and Britons think that the discussion about climate change in their country is not sufficient and are not satisfied with the climate change action in their country. There was a statistically significant difference found in that context with Polish people being more undecided (half of the answers) regarding the issue. Failure in addressing the issue and preventing climate change by the organisations and government in the country and leads to worsening mental health (Hiickman et al., 2021). Therefore, it is extremely important for mobilising the people, to set good examples in society. Moreover, as found by researchers and confirmed by the study, many people want to care about climate change, but think that society in general doesn't (Steg, 2023). Potentially, having a negative public debate around the issue and presenting it as a controversial political tool rather than a necessity, can lead to strengthening this misconception and demotivate people even more. There was a statistically significant difference in terms of people who attributed the cause of climate change with more people in Poland claiming it is a mix of both human and nature activity. Almost half Britons and over a half of Poles marked this answer. According to literature, climate change is mainly due to human activity (Lynas et al., 2021). The concerning high number of answers including nature as the cause shows the need for climate change education. In the "Ziemiańie atakuja [Earthlings attack]" report the authors showed that on average people rate themselves higher in terms of knowledge than in reality. As mentioned previously deniers of anthropogenic causes of climate change could be also found.

A strong difference in responses regarding caring for the environment was seen with 78 responses in a Polish sample about recycling. What is meant by the participants is dividing trash and throwing them in appropriate boxes. However, still only 40 percent of trash is being recycled in Poland (Vercammen, Oswald et al., 2023). It can be seen that it is commonly taught in schools to recycle, turn off the light while not spending time in the room and turning off the water while brushing teeth, which could suggest why it was such a frequent answer. In reality these actions have a low impact and it could be indicated that in reality Britons are more eco-friendly than Polish people, who often limited themselves to the trivial things mentioned above. It could also point out flaws in the education system, which does not promote more advanced practices.

The study conducted was a pioneering project in the field and the first study which compared the UK and Poland in terms of climate change and mental health, including a statistical analysis. The study's strength was inclusion of variety of methods, with both quantitative and qualitative methods of research. The open-ended questions gave the opportunity for more in depth answers and real glimpse into thoughts of the participants. However, there were some limitations as well, firstly the sample collected was relatively small and not representative regarding the demographic variables. This could potentially explain the lack of many strong statistically significant differences in terms of age, gender and level of education.

Future research could therefore involve bigger and more stratified quota to delve deeper in differences regarding different demographic variables. Negative emotions should be taken into consideration and examined in terms of their causes, correlation between them and

mental health or potential for taking action and potential sociodemographic explanations for these relationships. Further differences could be examined in the context of two countries by looking closely at described mental states and thoughts. Anger in Poland might be a different mental response, requiring different coping strategies than anger in England, although the overall range of emotions felt is similar, the depth and manifestations of them might be different.

## **Conclusion**

To conclude, the research aimed to perform a comparative analysis of the Polish and the British societies in the context of climate change and mental health. In order to fulfil the aims, the literature review was performed which helped in identifying the trends dominating this field of study. In order to gather more information 4 expert interviews with people working in the field of climate change and psychology were performed. Afterwards, a survey was created which was later filled in by 214 respondents (110 from Poland, 104 from the United Kingdom). The results of the questionnaires were then analysed and discussed. It can be concluded that the society in the United Kingdom showed a bit more pro-environmental behaviour than the society in Poland. Additionally, it was found out that there is more awareness of mental health in the context of climate change in the United Kingdom than in Poland. Nevertheless, both societies showed a lot of pro-environmental behaviour and similar emotions in connection to climate change. The research has provided a lot of insight on the climate, environment, and mental health in the two analyzed countries. As the topic of climate change and mental health is relatively new, it should be continuously examined and developed in the future.

## Bibliography

- Alavi, S. H., O'Neill, P., Bitensky, D., Liaqat, A., Huertas-Trujillo, M., & Bodnar, S. S. (2023). Nature's Role in Positive Youth Development and as a Protective Factor Against Adverse Childhood Experiences. *Journal of Ecopsychology*, 3, 5, 1-12
- Böhm, G., Pfister, H.-R., Doran, R., Ogunbode, C. A., Poortinga, W., Tvinnereim, E., Steentjes, K., Mays, C., Bertoldo, R., Sonnberger, M., & Pidgeon, N. (2023). Emotional reactions to climate change: A comparison across France, Germany, Norway, and the United Kingdom. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1139133>
- Bouman, T., Verschoor, M., Albers, C. J., Böhm, G., Fisher, S. D., Poortinga, W., Whitmarsh, L., & Steg, L. (2020). When worry about climate change leads to climate action: How values, worry and personal responsibility relate to various climate actions. *Global Environmental Change*, 62, 102061. <https://doi.org/10.1016/j.gloenvcha.2020.102061>
- Brick, C., Bosshard, A., & Whitmarsh, L. (2021). Motivation and climate change: A Review. *Current Opinion in Psychology*, 42, 82–88. <https://doi.org/10.1016/j.copsyc.2021.04.001>
- Budziszewska, M., & Kałwak, W. (2022). Climate Depression. critical analysis of the concept. *Psychiatria Polska*, 56(1), 171–182. <https://doi.org/10.12740/pp/127900>
- Chandelkar, S. (2024). Ecopsychology and Nature-Based Interventions: Exploring Therapeutic Benefits and Integration into Mental Health Nursing Practice. *Brio International Journal of Nursing Research (BIJNR)*, 5(1), 279-283.
- Charlson, F., Ali, S., Benmarhnia, T., Pearl, M., Massazza, A., Augustinavicius, J., & Scott, J. G. (2021). Climate change and mental health: A scoping review. *International Journal of Environmental Research and Public Health*, 18(9), 4486. <https://doi.org/10.3390/ijerph18094486>
- Clayton, S., Manning, C. M., & Hodge C. (2014). Beyond storms & droughts: The psychological impacts of climate change. Washington, DC: American Psychological Association and ecoAmerica.
- Clayton, S., Pihkala, P., Wray, B., & Marks, E. (2022). *Psychological and Emotional Responses to Climate Change among Young People Worldwide: Differences Associated with Gender, Age, and Country*. <https://doi.org/10.21203/rs.3.rs-2256929/v1>
- Climate Change Performance Index. (2023, December 8). *UK – climate performance ranking 2024: Climate change performance index*. Climate Change Performance Index | The Climate Change Performance Index (CCPI) is a scoring system designed to enhance transparency in international climate politics. <https://ccpi.org/country/gbr/>
- ClimateTrade. (2023, August 7). *Countries leading the world's decarbonization*. <https://climatetrade.com/top-10-countries-leading-the-worlds-decarbonization/>
- Department for Energy Security and Net Zero. (2023). *Climate change explained*. GOV.UK. <https://www.gov.uk/guidance/climate-change-explained>
- Dittmer, L. D., Reimer-Watts, K., Dobai, J., & Riemer, M. (2023). Contributions, missed opportunities, and future directions: A critical reflection on global climate change and environmental sustainability in *ajcp* over five decades. *American Journal of Community Psychology*, 72(3–4), 288–301. <https://doi.org/10.1002/ajcp.12720>

- Electricity Explained. (2024, January 9). *Britain's electricity explained: 2023 review*. ESO.  
<https://www.nationalgrideso.com/news/britains-electricity-explained-2023-review>
- European Commission. (2021). Eurobarometer Survey: Europeans consider climate change to be the most serious problem facing the world. European Commission - European Commission.
- European Parliament. (2021, October). *Climate action in Poland - Latest state of play*. European Parliament.  
[https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698766/EPRS\\_BRI\(2021\)698766\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698766/EPRS_BRI(2021)698766_EN.pdf)
- Greenpeace. (2023, October 25). *What is the UK doing about climate change?*. Greenpeace UK.  
<https://www.greenpeace.org.uk/challenges/climate-change/what-is-the-uk-doing-about-t-climate-change/>
- Hayes, K., Blashki, G., Wiseman, J., Burke, S., & Reifels, L. (2018). Climate change and mental health: Risks, impacts and priority actions. *International Journal of Mental Health Systems*, 12(1). <https://doi.org/10.1186/s13033-018-0210-6>
- Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C., & van Susteren, L. (2021a). Climate anxiety in children and young people and their beliefs about government responses to climate change: A global survey. *The Lancet Planetary Health*, 5(12). [https://doi.org/10.1016/s2542-5196\(21\)00278-3](https://doi.org/10.1016/s2542-5196(21)00278-3)
- Instytut Ochrony Środowiska Państwowy Instytut Badawczy. (2019) *Krótką historia działań i wyzwania na rzecz ochrony klimatu w Polsce: 1988 – 2018 – 2050*. [A brief history of climate action and challenges in Poland: 1988 – 2018 – 2050] [https://ios.edu.pl/wp-content/uploads/2019/03/Kr%C3%B3tka-historia-dzia%C5%82a%C5%84-i-wyzwania-na-rzecz-ochrony-klimatu-w-Polsce\\_PL.pdf](https://ios.edu.pl/wp-content/uploads/2019/03/Kr%C3%B3tka-historia-dzia%C5%82a%C5%84-i-wyzwania-na-rzecz-ochrony-klimatu-w-Polsce_PL.pdf).
- Ipsos. (2023). *Climate change and political priorities: What the British public think*. <https://www.kcl.ac.uk/policy-institute/assets/climate-change-and-political-priorities.pdf>
- IQAir. (2024). *World's most polluted countries in 2023 - PM2.5 ranking*. <https://www.iqair.com/world-most-polluted-countries>
- Kishinani, P., & Smith, M. (2020). *Student Guide To The Climate Crisis: A Handbook for Climate Grief, Science and Action*. Climate Emergency Manchester.
- Kundzewicz, Z., Hov, Ø., & Okruszko, T. (2017). *Zmiany Klimatu i ich wpływ na wybrane sektory w Polsce*. [Climate changes and their impact on chosen sectors in Poland] Ridero.
- Kurmayer, N. (2024, January 16). *Polish government aims to become a green player in Europe*. Climate Home News.  
<https://www.climatechangenews.com/2024/01/16/polish-government-green-tide-arrives-in-brussels/#:~:text=The%20new%20Polish%20government%20has,its%20home%20heating%20from%20coal>
- Lawrance, E. L., Jennings, N., Kioupi, V., Thompson, R., Diffey, J., & Vercammen, A. (2022). Psychological responses, mental health, and sense of agency for the dual challenges of climate change and the covid-19 pandemic in young people in the UK: An online survey study. *The Lancet Planetary Health*, 6(9). [https://doi.org/10.1016/s2542-5196\(22\)00172-3](https://doi.org/10.1016/s2542-5196(22)00172-3)

- Lawrance, E. L., Thompson, R., Newberry Le Vay, J., Page, L., & Jennings, N. (2022). The impact of climate change on mental health and emotional wellbeing: A narrative review of current evidence, and its implications. *International Review of Psychiatry*, 34(5), 443–498. <https://doi.org/10.1080/09540261.2022.2128725>
- Le Hai, D., & Larionow, P. (2022). Towards pro-environmental psychology and education: Personality traits and sociodemographic correlates of environmental identity and voluntary simplicity. *Lubelski Rocznik Pedagogiczny*, 41(4), 53–76. <https://doi.org/10.17951/lrp.2022.41.4.53-76>
- Lynas, M., Houlton, B. Z., & Perry, S. (2021). Greater than 99% consensus on human caused climate change in the peer-reviewed scientific literature. *Environmental Research Letters*, 16(11), 114005. <https://doi.org/10.1088/1748-9326/ac2966>
- Morganstein, J.C., & Ursano, R.J. (2020) 'Ecological disasters and mental health: Causes, consequences, and interventions', *Frontiers in Psychiatry*, 11. doi:10.3389/fpsy.2020.00001.
- Nartova-Bochaver, S. K., Donat, M., Kiral Ucar, G., Korneev, A. A., Heidmets, M. E., Kamble, S., Khachatryan, N., Kryazh, I. V., Larionow, P., Rodríguez-González, D., Serobyan, A., Zhou, C., & Clayton, S. (2022). The role of environmental identity and individualism/collectivism in predicting climate change denial: Evidence from nine countries. *Journal of Environmental Psychology*, 84, 101899. <https://doi.org/10.1016/j.jenvp.2022.101899>
- Niranjana, A. (2024, January 20). UK “used to be a leader on climate”, lament European lawmakers. *The Guardian*. <https://www.theguardian.com/environment/2024/jan/20/uk-used-to-be-a-leader-on-climate-lament-european-lawmakers>
- NOAA National Centers for Environmental Information. (2024, January 17). *2023 was the warmest year in the modern temperature record*. NOAA Climate.gov. <https://www.climate.gov/news-features/featured-images/2023-was-warmest-year-modern-temperature-record>
- Ogunbode, C. A., Pallesen, S., Böhm, G., Doran, R., Bhullar, N., Aquino, S., Marot, T., Schermer, J. A., Wlodarczyk, A., Lu, S., Jiang, F., Salmela-Aro, K., Hanss, D., Maran, D. A., Ardi, R., Chegeni, R., Tahir, H., Ghanbarian, E., Park, J., ... Lomas, M. J. (2021). Negative emotions about climate change are related to insomnia symptoms and mental health: Cross-sectional evidence from 25 countries. *Current Psychology*, 42(2), 845–854. <https://doi.org/10.1007/s12144-021-01385-4>
- Ogunbode, Charles A., Doran, R., Hanss, D., Ojala, M., Salmela-Aro, K., van den Broek, K. L., Bhullar, N., Aquino, S. D., Marot, T., Schermer, J. A., Wlodarczyk, A., Lu, S., Jiang, F., Maran, D. A., Yadav, R., Ardi, R., Chegeni, R., Ghanbarian, E., Zand, S., ... Karasu, M. (2022). Climate anxiety, wellbeing and pro-environmental action: Correlates of negative emotional responses to climate change in 32 countries. *Journal of Environmental Psychology*, 84, 101887. <https://doi.org/10.1016/j.jenvp.2022.101887>
- Pearce, F. (2023, October 17). *Why is Britain retreating from Global Leadership on Climate Action?*. Yale E360. <https://e360.yale.edu/features/ungreening-britain-sunak-climate-change2023>

- Pereira, T., & Freire, T. (2021). Positive youth development in the context of climate change: A systematic review. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.786119>
- PERITIA. (2022a). *Public perceptions on climate change*. [https://peritia-trust.eu/wp-content/uploads/2022/06/4-Climate-change\\_EU.pdf](https://peritia-trust.eu/wp-content/uploads/2022/06/4-Climate-change_EU.pdf)
- PERITIA. (2022b). *Public perceptions on institutions tackling climate change* /[https://pan.pl/pliki/5\\_institutions\\_tackling\\_climate\\_change.pdf](https://pan.pl/pliki/5_institutions_tackling_climate_change.pdf)
- Reser, J. P., Bradley, G. L., Glendon, I., Ellul, M. C., & Callaghan, R. (2012). *Public risk perceptions, understandings and responses to climate change in Australia and Great Britain Final Report*. Griffith University.
- Richardson, M., & Hamlin, I. (2021). Nature engagement for human and nature's well-being during the Corona pandemic. *Journal of Public Mental Health*, 20(2), 83–93. <https://doi.org/10.1108/jpmh-02-2021-0016>
- Royal College of Psychiatrists (2020) *The climate crisis is taking a toll on the mental health of children and young people*, [www.rcpsych.ac.uk](http://www.rcpsych.ac.uk). Available at: <https://www.rcpsych.ac.uk/news-and-features/latest-news/detail/2020/11/20/the-climate-crisis-is-taking-a-toll-on-the-mental-health-of-children-and-young-people>
- Schapiro, L. H., McShane, M. A., Marwah, H. K., Callaghan, M. E., & Neudecker, M. L. (2024). Impact of extreme heat and heatwaves on children's health: A scoping review. *The Journal of Climate Change and Health*, 100335. <https://doi.org/10.1016/j.joclim.2024.100335>
- Schwartz, S. E., Benoit, L., Clayton, S., Parnes, M. F., Swenson, L., & Lowe, S. R. (2022). Climate change anxiety and mental health: Environmental activism as Buffer. *Current Psychology*, 42(20), 16708–16721. <https://doi.org/10.1007/s12144-022-02735-6>
- Searle, K., & Gow, K. (2010). Do concerns about climate change lead to distress? *International Journal of Climate Change Strategies and Management*, 2(4), 362–379. <https://doi.org/10.1108/17568691011089891>
- Smith, N., & Leiserowitz, A. (2013). The role of emotion in global warming policy support and opposition. *Risk Analysis*, 34(5), 937–948. <https://doi.org/10.1111/risa.12140>
- Steg, L. (2023). Psychology of climate change. *Annual Review of Psychology*, 74(1), 391–421. <https://doi.org/10.1146/annurev-psych-032720-042905>
- Stezycki, K. (2024, May 10). *Polish farmers march against “green poison” EU Climate Change Rules* | Reuters. Reuters. <https://www.reuters.com/world/europe/polish-farmers-march-against-green-poison-eu-climate-change-rules-2024-05-10/>
- Trost, K., Ertl, V., König, J., Rosner, R., & Comtesse, H. (2024). Climate change-related concerns in psychotherapy: Therapists' experiences and views on addressing this topic in therapy. *BMC Psychology*, 12(1). <https://doi.org/10.1186/s40359-024-01677-x>
- UN Global Compact Network Poland, KANTAR, European Climate Foundation, & Lata Dwudzieste. (2022). *Ziemiańskie atakuja 2022. [Earthlings attack]* <https://ziemiańskieatakuja.pl/>



- Vercammen, A., Oswald, T., & Lawrance, E. (2023). Psycho-social factors associated with climate distress, hope and behavioural intentions in young UK residents. *PLOS Global Public Health*, 3(8). <https://doi.org/10.1371/journal.pgph.0001938>
- Vercammen, A., Yatirajula, S. K., Daniel, M., Maharaj, S., Campbell, M. H., Greaves, N., Guinto, R., Aruta, J. J., Peñamante, C. A., Wray, B., & Lawrance, E. L. (2023). Investigating the mental health impacts of climate change in youth: Design and implementation of the International Changing Worlds Study. *Challenges*, 14(3), 34. <https://doi.org/10.3390/challe14030034>
- Verplanken, B. & Roy, D. (2013) “‘My Worries Are Rational, Climate Change Is Not’: Habitual ecological worrying is an adaptive response’, *PLoS ONE*, 8(9). doi:10.1371/journal.pone.0074708.
- Watts, J., & Campbell, D. (2020, November 20). *Half of child psychiatrists surveyed say patients have environment anxiety*. The Guardian. <https://www.theguardian.com/society/2020/nov/20/half-of-child-psychiatrists-surveyed-say-patients-have-environment-anxiety>
- Wilczek, M. (2021, October 20). “*EU green policies are madness and theories without evidence,*” says Kaczyński. Notes From Poland. <https://notesfrompoland.com/2021/10/20/green-policies-are-madness-based-on-theories-without-evidence-says-kaczynski/>
- Wojaczyk, J. (2024, January 10). *Toniemy W Smogu. Polskie Miasta na liście Najbardziej Zanieczyszczonych na świecie. [Drowning in Smog. Polish Cities on the World’s Most Polluted List.]* Interia. <https://zielona.interia.pl/smog/news-toniemy-w-smogu-polskie-miasta-najbardziej-zanieczyszczone-na-nld,7260664>
- YouGov. (2023). *YouGov / Eurotrack Survey Results*. 2023, [https://d3nkl3psvxxpe9.cloudfront.net/documents/Eurotrack\\_ClimateChange\\_Apr23\\_W.pdf](https://d3nkl3psvxxpe9.cloudfront.net/documents/Eurotrack_ClimateChange_Apr23_W.pdf)
- YouGov. (2024). *How is the UK government handling climate change*. <https://yougov.co.uk/topics/politics/trackers/how-is-the-uk-government-handling-climate-change>

## Appendices

### Appendix 1 Survey in English

# Climate change attitudes - Earth and Mind project survey

Hello! My name is Konstancja Cegłowska and this is a part of my Earth and Mind research project regarding climate change attitudes. I would be very grateful if you could fill in this questionnaire and share it with your friends and network. This would help me to complete my research in the best way possible. Thank you in advance!

[Sign in with Google](#) to save your progress. [Learn more](#)

\* Indicates a required question

What is your age? \*

- ☐ 18-24
- ☐ 25-34
- ☐ 35-45
- ☐ 46-55
- ☐ 56-65
- ☐ over 65

What is your gender? \*

- ☐ Male
- ☐ Female
- ☐ Other: \_\_\_\_\_

What is the highest level of education you have completed? \*

- ☐ primary school
  - ☐ secondary school
  - ☐ university - undergraduate degree
  - ☐ university - postgraduate degree
- 

What is your current occupation? \*

- ☐ secondary school student
- ☐ student
- ☐ student and working
- ☐ working
- ☐ unemployed
- ☐ retired
- ☐ Other: \_\_\_\_\_

How do you care for the environment? \*

your answer \_\_\_\_\_

How do you assess the influence of your activities connected with environmental protection? \*

	1	2	3	4	5	
very lowly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very highly

How serious do you think the issue of climate change is? \*

	1	2	3	4	5	
not serious at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	extremely serious

---

To what extent do you consider ecological choices when making daily decisions? \*

- ☐ 1 - Not at all, I don't consider the environment when making decisions
- ☐ 2 - A little bit
- ☐ 3 - I don't know
- ☐ 4 - Quite a lot
- ☐ 5 - I always consider the environment when making decisions

Mark 3 states or emotions you experience most strongly regarding climate change

\*

- ☐ Sadness
- ☐ Anxiety
- ☐ Fear
- ☐ Frustration
- ☐ Anger
- ☐ Regret
- ☐ Hope
- ☐ Optimism
- ☐ Empowerment
- ☐ Helplessness
- ☐ Motivation
- ☐ Indifference
- ☐ I don't have an opinion
- ☐ Other: \_\_\_\_\_

To what extent are you trying to implement methods that would help you function better mentally in the face of climate change? (for example, surrounding yourself with active people or positive news)

\*

- ☐ 1 - I don't implement any methods
- ☐ 2 - I don't try implementing some methods
- ☐ 3 - I am not sure
- ☐ 4 - I sometimes implement some methods
- ☐ 5 - I always implement a variety of methods

Please list these methods. If you don't implement any, write a dot. \*

your answer

---

What reactions do you observe the most often, when you share your thoughts and climate emotions with others? \*

- ☐ People say that I overreact
- ☐ People make me feel that my thoughts and emotions are not significant
- ☐ People share my thoughts and emotions
- ☐ People support me and are empathetic
- ☐ Other: 

---

Have you ever used forms of support such as articles, organizations, or psychological help dealing with mental health in the context of climate change? \*

- ☐ Yes
- ☐ No, but I need them
- ☐ No as I do not need them
- ☐ No as I did not know that I have these opportunities

What emotions does public climate discussion evoke in your country? \*

your answer

---

To what extent do you feel that, in your country, there is a discussion around mental health in the context of climate change? \*

- ☐ 1 - Not at all
- ☐ 2 - Not enough
- ☐ 3 - I am not sure
- ☐ 4 - Heading in the right direction
- ☐ 5 - Sufficient discussion

Are you satisfied with the climate action taken in your country? \*

- ☐ 1 - Very dissatisfied
- ☐ 2 - Dissatisfied
- ☐ 3 - Hard to say
- ☐ 4 - Satisfied
- ☐ 5 - Very satisfied

What do you think can motivate active people to take greater climate action? \*

your answer

---

What do you think can be done to mobilize passive people to take climate action? \*

your answer

---

Climate change is the result of: \*

- ☐ Human activities
- ☐ Nature
- ☐ Mixtures of both

On whose side is the greatest responsibility for addressing climate change? \*

- ☐ the government
- ☐ local authorities
- ☐ companies and concerns
- ☐ individual people
- ☐ pro-environmental organisations and associations

Would you like to share something relevant to the topic of climate change and the attitudes connected to it? \*

your answer

---

## ***Appendix 2: Survey in Polish***



---

# Postawy w obliczu zmian klimatu - ankieta projektu Earth and Mind

Nazywam się Konstancja Cegłowska, a ta ankieta jest częścią mojego projektu badawczego Earth and Mind. Będę wdzięczna jeśli Pan/Pani wypełni tę ankietę oraz prześle ją do innych znajomych osób. Każde wypełnienie będzie dla mnie wartościowe i pomoże mi przeprowadzić moje badanie jak najlepiej.

Z góry dziękuję!

---

[Zaloguj się w Google](#), aby zapisać postępy. [Więcej informacji](#)

---

\* Wskazuje wymagane pytanie

Ile masz lat? \*

- ☐ 18-24
- ☐ 25-34
- ☐ 35-45
- ☐ 46-55
- ☐ 56-65
- ☐ 65+

Podaj swoją płeć \*

- ☐ Kobieta
  - ☐ Mężczyzna
  - ☐ Inne: \_\_\_\_\_
-



Jak poważny jest według Ciebie problem zmian klimatu? \*

	1	2	3	4	5	
w ogóle nie jest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	niezmiernie poważny

W jakim stopniu bierzesz pod uwagę aspekty ekologiczne podejmując decyzje na co dzień? \*

- ☐ 1 - Żadnym, nie biorę pod uwagę środowiska podejmując decyzje
- ☐ 2 - Małym
- ☐ 3 - Nie wiem
- ☐ 4 - Dużym
- ☐ 5 - Bardzo dużym, zawsze biorę pod uwagę środowisko podejmując decyzje

Zaznacz 3 stany lub emocje, które najczęściej towarzyszą Ci w odniesieniu do zmian klimatu.

\*

- ☐ Smutek
- ☐ Niepokój
- ☐ Strach
- ☐ Frustracja
- ☐ Gniew
- ☐ Żal
- ☐ Nadzieja
- ☐ Optymizm
- ☐ Poczucie sprawczości
- ☐ Poczucie bezsilności
- ☐ Motywacja
- ☐ Obojętność
- ☐ Nie mam zdania
- ☐ Inne: \_\_\_\_\_

W jakim stopniu starasz się stosować metody, które pomogłyby Ci lepiej funkcjonować w obliczu zmian klimatu? (na przykład otaczanie się aktywnie działającymi ludźmi lub pozytywnymi wiadomościami)

\*

- ☐ 1 - Nie wprowadzam żadnych metod
- ☐ 2 - Wprowadzam czasami jakieś metody
- ☐ 3 - Nie jestem pewna/y
- ☐ 4 - Często wprowadzam jakieś metody
- ☐ 5 - Zawsze wprowadzam różnorodne metody

Proszę, wypisz te metody. Jeśli żadnych nie wprowadzasz to postaw kropkę. \*

Twoja odpowiedź

---

Jakie reakcje od większości osób zauważasz gdy dzielisz się swoimi przemyśleniami i emocjami klimatycznymi? \*

- ☐ Ludzie mówią, że przesadzam
- ☐ Ludzie sprawiają, że myślę, że to co czuję nie jest ważne
- ☐ Ludzie dzielają moje odczucia i przemyślenia
- ☐ Ludzie wspierają mnie i są empatyczni
- ☐ Inne: 

---

Czy korzystałeś kiedyś z form wsparcia takich jak artykuły, organizacje, pomoc psychologiczna zajmujące się zdrowiem psychicznym w kontekście zmian klimatu? \*

- ☐ Tak
- ☐ Nie, ale ich potrzebuję
- ☐ Nie, bo ich nie potrzebuję
- ☐ Nie, jako że nie wiedziałam/em, że takie formy istnieją

---

Jakie emocje wywołuje debata publiczna na temat zmian klimatu w Twoim kraju? \*

Twoja odpowiedź

---

W jakim stopniu, według Ciebie, w Twoim kraju jest prowadzona dyskusja związana ze zdrowiem psychicznym w kontekście zmian klimatu?

\*

- ☐ 1 - Żadnym/znikomym
- ☐ 2 - Niewystarczającym
- ☐ 3 - Nie wiem
- ☐ 4 - Zmierzającym w dobrym kierunku
- ☐ 5 - Wystarczającym

Czy jesteś zadowolona/y z działań na rzecz klimatu podejmowanych w Twoim kraju?

\*

- ☐ 1 - Bardzo niezadowolona/y
- ☐ 2 - Niezadowolona/y
- ☐ 3 - Trudno powiedzieć
- ☐ 4 - Zadowolona/y
- ☐ 5 - Bardzo zadowolona/y

Co według Ciebie może zmobilizować osoby aktywne do większego działania na rzecz zapobiegania zmianom klimatu?

\*

Twoja odpowiedź

---

Co można zrobić aby zmobilizować osoby bierne do działania na rzecz zapobiegania zmianom klimatu?

\*

Twoja odpowiedź

---

Zmiany klimatu są efektem: \*

- ☐ Działalności człowieka
- ☐ Natury
- ☐ Mieszanki obu

Po czyjej stronie leży największa odpowiedzialność za rozwiązywanie problemu zmian klimatu? \*

- ☐ rządu
- ☐ lokalnych samorządów
- ☐ przedsiębiorstw i koncernów
- ☐ indywidualnych osób
- ☐ organizacji i zrzeszeń proekologicznych

Chcesz podzielić się czymś istotnym w kontekście tematu zmian klimatycznych i postaw z nimi związanych? \*

Twoja odpowiedź

---

### **Appendix 3: Interview with Dr Agnieszka Klimska**

**Konstancja Cegłowska:** What attitudes towards climate change do you observe in Poland? Is there a noticeable difference between social groups? If so, what kind? What is its cause?

**Dr Agnieszka Klimska:** By virtue of my scientific interests and my work, the issue of climate change has been close to me for more than a dozen years. During this time, I have been able to observe how public attitudes towards climate change are being formed.

In my opinion, by far the most committed to climate issues are young people. I am thinking here primarily of people of high school and college age. This is probably due to the fact that it is partly on them that the burden of fighting for the future of the world has been thrown.

Positive attitudes towards climate change, expressed in concrete, informed choices are discernible among communities living in larger cities. This is due to the availability of environmentally friendly infrastructure, greater efforts to promote good practices or create awareness of climate change among citizens, but also to engage in campaigns that are “at their fingertips.” Residents of large cities are much more taken care of in this regard than the community living in non-urban areas.

This is confirmed by studies or reports that point out that while people recognize climate change, they do not look at the problem locally.

**How has this issue changed over the years?**

In my opinion, those in the Baby Boomers generation, although they recognize climate change and even the effects, do not think about the causes, much less link them to their own activities. The case is different for Generation X and Y. Their awareness of climate change is greater although it does not necessarily translate into attitudes. They are more likely to declare that they are ready to counter climate change, but this is not as often reflected in their attitudes. From my observations, Generation Z is the most committed to climate change, which is due to the fact that they are growing up and forming their views in a world of constant access to information about threats, global issues, etc. The forms of messages that reach them are not only much richer, but also more clearly appealing and driving them to action. However, the motivation to take these actions sometimes varies. In addition, this is a generation that had the chance in the process of school education to learn about the anthropogenic impact of humans on the environment.



Positive attitudes towards climate change are also associated with a certain fashion for living “eco” or in accordance with the postulates of sustainable consumption. This is strongly influenced by social media, especially the activity of influencers who promote pro-environmental attitudes and habits.

### **What attitudes to climate change prevail in Poland? What are their causes?**

In my opinion, passive attitudes toward climate change still prevail. Although awareness of the change itself and the risks is growing, it is not translating into action or choices. Where do such attitudes come from? First of all, from convenience. We tend to be able to give up things that do not involve huge sacrifice or significant restrictions. On the other hand, from the side of the young there are voices that they do not want to take responsibility for what others, older ones, have done. Why should they, because of the negligence of earlier generations, now take up the fight against climate change? Despite a sizable group of young people committed to climate action, there is also a segment of society that accepts this narrative. Still others are paralyzed by fear and pessimism. They do not believe that anything can still be done and are passive observers of negative changes.

### **What can be done to motivate passive people?**

First of all, it is necessary to find out for what reason they are not taking action to protect the climate. If they are climate denialists one can try to convince them, based on reliable scientific sources, that climate change is a fact. However, there are opinions that since there are far fewer climate denialists, the focus should not be on changing their beliefs and positions, but should instead focus on working with people who are aware of and confident in the dangers of climate change.

Probably a sizable group of people who are aware of the dangers of climate change are not taking any action to protect it. In my opinion, it is worth showing them how these changes negatively affect individual humans – specifically, themselves. For it turns out that, unfortunately, some people are not able to give up their own comforts, to go beyond their comfort zone. Sometimes they are unaware that small changes can bring considerable benefits. Some also think that their “positive change” – some specific good practice – is a “drop in the ocean” in the face of global needs. Besides, if others don’t sacrifice, why should he or she.

However, it is worthwhile with various activities to teach responsibility for future generations and implement positive practices at every stage of a person’s life. Various forms can be used for this. First, teach from an early age in homes, kindergartens, schools. Secondly, create as many campaigns and projects as possible, during which solutions for climate protection are “smuggled in”. It is worth

showing the involvement of well-known people, authorities in various fields, who can also promote certain attitudes.

### **What can be done to support active people?**

Above all, it is worth appreciating even the smallest actions, promoting them, rewarding them, showing their importance. Recognizing someone's involvement, emphasizing its legitimacy and showing interest and support will work to drive and motivate.

### **What emotions about climate change can we observe in our country?**

I perceive extreme emotions in this regard. Here comes the problem of combining the need for climate protection with political action. Where there is politics, there are strong emotions both positive and negative. If we combine climate action with politics or tie it to other issues on the principle of getting "two birds with one stone," we may not move on. Climate activists are sometimes viewed negatively if at the same time, for example, they promote other content or attitudes in their marches, such as opposition to specific politicians or the needs of LGBT people. Each of these issues people have the right to consider important, but each should be pursued separately. Associating them with each other can cause negative emotions.

### **What complex emotional states / mental models related to climate change do you see in our country?**

Here I can refer to what I mentioned in my answer to question 3. I don't know if these are complex emotional states (I'm not a psychologist, so I don't want to elaborate too much on this, since I don't have enough knowledge on the subject), but I can see that these are different emotional states, often extreme.

I observe them, if only in my work with students. Many factors influence their attitudes or emotions. If we discuss the consequences and predictions of climate change, states of resignation, doubt and emotions such as disappointment or sadness are noticeable. Other times, when I show the results of various climate protection activities, passion and commitment, not only of some organization, foundation or institution, but of ordinary people, then the emotions in the same people are different. Optimism and enthusiasm appear. That's why I often emphasize that a lot depends on the narrative and the way to stimulate action. If everything is based on scaremongering and alarming how little time we have left, this will not necessarily translate into action, changes in attitudes, etc.

Referring to mental models, it's worth mentioning, for example, the strong belief that is in the minds of many of us that we can't do anything ourselves. *After all, others don't do anything! So what if I'm going to reduce consumption if others don't want to change it! What about big businesses? After all, there is a lack of control, and if there is, financial penalties are not a burden on these companies!* Etc.

Such images and such beliefs will limit our activities, willingness to change already at the idea stage.

Of course, such a mental model is also a conviction about the natural process of climate change, which is completely unaffected by human functioning. This is because some people still debate and even question the assessments of the scientific evidence on climate change by the Intergovernmental Panel on Climate Change. We also continue to encounter the opinions of climate deniers who deny the phenomenon of global warming.

**How do you think people will react when the most pessimistic predictions come true?**

I think they will be gripped by even more fear and an even greater sense of powerlessness in the face of what may yet come.

Unfortunately, we don't learn from our mistakes, and in my opinion we will be thinking about climate migration rather than countering change.

**What happens to people's mental health in the context of climate change?**

It depends from which side you look at it. Some people still have too little awareness of climate change and their mental health definitely improves as the temperature rises. I'm joking a bit here. But I want to emphasize that there are people who at the thought that there will be no cold winters, that the summer will be warmer feel better mentally.

However, referring to scientific data, the level of anxiety about the future on Earth is increasing, depressive states related to fears about the future are appearing. For example, some people experience anxiety states due to the disruption of the seasons, while others choose not to have offspring due to concerns about climate change.

**Who is most vulnerable to mental health deterioration in the context of climate change?**

Most vulnerable are young people, who already, research shows, are the least resilient to current changes in their home, school or work environments. This group sees climate change as one of the key threats to civilization. It used to be that climate change was not perceived as a major threat. Scientific units that study the phenomenon recognize that for the past two years, concerns about life and health have been closely linked to climate change. They appear right behind wars and epidemics. Interesting research on the subject is being conducted by Prof. Izabela Kapsa and Dr. Wojciech Trempała of Kazimierz Wielki University in Bydgoszcz, among others.

**Are there cases in which a person reaches out for psychological support because of climate change?**

Absolutely. This is a result of climate stress and even climate depression. Research by psychologists is emerging in this area, which shows the scale on which we are already dealing with mental difficulties resulting from climate change, the effects experienced, and especially anxiety about the future. I encourage you to read the research and scientific publications of Dr. Magdalena Budziszewska of Warsaw University and Dr. Weronika Kalwak of Jagiellonian University.

We should also not forget about the groups of people who report to a psychologist or psychiatrist because they cannot cope with the idea that they will have to sacrifice something, give up something, due to climate change. I'm not just talking about giving up some comforts or, for example, the fear that airplane flights will be restricted. I mean, for example, miners who fear for their future, their professional fate, whether they will be able to support their families, etc.

**Do you observe a special sensitivity of a particular social group?**

I am not competent enough to answer this question. It seems to me that younger people are more sensitive, because they realize that with the effects of climate change, they, not we (the elderly), will be the ones left behind.

**What factors matter?**

What matters are individual factors in particular, i.e. how each of us reacts to specific data from climate change reports, to what extent we fear for our lives and those close to us (in the context of climate change), how we react to stressful situations in general, etc.

**What remedial and supportive strategies do we have at our disposal in the context of mental health, since climate change and environmental degradation are constantly accompanying us?**

This is now a task for psychologists, who in this regard should join forces with climate change and environmental scientists, as well as with educators and ethicists.

**How can we learn to function with the constant changes taking place in our environment in mind?**

You can't learn it, you can get used to it and try to react properly to these changes. Nowadays, there are some changes in every area of life. In fact, hardly anything is stable nowadays. I think that millennials (generation Y) will neither have to learn nor get used to any changes. This is already written into their lives to some extent. In the face of the changes taking place, they will reassert themselves that they can basically count on themselves first and foremost. The traditional model of family, friendship, authority figures are disappearing. Even universal values are becoming less and less significant. Where is stability, balance supposed to come from? That's why I emphasize it so often, that the young are more likely to be lonely, lost and stressed because of the changes taking place. The consequences of changes, including those taking place in the environment, will affect them more.

**How relevant is psychology in the context of climate change, what is its role?**

Psychology is important in the sense that it can give tools to counteract and combat climate stress or depression. To some, it seems unbelievable that someone is struggling with anxiety because of the climate. A bit abstract, but at the same time real and unfortunately increasingly common. It is therefore important to build mental resilience in this aspect as well. This is a challenge for psychologists, and this is where psychology is beginning to develop in Poland.

**To what extent are psychological factors taken into account in the discussion of climate change in our country, or to a sufficient degree?**

In my opinion, these issues are completely ignored. There is no talk at all about fear, negative emotions, climate depression. There are messages like The young are worried about the future. However, they are completely unrelated to the actual conditions. After all, fear does not only mean perceiving that something is wrong. Fear can involve permanent stress, anxiety, resignation, etc.

Here again, awareness-raising activities are needed, for few people realize that climate change can bring, as much as COVID-19, stress, fear for their own lives and those of their loved ones.

**Does Poland differ significantly from other countries in the aspects discussed above?**

It is difficult for me to assess this clearly, because in other countries, despite having a more firm or developed climate policy, actions are allowed that contradict the assumptions of the policy. Still, money rules, and sometimes the interests of “others” turn out to be more important than the welfare of current and future generations.

**Thank you a lot for the conversation!**

Thank you too.

#### **Appendix 4: Interview with Dr Caroline Hickman**

**Konstancja Cegłowska: So we can start! What attitudes towards climate change do you observe in England?**

**Dr Caroline Hickman:** Oh yeah, it's a very big question. When you ask about attitudes I think you have to break it down into how people feel emotionally and also what people think cognitively. I think emotionally the majority of people are concerned or worried and then a percentage of people are very scared and very angry and much more inclined towards activism as a result and then there's a percentage of people who just have a kind of fantasy that it's not going to be that bad. So you have a whole range of responses to it. I don't think anyone is indifferent, I think everybody has a level of concern but a lot of people either don't want to think about it too much, don't want to do anything different so they have an emotional concern but they don't want to physically change anything. There is a percentage of people as well who are so overwhelmed with paying the bills and coping with life that they haven't got the space to think about climate change on top of that. There is an growing group of people and I think young people have greater concern than older generations because they are more informed and they're also thinking about in terms of their future. So there is a range of responses I think in terms of attitude. There is a disconnect, there is a mismatch between how people think and feel but how they're prepared to act and often how they're prepared to act is not enough, not sufficient.

### **Has this somehow changed over the years?**

I think it has changed, I think it changes every year, I think it's constantly changing and we would talk about this as an emergent problem because it is constantly changing, it never stays still. Every day in the news or every week in the news we have new information about ice melting or wildfires or flooding or not knowing when spring is. We've got the blossom out too early. People are constantly observing these things but not necessarily recognizing that it is incrementally getting worse year on year. Two years ago we had 40 degrees heat which worried people, last summer we had cold wet weather. People will be quick to be reassured by that. There is also misinformation and disinformation from governments and oil companies and big business that are economically driven, making decisions about economic security rather than food security or land security so you've got competing narratives some of which is quite criminal, if you listen to Antonio Guterres, you know, he says it's a crime that we're not acting on this. So I think what it comes down to is a lot of confusion and when people are confused they don't know what to do. I think we are seeing more and more and more people worried. I think that this is increasing year on year. We're also seeing government and legal action against protesters and activist so there is backlash against that. It's very very difficult times to navigate because awareness is growing but that leads to more pressure on people who know what's going. We don't have leadership so we don't have government leadership and we don't have economic leadership.

### **What can be done to mobilize passive people? You said a bit about confusion and indifference. What can be done here?**

I think a number of things I think the legal cases are really important so we have the ruling from the European court, next week on April the 9<sup>th</sup>. I don't know if you know the case but six Portuguese children have sued European governments which includes your government for failing on climate change in the European Court in human rights yeah. They are ruling on it next Tuesday the 9th of April so get online and listen to the ruling. There's three cases being ruled. I think the legal arguments are absolutely crucial and we will see more and more and more legal cases now with groups of young people, groups of adults who are concerned, citizens trying to get legal precedent to force people to act. Governments will be more willing to act if they are forced to. One of the things that will force them is legal action. The other thing that will force them is political action and you know we have big elections coming up here this at the end of this year and we should only be voting for the politicians who have strong environmental policies but there's a backlash around the world, in the Netherlands and in other countries where the opposite is happening. So it's a real war between globally between people who want to take action and people who are opposing it. I think the legal cases are crucial I think psychology is crucial helping people to not just deal with their feelings but also understand how to challenge and confront denial and disavow because when you understand it psychologically then

you're in a better position to challenge it. One of the things that doesn't work in challenging people is giving them facts and figures. It doesn't change the way people feel, they just ignore the information so we need to give people data, science, facts and figures with the psychology so they know how to act on it and navigate it so I prefer a kind of psychoeducational approach. You educate people about mental health, you educate them about climate change and you teach them how to develop the emotional intelligence and resilience to deal with it. Sally Winthrop talks about the culture of uncaring and we need a culture of care, we need to understand and we need the intergenerational solutions because it's often the older generations that have created the problem but it's the younger generations like yourself that are paying the price. You've not caused this problem so we need to recognize that this is an intergenerational conflict and we should be giving children as young as 14 political votes particularly on these issues. You should vote on this not old people. We should be handing more power in decision-making to young people because these are decisions that need to be made for the future. Young people are more invested in thinking about those futures and it should be in schools universities colleges we should be teaching it across the curriculum. So that people have the education but they also are taught how to deal with the feelings and the mental health. Mental health difficulties in young people in particular are just getting worse and worse with anxiety and depression and self harm and ADHD and all sorts of difficulties that young people are facing and a lot of that is because of the pressure the planet is under and the lack of hope in their futures. So we need to find a way to give young people that power to construct the future for themselves that they want. We should be involving them in decision making and give them power instead of being patronizing or pathologizing them and telling them to stop worrying and go back to school which doesn't help anybody.

**So would you say that the young generation is at the highest risk regarding mental health problems in the context of climate change?**

Yeah, without question because young people in particular and children in particular don't have the power to move. When we feel threatened we can either fight the threat or we want to run away from the threat. You can take activism as a climate activist to try and fight the threat but again you've got relative little power. You can't run away from it because you're stuck where your family lives or economically you're stuck so psychologically that creates that state of trauma and Terror and anxiety but with no way of resolving it except groups like Fridays for Future, other activist groups which give young people a space where they can at least feel they're taking some action. Psychologically as well young people have not developed the defenses, they're still developing. Child, adolescent development, our brains don't stop forming until our mid 20s. Brain is in development right up to mid 20s, so your brain is developing, your neurological system is developing, physically you're developing. To deal with the pressure and the multiple stresses of dealing with anxiety about climate change from heat from wildfires from smoke from flooding, those stresses impact on



your mental health and your well-being and your development as a child or young person in ways they don't impact in the same way on fully grown adults because the adults have had the security through childhood before they are developing right. So children are much more at risk and physiologically they're more at risk from heat from smoke from air pollution and the physiological impact has an impact on mental health as well. So without question children and young people are much more at risk much greater risk and it has long-term impact. The impact of stress in childhood can create a long-term mental health impact throughout adulthood and the stress isn't going away, the stress of climate change is not going to go away, it's not like having stress over an exam or being involved in an argument with someone where you can sit the exam or end the argument and then the stress is gone. Climate stress is never going to leave because we're continuing to add to it so this is a long-term stressor.

**So what are the coping strategies for the mental health and wellbeing as the climate change and environmental degradation continues to surround us and will not stop surrounding us?**

You need solutions at a number of levels they have to be political and collective and cultural first so we need that collective cultural political shift then we can move to more social family shifts then we can move to individual. It has to be that way around, there's a lot of emphasis on individual action but actually it needs to be collective action first. Then you need to validate how people feel, you need to tell them that you understand, you need to tell them they're not crazy that your fears make complete sense and you're not on your own with this and then we need to take a range of actions which includes physical action. So we need cleaner environments, we need better transport systems so that we can have less air pollution. We need better food quality, organic farming, organic food. Food might be more expensive but it will be better quality, we need to reduce emissions from agriculture as well as from transport as well as from industry. And get people to adapt to that and adjust to that because actually the quality of life can be better. This means you some people may have to pay a bit more for some food but actually that would be affordable if we collectively took action on this to make food affordable for people and then they can make the adjustment. We need better insulated homes, we need better flood defenses, we need better land management, we need rewilding. We need to use less pesticides so the bees are not being killed. That's what I mean that we need to deal with it at an ecological level not just at an individual level. On individual level yes you can do your recycling you can try to live your life in that way, you can become vegan, you can stop drinking cow's milk, yeah these are important steps but unless everybody's doing it it's not going to make much difference.

**Apart from the young generation do you observe any particular sensitivity of a specific social group?**

It's interesting. No, I don't think it is a particular social group I think it's more people who are aware. As you wake up you realize more and more. No, I think it's as people become aware and we talk about what woke you up, when did you wake up because it's almost like your awareness kind of stays quite low level and then often there's something that wakes you up more and it can be observing a wildfire or a flood not even in your own country but seeing it on the news or learning more about it in school and then realizing how it's impacting your future decision making. Starting to make choices about whether or not to have children for example so there's often a triggering event that wakes people up but I don't think there is a particular social group that is more or less concerned. I think demographically the younger generations are definitely more concerned up to late 30s but after that it drops in midlife and then it tends to go up again and older age over 60s seem to be more concerned. I think maybe at midlife you're so busy trying to pay the rent and manage and survive and feed the kids and keep your job and maybe you are just overwhelmed with worries. I don't think there's that distinctive a difference in terms of cultural difference I think the differences I've seen in countries, because I've been talking with young people all over the world, and actually what is most striking is how similar people's concerns are, not how different they are. So young people in the UK feel very similarly to the young people in Brazil who feel very similarly to the young people in the United States and Finland and the Maldives. They think and feel very similarly. Even though some of them in Nigeria the Maldives India are on the front line of the climate crisis. Maybe they have less guilt, maybe there is a bit more guilt in Western countries where there is higher economic development but I think when you get underneath that, when you ask how people think and feel you see more similarities.

**You said that the emotions and the feelings of young people in different countries can be similar but what about the overall awareness of people because the actions taken in different countries differ? Does it influence the mental health and the feelings in each country? In each country there's like a different approach of the government and as you said about Poland we did not have very like good government in this case.**

Well, in Poland it is interesting because your economic progress has been rapid in the last few years. A few years back Poland was not economically very secure. Suddenly Poland is much more economically secure there's been a lot of progress. I'm generalizing I know but people are not going to want to give up that comfort that security right. In Poland they're not going to want to lose that okay and also it requires investment in infrastructure to reduce the impact of burning coal and fuel and heating houses. You will need to heat in the winter the same as us. So the problem with government attitudes in whichever country you're in is they're going to be more interested in short term. So Poland's government will be not that different to the UK government. Our government may be worse than yours right now, our is terrible right now because they're interested in short-term popularity okay and they

know if they bring in unpopular policies they will be voted out by the public so they're interested in keeping their own jobs so they're kicking the problem down the road to the future and the problem is the longer we to act on this the worse the action will be. We've known about this since well before you were born we've known about this. The seriousness of this since the 1950s, 1960s when I was born but we've failed to act on this so the delay that has taken place means that people have a kind of. I mean the 1970s 1980s I believed we would adapt because it was so obvious but here we are 40 years later still not acting. So it's really hard to reconcile yourself with this and think. Once you're aware of the urgency to continue, to avoid that action is really hard to understand so the only way to understand it is selfishness and greed, apathy or powerlessness because you're feeling poor or dealing with racism or dealing with homophobia dealing with another social political pressure which overwhelms you and then you feel powerless and then you think "well, what can I do" and then you think "well, I can't cope with it this week". So humanity doesn't have very good understanding of the importance of looking 20, 30 years down the road otherwise we would have taken action. Our psychology is very stupid, if I'm honest, we deal with immediate threats but we don't deal with long-term threats and we're not we're not as smart as we think we are we think we're very superior but we're really really not, otherwise we would not be in this mess. We are still wired psychologically to deal with immediate threat but not long-term threat so until your government buildings are flooded you won't act and neither will our country and even when they're flooded they may not act they'll think "oh well we'll do this or we'll do that". There's a lot of bargaining and not avoidance of the need to take action and if you contrast it with Covid for example, okay no governments did brilliantly with Covid, but there was rapid action. Your country went into a lockdown because of covid, yeah? So did we, we stopped the economic activity, we stopped traveling, we closed our borders, we were able to take action rapidly there because it was an immediate threat. We just need the same scale of response to the climate crisis but because we don't perceive it as an immediate threat we're not going to give that significant response. By the time we do that, things will not be great, we already have millions of people migrating all over the world because of climate change. Sorry, talking to me can be depressing.

**What you said about the indifference and things like that and also the misinformation around it, is there any way to cope with the climate change deniers?**

Yeah, conversations like this, helping people, first of all you want to try and help people understand why they're in denial. Because I think behind the wall of denial people are genuinely frightened and worried, but the denial is a defense. So they're like "no, no, no, no, it's not that bad, it's not that bad", it's a defense, right? If you get over the other side of the defense they will say to you "yeah, it is really frightening but I don't know what to do", right? So if you can speak to the defense and help people recognize that they're defending against it because they're overwhelmed or

scared or don't know what to do and then help people take simultaneous action at a local level, small scale change and at a national and international level large-scale change, pressure on governments, pressure on International action, personally I think this has to be taken out of the hands of individual governments because individual governments, all our political systems are based on popularity so you're going to make yourself very unpopular. You're not going to do it. So we need absolutely to give people the option of taking that action but not being punished for it. So you confront the denial, you explain the denial to people. I talk about throwing the messages over the denial wall, you know I say to people "look I know you're scared I know you're angry, behind this is just denial, let's deal with the denial" and then behind it you've got people's concerns which you can speak to then you say "okay right what action can we take". So if you explain, if you help people understand educate them psychologically people will often then be able to come on board more. If you challenge denial it'll just reinforce it and make it stronger. So you have to be clever you have to deceive people and get around the defenses.

**So how can we support the people who are already active? Because it can be also hard to be a person who is involved and is dealing with the stress that other people don't do anything.**

I agree absolutely, so the first thing I say is, look you have climate distress which is motivating you to take action but this is a sign of mental health. It's, you're mentally healthy because you're taking action and you're taking action because you care. So you should be proud that you care. So we have to reframe the distress so that you see the distress as a good sign not a bad thing. Often when we're anxious or depressed we think it's a bad thing, no if you're anxious or depressed about the climate crisis it's a good thing. So you reframe it and say "well done I'm proud of you, don't do it on your own take action collectively you need support from other people all the time if you try and do it on your own you will get burnt out you will get depressed. It will feel terrible and you have to have faith and radical hope in the future that we are struggling with this but you have to find a way to keep going, you need that resilience to keep going and you need to identify the small wins as well as take action on the big ones because every small action you take counts for something. It's a marathon not a sprint so you have to sustain yourself over the long term okay and don't think we're going to get this changed in the next two weeks, because we're not, but a combination of citizen action, young people taking action, education, psychology, legal cases, these things together will make a difference".

**Do you think that the psychological and social factors of climate change are discussed to a good extent in your country?**

No, nowhere near enough. No, they should be being discussed a lot, all the time. Because people don't understand, if people don't understand the nature of what we're dealing with then they won't be able to take action. So they need the psychological social understanding but there's too much emphasis on the physical

impact on the impact of floods and crops and heat and the physical and people dismiss the psychological and they really should be paying a lot more attention to psychological.

**The last quick question, are there cases when someone for example seeks psychological help or a support group due to the climate change?**

Yeah quite a lot okay, yeah. And people don't need a therapist unless they've become highly distressed but they do need understanding, they need support and sometimes they need somebody to help them learn how to navigate the multiple stresses. So I think psychological help really is a benefit there. I work with people individually but I also encourage people to find a group, find a community to be part of as well. So it's not just individual because it's not just you that feels this way. All good people feel this way so you need both the individual support and the collective.

**So these are all of the questions.**

They're very good questions, thank you!

**Thank you very much!**

## **Appendix 5: Interview with Ben Hart**

**Konstancja Cegłowska:** Hello, thank you for coming to my interview. We can start, so the first question is what attitudes towards climate change in England do you observe?

**Ben Hart:** Thank you for having me. In England we have a big range of attitudes towards climate change, there are lots of people who are very worried and there are lots of people who are very passionate about trying to help, reduce and stop fossil fuels and emissions that are causing climate change. There's also a lot of people who I think, I think there's a lot of people who ignore it and who think it doesn't matter or are worried but don't feel like they can do anything and there are unfortunately quite a few people who either don't believe or don't care about climate change and often unfortunately the people like that tend to be the ones in power. So the latest government or the government that's been in the UK for some time but has changed a lot over the last few years is currently going back and against some of the commitments that they made because they think they can get more votes by not pushing as hard on climate change adaptation.

**Do these attitudes differ between social groups? Is there a social group which is more active or less active?**

Yes definitely, I would say it's more political, the political groups. Certainly the older generation who are the ones in power, as a general obviously, you know individuals are different, but generally I think the older generation are not as worried. There's a lot of anxiety within the younger generation and there's a lot of people in power who are the older generation and, you know, they want to keep things the same way because that benefited them over time.

### **Has this changed over the years? Do you observe any change?**

I mean we've certainly seen a lot of change in the UK over a number of years. So the UK has had lots of very passionate people campaigning about climate change for a long time. 10, 15 years ago there were lots of activist groups who started. One of them was called The Camp for Climate Action where they would do big protest camps outside the Heathrow Airport and protesting against the third runway and they protested against new coal fire powered stations and they actually stopped new power stations being built. Then you had Extinction Rebellion came through in 2018 and they shut down all the bridges in London and actually at that point that was after the Paris Agreement from 2015 and Extinction Rebellion did a big protest in London for a week and they shut down all the bridges in London. A few months after that Teresa May who was a conservative prime minister actually enshrined into law a thing called the climate emergency kind of act but basically she enshrined the Net Zero Act actually which legally committed the UK to reducing its carbon emissions to Net Zero by 2050. So because of a lot of very passionate people doing protests and putting themselves in the way and putting themselves in danger it pushed the government into signing up to one of the world's first Net Zero by 2050 in law agreements. Ever since then unfortunately, the UK has done some really good stuff but over the last four or five years maybe the UK has kind of turned around and some of the good policies they put in place they've started to backtrack on. The UK has had lots of different attitudes, right now we have Just Stop oOI which is another campaign group that came out of Extinction Rebellion. There's lots of very passionate people who are doing lots of very good stuff, there are lots of people who seem to be sticking their heads in the sand and like to keep things the way they are because they're making money out of it and there's a lot of people in the middle who either don't know what to do or try to ignore it because it's too scary to think about.

### **What can be done to mobilize these passive people?**

I think climate change has become much more over the last four or five years because we've seen a lot of climate changes and the temperature is going up and we've seen lots of flooding in the UK, we see droughts that affect our farmers and our crops so I think people are starting to wake up and realize that it's not something that's going to happen in 20 years time, it's happening now, so climate change has become much more of a political agenda than it has been before. We have an election coming up probably next January or somewhere between now and next January and for the first time ever it's expected that climate change will play a key

part in the election conversations. So in terms of mobilizing more passive people I think bringing it more into the conversation, into discussions. The other thing I always say is that I'm a techno-optimist. I think we have the technology to stop climate change or reduce the impacts of climate change. We've already managed to globally reduce the projected increases from 6 degrees down to 3 degrees in the last 10, 15 years. Actually if we keep bringing more technology in renewable energy, solar panels, wind power, electric vehicles, new forms of regenerative farming. There's lots of solutions now. What's happened over the last maybe five years is that a lot of these technologies are becoming cheaper and better than the alternatives. Nowadays an electric car it's about as expensive as a normal car but it's much more better for the environment, it costs much less to drive, so from a moving the passive people forward, it's more a case of making the green alternative more attractive for normal consumers.

### **How can we support people who are already active?**

There's a whole lot of ways you can do that. Obviously there's lots of different types of activism, so you have things like Greenpeace and Friends of the Earth so if you felt like you wanted to get involved you can donate. I do monthly donations to Greenpeace for example. So that's kind of financially supporting them. Obviously if there are things like protests, if there are things that people do to be more active than supporting them on social media, supporting them on news articles, things like that, that's really good. Unfortunately or fortunately the democracy works in terms of opinion so if the governments of the day see that people want to see more green action by supporting the active people you are actively showing the governments that they should be changing quicker. You can also join political parties. I'm a member of the Green Party which is a political party in the UK which campaigns for more green solutions and has one Green MP, hopefully will have more Green MPs in the next election. So that's the main one in terms of supporting activism.

### **What emotions can be seen in your country regarding climate change because there is range of attitudes and what about emotions?**

I think emotions, there's a lot of them. There's a lot of people who are very worried and very upset and feel very helpless. The more you learn about the science the scarier it can get and the news is very scary because we always know that the news has a very negative bias so the news only talks about negative things because that's what people will watch. I think there's a lot of people who do that and therefore the advice to a lot of those people is to get involved be more active, do more good things, do stuff yourself, get renewable energy, fly less, take the train more, buy organic food, all that kind of stuff. Then there's a lot of people on the other end who are very angry and who are very anti what they call woke or left or liberal and they see it as a political philosophy and they get very angry about it because it's been turned into a scary thing that's affecting their lifestyles and affecting their liberties. Personally I think a lot of that is just fear mongering and it's just campaigns by fossil

fuel companies who want to keep things the same, who don't want change to happen. So, there's a lots of different emotions from kind of very angry people who don't believe in climate change all the way through to people who are worried and scared about what the future brings.

**About the future, what do you think would happen if the pessimistic scenarios would occur? People would be more prone to collaboration or would it turn into this as you said political thing? Are there for example some works related to climate-related emergency**

I mean no, there's no such thing at the moment around emergency laws but there are obviously emergency provisions for emergencies that you could argue are because of climate change. For example if there is massive flooding because there's so much rain then obviously there needs to be plans in place to support people if their houses get flooded. So there are kind of emergency plans in terms of place like that. In terms of the pessimistic scenarios it's hard to tell what's going to happen. Temperatures are already changed, rising and we're already seeing extremes of weather and that's a challenge. We are seeing extremes of heat so we have very dry summers and then we see very wet winters and we see lots of rain. Obviously if the worst case scenario happens and things like the ice sheets in Greenland start melting a lot quicker than they are then sea levels will rise and cities will flood so the very worst pessimistic stuff is society starts to break down and you have what we're already seeing which is wars, you see pandemics, and what happens is more and more of them come quicker and quicker and governments and society struggle to maintain structures because they haven't got any money, they haven't got any energy. So that's the very pessimistic end, the other end is that actually the more positive view is that as people start to see that these things start to affect them, it's not just happening in some developing country far away, it's actually impacting and their lifestyles and the food on their table and their jobs and how they move around and in their house prices and insurance prices. People will start to pay more attention and start to demand more action on climate change. And action on climate change is stopping fossil fuels, is reducing emissions but it's also creating more resilient forms of growing food, it's creating more resilient communities that look after each other, it's developing more nature which is what I do for a job which is buying up farms that shouldn't be farmed because the soil is so bad anyway and restoring nature on those farms so that we can protect nature as things start to change. It's renewable energy and it's local communities getting together and then putting their own renewable energy. So there's two extremes, there's the pessimism and then there's the optimism and I actually try and be really optimistic about it. I think we're seeing the technological changes happening and renewable energy for example is now cheaper to install than fossil fuels so it makes sense economically to invest in renewable energy over fossil fuels so there you'll start to see more and more renewable energy coming on. Then I believe that as the older generations move out of power they retire they die and younger generations come through who are more



worried about what's happening and have longer to deal with it I believe we will start to see more and more positive policies and scenarios and more people in power who understand what's happening and we'll make the necessary changes.

**We were talking a little bit already about the mental health of people, so are there some other phenomena regarding mental health in the context of climate change or do you think that we've discussed all the range of behaviours?**

I think mental health is a challenging one because it's scary frankly and the more you think about it the more you know about it the harder it is to deal with because it is scary but it's like anything. There is a range of emotions that we have. I think supporting people's mental health is really important I think certainly what I do with my career is we try and work on projects that provide hope because if you can show certainly with nature if you can show that nature returns and gets better, it's not just a destruction thing, that you can create projects and stories of hope I think that really helps people and certainly I try and focus on positive news over negative news to give myself a sort of mental supports.

**Would you say that this hope is the tool for people who are very active? Because I think that sometimes when we get more active and we try to change things and we are in an environment where people don't care it can be very demotivating. Would you say the hope is the factor that can help in this case?**

Yeah, I think hope is the only thing. We are humans and to be alive is to have hope so I think hope is the driving factor. If you think of all of the activists who do all the stuff they do from gluing themselves to a road, to campaigning, you know political activists are still activists, to all the people who are working on renewable energy technologies and new food production and regenerative farming you know, everyone has hope otherwise they wouldn't be doing it. You wouldn't do it if you didn't think we could help change things. For me hope is the driving factor and it's why we have millions and millions of people across the world now working on this problem and as a society and humanity we have to hope that we can collectively come together and find some solutions and start to mitigate some of the worst parts of what could potentially be quite a scary future.

**You said that younger people are more worried so would you say this is the social group which is at highest risk regarding mental health problems?**

I think so, I think young people in general are much more aware of their mental health nowadays. I think it's very good because they're much more aware of their emotions and are much more able to communicate. It does unfortunately feel like younger generations have more mental health issues than older generations but I actually just think it's because older generations haven't really been taught to talk about it so there's probably the same amount of mental health it's just if you're in an older generation you never really learned to talk about it so I think it's really healthy

that the younger generations can talk about it. I think yes, it is harder because when you're young as a generational thing you have less power you don't have money, you don't have stable jobs, you aren't in a position to make as much change so I think it's a scary time and obviously your generation has had it quite tough. You grew up after the recession in 2008 and then we had a pandemic and now we've got a war in Europe and it's tough, it's kind of relentless and then you're coming out to struggling economy, house prices are really high. You know there's so many different challenges around being a young person but because you're generation you've got the opportunity to make a change and you've got long time to get into power and you can do things, you can make changes and stuff so I think that's the key thing to focus on with this generation.

**How can we learn to function with the constant changes as you said that now it's such an uncertain time regarding climate change? Also as you said that there was pandemic?**

I think you have to build up your resilience I think you have to understand how the world is and how the world could be and work out your circle of influence, understand what it is that you can change and you can make a difference in and understand what things are out of your control and you focus on the things you can change. You can change your own habits and your own lifestyle and what you do for your job and your career but you can't necessarily change, there's nothing you can do about climate change and you can't do anything about a war in Ukraine, you know all you can do is be aware and work on which areas you can do good things in. I think that's the best way to look at – “what can I control?” and “what can I make a change in?”. And then over time if you do things and you make changes and you do positive stuff you'll find that your circle of control expands and you'll have more opportunities and more power to make bigger and bigger changes and if everyone did that then actually you'd end up with a lot of people doing a lot of very positive things.

**Do you observe any differences between England and Poland and our region of Europe? Could you say something about it?**

It's interesting because obviously Poland's been going for a bit of a change recently. So you've changed your politics. I think actually for the last 10 years we've both had quite right-wing governments, right-leaning governments and conservatives in the UK and PiS in Poland and I think these governments are very traditionalists and they create a lot of fear in order to keep power and they make other people, other groups of people be the scapegoats and they say it's because of the immigrants or it's because of people of a different race or a religion. So I think there has been a lot of similarities. I think in the UK, it's interesting, we had a conservative government in the '80s which was led by Margaret Thatcher and in the UK at that point we were a very coal-heavy country, we used a lot of coal and the coal miners were really big and the coal mining unions were really big, now I don't know whether it's a good

thing or not to be honest but actually the Conservative government at the time went against the unions and closed down a lot of the coal mines. It was socially seen as a very negative thing, we privatized a lot of our energy companies which again may be not a good thing but what happened is that energy is not so much of a political social thing. It's still a challenging thing but I suppose there's less power of the unions in the UK than there are in Poland. In Poland you've got big coal mining areas, rural areas, lots of coal. Poland is one of the last hold outs of coal in Europe. Poland has a lot of coal-fired power stations, you produce a lot of coal and the previous government didn't really do much to stop that and I think now that you've got a more liberal left-wing government you'll start to see a lot more drive towards stopping, shutting down the coal-fired power stations in Poland. Obviously socially there'll be a lot of changes that that come with that because there's lots of communities that rely on this but they will have to change. I think you'll start to see more of a change, in the UK we've actually done very well with closing our coal-fired power stations, it hasn't become a big political drama because everyone's realized that it's a good thing and we've actually got a lot of wind power in the North Sea. Actually, one of our success stories in the UK, the national electricity grid is something like 40-50% of it is renewable now and I think you'll see the same thing happen in Poland over the next few years hopefully, we'll start to see a lot more renewable energy a lot more support for renewable systems and when people start to realize that actually it makes the air cleaner and it's a lot nicer and it's cheaper eventually and we don't have to rely on gas from Russia then I think you start to see a lot more positive stuff happening in that respect but there will be some political emotional changes for a lot of people who have grown up and survive in these communities that are based on fossil fuels.

**Would you say that Poland and England are on different like levels of our awareness?**

I think so, I mean I don't know as much about Poland. I think in the UK certainly over the last three four years everyone has become very aware even if they don't agree, they have opinion on it. I think Poland is maybe some years behind because the previous government didn't really care and didn't really talk about it so I think in Poland you may be catching up on the kind of awareness of the challenges around climate change but you're also part of Europe which has some quite good policies. I think Poland will be pushed along maybe a bit faster.

**That's interesting! What would you say about psychology in the context of climate change? I think that it is a newer area, especially in Poland and there are few people who are dealing with that in Poland. How is it in Great Britain?**

I don't know I don't have that much experience obviously. I think, I assume that as you become more and more aware as a country there'll be more and more people who start to get worried and from a psychological point of view there'll be more and more people who need help and I think that's something the UK has maybe been dealing with for some time and it's becoming more and more important and more

mainstream to talk about worries about climate change and the future so I would guess that Poland will need to have more and more psychological support, more mental health, people aware of those kind of challenges

**Are there any support models for people who experience some kind of mental health problems regarding climate change in England?**

I don't know. I don't think there are addition there are certainly organizations like Force of Nature I've told you about, who are specifically set up to help young people and advise young people on dealing with climate anxiety through the lens of getting active. There are organizations that have been set up to help young people and help you people who newly discover the challenges around the future. I think that's how they do it, get people more active, get people more engaged, give them the tools mentally and emotionally and the skills to understand how to go and make a change because as soon as you start doing something positive then you can see a future that is positive.

**Thank you!**

## **Appendix 6: Interview with Anouchka Grose**

**Konstancja Cegłowska: Thank you once again and we are going to start now. What has sparked your interest in this area of mental health related to climate change?**

**Anouchka Grose:** I suppose I'd always been interested in the environment and in our impact on the environment. I wrote a book about vegetarianism I think at the end of the 80s or beginning of the 90s so a really long time and even then they were talking about the impact on carbon and the climate to do with meat eating and industrial farming. So it's always been there but then when I became a psychoanalyst I was just listening to people all the time talk about their fears because they'd see this stuff in the news about "how many harvests left at the current rate of consumption" or all that stuff and so just real people were freaking out and it wasn't very public, there was no sort of public recognition of the fact that was happening.

**What attitudes towards climate change do you observe in England?**

Really different ones I mean, so still some people who just think somebody else is going to fix it. Not so much in my practice but among friends they just think technology is going to solve it. I meet people who believe that collapse is really imminent, that we're going to see collapse in our lifetimes like societal collapse and

real catastrophe. Then among those people I know people who just think that you should be rich and you should have land and then other people who are really working, anything they can think of to build communities and they want it to go well and be fair and do justice. I don't know, so I see this really big range of things.

**Has it somehow changed over the years?**

Yes. I think people started talking about it maybe in 2015, by then it was already, really seemed to be in people's psyche but maybe only since 2019 it became really legitimate. I think nobody will think you're crazy now if you think collapse is a possibility, that's not a sort of insane position and actually people, economists and hedge fund manager, banker people also think collapse is possible and they're worried about butterflies. So it isn't a niche concern, all sorts of people are worried about it.

**You said it is a range but do you think a certain attitude is the most common one nowadays?**

I wonder if the most common one is the one where people are really really scared, they're trying to do a little thing, they don't know what to do, they hope that something will come up, they hope that they're worrying too much, that sort of.

**What can be done to support the people who want to be active and they're sort of confused, what can we do to support them?**

I mean one of the first things I suppose was to take them seriously so in therapy I think before 2020 PE people if they came with those concerns they might be told to sort of step back from them a little bit maybe, do yog, do breathing it's going to be okay in temperate climates, just rubbish like that and so now I hope no therapist would ever try and downplay a person's fears. Taking action is the best thing you can do, it's just about finding the action that is possible for you or that's most appropriate or relevant to your life or also the one where you can get the most traction, where you can go the furthest.

**What can be done to mobilize the passive people who kind of neglect climate change or say that they can't do anything about it?**

That is the key question, I mean that's the one all the activists and people that we work with are always trying to work on that or people who write about climate change because if you panic people too much apparently they shut down so it's to give people the information in a way that they can bear but it's like an impossible zone because if you tell people it's kind of probably going to be okay then then they might not do anything if you tell them that it's all lost and everything's a disaster they won't do anything so it's that spot in the middle where it's really really bad but there are things we can do. Messaging around that zone seems to be the best thing.

**What emotions can you see in the people's minds, related to climate change? Is there a range of different emotions or is it just a specific area?**

No, big range. People seem to deal with it really differently either they get really angry and they'll be angry with elites or angry with politicians or the people who are just really helpless, depressed, really really sad and you could say there might be unconscious anger in that but it expresses itself by sadness or helplessness. It seems to be quite an array.

**Can also some specific mental states be observed, related to climate change, so for example grief and more complex states?**

Yeah. I would say this isn't really mental state but overthinking. I wouldn't call it overthinking because I don't want to make a value judgment about it but one of the things that seems to happen with people is that you just start thinking about everything and you're right to think about everything. People who are thinking about the food in the supermarket, how the local government works, how the big government works, how to communicate the global supply chains, weather systems, insects, when people start putting all of that stuff together that seems to be the one that really we all suffer from because when you start thinking about it that way you just think too much.

**What do you think would happen if the most pessimistic forecasts would occur? How would people react, would they be able to cope with this situation in the case of natural disasters for example?**

One of the things where the battle is at the moment, everyone's very frightened of eco- fascism and the idea that that when disasters start to happen people will just think they need a strong leader and they'll just do anything to kind of have some strong man. I think that would be a catastrophe because that just doesn't work and those people never have everyone's interests at heart and so this other idea of a more kind of communities and people interrelating and sharing resources and behaving well towards each other is the one that we are all trying to campaign for and hope for and really do anything to try and pull things that way and away from the authoritarian ecofascism.

**How can it be done? The campaign for this more community well-being and sharing the resources?**

There's this sort of huge ideology that's been put about through since the 18th century that human beings are fundamentally bad and you have to have strong laws and you have to really control them otherwise everything will be a disaster and it seems if you look outside capitalist societies or if you look back to prehistory that's not true and so we really have to fight ideas like that. I think at the moment it's a war of ideas, it's not about people taking small actions but it's about much bigger ideas

being kind of put into the world. So people can trust that human beings would behave decently in a state of catastrophe and would protect each other and wouldn't just turn into sort of horrible chaos, selfishness. I think that's real if you look at the whole of human history it's perfectly possible that people could treat each other well.

**We talked about emotions and does something else happen to people's mental health in the context of climate change?**

This is one that I noticed now and I think this is really recent but something like when people really don't know how to live or what to do and maybe for younger people as well losing a sort of investment in the future thinking "well we don't know what that future is going to be so what am I supposed to do now" people really not knowing how to live I think and having really big philosophical questions about that.

**Who is at highest risk regarding the mental health problems in the context of climate change? Is there a specific social group?**

Younger people. The percentage of young people affected is just enormous.

**How common are the cases in which a person seeks their psychological support due to climate change?**

There was something about that recently, wasn't it? One in four people? I don't know. I mean when I'm thinking about the people who come and see me, I'm not an impartial person because they know that I'm interested in that but everyone who comes to see me would mention it but I think with the climate anxiety or climate grief or whatever to call it, it usually doesn't present as the person's main thing. It will be everything so their relationships, their satisfaction in life, their satisfaction with work, whatever it is. It's all sort of bound up together. So people don't usually come to therapy just saying that they've got climate grief, it's whole bundle of things.

**Why do you think that younger generation is more prone to mental health problems? Is it just because we are the generation which will be more affected by climate change or is there something else?**

I think the thing you've said is really really key. I don't know, I mean you probably know much more than me. Maybe things about the way information circulates? And sort of social media and the way people can be sort of separated from one another and kind of pushed into weird things to where you're just interacting through screens a lot and all of those things must not help mental health I would think.

**What are the coping and support strategies for mental health as the environmental degradation continues?**

I think engaging with any kind of activism or campaigning is really important but also maybe to try and do it in real life with real people. It counts for a lot because I think

people can feel very helpless if you're just signing online petitions and all that kind of stuff, it just feels awful, so doing real world stuff and speaking with other people who take you seriously and are kind of at the same level as you with all this stuff seems to help a lot and that's what helps me. How about you? What do you do?

**I'm volunteering at local environment organizations so I really feel what you said.**

Yeah, good.

**What about the cases where someone is very engaged and is observing other people and sees that it's very hard to make a change when there are other people who don't care? What to do with this feeling of helplessness when we are so involved?**

That is the problem, there are so many things there sort of paradoxical, aren't they? Because in a way the more involved you get then you're thinking about it more and it can really be upsetting and it can cause a schism between say you and your friends or you and your family. It can solve one set of problems and then give you a whole new set of problems and burnout is a real possibility but in a way lots of the sort of Buddhist ideas and Zen ideas and things around acceptance and what's possible, if you're doing what's possible, that kind of has to be enough. You have to accept that it's not that those other people are complacent because you're not trying hard enough. You have to sort of recognize something about your limits.

**When it comes to average people how can they learn to function with the constant changes taking place? What's important here?**

All people, people who are worried, people who are not worried are going to have to deal with a lot of change. What can help them through? Actually this maybe ties back to your last question as well that everyone's got their different psychological defenses and so maybe I don't know for you definitely for me my way of coping is to be very active, is to engage, to do stuff, to campaign and that that's how I cope but for other people sort of maybe not engaging so much, pushing it to the back of their mind, hoping that governments and businesses are really nice, responsible people who want the best for everyone. Just everyone has a different psychic defense and I suppose you have to be quite tolerant of other peoples because I'm sure you meet like environmentalists who start hating everyone and start really fighting with everyone and having an awful time and that's awful for the person generating that and I don't think it brings anyone in, I don't think it helps very much. Just sort of accepting that everyone's dealing with it in their own way even complete deniers I think they do actually know what's happening, that's just their mechanism for protecting themselves. Being pretty kind about other people's engagement is probably the best thing for everyone.



## **Is there a way we can cope with all of this stereotypes and myths about climate change?**

That's such a good question, that's another one of the sort of really big terrifying questions that everybody's hard at work on. In all the different fields like the ecojustice lawyers and the scientists and just everybody everywhere who's engaged is trying to work with that stuff especially because you want to tell the truth but nobody knows the exact truth so even the scientists are maybe modeling ice flows and the melting of ice flows but they don't know when things are going to happen or how. The fact that there's all this blurriness everywhere means it's really hard but I think people have been very successful. There was this study showing uh scientists and anthropogenic climate change and that everybody in the science community I think it's 99.9% of scientists who are involved in that agree that anthropogenic climate change is real and so the sort of 0.1% of people who are being called out and making public pronouncements on Facebook or even on the news are just the smallest smallest minority. Working to always expose things like that, because while it might be blurry there are certain things that are really clear and so to really promote the clear things as much as we can is really important.

## **What is the role of psychology and behavioral sciences in the context of climate change?**

I wish we had a more sophisticated role because there are all these questions, everybody knows what's happening and people aren't acting enough and so why are they not acting enough? Psychoanalysts, we've got this thing that there's the unconscious and that people don't always do what's best for them. We're interested in irrationality. I think all of those things can be helpful for thinking about why people are behaving so irrationally. But it's not like there can be a program where we sort of cure humanity and humanity starts behaving well because it just doesn't work like that. Basically it's people who want to accumulate wealth like if you read about Elon Musk and his interplanetary life, doesn't think what happens on Earth. Neither here or there, that can all go wrong, what he seems to want is a kind of master race super wealthy super intelligent people and if they live on Mars that's fine. It's thinking like that just messes everything up for everyone and if you're an indigenous person, you're living in the Brazilian rainforest, you're getting frightened by people like that. How we work against that?

**To what extent are the psychological factors taken into account in this discussion of climate change? Because from what I observe in Poland it is kind of neglected and we are still in the process of acknowledging that people can feel bad because of climate change. Do you think that this topic of psychology and support in area of mental health is discussed enough in Great Britain or not yet?**

I think it's improved a lot. We had an addition of the Psychiatrist's, this sort of magazine that all psychiatrists read, and there was a whole edition about climate change so anyone who turns up in the psychiatric system, who's suffering from it, will never be told not to worry. In a way in Britain I think it's come really fast, really well and loads of people are really on it, Caroline Hickman's research, completely brilliant. So no, I think there's been an amazing work done in a really short space of time and I do think that that is helpful to people, I hope it's helpful to people.

**These are all of the questions do you think that you would like to add something that I didn't maybe ask about?**

I don't really know, I always wonder how do you think about the future and whether you feel optimistic and what do you think are the best, the most important things people could be doing?

**I think that I'm in this kind of environment where people started really caring about the climate change and I think that we are at this start of really caring about the environment and I've seen that lots of young people get involved even though because of our previous government it was a little bit hard because I feel like our government didn't really care that much. I feel like I'm very optimistic because I see that we can change even though I would say that Polish people had also a slightly difficult situation because of being in the oppression after the Second World War so when we entered the 21st century it was kind of a shock that we got access to all of the goods and I think that everyone was sort of in this consumerism era because it was so amazing for everyone that we could access all of the products suddenly but I now observe that it is getting better and I'm very optimistic about it.**

Good I'm so glad to hear that.

**Thank you very much, I think that's all. it was very valuable and if you would like I can keep you updated about my progress in the project.**

Good luck, it's really good. It's really important work, it's great that you're doing it.