Doing the right thing even if you might fail: Does moral obligation interact with collective efficacy to predict environmental activism?

by

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Abstract

Climate change poses a significant challenge, and despite growing calls from activists around the world, those in power have been slow to act. Plausibly, many would-be environmental activists may experience low collective efficacy, which can undermine collective action. A growing body of work suggests moral obligation is an important predictor of collective action. I tested the hypothesis that low collective efficacy undermines motivation to engage in collective action to a lesser degree for individuals who are high in moral obligation compared to those who are low in moral obligation. Study 1 examined qualitative interviews with 11 environmental activists to see how they discuss moral obligation and efficacy when talking about their activism. The majority of activists spoke of climate change as a moral issue and all activists who expressed low efficacy indicated moral motivations for their activism. Study 2, a secondary analysis on two correlational samples, provided some evidence of an interaction in a sample of undergraduate students (n=368), but not in a representative Canadian sample (n=1029). Study 3, a correlational study with an undergraduate student sample (n=428), showed no evidence of an interaction. Finally, Study 4 was an experiment (n=405); however, the experimental conditions failed to manipulate moral obligation and collective efficacy. Supplementary correlational tests once again provided no evidence of an interaction. Across all three quantitative studies, moral obligation was strongly associated with environmental activism even when controlling for collective efficacy. Thus, although the interaction hypothesis was not supported, these findings still provide evidence that moral obligation is an important predictor of environmental activism and deserves more attention. Those interested in inspiring environmental activism, such as activists and policymakers, need to focus not only on efficacy but also on the moral beliefs about and moral obligation toward climate change.

Keywords: climate change; moral obligation; efficacy; environmental activism; collective action; social psychology

Dedication

I dedicate this dissertation to my father, Murdoch Neil Mackay (1951-2012), who was a passionate environmental activist and who instilled in me love, care and compassion for the natural world and for other people.

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Chapter 1.

Introduction

Climate change requires urgent action, involving widespread and large-scale societal changes (IPCC, 2022). Given the scope of the changes necessary to avoid the more devastating impacts of climate change and the powerful opposition to such changes from elites (Klein, 2014; Supran & Oreskes, 2017), combatting climate change is a daunting task. At times, tackling the crisis that climate change poses may even seem insurmountable. For example, Canadians were pessimistic that Canada will make significant progress on climate change in the next ten years (Sethi et al., 2022).

However, a large body of evidence suggests that people will be motivated to engage in climate activism when they experience high efficacy, a belief that climate change mitigation is both possible and achievable (e.g., Bostrom et al., 2018; Hart & Feldmen, 2016; Thaker et al., 2016). Some researchers go as far as to suggest high efficacy is essential to climate change activism (Bostrom et al., 2018) and that a lack of efficacy will undermine motivation to engage in activism regardless of climate change beliefs (Honig et al., 2021). Yet, against overwhelming odds, many environmental activists continue to campaign for governments and leaders to take more decisive action on climate change (e.g., Taylor, 2021), and they do so without any guarantee that their actions will create the change they seek. Thus, it is worth asking the question: what motivates individuals to engage in climate activism even when the odds seem to be against them? One motivation to engage in climate activism despite a low sense of efficacy might be moral obligation – that is, the belief that one has a responsibility to try and mitigate climate change even if one might fail. In this program of research, I investigated whether moral obligation interacts with efficacy to predict environmental activism, such that low efficacy will not undermine motivation to engage in activism when individuals have a high sense of moral obligation.

1.1. A review of collective action

Climate activism is a form of collective action. According to social identity theory (Tajfel & Turner, 1979), collective action is action undertaken by individuals to further the

interests and goals of a group that the individual belongs to (i.e., an ingroup) and involves a perceived power struggle between two or more groups in society (van Zomeren, 2014; Wright et al., 1990). Groups we belong to and identify with (i.e., collective identities) inform much of our attitudes, beliefs, and behaviour (Tajfel & Turner, 1979; Turner et al., 1987). People often engage in collective action on behalf of groups they identify with (van Zomeren et al., 2008). In the context of climate activism, such groups may be as broad as identifying as part of the natural world (e.g., Mayer & Frantz, 2004; Mackay & Schmitt, 2019), or as specific as identifying with an environmental activist group (e.g., Dono et al., 2010; Schmitt et al., 2019). People can participate in climate activism on behalf of collective identities that are not specifically environmental in nature. For example, many racialized groups are disproportionately harmed by the effects of climate change, and so members of racialized groups may engage in climate activism on behalf of that group (e.g., Pearson et al., 2017). Certain kinds of identities are more strongly associated with collective action than others. For example, politicized identities, such as identification with environmental activists, are defined by being engaged in collective power struggle to improve the conditions of a broader collective identity (Mackay et al., 2021; Simon & Klandermans, 2001; Stürmer & Simon, 2004). As such, politicized identities tend to be more strongly associated with collective action than other, broader forms of collective identity (Mackay et al., 2021; Simon & Klandermans, 2001; Stürmer and Simon, 2004; van Zomeren et al., 2008).

However, simply because one identifies with a group who would benefit from the changes that collective action might create does not necessarily mean that an individual will engage in collective action. An individual's motivation to engage in collective action also depends on how the social context surrounding that action is perceived. As collective action involves challenging the status quo, people are more likely to engage in collective action when they perceive the status quo to be illegitimate, that is, unjust (Mummendey et al., 1999; van Zomeren & Iyer, 2009; Wright, 2009). People also need to be able to imagine how the status quo could be different, which Tajfel (1978) called cognitive alternatives to the status quo (van Zomeren & Iyer, 2009). Furthermore, people must believe that the status quo can be changed. This refers both to the stability of the status quo, that is that the social system is responsive to changes (Wright, 2009; Wright et al., 1990) and collective efficacy, that one's ingroup has the ability to change the system (van Zomeren & Iyer, 2009; van Zomeren et al., 2008; Wright, 2009).

Collective efficacy, in the context of collective action, is the belief that it one's ingroup has the necessary resources, skills, and power to challenge the status quo through collective action. A great deal of empirical evidence suggests that collective efficacy predicts collective action (Bostrom et al., 2018; Hart & Feldmen, 2016; Jiménez-Moya et al., 2019; Thaker et al., 2016). Similarly, a lack of efficacy has been theorized to undermine collective action, as individuals are likely to experience low motivation if they believe the action will not be successful (Honig et al., 2021). However, low collective efficacy does not always prevent collective action. For example, in 1983, peace activists in the Netherlands participated in a protest against having NATO nuclear warheads controlled by the Dutch government despite believing there would be no possibility of stopping the warheads from being sent to the Netherlands (Klandermans & Oegema, 1987). Many of these activists reported higher efficacy for a smaller and more plausible goal, that of sending a message to the Dutch government of their disapproval of the nuclear arms race. Thus, one way that individuals may overcome low collective efficacy to engage in collective action is to focus on more manageable, short-term goals and expectations.

I hypothesize that another way of overcoming low collective efficacy to engage in collective action is a strong sense of moral obligation.

1.2. What is moral obligation?

Moral obligation is a motivation to act that is based on beliefs about what actions are right and wrong (Sabucedo et al., 2018; Vilas & Sabucedo, 2014). That is, people who experience moral obligation are motivated to act because they perceive they have a responsibility to act based on their values. Values are beliefs about what is important, and though not all values are moral in nature, values are often the basis for moral beliefs (Ellemers et al., 2019). Thus, moral obligation drives people to act because they perceive the act itself to be morally correct, and similarly, a failure to act may constitute a moral failure. According to Sabucedo et al. (2018), moral obligation is strictly individual in nature, determined by personal moral beliefs and values. Arguably, however, collective identity plays a role in shaping moral obligation and vice versa. From a social identity perspective, when individuals identify with a group, they often take on the values of that group. People may adopt moral beliefs consistent with the moral norms of the group, and they may also be more inclined to identify with groups that share their pre-existing

moral beliefs. Thus, moral beliefs about right and wrong are often shared and collective in nature. People learn about what is right and wrong from other group members and expect other group members to act according to the moral standards set by the group (Ellemers et al., 2019). In this way, moral obligation often involves actions that are required as part of a social contract. Failure to take morally obligated action violates group norms and can result in adverse psychological and social consequences, such as experiencing guilt, cognitive dissonance, or social rejection (Tomasello, 2020; Vilas & Sabucedo, 2014). In an environmental context, people who feel a moral obligation to engage in climate activism are also more likely to identify with environmental activists as a group (Schmitt et al., 2019).

1.3. Moral obligation and collective action

A growing body of work has incorporated moral obligation into existing social identity models of collective action (Ayanian et al., 2021; Sabucedo et al., 2018; Sabucedo et al., 2019; Schmitt et al., 2019; Vilas & Sabucedo, 2014). Van Zomeren and colleagues (2018) proposed the dual-process model of collective action, which includes a moral component. According to the dual-process model, two psychological processes operate in parallel to drive an individual to engage in collective action (van Zomeren et al., 2018). One process is collective efficacy. The second process is through group-based emotions such as anger and contempt that arise from perceived violations of moral standards. Specifically, van Zomeren and colleagues (2018) suggest that violations of moral standards by an outgroup cause individuals to consider the moral norms of groups they identify with, and this strengthens their conception of that identity as one which will not stand for violations of moral standards. Although van Zomeren and colleagues (2018) do not discuss moral obligation explicitly, their conceptualization of how morality can motivate individuals to engage in collective action is similar to theorizing on moral obligation; people are motivated to behave in accordance with moral standards, either their own personal standards or those of an ingroup.

Moral obligation is closely related to the concept of legitimacy in social identity theory (Tajfel & Turner, 1979). Legitimacy is a cognitive appraisal that the status quo is just or unjust, whereas moral obligation is a motivation to act in accordance with moral standards. Individuals may feel a moral obligation to rectify an illegitimate situation, particularly when an ingroup is perceived to have caused illegitimate harm to another

group (Ferguson & Branscombe, 2014; Solak et al., 2017). Commonly referred to as collective guilt, this specific form of moral obligation has been linked to collective action (e.g., Calcagno, 2016; Ferguson & Branscombe, 2014; Solak et al., 2017). In an environmental context, Ferguson & Branscombe (2014) found that collective guilt over human-caused climate change predicted willingness to engage in climate-friendly behaviours..

Empirical evidence suggests that moral obligation is positively associated with collective action (Ayanian et al., 2021; Schmitt et al., 2019; Vilas & Sabucedo, 2014). Vilas and Sabucedo (2014) found that moral obligation was more strongly associated with collective action than other traditional antecedents of collective action such as collective efficacy, anger, and identification with environmental activists, and mediated the relationship between these variables and collective action. Schmitt and colleagues (2019) also found that moral obligation was associated with pro-environmental collective action even when controlling for identification with environmental activists, identification with nature, and perceptions of environmental threat.

Finally, moral obligation is distinct from the belief that climate change is a moral issue, which refers to the belief that climate change is a moral and ethical problem (Markowitz, 2012). People can believe that climate change is a moral issue without necessarily feeling a moral obligation to do something about it themselves. However, belief that climate change is a moral issue is closely related to moral obligation, and people who can articulate reasons that climate change is a moral and ethical problem are more likely to also believe it is a serious problem that needs to be addressed urgently (Markowitz, 2012). Thus, belief that climate change is a moral issue may be an important antecedent of moral obligation.

1.4. Moral obligation and efficacy

Because collective efficacy is an important antecedent of collective action (e.g., van Zomeren et al., 2008), low efficacy is often considered to be a psychological barrier that undermines intentions to engage in collective action (e.g., Gifford, 2011). However, when people act out of moral obligation, their motivation is based on their beliefs about right and wrong rather than the outcome of the action (Vilas & Sabucedo, 2014). Thus, moral obligation may shift the psychological focus such that individuals are more

concerned with behaving in a way that aligns with personal and collective morals rather than the efficacy of that behaviour to achieve collective goals. As such, moral obligation should overcome the influence low efficacy may have on undermining motivating to engage in collective action.

Moral obligation may be particularly important in the context of climate change, where social change may seem like an insurmountable task. In the context of environmental activism, powerful corporations and governments often have a vested interest in maintaining the status quo and are actively opposed to actions needed to mitigate and adapt to climate change (Klein, 2014). In addition, although most people may believe climate change is a threat that needs urgent action, there is a common misconception that others do not share those views (Geiger & Swim, 2016; Leviston et al., 2013). Thus, many people express doubt, rather than hope, that humanity will be able to mitigate climate change (Marlon et al., 2019). However, millions of people around the world continue to engage in climate activism. Moral obligation may play a key role in motivating those who engage in the climate movement despite low efficacy.

1.5. Current studies

Past research and theorizing have focused on moral obligation and collective efficacy as unique predictors of collective action (van Zomeren et al., 2018). However, none have explored the possibility that moral obligation and collective efficacy interact to predict collective action. I hypothesize that low efficacy undermines motivation to engage in collective action to a lesser degree for individuals who are high in moral obligation compared to those who are low in moral obligation (see Fig. 1.1). Secondly, because politicized collective identity, such as identification with environmental activists, is a strong predictor of pro-environmental collective action (Mackay et al., 2021; Schmitt et al., 2019), I also test whether moral obligation and collective efficacy interact to predict identification with environmental activists. While moral obligation and collective efficacy are often theorized to result from collective identity, politicized collective identity is specifically defined around engaging in collective action. Thus, I hypothesized that this type of identity may form under similar conditions that lead to collective action. I examined these research questions in four studies.

Study 1 was a secondary, qualitative analysis of data from 11 environmental activists who were interviewed and asked to discuss their reasons for engaging in activism. I examined whether participants discussed moral obligation and efficacy as reasons for engaging or not engaging in activism. Study 2 was a secondary analysis on cross-sectional correlational data containing self-report measures of moral obligation, collective efficacy, willingness to engage in environmental activism, and a behavioural measure of environmental activism. I tested whether there was correlational evidence supporting an interaction between moral obligation and collective efficacy predicting both self-reported and behavioural activism.

Figure 1.1 Hypothesized interaction between moral obligation and collective efficacy

The data for Study 1 and 2 were collected for other research projects with different research questions in mind. To assess the current research question more effectively, in Study 3 I collected additional correlational data with measures of moral obligation that I created specifically to answer my research question. Study 4 was an experiment in which I attempted to manipulate moral obligation and collective efficacy to test the effect of moral obligation on willingness to engage in environmental activism, and whether this effect was moderated by collective efficacy.

Chapter 2.

Study 1

Study 1 examined how environmental activists discuss their motivations for engaging in activism. I performed a secondary analysis on pre-existing qualitative data. The data were collected as part of a previous study conducted by Mendel, Schmitt, Hamid, Neufeld and Wright (2022), who provided permission to use the data.

Specifically, I analyzed qualitative data from interviews conducted with environmental activists. In doing so, I hoped to learn how activists themselves view their own motivations for engaging in activism. Specifically, I looked at people already engaged in activism to see whether they discussed being influenced by a sense of moral obligation or collective efficacy. I was interested in whether all the activists expressed a high sense of collective efficacy, or if some would be low in efficacy. Similarly, I looked at the interviews for evidence that moral obligation is enough to motivate activism in cases where efficacy was low. Since the interviews were conducted for a different study with different research questions, the activists who were interviewed were not specifically asked about their moral obligation or efficacy beliefs. Although this is a potential limitation of using this data, this also provides an opportunity to examine whether environmental activists spontaneously refer to morality or efficacy when discussing their reasons for engaging in environmental activism.

In this study I aimed to answer four research questions: 1) Do environmental activists think of climate change as a moral issue? 2) Are environmental activists morally motivated? 3) Do activists feel efficacious about their activism? 4) If activists do not feel efficacious, do moral beliefs play a role in their activism?

2.1. Method

2.1.1. Participants

I obtained anonymized transcripts from semi-structured interviews with 11 environmental activists. Participants were recruited from student-led activist groups at a Canadian university. Interviews were conducted one-on-one between a participant and a

researcher and were approximately 30 minutes in length. Participants had a mean age of 23.09 (SD = 1.70), ranging from 18 to 38. Four participants identified as male and seven participants identified as female. Six participants identified as White, two identified as South Asian, two identified as East Asian or Southeast Asian[1], and one participant preferred not to identify their ethnicity. In the original study by Mendel et al. (2023), the researcher guided the interview with a series of questions designed to prompt participants to talk about their experiences with environmental activism. The original focus of the study was to investigate participants ability to imagine environmental cognitive alternatives to the status quo – that is, the ability for participants to imagine a world in which humans have a more sustainable relationship with nature (Wright et al., 2020). The audio from the interviews was recorded and transcribed.

2.1.2. Coding

The data had been previously coded as part of the original study. Four researchers coded the activist interviews for appraisals of the likelihood of successfully mitigating climate change (Mendel et al., 2023). These appraisals were coded as either optimistic (i.e., participants expressed belief that a sustainable future is feasible even if acknowledging challenges) or pessimistic (i.e., participants expressed belief that a sustainable future is unlikely to happen). For the purposes of the current study, I decided to use the previously coded appraisals of success as a proxy for collective efficacy.

The data had not been previously coded for moral obligation to engage in environmental activism nor moral beliefs about climate change. Thus, for the current study I worked with two research assistants to develop a coding guide and to code the 11 interview transcripts for references to moral beliefs and motivations. Broadly, I defined morality as a set of principles that inform what actions a person finds acceptable (i.e., right) and unacceptable (i.e., wrong). As the data were originally collected for a different study, the interview questions did not explicitly ask participants about morality. As such, I expected that participants might not refer to moral beliefs or motivations in specific terms. Thus, in creating the coding guide we allowed for a wide range of language that could potentially indicate moral beliefs and motivations, as well as

[1] East Asian and Southeast Asian were listed together as a single category that participants could choose when indicating their ethnicity.

concepts that are theoretically related to morality such as perceived injustice and illegitimacy. For example, language coded as moral included references to “right” and “wrong”, discussion of “ethics”, “values”, “ideals”, “principles”, a sense of “duty” or “responsibility”, feelings of “anger”, “guilt” or “shame” at failures to address climate change, and concerns about “fairness”, “equality”, and “justice”.

We created two coding categories to capture the ways participants discussed morality and its general connection to climate change as a societal problem and more specifically to their own motivations for engaging in climate activism. First, I was interested in whether participants considered climate change to be a moral issue. This could include linking climate change to other morally-charged issues, such as social justice and intergroup inequality. Although participants did not always explicitly discuss morality when drawing connections between climate change and other social problems, issues of social justice tend to be framed through a moral lens (Hemphill, 2015; Wendorf et al., 2002). Thus, by linking climate change to such issues and adopting a climate justice framework, it seems likely that these activists are thinking of climate change as a morally-charged issue.

As well, we coded passages where participants expressed anger or contempt for groups who have contributed to environmental problems and/or failed to take action (i.e., world leaders). Anger and contempt are collective emotions associated with perceived moral failings (Molho et al., 2017). We also included in this coding category passages where participants talked about possible solutions to climate change that involved shifting societal moral norms and values. When coding for belief in climate change as a moral issue, we looked for statements linking climate change to moral and ethical concerns more broadly. For example, “we need to change our ethics […] the long-term sustainable solutions is [sic] to […] proceed with life with the right values.” Statements concerning a participants’ own behaviour and motivations for engaging in behaviour fell under the second coding category, moral motivations for activism, discussed below.

Secondly, I was interested in the motivations participants expressed for engaging in environmental activism. We created a coding category for statements that indicated that participants seemed to express moral motivations for climate activism. This could include statements that participants feel a duty or responsibility to engage in climate activism, that they feel climate activism is the “right” thing to do, that they believe taking

no action on climate change is “wrong” (i.e., acting to avoid feelings of guilt or shame), or that they believe climate activism is consistent with their own principles and values. Statements coded under this category included, “[Activism] is, for me, a morally-right step to take.” Finally, we also coded non-moral motivations that participants gave for climate activism. For example, these could include fear of the consequences of climate change, feeling connected to other activists, feeling connected to nature, a sense of efficacy, or being able to imagine a more sustainable future. These included statements such as, “it makes me feel great personally, it makes, it feels really important.”

Two interviews were coded by all three coders who then met to discuss and resolve discrepancies. We did this to ensure that we all understood and agreed on the coding guidelines and were coding the data similarly. The remaining nine interviews were divided so that two coders coded each interview. After the data was coded, one of the research assistants and I independently reviewed all the coded transcripts and suggested a resolution to any discrepancies. Then we met to discuss the discrepancies and come to an agreement on how to resolve them.

2.2. Results

I used a deductive analysis to identify content relevant to my research questions: 1) Do environmental activists think of climate change as a moral issue? 2) Are environmental activists morally motivated? 3) Do activists feel efficacious about their activism? 4) If activists do not feel efficacious, do moral beliefs play a role in their activism? I analyzed each coding category to see what participants said about climate change as a moral issue, moral motivations for engaging in activism, non-moral motivations for activism, optimism about climate change, and pessimism about climate change. Quotes are included as particularly representative examples of themes, with some edited for brevity. I refer to participants by pseudonyms for the sake of anonymity.

2.2.1. Do Environmental Activists Think of Climate Change as a Moral Issue?

Overall, it was very common for participants to describe climate change as a moral issue. All but two out of 11 participants discussed climate change as a moral issue. In general, participants linked climate change to morality in three ways.

First, five participants discussed how climate change is related to issues of social justice and societal inequality. These participants discussed how climate change is fundamentally tied to societal inequality, such that one cannot be solved without addressing the other. For example, Alex talked about how climate change disproportionately affects more vulnerable communities, and how this is unjust, "I just don't think it's very fair, especially on a global scale I don't think it's fair to people in less wealthy nations as they bear the brunt of like most climate change effects…" Another participant, Robin, said that,

> The environment isn't something that only green people do, but it affects livelihoods and it's about social justice, it's about equality, it's about people! And so, I was like super passionate about it, and so, um, attending different events, picking my major, uhm, climate activism.

Second, five participants discussed how society's morals and values are misguided, and that these moral failings of society contribute to climate change. These participants felt that to address climate change and become a more sustainable society, we need to develop better values, morals, and ethics. Some participants also talked about how consumerism encourages people to be selfish and, perhaps, amoral. For example, Kris stated,

> So uh, yea, I see like just, I mean, sounds really corny but just an overall just and fair society because I think that's the only way that people are going to be, like until you get a voice for the environment at the table, that's mainly, […]—I mean, uh, consumer culture's gonna need to change as well […] I mean, it's kind of disappointing that people don't already have this moral commitment or moral obligation to one another.

Finally, four participants discussed political corruption as a barrier to climate action. These participants believed that politicians and leaders have acted immorally in regard to climate change. These participants also suggested that in order to address climate change, political leaders and policy-makers needed to be held to a higher moral standard. For example, Sam said that addressing climate change would require,

> …people in power remembering, like having a better moral compass. I don't know [how] exactly that would happen but like, remembering to like, to do the right and the good things for a longer, foreseeable future rather than just the four years just to get elected again.

Thus, in this sample of environmental activists, the link between climate change and morality is clear. Many participants viewed climate change and issues of social

justice as being closely related, such that one could not be addressed without addressing the other. In general, most participants in this sample believed that both climate change and social inequalities are rooted in systematic problems and political corruption.

2.2.2. What Motivations Do Activists Express for Climate Activism?

When asked about their motivations for engaging in climate activism, participants gave a variety of reasons. However, the most common motivation participants expressed was a sense of moral obligation. Roughly half the sample, six out of 11 participants, expressed moral motivations for their climate activism. Five of these participants referenced a sense of morality explicitly, such as Robin, who said that,

> To me, being passionate about sustainability and the well-being of others is something that is, like, it makes sense. It's rational, and I can see myself being a part of that community. It is, for me, a morally-right step to take.

Four participants in the sample expressed a sense of duty or responsibility to engage in climate activism. This sense of responsibility could be towards future generations or fellow contemporary human beings who will suffer from the consequences of climate change. For example, Max said,

> It's sort of, like, my duty in a way? […] As like a citizen to try and improve society […] it is every person's duty in my opinion, to… make it so that the world is a better place when they leave when they got, than when they got there… so, on an individual scale that sort of means trying your best like to not hurt people whether that be emotionally or otherwise, or through your inaction allow people to be hurt, and that's where the environmental activism comes in because if nothing is done we're all gonna burn.

Similarly, Kris said, "I don't know, we're discussing the moral and legal problems in philosophy and it's the idea that we have an obligation to future generations that you know, you want to leave the world a better place." Three participants also expressed a sense of duty towards protection the natural world itself, and felt motivated to take a stand against environmental harm. Two participants indicated that they would feel guilty if they did not engage in climate activism or expressed shame over the harm humans as a group have caused to the environment. For example, Alex said,

> I just feel so ashamed that we are like, the species that I am a part of is destroying something so beautiful and life-bearing and giving and uh, yeah, I just like want to do everything I just feel motivated…

Thus, we see some evidence that, among these participants, moral obligation is a common motivation for environmental activism. In fact, moral obligation was the most common reason participants gave for their motivation to engage in climate activism. While other motivations were discussed, fewer participants discussed specific non-moral motivations.

2.2.3. Do Activists Feel Efficacious?

Roughly half (five out of 11) participants in our sample expressed a sense of optimism about climate change and climate activism, while four participants expressed pessimism. One participant expressed both optimistic and pessimistic sentiments, but for the rest of the participants there was no overlap with participants who were coded as pessimistic. In general, optimistic participants acknowledged challenges to climate action, but they tended to believe that these challenges can and will be overcome. For example, Cameron said, “Yeah. I think it’s possible. I can imagine. Yeah, it’s difficult, and some people always sort of resist, um. But, I don’t think it’s not do-able.” Several participants expressed a sense of hope related to recent changes, such as advances in technology, increased access to information and awareness about climate change, and shifting political attitudes. One participant, Robin, stated that not only are they hopeful, but they believe hope is necessary to succeed.

> Even though sometimes it’s really hard. We can’t afford to be hopeless and let the fight to continue for a fight for a better future. It’s like, it’s out there and who am I to step back and not participate in like, one of the greatest movements of possible all of humanity, so I think it’s pretty cool.

Some pessimistic participants stated outright that they do not believe humanity will succeed in mitigating climate change, or that climate activism will make enough of a difference to avoid the most serious consequences of climate change. A few of these participants expressed a sense of hopelessness, such as Max who stated, “I’m stuck vacillating between, ‘I wanna work and make this change happen’ and, ‘we’re doomed, just enjoy the time you have left’”. Even if they could imagine a more sustainable future in which the problems causing climate change had largely been solved, they felt this

outcome was unrealistic and things were more likely to get worse rather than better. Some participants saw many barriers to change that they believed were unlikely to be overcome.

Overall, in this sample roughly half of environmental activists have a sense of optimism about the future regarding climate change and the ability of climate activists to make a meaningful difference. However, a little under half the sample did not express a high degree of efficacy about their activism. It is worth noting that, even among optimistic participants, there was acknowledgement of immense challenges facing those fighting for climate action. Participants felt and awareness that the sort of systemic change necessary to address climate change could not happen easily and without solidarity and cooperation from diverse groups. Yet, all participants in this sample still identified as environmental activists and discussed working towards a better future. In the next section, I examined what motivates participants who were pessimistic about climate change.

2.2.4. Are Pessimistic Activists Morally Motivated?

One of my main research questions asks what role morals play, if any, for activists who do not feel efficacious (i.e., who are pessimistic). To address this question, I analyzed what participants who expressed pessimistic views about climate activism had to say about their motivations for engaging in climate activism. I found that all four pessimistic participants also expressed moral motivations for engaging in activism.

For example, Francis, when discussing their views on addressing climate change and what is likely to happen in the future, said,

> There is too much damage that is already been done. Like, if you look at the IPC's [sic] report, it is like, no we can't, we can't reverse it. It is here and we just have to handle it, like, make sure it is not going to get much worse but it is probably going to be.

This shows quite a pessimistic outlook on humanity's ability to avoid the negative consequences of climate change. Later, when asked what motivates them to engage in climate activism, Francis responded, "Yeah, responsibility, accountability, I don't know (laughs)."

A couple participants discussed their moral motivation to engage in activism in the context of their feelings of low efficacy, indicating that for them, a sense of moral responsibility keeps them motivated even if the situation might feel hopeless. Alex said that, "…if I'm gonna be like perfectly honest like I don't…think that we will succeed […] I just genuinely don't believe that, so […] I don't think that's the most motivating thing but where I still feel motivated is that we must try and even if we don't succeed like if we hit this runaway climate change point … Um, there's still a lot of suffering that I would like to alleviate, and that's where I find motivation."

Unlike pessimistic participants, not all optimistic participants discussed morality as their motivation for activism. Among the six optimistic participants, only two discussed moral motivations. Kris said that,

> I hold this belief that it's morally wrong to kind of exploit the planet and people and to continue doing so. You know, even until there's (snorts) nothing left. And there's no like, there's no atonement, there's no, um, there are no reparations [...] There's nothing you can do to really make up for that. So, um, yea and I'm kinda motivated by this idea that people deserve better, people deserve to live in a better society. The environment deserves to have it- you know, flourish, as if we're not gonna leave a major impact on it. We're not gonna push it out of its equilibrium (laughs). Um, yea I think that, you know, it comes from a place of just we ought to be doing better? I guess.

Given the small number of participants, it's unclear if there are any differences in the way optimistic and pessimistic participants talk about moral motivations. However, Robin, one of the more optimistic participants, said their optimism was in part driven by moral motivation. They believed that climate activism was the morally right thing to do, and to stay motivated to do it they could not allow themselves to lose hope.

> To me, being passionate about sustainability and the well-being of others is something that is, like, it makes sense. It's rational, and I can see myself being a part of that community. It is, for me, a morally-right step to take and also, I just like driven by the fact that we can't afford to not be-we can't afford to be hopeless.

Robin's experience suggests that in some cases moral motivations may help drive a sense of efficacy to keep activists motivated. However, at least in this sample, moral obligation does not appear to be as central a motivator for participants who feel a sense of optimism regarding climate activism, compared to those who are more pessimistic.

2.3. Discussion

In summary, the results of Study 1 support that idea that moral beliefs and moral motivations are common among environmental activists. Most environmental activists in this sample thought of climate change as a moral issue, including some who linked climate change to other social justice issues, such as inequality and oppression. Roughly half the activists in this sample expressed pessimism, or low efficacy, about the ability of humanity and activists to affect meaningful change to mitigate or adapt to climate change. It is worth noting that even participants who expressed more optimism, or higher efficacy, were cautious in doing so, and still described many challenges that would have to be overcome to achieve a more sustainable future. Despite these sentiments, participants were still motivated to engage in environmental activism, and many of them expressed moral motivations for doing so: a sense of responsibility towards future generations, fellow human beings, and nature itself. Consistent with my hypothesis, all participants who expressed pessimism about climate change also discussed moral motivations for continuing to engage in environmental activism. This supports that idea that moral obligation can keep activists motivated to continue working for systemic change even when they believe that change is unlikely to occur.

However, this research is limited in that these findings are not representative or generalizable to the larger population. It may be that thinking of climate activism in terms of moral beliefs and motivations is specific to the subculture of student activists that were interviewed in this study. Furthermore, the data were limited by this being a secondary analysis. As the original study was not designed to ask research questions about moral obligation, participants were not specifically asked about their moral beliefs and motivations for engaging in climate activism. Thus, when coding for discussions of morality, I had to cast a wide net and include a lot of ideas that might broadly be related to moral beliefs. While it is still informative to examine what participants say about morality without being prompted to do so, I may have been able to gather more detailed data on participants' moral views if I had designed the study and structured the interview around that topic.

Chapter 3.

Study 2

In Study 2, I sought to test whether there is correlational evidence supporting the hypothesis that moral obligation interacts with collective efficacy to predict environmental activism. I conducted a secondary analysis on data from two prior studies. Both studies were designed to examine the relationship between environmental cognitive alternatives, environmental activist identity, and environmental activism (Lutz & Schmitt, 2022; Wright et al., 2020). One study was an online correlational study conducted with a representative sample of Canadian participants (Wright et al., 2020). The second study was an online experimental study that attempted to manipulate participant's ability to imagine cognitive alternatives to the environmental status quo (Lutz & Schmitt, 2022). Participants were randomly assigned to one of four conditions: a) a control condition where they read two articles unrelated to climate change, b) a condition, where in addition to a control article, they read an article on the best case scenario of a future where humans take action to mitigate climate change, c) a condition where, in addition to a control article, they read an article on the worst case scenario where the status quo is maintained and climate change continues unmitigated, and d) a condition where they read the worst case article followed by the best case article. As the data from each study includes the same measures of moral obligation, collective efficacy, identification with environmental activists, and intentions to engage in environmental activism, I will be conducting a secondary analysis on these combined data. I will also conduct an analysis on each sample separately. Finally, I will control for condition in the sample from the experimental study by treating each condition in the second study as a separate sample. The data analysis plan was preregistered on the Open Science Framework (https://osf.io/afcdg).

3.1. Method

3.1.1. Participants

A sample of 1031 Canadians were recruited through a Qualtrics panel. Participants were selected to be representative of the Canadian population on

demographics such as age (Range: 18-99; *M* = 47.12, *SD* = 17.10), gender (52.9% Female, 47.1% Male), and ethnicity[2]. Additionally, a sample of 401 undergraduate students were recruited from a Canadian university with ages ranging from 18-49 (*M*=19.60, *SD* = 2.74), and a gender distribution of 61.7% female, 37.2% male, 1.1% nonbinary. Across the two samples, seven participants withdrew consent for the use of their data after completing the study, 26 participants were excluded from analysis due to failing an attention check, and 2 participants were excluded due to nonsensical answers on written responses (i.e., indicating potential bots). Thus, the final combined sample used in the analysis consisted of 1397 participants.

The combined sample had a mean age of 39.85 (*SD* = 19.11), with reported ages ranging from 18 to 99. The majority of the sample identified as female (771 participants), 622 identified as male, and 4 participants identified as non-binary. Most of the sample identified as White (894 participants), 156 identified as East Asian, 149 identified as South Asian, 71 identified as Southeast Asian, 57 identified as Indigenous/Aboriginal Canadian, 52 identified as Arab or West Asian, 42 identified as Black, 19 identified as Latino, and 22 participants identified by another ethnicity that we did not specify. Participants were able to select multiple ethnicities in the case of multi-racial individuals, so the numbers of each category add up to greater than the total sample size.

3.1.2. Measures

The following measures were contained in both datasets, with two exceptions. Only the Qualtrics panel data contained a behavioural measure of pro-environmental behaviour, in which participants were asked to write a letter to the Environment Minister of Canada urging action on climate change. Thus, analyses on this behavioural outcome will only include data from the Qualtrics panel study. Secondly, the measure of collective efficacy, while based on the same scale by van Zomeren and colleagues (2013), differed in the goal of the collective action between the two samples (see below for details).

Moral obligation. Participants completed a measure of moral obligation to take action to mitigate climate change, adapted from Schmitt et al. (2019). The measure included six items such as, “I feel that I have a duty to preserve the environment for

[2] The ethnic breakdown of the sample is reported in Table 1 of Wright et al., 2020 (https://psyarxiv.com/rk79q/).

future generations." Each item was rated on a 7-point Likert type scale from 1 (strongly disagree) to 7 (strongly agree). The scale had high reliability (Cronbach's α = 0.858).

Collective efficacy. A collective efficacy scale was included in both studies that make up the combined sample of the current study. In both cases, the scale used four items adapted from van Zomeren et al. (2013), using humans as the referent category. However, the wording of the items was slightly different in each study. In the undergraduate student sample, the scale asked participants about their collective efficacy beliefs regarding climate change (e.g., "Together, humans can prevent catastrophic climate change"). In the representative Canadian sample, the scale asked participants about their collective efficacy beliefs regarding environmental harm more generally (e.g., "As a group, humans can stop environmental degradation"). Other than swapping climate change for environmental harm, the wording of each item was otherwise identical betweens studies. For the purposes of this analysis, I treated the scales as the same when analysing the combined sample. The scale had high reliability (Cronbach's α = 0.880).

Identification with environmental activists. Participants completed a measure of identification with environmental activists, adapted from Cameron (2004). The measure included eight items such as, "I have a lot in common with environmental activists." Each item was rated on a 7-point Likert type scale from 1 (strongly disagree) to 7 (strongly agree). The scale had high reliability (Cronbach's α = 0.839).

Intentions to engage in environmental activism. Participants completed a measure of intentions to engage in environmental activism (Schmitt et al., 2019). The measure included 10 items describing different activist behaviours. Participants rated how willing they were to engage in each behaviour on 7-point Likert type scales from 1 (very unwilling) to 7 (very willing). The scale had high reliability (Cronbach's α = 0.954).

Writing a letter to the environment minister of Canada. In the representative Canadian sample, participants were given the opportunity to write a letter to the environment minister of Canada urging the government to act on climate change. Participants who chose to write a letter where also given the option of signing. I examined whether participants chose to write a letter as a dichotomous dependent variable. I also examined whether participants chose to write and sign a letter.

3.2. Results

The analysis for this study was pre-registered on the Open Science Framework (https://osf.io/afcdg). Means, standard deviations and bivariate correlations for moral obligation, collective efficacy, identification with environmental activists, and intentions to engage in environmental activism for the combined sample (N =1397) can be found in Table 3.1.

Table 3.1 Means, standard deviations and bivariate correlations of variables in combined sample (N = 1397)

	Mean (*SD*)	2 (CE)	3 (IA)	4 (IEA)
1. Moral Obligation (MO)	5.43 (1.05)	0.61**	0.62**	0.58**
2. Collective Efficacy (CE)	5.62 (1.08)	-	0.55**	0.49**
3. Identification with Activists (IA)	4.32 (1.48)		-	0.70**
4. Intentions to Engage in Environmental Activism (IEA)	3.80 (1.24)			-

Note: All correlations are Pearson's correlation coefficient (r). ** Indicates that correlation is significant at $p < .01$.

The main hypothesis of this study was that moral obligation interacts with collective efficacy to predict engagement in climate change activist behaviour. Specifically, I hypothesized that low efficacy undermines motivation to engage in environmental activism to a lesser degree for individuals who are high in moral obligation compared to those who are low in moral obligation. To test this hypothesis, I conducted a linear regression analysis using the PROCESS macro for SPSS (Hayes, 2019). I used model 1, a simple moderation model, and centered each of the independent variables (i.e., moral obligation and collective efficacy) at their respective means.

The results of the regression analysis did not show evidence of the hypothesized interaction (see Table 3.2). The interaction between moral obligation and collective efficacy did not significantly predict intentions to engage in environmental activism. However, there was a significant main effect of moral obligation predicting activist behaviour. Similarly, there was a significant main effect of collective efficacy.

Table 3.2 Results of regression testing interaction between moral obligation and collective efficacy predicting intentions to engage in environmental activism in the combined sample (*N*=1397)

	***b* (*se*)**	**β**	***t* (1393)**	***p***
Constant	4.33 (0.03)		132.63	<.01
Moral Obligation (MO)	0.64 (0.04)	0.46	17.84	<.01
Collective Efficacy (CE)	0.36 (0.04)	0.26	9.91	<.01
Interaction (MO*CE)	-0.02 (0.02)	-0.21	-0.93	.35

Note: *b* indicates unstandardized coefficients and *se* indicates standard error. β indicated standardized coefficients. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

I also tested whether moral obligation and collective efficacy interact to predict identification with environmental activists. The results of the regression analysis showed evidence of a significant interaction, but not in the hypothesized direction (see Table 3.3). I hypothesized that low collective efficacy would undermine identification with environmental activists to a lesser degree for those high in moral obligation, compared to those low in moral obligation. However, the results suggest that collective efficacy has a stronger relationship with identification with environmental activists for those high in moral obligation, compared to those low in moral obligation (see Fig 3.1). There were also significant main effects of moral obligation and collective efficacy predicting activist behaviour.

Table 3.3 Results of regression testing interaction between moral obligation and collective efficacy predicting identificaion with environmental activists in the combined sample (*N*=1396)

	***b* (*se*)**	**β**	***t* (1393)**	***p***
Constant	3.76 (0.03)		130.09	<.01
Moral Obligation (MO)	0.53 (0.03)	0.45	16.68	<.01
Collective Efficacy (CE)	0.28 (0.03)	0.25	8.90	<.01
Interaction (MO*CE)	0.05 (0.02)	0.07	2.99	<.01

Note: *b* indicates unstandardized coefficients and *se* indicates standard error. B indicated standardized coefficients. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

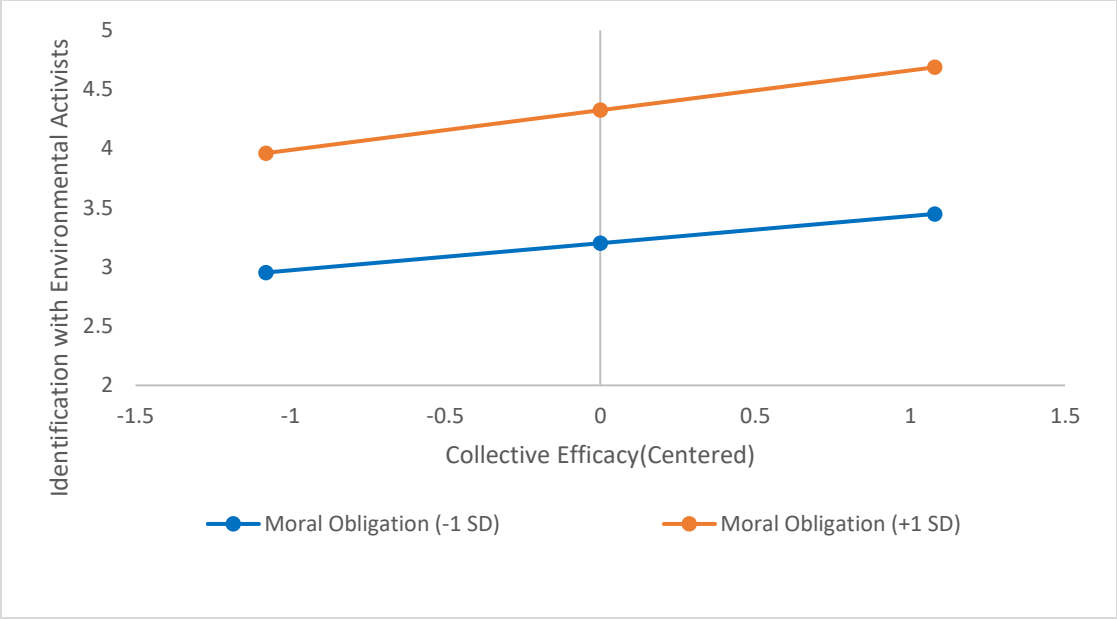

Figure 3.1 **Interaction between collective efficacy and moral obligation predicting identification with environmental activists in the combined sample (*N*=1396)**

3.2.1. Representative Canadian Sample

As preregistered, I also examined the two samples separately. Descriptive statistics for the key variables in the representative Canadian sample can be found in Table 3.4. I conducted another regression test of the main hypothesis using only the representative Canadian sample (*N*=1029). As in the combined sample, the results of the regression showed no evidence of the interaction between moral obligation and collective efficacy predicting intentions to engage in environmental activism (see Table 3.5). There was a significant main effect of moral obligation as well as collective efficacy predicting climate activist behaviour.

Table 3.4 **Means, standard deviations and bivariate correlations of variables in representative Canadian sample (*N*=1029)**

	Mean (*SD*)	2 (CE)	3 (IA)	4 (IEA)
1. Moral Obligation (MO)	5.44 (1.07)	0.66*	0.64**	0.59**
2. Collective Efficacy (CE)	5.50 (1.10)	-	0.55**	0.54**
3. Identification with Activists (IA)	4.18 (1.55)		-	0.71**
4. Intentions to engage in environmental activism (IEA)	3.75 (1.27)			-

Note: All correlations are Pearson's correlation coefficient (*r*). ** Indicates that correlation is significant at $p < .01$.

Table 3.5 Results of regression testing interaction between moral obligation and collective efficacy predicting intentions to engage in environmental activism in the representative Canadian sample (*N*=1029)

	***b* (*se*)**	**β**	***t* (1025)**	***p***
Constant	4.20 (0.04)		104.35	<.01
Moral Obligation (MO)	0.72 (0.05)	0.50	15.26	<.01
Collective Efficacy (CE)	0.32 (0.04)	0.23	7.31	<.01
Interaction (MO*CE)	0.01 (0.02)	0.01	0.52	.60

Note: *b* indicates unstandardized coefficients and se indicates standard error. β indicated standardized coefficients. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

The representative Canadian sample included a behavioural dependent variable, in which participants were given an opportunity to write, and later sign, a letter to the environment minister of Canada regarding climate change. I conducted a logistic regression testing whether moral obligation interacts with collective efficacy to predict the probability of participants choosing to write a letter (regardless of whether they left the letter anonymous or chose to sign their name). The results of this analysis were similar to results of the analysis of intentions to engage in environmental activism (see Table 3.6). There was no evidence of a significant interaction between moral obligation and collective efficacy predicting whether participants chose to sign a letter. However, there were significant main effects of moral obligation and collective efficacy.

Table 3.6 Results of regression testing interaction between moral obligation and collective efficacy predicting writing a letter to the environment minister of Canada in representative Canadian sample (*N*=1029)

	***b* (*se*)**	***z***	***p***
Constant	-2.36 (0.14)	-17.39	<.01
Moral Obligation (MO)	0.53 (0.16)	3.36	<.01
Collective Efficacy (CE)	0.44 (0.16)	2.80	.01
Interaction (MO*CE)	0.02 (0.13)	0.17	.87

Note: *b* indicates unstandardized coefficients and *se* indicates standard error. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

I also conducted a logistic regression testing whether moral obligation interacts with collective efficacy to predict the probability that participants wrote and chose to sign their letter. The results were similar to results from the analysis of just writing a letter. There was no evidence of a significant interaction between moral obligation and collective efficacy predicting signing a letter (see Table 3.7). There was a significant

main effect of moral obligation predicting whether participants signed their letter. However, unlike in the previous analyses, the main effect of collective efficacy was not significant.

Table 3.7 Results of regression testing interaction between moral obligation and collective efficacy predicting signing a letter in the representative Canadian sample (*N*=1029)

	***b* (*se*)**	***z***	***p***
Constant	-2.95 (0.14)	-16.93	<.01
Moral Obligation (MO)	0.70 (0.20)	3.54	<.01
Collective Efficacy (CE)	0.35 (0.19)	1.85	.06
Interaction (MO*CE)	0.15 (0.12)	1.25	.21

Note: *b* indicates unstandardized coefficients and *se* indicates standard error. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

As in the combined sample, I tested whether moral obligation and collective efficacy interacted to predict identification with environmental activists using linear regression analyses. The results showed evidence of a significant interaction. As with the combined sample, collective efficacy had a stronger relationship with identification with environmental activists for those high in moral obligation, compared to those low in moral obligation (see Fig 3.2). There were also significant main effects of moral obligation and collective efficacy predicting activist behaviour (see Table 3.8).

Table 3.8 Results of regression testing interaction between moral obligation and collective efficacy predicting identification with environmental activists in the representative Canadian sample (*N*=1029)

	***b* (*se*)**	**β**	**t (1025)**	***p***
Constant	3.70 (0.03)		107.90	<.01
Moral Obligation (MO)	0.51 (0.04)	0.43	12.89	<.01
Collective Efficacy (CE)	0.34 (0.04)	0.29	8.85	<.01
Interaction (MO*CE)	0.06 (0.02)	0.08	3.03	<.01

Note: *b* indicates unstandardized coefficients and se indicates standard error. β indicated standardized coefficients. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

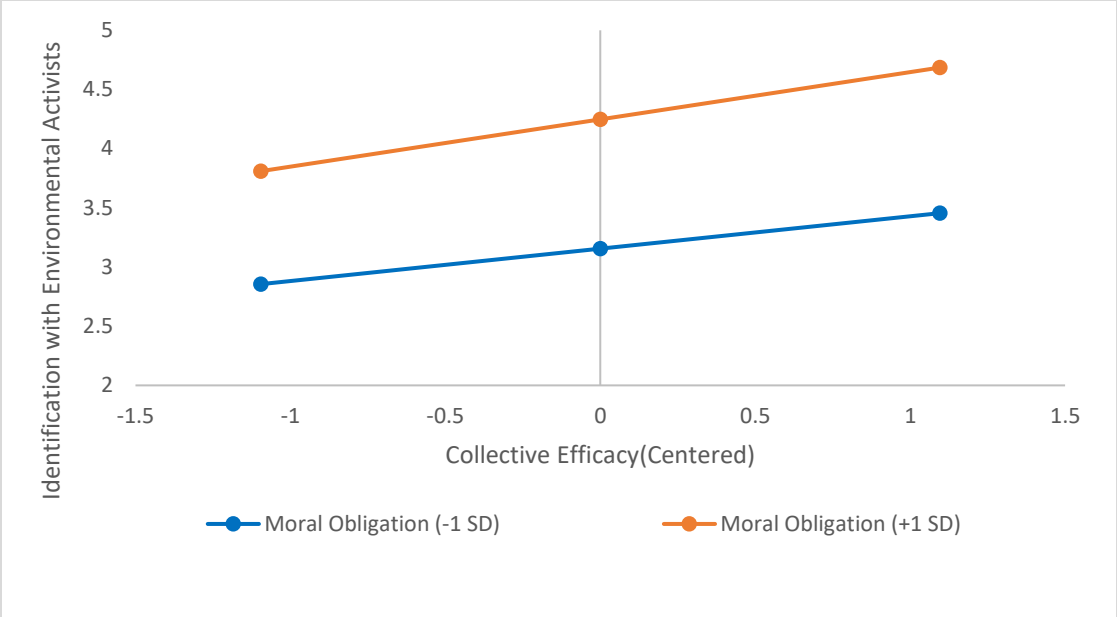

Figure 3.2 Interaction between collective efficacy and moral obligation predicting identification with environmental activists in the representative Canadian sample (*N*=1029)

3.2.2. Undergraduate Student Sample

Finally, I also tested the main hypothesis in the undergraduate student sample (*N*=368). Descriptive statistics for the key variables in this sample can be found in Table 3.9.

Table 3.9 Means, standard deviations and bivariate correlations of variables in undergraduate student sample (*N*=368)

	Mean (*SD*)	2 (CE)	3 (IA)	4 (IEA)
1. Moral Obligation (MO)	5.39 (1.01)	0.48*	0.61**	0.55**
2. Collective Efficacy (CE)	5.94 (0.96)	-	0.45**	0.30**
3. Identification with Activists (IA)	4.71 (1.20)		-	0.67**
4. Intentions to engage in environmental activism (IEA)	3.94 (1.16)			-

Note: All correlations are Pearson's correlation coefficient (*r*). ** Indicates that correlation is significant at $p < .01$.

As before, I conducted a linear regression analysis (see Table 3.10). In the undergraduate student sample, there was evidence of a significant interaction between moral obligation and collective efficacy predicting intentions to engage in climate activist behaviour. As seen in Figure 3.3, the interaction was in the predicted direction, where low efficacy undermines intentions to engage in environmental activism to a lesser

degree for those high in moral obligation compared to those low in moral obligation. There was also a significant main effect of moral obligation and collective efficacy.

Table 3.10 Results of regression testing interaction between moral obligation and collective efficacy predicting intentions to engage in environmental activism in the undergraduate student sample (N=368)

	b (*se*)	β	*t* (364)	*p*
Constant	4.75 (0.05)		92.76	<.01
Moral Obligation (MO)	0.62 (0.05)	0.52	11.43	<.01
Collective Efficacy (CE)	0.20 (0.06)	0.16	3.37	<.01
Interaction (MO*CE)	-0.08 (0.04)	-0.09	-2.14	.03

Note: *b* indicates unstandardized coefficients and se indicates standard error. β indicated standardized coefficients. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

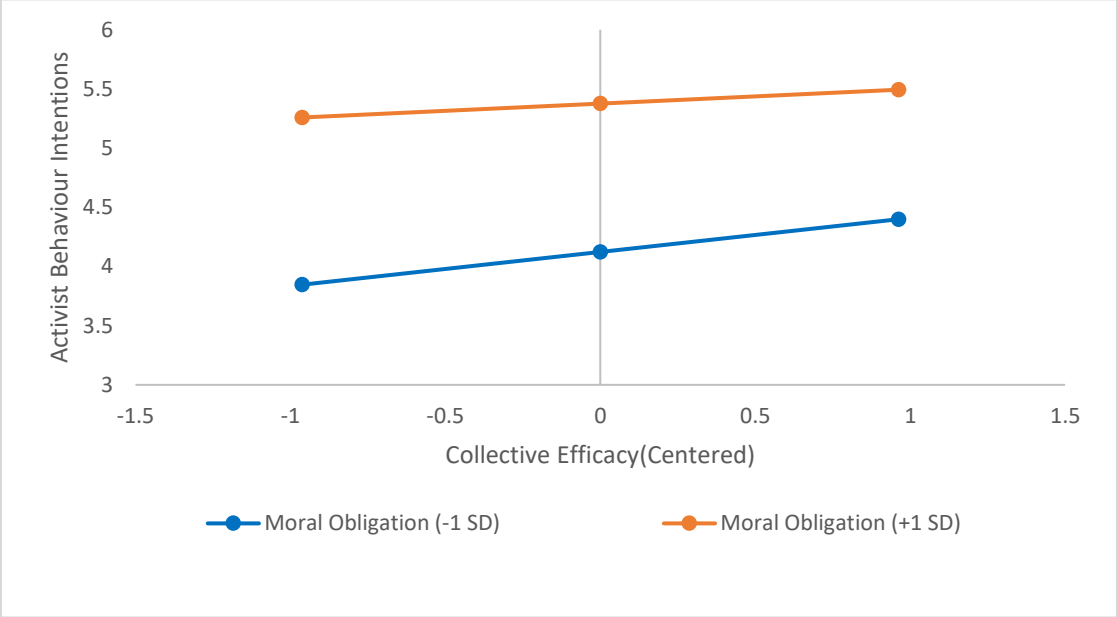

Figure 3.3 Interaction between collective efficacy and moral obligation in the undergraduate student sample (*N*=368), predicting activist behaviour intentions

Once again, I tested whether moral obligation and collective efficacy interacted to predict identification with environmental activists. In the undergraduate student sample, the results did not show evidence of a significant interaction. There was a significant main effect of moral obligation, but not collective efficacy, predicting activist behaviour (see Table 3.11).

Table 3.11 Results of regression testing interaction between moral obligation and collective efficacy predicting identification with environmental activists in the undergraduate student sample (*N*=368)

	***b* (*se*)**	**β**	***t* (364)**	***p***
Constant	3.93 (0.05)		72.90	<.01
Moral Obligation (MO)	0.60 (0.06)	0.53	10.59	<.01
Collective Efficacy (CE)	0.06 (0.06)	0.05	0.96	.34
Interaction (MO*CE)	0.02 (0.04)	0.02	0.51	.61

Note: *b* indicates unstandardized coefficients and se indicates standard error. β indicated standardized coefficients. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

3.2.3. Examining Experimental Conditions in the Undergraduate Student Sample

Primary analyses on the undergraduate student sample indicated that the experimental conditions did not have a significant effect on moral obligation or willingness to engage in environmental activism. However, the experimental manipulation did significantly impact collective efficacy, such that reading the worst case article increased participants' collective efficacy ($F(1,366) = 11.04$, $p = .001$). Thus, the collective efficacy measure may be confounded with the experimental condition in the undergraduate student sample.

To test for this, I conducted an additional analysis controlling for the experimental condition and a possible 2-way interaction between moral obligation and experimental condition. Experimental condition was represented using a dummy coded variable, where 0 indicated participants assigned to read only the control articles or best case scenario articles, and 1 indicated participants who had been assigned to read the worst case article. As seen in Table 3.12, the results of this linear regression analysis show that the main effects of moral obligation and collective efficacy are nearly identical to those in the analysis that did not control for experimental condition nor an interaction between moral obligation and condition. The pattern of the interaction is also very similar, although marginal. Furthermore, there is no evidence that experimental condition, nor an interaction between experimental condition and moral obligation, predicts intentions to engage in environmental activism.

Table 3.12 Results of regression testing interaction between moral obligation and collective efficacy predicting intentions to engage in environmental activism, controlling for experimental condition and an interaction between moral obligation and experimental condition, in the undergraduate student sample (*N*=368)

	***b* (*se*)**	**β**	***t* (362)**	***p***
Constant	4.74 (0.07)		66.55	<.01
Moral Obligation (MO)	0.66 (0.08)	0.56	8.51	<.01
Collective Efficacy (CE)	0.20 (0.06)	0.16	3.20	<.01
Interaction (MO*CE)	-0.08 (0.04)	-0.09	-1.95	.05
Condition	0.02 (0.10)	0.01	0.20	.84
Moral Obligation*Condition	-0.08 (0.10)	-0.05	-0.77	.44

Note: *b* indicates unstandardized coefficients and se indicates standard error. β indicated standardized coefficients. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

3.3. Discussion

In summary, Study 2 provided evidence that both moral obligation and collective efficacy are important predictors of intentions to engage in environmental activism. Combining two samples, one of undergraduate students and one of a representative Canadian sample, we saw significant main effects of moral obligation and collective efficacy predicting intentions to engage in environmental activism. Moral obligation was consistently strongly associated with environmental activism when controlling for collective efficacy. In contrast, the association between collective efficacy and environmental activism was weaker (than that of the association between moral obligation and activism) when controlling for moral obligation.

However, results for the hypothesis that moral obligation interacts with collective efficacy to predict climate activism were mixed. In the combined sample, there was no evidence of a significant interaction. When looking at the samples separately, there was evidence of the interaction in the student sample. As expected, low collective efficacy was associated with lower intentions to engage in environmental activism, however this effect was smaller for participants who were higher in moral obligation compared to participants low in moral obligation. Thus, at least in the student sample, there was some evidence in support of my hypothesis. However, this interaction did not emerge in the sample selected to be representative of the Canadian population.

Contrary to my hypothesis, there was evidence for a significant interaction between moral obligation and collective efficacy predicting identification with environmental activists in the opposite direction than expected. In the overall sample and in the representative Canadian sample, the relationship between collective efficacy and identification with activists appeared stronger for participants who reported relatively high moral obligation, compared to participants who reported lower moral obligation. This suggests that when predicting identity, moral obligation and collective action have a synergistic relationship. Collective efficacy matters more for predicting identity when moral obligation is high, compared to when moral obligation is low. However, it is difficult to know why this pattern arises with activist identity and not with intentions to engage in activist behaviour.

Unfortunately, the data also cannot speak to why we would find evidence of an interaction in one sample but not the other, if the findings are not in fact spurious. One difference between the two samples is that the undergraduate study came from an experimental study that had four conditions. However, the analysis controlling for experimental condition showed no evidence that experimental condition explains the interaction effect found in the undergraduate student sample. Another difference between the two samples is the wording used in the collective efficacy measure. Although the phrasing of the four items was similar, the items in the undergraduate student sample specifically asked participants about their collective efficacy regarding humanity's ability to address climate change. In contrast, the larger Canadian sample asked participants about their sense of humanity's collective efficacy to reduce environmental harm more generally. However, it is not clear why these differences would lead to different interactions between moral obligation and collective efficacy in the undergraduate student sample and the representative Canadian sample. Finally, there are notable demographic differences between the two samples. Compared to the representative Canadian sample, participants in the undergraduate students were on average younger and more ethnically diverse. Once again, however, it is not obvious how these demographic differences would impact the interaction between moral obligation and collective efficacy. As we will see in Study 3 and 4, evidence of an interaction between moral obligation and collective efficacy does not consistently appear in student samples.

Chapter 4.

Study 3

As Study 2 was a secondary analysis on existing data, I was restricted to the measures included in those datasets. Specifically, the measure of moral obligation included in Study 2 only included items that measured participants' moral obligation to engage in pro-environmental behaviour. Pro-environmental behaviour is a broad category that could include non-activist behaviours (e.g., recycling) and behaviours that are not necessarily related to climate change (e.g., protecting endangered species). As I am interested in examining motivations for pro-environmental collective action and climate change activism, it would be ideal to have a measure of moral obligation specific to these behaviours. In Study 3, I created a measure of moral obligation with items that capture a sense of moral obligation to engage in climate activism.

Moral obligation is a sense of responsibility to act based on beliefs about what actions are right and wrong, and both personal and group-based values (Ellemers et al., 2019; Sabucedo et al., 2018). Moral beliefs about climate change, such as the belief that climate change is a moral issue, are theoretically closely related to moral obligation. To examine the relationship between belief that climate change is a moral issue and moral obligation, as well as to show that the effects of moral obligation are driven specifically by a moral motivation to take action, and not simply by moral beliefs, I also created a measure of the belief that climate change is a moral issue. This scale is aimed at measuring participants moral beliefs about climate change without being confounded by other motivations for climate action. Theoretically, belief in climate change as a moral issue is distinct but related to moral obligation. I expected these two variables to load onto separate factors, however it was of interest to test whether belief in climate change as a moral issue could explain the same effects as moral obligation. Thus I also conducted a test of the interaction hypothesis using belief in climate change as a moral issue in the place of moral obligation.

In Study 2, participants were asked about the collective efficacy of humanity. However, it may be that perceptions about the efficacy of environmental activists plays a more important role in motivations to engage in environmental activism. Thus, for Study

3, I used a measure of collective efficacy that focuses on environmental activists as the referent category, rather than humans.

Thus, in Study 3 I conducted a cross-sectional correlational study examining whether moral obligation interacts with collective efficacy to predict intentions to engage in environmental activism, behavioural environmental activism, and identification with environmental activists. I also tested whether belief in climate change as a moral issue interacted with collective efficacy to predict these same outcomes. This study was preregistered on the Open Science Framework (https://osf.io/5kbx8).

4.1. Method

4.1.1. Participants

Four-hundred and thirty-eight undergraduate students were recruited for this study. Nine participants were excluded from analysis for failing to correctly answer an attention check. Thus, the sample used for analysis consisted of 429 participants. A full breakdown of the demographics in this sample can be found in Table 4.1.

4.1.2. Measures

Only the measures used in the current analyses are reported here[3]. Please see Appendix for a complete list of items and measurement scales for all variables included in Study 3. Participants completed the following measures in the order presented below. Unless stated otherwise, item scales were rated on a 7-point Likert type scale from 1 (strongly disagree) to 7 (strongly agree).

Collective efficacy. Participants completed a similar measure of collective efficacy as in the undergraduate student sample of Study 2, based on van Zomeren et al. (2013). The wording of the items was changed to use environmental activists as the

[3] Although not part of the present study, the questionnaire also contained measures of individual efficacy, climate change beliefs, collective guilt about how humans treat the environment, collective guilt about how humans treat each other, collective anger at how humans treat the environment and collective anger at how humans treat each other. The full measures are included in the Appendix containing study materials.

referent category (e.g., “As a group, environmental activists can help prevent catastrophic climate change.”). The scale had high reliability (Cronbach’s α =0.79).

Moral obligation. Participants completed a measure of moral obligation to take action to mitigate climate change, adapted from Schmitt et al., 2019. The measure included eight items such as, “It is morally imperative that I join movements against projects that contribute to emissions (e.g. pipelines, fracking).” The scale had high reliability (Cronbach’s α =0.91).

Climate change as a moral issue. Participants completed a measure of climate change as a moral issue. The scale contained three items such as, “It is morally wrong to ignore climate change.” The scale had high reliability (Cronbach’s α =0.71).

Identification with environmental activists. Participants completed the same measure of identification with environmental activists as in Study 2 (Cameron, 2004). I included four additional items based on Cameron (2004) which measure participants feelings toward the group they identify with, such as “In general, I’m glad to be an environmental activist.” The scale had high reliability (Cronbach’s α =0.83).

Intentions to engage in climate activism. Participants completed a measure of intentions to engage in climate activism based on the measure used in Study 2 (Schmitt et al., 2019), with two key differences. First, I altered the wording of the items to focus on explicitly on climate change activism rather than environmental activism. This was to keep the behavioural measure consistent with the focus of the moral obligation and collective efficacy scales used in Study 3, which also focus on specifically on climate change rather than pro-environmental action more broadly. Second, I changed the rating scale. Instead of being asked to rate their willingness to engage in each behaviour, participants were asked to rate how much they intend to engage in each behaviour over the next year (1 – never, 5 – always)[4]. By changing the rating scale, participants were asked to express more directly their intentions to engage in each behaviour, rather than indicating willingness, which is conceptually similar to motivation.

[4] Due to human error, this scale was changed from the pre-registration, which said that participants would rate the scale from 1 (never) to 7 (more than once a week).

The measure consisted of 10 items, such as, “Get involved with a group whose main aim is to take action on climate change.” The scale had high reliability (Cronbach’s α =0.91).

Providing email to be contacted by student activist group: Participants were told about a student climate activist group, SFU350, that is active at the university. They were then given the option to type in their name and email address to be forwarded to the activist group for more information and volunteer opportunities. Participants could select from three options: 1) Yes, I would be interested (followed by a prompt to type their email), 2) No, I’m not interested, and 3) I’m already a member of SFU350. For analysis, I treated this as a dichotomous dependent variable, where 0 indicated that participants did not type their email, and 1 indicated that participants did type their email. Only two participants indicated that they were already members of SFU350, and were excluded from analyses using this dependent variable.

Other measures. Participants also completed a measure of political orientation (2 items, Liu & Latané, 1998), and demographic variables (i.e., age, gender, ethnicity, sexual orientation, disability) for the purposes of sample description.

Table 4.1 Demographics of Study 3

Demographic Variables	Total (*N*=429)
Age	
Mean (*SD*)	19.10 (2.29) years
Range	16 – 46 years
Gender	
Female	295[1]
Male	120
Another/Nonbinary	4
Did not disclose	1
Ethnicity	
White	116
Asian (non-specific)	39
South Asian	98
East Asian	63
Southeast Asian	22
Middle Eastern	16
Hispanic	6
Black	8
Multiracial	31
Another label	12
Did not disclose	16
Sexuality	
Heterosexual	279
Multigender attraction	46
Homosexual	14
Asexual	4
Questioning/unsure	7
Another label	1
Did not disclose	26
Gender/pronouns[2]	49
Disability/illness	
Yes	26
No	370
Did not disclose	33
Political orientation[3]	
Social Mean (*SD*)	2.97 (1.30)
Economic Mean (*SD*)	3.27 (1.31)

[1] Unless otherwise indicated, numbers in table refer to the number of participants in each category. [2] 45 participants indicated gender or pronouns instead of sexual orientation, and 43 of these participants indicated a gender that matched their own and 6 wrote a different gender. It is unclear what these participants meant to indicate. In hindsight, I did not provide an explanation of what sexual orientation means, so it may have been confusing to some participants. [3] Participants rated their political orientation on social and economic issues on a 7-point scale from 1 (very liberal) to 7 (very conservative).

4.2. Results

Means, standard deviations and bivariate correlations for the variables in Study 3 (*N*=429) can be found in Table 4.2.

Table 4.2 Means, standard deviations, and correlations of Study 3 variables

	Mean (*SD*)	2	3	4	5	6
1. Moral Obligation	4.43 (1.11)	0.42**	0.43**	0.64**	0.50**	0.28**
2. Collective Efficacy	5.18 (0.95)	-	0.27**	0.32**	0.23**	0.11*
3. Climate Change as a Moral Issue	4.85 (1.19)		-	0.41**	0.23**	0.21**
4. Identification with Environmental Activists	3.88 (0.80)			-	0.50**	0.33**
5. Intentions to Engage in Environmental Activism	2.54 (0.96)				-	0.24**
6. Providing Email to be Contacted by Student Activist Group	gave email: 46 (10.7%) did not give email: 383 (89.3%)					-

Note: All correlations reported are Pearson's correlation coefficient (*r*). ** Indicates that correlation is significant at $p < .01$.

4.2.1. Factor Analysis of Moral Scales

In this study, I used a new measure of moral obligation and belief that climate change is a moral issue. These measures have not been used in previous studies, therefore, as pre-registered, I conducted a factor analysis, using principal axis factoring and Promax rotation. Theoretically, I expected moral obligation and belief that climate change is a moral issue to be highly correlated but separate factors. To test this empirically, I conducted a factor analysis on all items from both measures.

The results of this factor analysis indicated three factors (Table 4.3). The first factor, which explained 49.38% of the variance with factor loadings between .768 to .861, consisted of five items from the moral obligation scale, which asked participants about their sense of moral obligation to engage in specific activist behaviours (e.g., such as attending climate protests). The remaining three items of the moral obligation scale, which described a sense of moral obligation to engage in climate activism generally (i.e., without specifying specific actions), formed the second factor, which explained 13.50%

of the variance with factor loadings from .773 to .886. Finally, the third factor consisted of the three items from the belief that climate change is a moral issue scale, which explained 9.16% of the variance with factor loadings from .670 to .685.

Based on these results, I decided to conduct the analyses as originally planned, treating the 8-item moral obligation scale and the belief that climate change is a moral issue scale as separate measures. I conducted exploratory analyses with the 8-item moral obligation scale separated into two measures: 1) a 3-item measure of moral obligation to engage in general environmental activism and 2) a 5-item measure of moral obligation to engage in specific activist behaviours (see Table 9). However, the results of the analyses using the separate factors within the moral obligation scale did not meaningfully differ from the analyses using the combined 8-item moral obligation scale, thus I only report the analyses using full 8-item scale.

Table 4.3 Rotated factor loadings for moral obligation and belief that climate change is a moral issue in Study 3

Scale Item	Factor 1	Factor 2	Factor 3
I feel morally responsible for taking action on climate change.	.557	.850	.451
I have a moral duty to work towards trying to stop climate change.	.584	.886	.409
I believe I have a moral obligation to promote climate friendly behaviours in my community.	.615	.773	.409
I have a duty to participate in climate marches and rallies.	.779	.516	.289
I have a moral responsibility to put pressure on my government to meet climate targets.	.768	.594	.356
I have a moral duty to protest for action on climate change.	.861	.526	.369
It is morally imperative that I try to stop projects that contribute to emissions (e.g., pipelines, fracking).	.791	.575	.309
I feel morally obliged to get involved with a group that is taking action on climate change.	.790	.533	.407
Climate change is a moral issue.	.330	.352	.685
It is morally wrong to ignore climate change.	.419	.483	.675
Climate change has nothing to do with morality or ethics.	.185	.250	.670

4.2.2. Moral Obligation and Collective Efficacy

To test the hypothesis that low collective efficacy undermines motivation to engage in environmental activism to a lesser degree for individuals who are high in moral obligation compared to those who are low in moral obligation, I conducted a linear regression analysis. I used model 1 of the PROCESS macro for SPSS (Hayes, 2019). The independent variables, moral obligation and collective efficacy, were centered on their respective means. The dependent variable was self-reported intentions to engage in climate activist behaviours. The results of this analysis are reported in Table 4.4. There was no evidence for a significant interaction between moral obligation and collective efficacy predicting intentions to engage in climate activism. There was a significant main effect of moral obligation, but not collective efficacy.

Table 4.4 Results of regression testing interaction between moral obligation and collective efficacy predicting intentions to engage in climate activism (*N*=428)

	***b* (*se*)**	**β**	***t* (424)**	**p**
Constant	2.53 (0.04)		59.04	<.01
Moral Obligation (MO)	0.43 (0.04)	0.49	10.55	<.01
Collective Efficacy (CE)	0.03 (0.05)	0.03	0.55	.58
Moral Ob*Collective Eff	0.03 (0.03)	0.04	0.91	.37

Note: *b* indicates unstandardized coefficients and *se* indicates standard error. β indicated standardized coefficients. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

I performed a logistic regression analysis to test whether moral obligation interacted with collective efficacy to predict whether participants provided their email to volunteer for a climate activist group (see Table 4.5). As before, I used model 1 of the PROCESS macro for SPSS (Hayes, 2019). There was no evidence of a significant interaction between moral obligation and collective efficacy predicting whether participants provided their email to be contacted by a student activist group. There was a main effect of moral obligation predicting whether participants provided their email, but no significant main effect of collective efficacy.

Table 4.5 Results of regression testing interaction between moral obligation and collective efficacy predicting providing email to be contacted by student activist group (*N*=428)

	***b* (*se*)**	***z***	***p***
Constant	-2.51 (0.22)	-11.56	<.01
Moral Obligation (MO)	1.08 (0.21)	5.24	<.01
Collective Efficacy (CE)	0.12 (0.27)	0.44	.66
Moral Ob*Collective Eff	-0.26 (0.21)	-1.26	.21

Note: *b* indicates unstandardized coefficients and se indicates standard error. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

I also tested whether moral obligation interacted with collective efficacy to predict identification with environmental activists (see Table 4.6). There was a significant main effect of moral obligation, but not collective efficacy. The results showed evidence of a significant interaction, however it was not in the predicted direction. As seen in Figure 4.1, participants who felt low moral obligation to engage in climate activism expressed lower identification with environmental activists regardless of their perceptions of collective efficacy. However, participants who felt a higher sense of moral obligation were more likely to identify with environmental activists if they also felt a high sense of collective efficacy, compared to if they felt a low sense of collective efficacy.

Table 4.6 Results of regression testing interaction between moral obligation and collective efficacy predicting identification with environmental activists (*N*=428)

	***b* (*se*)**	**β**	***t* (424)**	***p***
Constant	-3.85 (0.03)		124.22	<.01
Moral Obligation	0.45 (0.03)	0.62	15.34	<.01
Collective Efficacy	0.06 (0.03)	0.07	1.79	.07
Moral Ob*Collective Eff	0.07 (0.02)	0.11	3.07	<.01

Note: *b* indicates unstandardized coefficients and se indicates standard error. β indicated standardized coefficients. Independent variables (moral obligation and collective efficacy) were centered at their respective means.

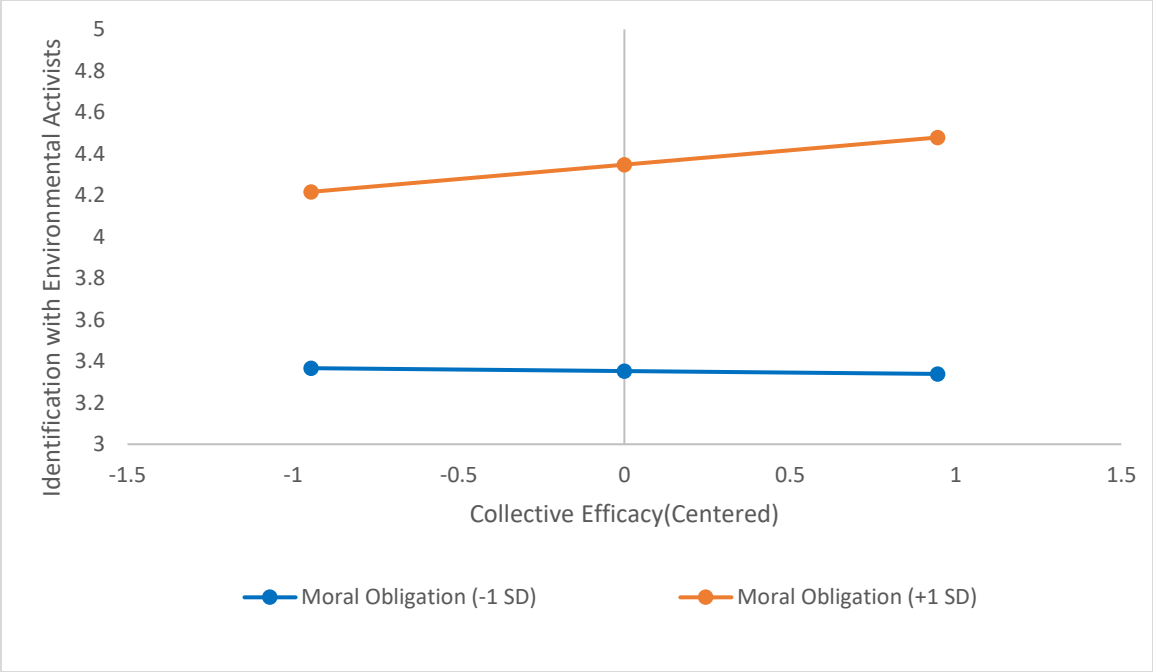

Figure 4.1 **Interaction between collective efficacy and moral obligation predicting identification with environmental activists (*N*=428)**

4.2.3. Belief in Climate Change as a Moral Issue and Collective Efficacy

I also tested whether belief in climate change as a moral issue interacts with collective efficacy to predict environmental activism. There was no evidence of a significant interaction predicting intentions to engage in climate activism (see Table 4.7), whether participants gave their email (see Table 4.8), or identification with environmental activists (see Table 4.9). However, there were significant main effects of climate change as a moral issue predicting all three outcomes. There was also a significant main effect of collective efficacy predicting intentions to engage in environmental activism and identification with environmental activists.

Table 4.7 **Results of regression testing interaction between climate change as a moral issue and collective efficacy predicting intentions to engage in climate activism (*N*=428)**

	***b* (se)**	**β**	***t* (428)**	***p***
Constant	2.55 (0.05)		55.32	<.01
CC as Moral Issue	0.14 (0.04)	0.17	3.60	<.01
Collective Efficacy	0.18 (0.05)	0.18	3.62	<.01
CCMoralIssue*Collective Eff	-0.02 (0.03)	-0.03	-0.57	.57

Note: *b* indicates unstandardized coefficients and se indicates standard error. β indicated standardized coefficients. Independent variables (belief in climate change as a moral issue and collective efficacy) were centered at their respective means.

Table 4.8 Results of regression testing interaction between climate change as a moral issue and collective efficacy predicting providing email to be contacted by student activist group (*N*=428)

Variable	*b* (*se*)	*z*	*p*
Constant	-2.39 (0.20)	-11.75	<.01
CC as Moral Issue	0.72 (0.18)	4.04	<.01
Collective Efficacy	0.40 (0.23)	1.72	.09
CCMoralIssue*Collective Eff	-0.27 (0.17)	-1.56	.12

Note: *b* indicates unstandardized coefficients and se indicates standard error. Independent variables (belief in climate change as a moral issue and collective efficacy) were centered at their respective means.

Table 4.9 Results of regression testing interaction between climate change as a moral issue and collective efficacy predicting identification with environmental activists (*N*=428)

	b (*se*)	β	*t* (428)	*p*
Constant	3.88 (0.04)		109.62	<.01
CC as Moral Issue	0.24 (0.03)	0.35	7.78	<.01
Collective Efficacy	0.19 (0.04)	0.23	5.01	<.01
CCMoralIssue*Collective Eff	0.02 (0.03)	0.03	0.63	.53

Note: *b* indicates unstandardized coefficients and se indicates standard error. β indicated standardized coefficients. Independent variables (belief in climate change as a moral issue and collective efficacy) were centered at their respective means.

4.3. Discussion

In summary, the results of Study 3 did not provide evidence in support of my hypothesis that moral obligation interacts with collective efficacy to predict climate activism. However, the results show consistent support for the role of moral obligation in predicting climate activism. When controlling for collective efficacy, the main effect of moral obligation was a significant predictor of intentions to engage in climate activism, participants choice to leave their email for a volunteer activist group, and identification with environmental activists. There was a floor effect for the behaviour measure, in that only a small minority of participants provided their email to be contacted by a student activist group. However, the results of the analyses with the behavioural measure were overall very similar to the results of the analyses performed on behavioural intentions.

Similarly, the main effect of belief that climate change is a moral issue was a significant predictor of these outcomes when controlling for collective efficacy. However, the main effect of between belief in climate change as a moral issue and environmental activism was not as strong as the main effect for moral obligation. Thus, while moral obligation and belief that climate change is a moral issue are closely related constructs, it seems that moral obligation may be especially effective in motivating participants to engage in climate activism. From a theoretical perspective, moral obligation is likely more proximally related to behaviour, as it involves a sense that action is imperative (Sabucedo et al., 2018; Vilas & Sabucedo, 2014). In contrast, one might believe that climate change is a moral issue, but not necessarily feel a sense of responsibility to take action. However, it is worth noting that the main effects of belief that climate change is a moral issue were similar to those of collective efficacy, and in some cases appeared stronger. Thus, belief that climate change is a moral issue is itself a noteworthy predictor of intentions to engage in climate activism.

Unlike in Study 2, the association between collective efficacy and intentions to engage in activism was not significant when controlling for moral obligation. Similarly, when controlling for moral obligation, collective efficacy was not significantly associated with whether participants provided their email to be contacted by a student activist group, nor identification with environmental activists. These results provide some evidence that moral obligation may be a stronger predictor of environmental activism, and particularly environmental activism aimed at addressing climate change, compared to collective efficacy.

As in Study 2, the results also provided evidence of a significant interaction between moral obligation and efficacy predicting identification with environmental activists. Once again, the interaction showed a different pattern than predicted. Rather than moral obligation mitigating the demoralizing effects of low efficacy on activism, the results showed that moral obligation had a stronger effect on identification with environmental activists when individual or collective efficacy was also high, compared to when efficacy was low.

Chapter 5.

Study 4

While the results of Study 3 did not support my hypothesis that moral obligation interacts with collective efficacy to predict environmental activism, there was some evidence to support this in Study 2. In addition, across both Study 2 and 3, there was consistent support for a strong association between moral obligation and environmental activism. However, as the data in Study 2 and 3 are correlational, I am unable to make causal inferences based on the results. To test whether there is a causal role of moral obligation and collective efficacy in motivating climate, in Study 4 I created two new manipulations, one intended to increase a sense of moral obligation to the environment, and one intended to increase perceptions of collective efficacy of environmental activists. Thus, Study 4 offers an experimental test of the interaction between moral obligation and collective efficacy using a 2 x 2 factorial design. Furthermore, there have been few experimental studies the causal role of moral obligation or collective efficacy. Thus, by experimentally manipulating these variables, I will be able to expand on prior research and examine if there is a causal main effect of moral obligation or collective efficacy predicting climate activist intentions, behaviour, and identity. I used the same measures as in Study 3 to measure moral obligation, belief that climate change is a moral issue, collective efficacy, intentions to engage in climate activism, providing email to be contacted by student activist group, and identification with environmental activists. As such, if I do not find causal evidence, I will also conduct correlational analyses with these variables to see if the results of Study 3 are replicated. This study was pre-registered on the open science framework (https://osf.io/g5yj9).

5.1. Method

The study took place online using Qualtrics survey software. Participants were recruited through the research participation program of a Canadian university.

Table 5.1 Demographics of Study 4 for total sample and by condition

	Total Sample (*N*=405)	Control (*n*=101)	Moral Obligation (*n*=104)	Efficacy (*n*=102)	Moral+Efficacy (*n*=98)
Age					
Mean (*SD*)	19.23 (2.59)	18.85 (1.22)	19.82 (3.56)	18.87 (1.59)	19.41 (3.09)
Range	17 - 43	18 - 26	18 - 38	18 - 29	17 - 43
Gender					
Female	326[1]	82	76	86	82
Male	67	16	24	14	13
Another/Nonbinary	6	1	3	0	2
Did not disclose	6	2	1	2	1
Ethnicity					
White	126	32	37	35	22
Asian (non-specific)	51	13	10	14	14
South Asian	67	21	16	10	20
East Asian	48	13	13	11	11
Southeast Asian	22	3	4	6	9
Middle Eastern	19	6	6	2	5
Hispanic	8	1	4	2	1
Black	6	1	1	2	2
Multiracial	34	8	7	12	6
Another label	14	2	2	5	5
Did not disclose	10	1	3	3	3
Sexuality					
Heterosexual	253	68	61	68	56
Multigender attraction	46	10	11	14	11
Homosexual	7	2	3	2	0
Asexual	5	4	0	0	1
Questioning/unsure	4	3	1	0	0
Another label	10	1	3	2	5
Did not disclose	34	6	10	9	9
Gender/pronouns[2]	46	7	15	7	16
Religion					
Atheist/non-religious	202	43	55	56	48
Christian	47	12	11	13	11
Sikh	39	11	9	8	11
Catholic	34	11	7	9	7
Muslim	24	6	8	6	4
Eastern Orthodox	6	2	1	0	3
Hindu	5	2	1	1	1
Buddhist	5	1	1	1	2
Jewish	2	1	0	0	1
Another label	17	5	7	1	4
Did not disclose	24	7	4	7	6
Disability/illness					
Yes	27	7	5	8	7
No	299	69	85	72	73
Did not disclose	79	25	14	22	18
Political orientation[3]					
Social Mean (*SD*)	3.10 (1.29)	3.17 (1.33)	3.27 (1.30)	2.99 (1.33)	2.96 (1.20)
Economic Mean (*SD*)	3.26 (1.21)	3.32 (1.27)	3.32 (1.22)	3.22 (1.32)	3.18 (1.02)

[1] Unless otherwise indicated, numbers in table refer to the number of participants in each category. [2] 45 participants indicated gender or pronouns instead of sexual orientation, and 1 participant just wrote "single". [3] Participants rated their political orientation on social and economic issues on a 7-point scale from 1 (very liberal) to 7 (very conservative).

5.1.1. Participants

To decide sample size, I conducted an a priori power analysis and determined that 400 participants provides 95% power to detect a medium effect size (F = .25) in a fixed-effects ANOVA, testing for main effects and interactions between four conditions (2x2). Four-hundred and fifteen undergraduate students were recruited from a Canadian university. Of these, 10 were excluded for failing an attention check, resulting in a final sample of 405 participants whose data was used for analysis. A full breakdown of participant demographics for the total sample and by condition can be found in Table 5.1.

5.1.2. Experimental Manipulations

The study was a 2x2 factorial design in which both moral obligation and collective efficacy were manipulated as independent variables. Participants were randomly assigned to one of four conditions: 1) moral obligation and collective efficacy, 2) moral obligation only, 3) collective efficacy only, and 4) control. (see Appendix for images and transcript of videos for each of the four conditions).

Moral obligation. All participants viewed a slideshow video about climate change before completing the questionnaire. Along with images related to climate change, participants heard statements about the serious consequences of climate change accompanied by piano music. For participants in the moral obligation control condition, the slideshow then ended. Participants who were assigned to the moral obligation condition heard additional statements about how climate change is a moral issue.

Collective efficacy. After viewing the video, all participants read a short paragraph describing a student-led environmental activist group on their campus, and the group's efforts to convince the university administration to divest from fossil fuels. For participants in the efficacy control condition, that is all they read. Participants in the high efficacy condition read an additional statement describing the results of the divestment campaign, and how the student activists were successful in getting the university to divest from fossil fuels.

5.1.3. Measures

After watching the short video and reading the short article, participants completed the following measures in the order presented below. Unless otherwise specified, all scale items were rated on a 7-point Likert type scale from 1 (strongly disagree) to 7 (strongly agree).

Attention and manipulation checks. After viewing the video and reading the article participants were asked reading comprehension questions to check that they watched the video and paid attention to the article. Additionally, I included measured moral obligation and measured collective efficacy in the questionnaire as manipulation checks.

Providing email to be contacted by student activist group. Participants completed the same behavioural measure as in Study 3 where they were asked if they wanted to provide their email to be contacted by student activist group for volunteer opportunities.

Intentions to engage in climate activism. Participants completed the same measure of intentions to engage in climate activism as in Study 3. The scale had high reliability (Cronbach's α=0.91)

Belief that climate change is a moral issue. Participants completed the same measure of belief that climate change is a moral issue as in Study 3. The scale had high reliability (Cronbach's α = 0.76).

Identification with environmental activists. Participants completed six items from the same measure of identification with environmental activists used in Study 2 and 3 (Cameron, 2004). The measure included items such as, "I have a lot in common with environmental activists." The scale had high reliability (Cronbach's α = 0.82).

Collective efficacy. Participants completed the same measure of collective efficacy as in Study 3. The scale had high reliability (Cronbach's α=0.89).

Moral obligation. Participants completed the same measure of moral obligation as in Study 3. The scale had high reliability (Cronbach's α=0.94).

Other measures.[5] As in Study 3, participants completed a measure of political orientation (Liu & Latané, 1998), and demographic variables (i.e., age, gender, sexuality, ethnicity, religion, international student status, chronic illness/disability).

5.2. Results

Means, standard deviations, and correlations of measured variables for the total sample and by condition can be found in Table 5.2. As expected, moral obligation, collective efficacy, and environmental activism were all positively correlated with one another.

5.2.1. Manipulation Check

I measured variables of moral obligation and collective efficacy as a manipulation check. First, I ran a two-tailed t-test on whether moral obligation condition affected measured moral obligation and belief that climate change is a moral issue. Watching the moral obligation video did not have a significant impact on measured moral obligation compared to watching the control video ($M_{moralvideo}$ = 4.41 (*SD* = 1.24), $M_{controlvideo}$ = 4.34 (*SD* = 1.09), *t*(403) = -0.57, *p* = .57). However, participants who watched the moral obligation video did report significantly higher belief that climate change is a moral issue than participants who watched the control video ($M_{moralvideo}$ = 5.20 (*SD* = 1.25), $M_{controlvideo}$ = 4.95 (*SD* = 1.17), *t*(403) = -2.05, *p* = .041).

Second, I tested whether the collective efficacy condition impacted measured collective efficacy and individual efficacy. Reading the article about an efficacious activist group did not have a significant impact on measured collective efficacy compared to reading the control article ($M_{efficacyarticle}$ = 5.27 (SD = 1.07), $M_{controlarticle}$ = 5.17 (*SD* = 1.05), *t*(403) = -0.94, *p* = .35).

[5] The study included other measures that were not part of the present analysis: individual efficacy, politicized environmental identity, climate change beliefs, and collective emotions. A list of the full measures included in Study 4 can be found in the Appendix.

Table 5.2 Means, standard deviations, and correlations of Study 4 variables by condition

	Condition	Mean (SD)	2	3	4	5	6
1. Moral Obligation	Control (*n*=101)	4.26 (1.10)	0.56**	0.51**	0.46**	0.47**	0.21*
	Efficacy (*n*=102)	4.42 (1.07)	0.31**	0.51**	0.56**	0.50**	0.26**
	Moral Obligation (*n*=104)	4.42 (1.31)	0.57**	0.46**	0.61**	0.63**	0.20*
	Moral+Efficacy (*n*=98)	4.39 (1.17)	0.48**	0.51**	0.64**	0.49**	0.33**
2. Collective Efficacy	Control (*n*=101)	5.11 (0.96)	-	0.41**	0.30**	0.41**	0.10
	Efficacy (*n*=102)	5.11 (1.15)		0.22*	0.26**	0.22*	-0.14
	Moral Obligation (*n*=104)	5.22 (1.13)		0.36**	0.52**	0.39**	0.10
	Moral+Efficacy (*n*=98)	5.42 (0.96)		0.45**	0.29**	0.26**	0.20*
3. Climate Change as a Moral Issue	Control (*n*=101)	4.89 (1.18)		-	0.28**	0.26**	0.26**
	Efficacy (*n*=102)	5.01 (1.16)			0.21*	0.19	0.24**
	Moral Obligation (*n*=104)	5.24 (1.23)			0.45**	0.25**	0.22*
	Moral+Efficacy (*n*=98)	5.16 (1.27)			0.32**	0.15	0.12
4. Identification with Activists	Control (*n*=101)	3.86 (0.87)			-	0.39**	0.37**
	Efficacy (*n*=102)	4.20 (1.00)				0.50**	0.18
	Moral Obligation (*n*=104)	4.01 (1.16)				0.56**	0.31**
	Moral+Efficacy (*n*=98)	4.01 (1.05)				0.56**	0.33**
5. Intentions to Engage in Climate Activism	Control (n=101)	2.26 (0.73)				-	0.21*
	Efficacy (n=102)	2.27 (0.81)					0.35**
	Moral Obligation (n=104)	2.31 (0.86)					0.28**
	Moral+Efficacy (n=98)	2.29 (0.73)					0.25*
6. Providing Email to be Contacted by Student Activist Group	Control (n=101)	gave email: 14 (13.9%) did not give email: 87 (86.1%)					
	Efficacy (n=102)	gave email: 11 (10.8%) did not give email: 91 (89.2%)					
	Moral Obligation (n=104)	gave email: 15 (14.4%) did not give email: 89 (85.6%)					
	Moral+Efficacy (n=98)	gave email: 10 (10.2%) did not give email: 88 (89.8%)					

Note: All correlations reported are Pearson's correlation coefficient (*r*). ** Indicates that correlation is significant at $p < .01$. * Indicates that correlation is significant at $p < .05$.

5.2.2. Experimental analyses

Did the moral obligation condition interact with the collective efficacy condition to affect intentions to engage in climate activism? I used a two-way ANOVA to test whether the manipulation of moral obligation interacts with the manipulation of collective efficacy to effect intentions to engage in climate activism. There was no a statistically significant interaction between the effects of moral obligation condition and collective efficacy condition predicting intentions to engage in climate activism, $F(1,404) = 0.05$, $p = .82$. In addition, both the main effect of moral obligation condition, $F(1, 404) = 0.25$, $p = 0.62$, and main effect of the collective efficacy condition, $F(1, 404) = 0.01$, $p = 0.94$, were not significant.

Did the moral obligation condition interact with the collective efficacy condition to cause activist behaviour? The behavioural dependent variable was whether participants gave their email to an activist group. I performed a logistic regression to test whether there was an interaction between the moral obligation condition and the collective efficacy condition predicting whether participants gave their email. There was no evidence of a significant interaction between moral obligation condition and collective efficacy condition ($b = -0.11$, $se = 0.61$, $\chi^2 = 0.03$, $p = .86$). Similarly, there was no significant main effect of moral obligation condition ($b = 0.46$, $se = 0.40$, $\chi2 = 0.01$, $p = .91$), nor collective efficacy condition ($b = -0.29$, $se = 0.43$, $\chi^2 = 0.44$, $p = .51$).

Did the moral obligation condition interact with the collective efficacy condition to cause identification with environmental activists? I used a two-way ANOVA to test whether the manipulation of moral obligation interacted with the manipulation of collective efficacy to effect identification with environmental activists. There was no a statistically significant interaction between the effects of the moral obligation condition and the collective efficacy condition predicting intentions to engage in climate activism, $F(1,404) = 2.71$, $p = .10$. In addition, both the main effect of moral obligation condition, $F(1, 404) = 0.25$, $p = 0.87$, and main effect of collective efficacy condition, $F(1, 404) = 2.90$, $p = 0.09$, were not significant.

5.2.3. Correlational Analyses

I conducted three correlational linear regression analyses testing for an interaction between measured moral obligation and measured collective efficacy predicting intentions to engage in climate activism, providing email to be contacted by student activist group, or identification with environmental activists. I found no evidence of a significant interaction between measured moral obligation and measured collective efficacy predicting any of these three outcome variables.

However, the results of these analyses showed that measured moral obligation is a significant predictor of intentions to engage in climate activism (see Table 5.3), providing email to be contacted by student activist group (see Table 5.4), and identification with environmental activists (see Table 5.5), even when controlling for collective efficacy. On the other hand, measured collective efficacy did not significantly predict intentions to engage in climate activism, providing email to be contacted by student activist group, or identification with environmental activists when controlling for measured moral obligation.

Table 5.3 Results of regression testing interaction between moral obligation and collective efficacy predicting intentions to engage in climate activism (*N*=405)

	***b* (*se*)**	**β**	***t* (403)**	***p***
Constant	2.28 (0.04)		65.09	<.01
Moral Obligation	0.33 (0.03)	0.49	10.21	<.01
Collective Efficacy	0.07 (0.04)	0.09	1.80	.07
Moral Ob*Collective Eff	0.01 (0.02)	0.02	0.47	.64

Note: *b* indicates unstandardized coefficients and se indicates standard error. B indicated standardized coefficients. Independent variables (belief in climate change as a moral issue and collective efficacy) were centered at their respective means.

Table 5.4 Results of regression testing interaction between moral obligation and collective efficacy predicting providing email to be contacted by student activist group (*N*=405)

Variable	*b* (*se*)	*z*	*p*
Constant	-2.19 (0.29)	-11.57	<.01
Moral Obligation	0.80 (0.18)	4.47	<.01
Collective Efficacy	-0.09 (0.20)	-0.46	.65
Moral Ob*Collective Eff	-0.07 (0.14)	-0.48	.63

Note: *b* indicates unstandardized coefficients and se indicates standard error. Independent variables (belief in climate change as a moral issue and collective efficacy) were centered at their respective means.

Table 5.5 Results of regression testing interaction between climate change as a moral issue and collective efficacy predicting identification with environmental activists (*N*=405)

	b (*se*)	β	*t*(401)	*p*
Constant	4.02 (0.05)		82.89	<.01
CC as Moral Issue	0.19 (0.04)	0.22	4.47	<.01
Collective Efficacy	0.26 (0.05)	0.26	5.16	<.01
CCMoralIssue*Collective Eff	-0.01 (0.03)	-0.01	-0.17	.87

Note: *b* indicates unstandardized coefficients and se indicates standard error. β indicated standardized coefficients. Independent variables (belief in climate change as a moral issue and collective efficacy) were centered at their respective means.

The results of these analyses showed that belief that climate change is a moral issue is a significant predictor of intentions to engage in climate activism, providing email to be contacted by student activist group, and identification with environmental activists. Furthermore, measured collective efficacy significantly predicted intentions to engage in climate activism and identification with environmental activists even when controlling for belief that climate change is a moral issue. However, measured collective efficacy did not significantly predict whether participants provided their email to be contacted by a student activist group.

5.3. Discussion

The results of Study 4 do not support the hypotheses that moral obligation interacts with collective efficacy to predict environmental activism intentions, whether participants provided their email to be contacted by a student activist group, and identification with environmental activists. Furthermore, I found no causal evidence that moral obligation or collective efficacy impacted these three outcomes. Thus, the results

of the experiment do not support the hypothesis that moral obligation causes environmental activism, nor that collective efficacy causes environmental activism. As in Study 3, there was a floor effect observed with the dichotomous behavioural measure where participants were asked if they wanted to provide their email to be contacted by a student activist group. However, as before, the results of analyses with this variable do not appear to be largely different from the results with the behavioural intentions variable.

However, the experimental manipulations did not work as intended. Participants randomly assigned to read the article about a successful environmental activist group did not report significantly higher measured collective efficacy than participants who read the control article. Similarly, participants who were randomly assigned to watch the video with moral messaging about climate change did not report significantly higher measured moral obligation than participants who watched the control video that did not contain moral messaging. It is worth noting that participants who watched the moral content video did report significantly higher beliefs that climate change is a moral issue when compared to participants who watched to control video. Thus, the moral messaging manipulation may have been partially successful in impacting participants' moral beliefs about climate change. However, while belief that climate change is a moral issue is similar to moral obligation to engage in climate activism, belief that climate change is a moral issue appears to be a weaker predictor of climate activism than moral obligation in the correlational regression models when controlling for collective efficacy. Since the manipulation increased belief that climate change is a moral issue but not any of the climate activism outcomes, it may be that belief that climate change is a moral issue alone is not strong enough to impact climate activism and that other factors have an important role to play. However, correlational data suggests it is comparable with collective efficacy in terms of the strength of its relationship to climate activism, and thus worthy of further investigation in future research.

Since neither the collective efficacy nor moral obligation manipulation worked as intended, it is difficult to draw conclusions from the results of the experimental analyses in Study 4. However, using correlational analyses, I was able to replicate some of the results of Study 3. Moral obligation was strongly associated with climate activism, and predicted climate activism when controlling for collective efficacy. In Study 4 and in previous studies, measures of collective efficacy were a weaker predictor of climate

activism when compared to moral obligation, and did not always predict climate activism when controlling for moral obligation.

Belief that climate change is a moral issue was also associated with environmental activism and activist identity when controlling for efficacy, but to a weaker degree than moral obligation. Belief that climate change is a moral issue explained less variance in activist outcomes than moral obligation. This is consistent with theoretical reasoning that belief that climate change is a moral issue is a less proximal predictor of collective action than moral motivation. However, the relationship between belief that climate change is a moral issue and climate activism was as strong as or stronger than the relationship between collective efficacy and climate activism. Thus, it seems that moral obligation is a stronger predictor of environmental activism than efficacy and belief that climate change is a moral issue.

Chapter 6.

General Discussion

Four studies tested the hypothesis that moral obligation interacts with collective efficacy to predict environmental activism. In Study 1, involving interviews with eleven environmental activists, the majority of the activists discussed climate change as a moral issue, without being prompted to do so. Many activists also stated that their motivation for engaging in climate activism involved a sense of moral obligation, responsibility, or duty. This was the case for some activists who expressed high efficacy in their activism, and for all activists who expressed low efficacy in their activism. Thus, the results of Study 1 seem to lend some support to the idea that moral obligation is particularly important for activists who are low in efficacy.

In Study 2, I conducted a secondary analysis of existing data to examine correlational evidence. Evidence for an interaction between moral obligation and collective efficacy predicting environmental activism was inconclusive. There was no evidence of a significant interaction in the larger representative Canadian sample. However, the predicted interaction pattern did emerge in the smaller convenience sample of Canadian undergraduate students. Students who were high in moral obligation reported higher intentions to engage in environmental activism even if they were low in collective efficacy; whereas, students low in moral obligation only reported higher intentions to engage in environmental activism if they were also high in collective efficacy.

However, Study 3 failed to replicate this effect. Data from a similar sample of Canadian undergraduate students, showed no evidence of a significant interaction between moral obligation and collective efficacy predicting environmental activism. Instead, there was evidence of an interaction between moral obligation and collective efficacy predicting identification with environmental activists. However, the pattern of this interaction was contrary to my hypothesis. Collective efficacy impacted identification with activists more for participants high in moral obligation compared to participants low in moral obligation. These results suggest that participants who do not feel very morally obligated to engage in climate activism are less likely to identify as environmental

activists regardless of whether they believe environmental activism is efficacious or not. However, participants who feel high moral obligated to engage in environmental activism are more likely to identify with other environmental activists if they also have a high sense of efficacy regarding activism.

In Study 4, I attempted to manipulate participants' sense of moral obligation and collective efficacy in an experimental test of the interaction hypothesis. However, the manipulations failed to influence participants' reported moral obligation and collective efficacy. Participants in the moral obligation condition did not significantly differ on moral obligation compared to participants in the moral control condition. However, participants in the moral obligation condition did report significantly higher beliefs that climate change is a moral issue. Participants in the collective efficacy condition did not significantly differ on collective efficacy compared to participants in the efficacy control condition. Unsurprisingly, participants did not significantly differ on measures of environmental activism between experimental conditions.

Since the experimental manipulations failed, I also conducted correlational analyses using the self-report measures in Study 4. As in Study 3, there was no evidence of a significant interaction between moral obligation and collective efficacy in predicting activism or identification with activists. Unlike in Study 3, all participants in Study 4 were given a message reminding them about the dire consequences of climate change. This is similar to the experimental condition given to some participants in the undergraduate student sample of Study 2. Thus, it seems unlikely that the experimental conditions in Study 2 could explain the differences between the student sample and the representative Canadian sample. Given that the results of Study 3 and Study 4 do not support the interaction hypothesis, the interaction effect found in the undergraduate sample of Study 2 may well be spurious.

6.1. Main Effects of Moral Obligation

Across all four studies, there is evidence that feelings of moral obligation are closely linked to environmental activism. Moral obligation consistently predicted environmental activism when controlling for collective efficacy. However, the reverse was not necessarily true (i.e., collective efficacy did not always predict environmental activism when controlling for moral obligation). In Study 1, nearly all participants

spontaneously discussed climate change as a moral issue (without prompting from the interviewer), and roughly half of the participants indicated that moral obligation was a motivation for engaging in environmental activism. Only half of the participants expressed a sense of optimism, or efficacy, regarding their environmental activism. In fact, half of the participants in this sample expressed a great deal of pessimism, or low efficacy, about environmental activism. Thus, while there is existing evidence that collective efficacy is associated with environmental activism and this effect emerges in some of the current data, it is certainly not the only path that might motivate people to participate. Thus, the current results are consistent with previous research suggesting that moral obligation influences collective action through a separate, independent path from efficacy (van Zomeran et al., 2018; Vilas & Sabucedo, 2012). Furthermore, although correlational, the results of the current studies suggest that collective efficacy may not be as strongly associated with climate activism as moral obligation and belief that climate change is a moral issue.

In all three quantitative studies, there was consistent correlational evidence was consistent with the qualitative findings it Study 1. The main effect of moral obligation predicting environmental activism was consistently significant even when controlling for collective efficacy. In contrast, the main effect of collective efficacy on environmental activism was often weaker when controlling for moral obligation, and was sometimes not significant. Taken together, these results provide evidence that moral obligation is an important predictor of environmental activism, and builds on prior work that suggests moral obligation is directly associated with collective action (Schmitt et al., 2019; Vilas & Sabucedo, 2012). Thus, the role of moral obligation deserves more attention in future research on both environmental activism and collective action more broadly.

The results of these studies also support the idea that many individuals engage in environmental activism despite low efficacy. Half of the participants in Study 1 expressed low efficacy about environmental activism, but still stated that they were motivated to continue engaging in activist behaviour. While past research has demonstrated that efficacy can be an important antecedent of collective action (Bostrom et al., 2018; Hart & Feldmen, 2016; Jiménez-Moya et al., 2019; Thaker et al., 2016), few of these studies have examined both efficacy and moral obligation together.

6.2. Limitations & Future Directions

There are several limitations to the present studies. Since Study 1 was a secondary analysis, I did not have control over the structure or the interviews nor the interview questions. Thus, participants were not asked about their moral beliefs nor moral obligation to engage in climate activism. While it is interesting that many participants in this study discussed ideas related to morality without being prompted to do so, I would likely have been able to gather more robust data by conducting my own interviews designed to ask participants about their moral beliefs regarding climate change. Similarly, Study 2 also relied on secondary analysis of data from two prior studies, neither of which was designed to test my research questions.

Furthermore, the present quantitative studies only examine correlational data. Due to the failure of the experimental manipulations in Study 4, I was unable to conduct conclusive tests of causality. Thus, I was only able to conduct correlational tests in Study 4 using measured moral obligation and collective efficacy. In the future, it would be worth considering different and perhaps more powerful methods of manipulating moral obligation and collective efficacy. It may be that simply watching a video in which moral beliefs about climate change are mentioned is not enough to increase a sense of moral obligation. Similarly, reading articles about one successful student activist initiative may not be enough to increase collective efficacy for environmental activists as a broad group. Collective efficacy about climate change may be difficult to manipulate. Hornsey et al. (2021) reviewed evidence that climate change efficacy beliefs are influenced by many factors, including social norms, perceived climate change threat, social desirability, and identity expression, and they found that climate change efficacy beliefs are generally not responsive to written messaging or verbal instruction. Imagery tended to be more effective in manipulating efficacy (Hornsey et al., 2021). Thus, future research on collective efficacy of climate activism might include images or use social norms to prime efficacy beliefs. It may also be the case that participants need to identify with the group in question in order for the group's successes to impact their own perceptions of collective efficacy. Although Study 4 included measures of identification with environmental activists, I did not include a measure of how much participants identified with SFU350, the activist group described in the manipulation. Given that none of the participants in Study 4 indicated that they were already members of SFU350, it is likely

that only a minority of participants would have identified with this group. Perhaps the manipulation could have been improved if the group being referenced was one that students in the sample could relate to more broadly.

Furthermore, in these studies I looked at collective efficacy around very general goals of activism aimed at mitigating climate change and environmental harm. I chose climate mitigation because it is a common goal in the climate change movement, and also one that is becoming increasingly difficult if not impossible to achieve (IPCC, 2022). However, climate activists have many other goals in their activism that I did not examine, such as spreading awareness of climate change as an issue, building the climate change movement, direct action to stop specific projects, and adaptation to the effects of climate change. It is possible that I may have seen different results if I had looked at efficacy around different goals. Speculatively, moral obligation may play a role in a process by which activists re-negotiate the goals of their activism. For example, if it is truly impossible at this point to mitigate the effects of climate change, then having strong moral beliefs about reducing the harm caused by climate change may result in activists shifting their larger goal from climate mitigation to adaptation. Similarly, there are other forms of efficacy that I did not examine in these studies. For example, participatory efficacy refers to the belief that one's own actions are effective in contributing to the collective action efforts of one's ingroup (van Zomeren et al., 2013). It may be that different forms of efficacy behave differently in relation to moral obligation.

To my knowledge, no published studies have successfully manipulated moral obligation. Some studies have manipulated related constructs such as moral beliefs (Lutrell et al., 2016), moral standards regarding climate change (Barth et al., 2015), moral norms regarding pro-environmental behaviour (Kácha & van der Linden, 2021), and expansion of one's moral circle to include the natural world (Bratanova et al., 2012). From a social identity perspective, we would expect a sense of moral obligation to arise from perceptions about the moral norms and values of one's ingroup (Ellemers et al., 2019). Thus, a manipulation that provides information that the majority of people in one's ingroup believe climate change is a moral issue and feel morally obligated to engage in climate activism may have been effective. However, such a manipulation would have to be designed carefully so as not to confound moral beliefs with normative beliefs, as social norms in and of themselves have been shown to predict pro-environmental behaviour (Keizer & Schultz, 2018).

In Study 4, the manipulation was partially successful in that participants who watched the moral message video reported significantly higher beliefs that climate change was a moral issue. However, the manipulation did not have a significant impact on measured moral obligation. Thus, it may be that moral obligation is more difficult to manipulate in such a short time frame. Showing participants a short video or article talking about the moral obligation we have to the environment may lead them to be more convinced that environmental issues as moral issue, but not enough to change participants' own sense of moral obligation.

Moral obligation may also be particularly difficult to manipulate due to psychological reactance – if individuals believe messaging is intended to influence their behaviour, they may react by doing the opposite of what the message intends (Steindl et al., 2015). Climate change is known to be politically divisive, and conservatives tend to view messages about climate change as impositions on their freedom (Chan & Lin, 2022). Thus, it is possible that some participants in Study 4 may have become defensive upon being told they are morally responsible for climate change. A potential way of avoiding reactance in future research may be to design a manipulation meant to decrease moral obligation by telling participants they are not morally responsible for climate change. Such a manipulation could work for comparing low moral obligation to a control condition, but may fail to adequately capture high moral obligation.

Future research could investigate other potential ways of manipulating this construct. For example, a design in which participants are asked to write down reasons they might feel morally obligated to stop climate change might be more effective, as it requires participants to engage more meaningfully with ideas of moral obligation over a longer period of time. Writing down their own thoughts also means participants are doing their own thinking about moral obligation, rather than being told to feel moral obligation, which might reduce psychological reactance. Perhaps a stronger argument is needed, rather than the short statements about the morality of climate change action given to participants in the Study 4 video. Future studies might try having participants read a longer, persuasive article about reasons that one might feel a moral obligation to engage in climate activism – perhaps using testimonies from real climate activists. Education about environmental topics may also increase belief that climate change is a moral issue, and perhaps moral obligation as well (Begum et al., 2022).

Another limitation of these studies is that I used small convenience samples of undergraduate students. Therefore, I did not have enough power to detect small effect sizes, only medium or large effect sizes. It is possible the interaction between moral obligation and collective efficacy only has a small effect, and thus my analyses failed to detect it. Although non-significant, the interaction between collective efficacy and moral obligation did show trends in the predicted direction in a few of the analyses in Study 3 and 4. Future research with larger, more representative samples may prove informative.

6.3. Conclusion

There is a large body of work examining the relationship between efficacy and collective action, and a smaller but growing body of work examining the relationship between moral obligation and collective action. However, at present, few studies have examined the impact of both moral obligation and collective efficacy simultaneously. Thus, this research addresses a gap in the existing literature on collective action. Although I did not find evidence to support my hypothesis that moral obligation interacts with collective efficacy to predict environmental activism, I did find robust evidence that suggests moral obligation is an important predictor of pro-environmental collective action. These findings add to the presently small body of empirical evidence supporting the importance of moral obligation as a motivation that drives people to engage in collective action (Ayanian et al., 2021; Sabucedo et al., 2018; Sabucedo et al., 2019; Schmitt et al., 2019; Vilas & Sabucedo, 2014).

Furthermore, my research suggests that the association between collective efficacy and environmental activism tends to be weaker, especially when controlling for moral obligation. This could have important applications for mobilizing activists. Instilling a sense of moral obligation may be one way of rallying individuals to work together against powerful actors who wish to maintain the status quo, such as corporations and governments who profit from environmental harm. In particular, climate activism is a context in which activists and other individuals engaging in collective action are likely to face what feel like overwhelming obstacles and thus may experience low collective efficacy. For this reason, the relationship between collective efficacy and climate activism may be weaker than has been previously found for other types of collective action. Thus, those interested in motivating people to engage in climate activism should consider other factors beyond efficacy. Based on the results of the present studies,

moral obligation seems to be an important factor in motivating climate activism. Even if moral obligation does not interact with collective efficacy to counter the demoralizing effects of low efficacy, it is still important to investigate.

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Appendix A.

Study 1 Coding Guidelines

The purpose of these guidelines is to provide clear and specific instructions for how to code qualitative data, so that different coders will be able code the same passage of text in the same way. Therefore, we want to make sure the instructions do not contain any ambiguity.

We also want to code the data in such a way that will allow us to tell a story about how people view climate change as a moral issue, and whether morality plays a part in their motivations to engage in pro-environmental behaviour (PEB).

What is Morality?

For the purposes of this study we define morality as a set of principles that inform what actions a person finds acceptable (i.e., right) and unacceptable (i.e., wrong).

Most participants do not discuss morality directly. Below we've generated some examples of ways participants might be discussing ideas related to moral beliefs.

- Standards for "right" and "wrong" behaviour
- Ethics, values, ideals, principles
- A sense of responsibility, duty, accountability
- Striving for fairness, equality, justice
- Feelings of guilt or anger (at perceived violations of moral beliefs)

Coding Categories

There are three coding categories we will be using to code how participants talk about morality in relation to the environment and their motivations to engage in pro-environmental behaviour.

1. Moral Obligation for Engaging in PEB
Is the participant motivated to engage in PEB for moral reasons? They might indicate this in the following ways:

- Do they feel compelled to engage in PEB because they see it as the right thing to do?
- Conversely, are they motivated because they perceive not doing PEB as wrong (e.g., they might feel guilty if they did not do it)?
- Do they believe that engaging in PEB is consistent with their own values, principles, ideals or standards they set for themselves?

Code passages that fall under this category by highlighting them in blue.

Below are examples of excerpts that would fit into this category:

"*I guess, I'm motivated* [to do things for the environment] *because I feel like I should do something, like I have to be responsible… and it's the right thing to do.*"

"*It just doesn't feel right to me, like, if I know there's a problem then I should try and do something about it. I would feel guilty if I wasn't doing anything* [to help the environment]."

"*I'm doing this* [pro-environmental behaviour] *because I want to make the world better, like, I want the world to be more equal, more fair, more just, and so I want to do whatever I can to contribute to that.*"

Important points to keep in mind:

Excerpts should only be coded under this category if participants are a) discussing **their own reasons for why they personally feel motivated to engage in PEB**, and b) **their motivations seem clearly related to morals**.

General statements about moral beliefs (e.g., "*I think solving climate change is a matter of ethics*"), or reasons for others to engage in PEB (e.g., "*People should have a sense of responsibility to protect the environment*"), do not belong in this coding category.

If the motivations the participant describes are not clear (e.g., "*I do it because it's a goal that I'm working towards*"), or do not seem related to morality (e.g., "*I guess I'm really worried about what will happen in the future if we don't fix the environment, so that's what motivates me*"), these should not be coded as moral obligation

2. Belief that Climate Change and Environmental Issues are a Moral Issues
When participants are discussing environmental issues, particularly climate change, do they express a belief that there is a moral component to these issues? They might indicate this in the following ways:

- Do they believe that the solutions to environmental problems involve a change in what we as a society value morally? For example, morally valuing nature?
- Do they express anger or morally condemn people and/or groups who have contributed to environmental problems or failed to take action?
- Do they link environmental problems to other moral problems, such as social justice and inequality? For example, do they acknowledge that climate change has disproportionate effects on marginalized groups of people?

Code passages that fall under this category by highlighting them in yellow.

Below are examples of excerpts that would fit in this category:

"*The only way we're going to fix the problem* [climate change]*, is if we change our values, you know, like our ethics and stuff. We need to have better principles, and to stay committed to them, that's the only way we can make progress with the environment, and as a society too.*"

"*People in power are, you know, they are morally bankrupt... they have no morals and that's why they're not doing anything about* [climate change]. *We need people with principles in charge.*"

"*... and it's* [climate change] *all linked to inequality, because people in poorer countries and indigenous communities aren't responsible for this problem, but they're already feeling the worst effects of it. This is wrong.*"

Important points to keep in mind:

Excerpts should only be coded under this category if it is reasonably clear that participants are a) discussing **moral beliefs** that are b) **specifically related to climate change and other environmental issues**.

3. Other (Non-Moral) Motivations for Engaging in PEB
What reasons do participants give for engaging in PEB that are unrelated to morality? This is a place to include any interesting excerpts from participants about why they engage in PEB that may not fit with moral codes.

Code passages that fall under this category by highlighting them in red.

Some examples of non-moral motivations include:

- Fear or anxiety about environmental threats (e.g., "*I'm worried about what will happen if we don't do anything to fix the environment*")
- Others are doing it (e.g., "*I feel inspired by my friends*")
- A sense of efficacy (e.g., "*I like having a goal to work towards. I feel like I am making a difference.*")

Additional Notes

It is possible that multiple codes can apply to one except. For example, in one sentence a participant might talk about how they view climate change as a moral issue, and then go on to state that this motivates them to engage in PEB. In that case, you would code the excerpt under both category 1 and 2.

MS Word does not allow you to highlight a passage in multiple colours, so to indicate overlap you can highlighting passages in the following colours to indicate that the passage falls under multiple coding categories:

Overlap between "moral obligation for engaging in PEB" and "climate change as a moral issue" can be highlighted in green.

E.g., "*I'm motivated because I think climate change is morally wrong, it's not fair that some communities, like indigenous people, are suffering more from climate change even though they're fighting the hardest to stop it and corporations just profit off of making it worse. So we have to fight back.*"

Overlap between "moral obligation for engaging in PEB" and "other non-moral motivations for engaging in PEB" can be highlighted in purple.

E.g., "*I have a lot of reasons for doing it I guess… I'm worried about the future, like future generations, and I want to spread awareness, also I think it's just the right thing to do.*"

Overlap between "climate change as a moral issue" and "other non-moral motivations for engaging in PEB" can be highlighted in orange.

E.g., "*I do it because I think we need to get the message out there, get more people educated about environmental problems, and then maybe more people would see how the system isn't working, you know that we could do better, we could be morally and ethically better [about the environment]. And also I think we would be better off as a society, we would be more connected, and happier, and thinking about that I guess motivated me personally.*"

Overlap between all three coding categories can be highlighted in black.

E.g., "*I feel like I have to do something, I would feel guilty if I wasn't contributing, so I just try to do what I can to educate and spread awareness about how all these injustices have contributed to climate change. I also don't want to grow old in a world that's continuing, like it is today, I want to live, and I want my children to have, a better future.*"

Appendix B.

Study 2 Measures

Moral Obligation (Schmitt et al., 2019)

1. As part of the human race, I feel responsible for the negative impact we are having on the environment.
2. I feel that I have a duty to preserve the environment for future generations.
3. I feel a moral obligation to promote sustainable behaviours in my community.
4. I feel a moral obligation to support local business by buying local produce.
5. I feel that I have a duty to encourage others to reduce their energy consumption and the use of greenhouse gases.
6. I feel a moral obligation to reduce my overall consumption of material goods.

Collective Efficacy (adapted from van Zomeren, Saguy, & Schellhass, 2013)

1. As a group, humans can stop environmental degradation.
2. Together, humans can prevent the environment from being harmed.
3. Through joint actions, humans can live in harmony with nature.
4. Humans can achieve their common goal of stopping global warming.

Identification with Environmental Activists (adapted from Cameron, 2004)

1. I have a lot in common with environmental activists.
2. I feel strong ties to environmental activists.
3. I find it difficult to form a bond with environmental activists. [R]
4. I don’t feel a sense of being “connected” with environmental activists. [R]
5. I often think about the idea that I am an environmental activist.
6. Overall, being an environmental activist has very little to do with how I feel about myself. [R]
7. In general, being an environmental activist is an important part of my self-image.
8. The idea that I am an environmental activist rarely enters my mind. [R]

Willingness to engage in activist behavior (Schmitt et al., 2019)

1	2	3	4	5	6	7
Very unwilling	unwilling	Somewhat unwilling	Neither willing nor unwilling	Somewhat willing	willing	Very willing

1. Get involved with a group whose main aim is to preserve or protect the environment.
2. Attend meetings of environmental groups.
3. Sign a petition in support of protecting the environment.
4. Give money to environmental groups.
5. Write letters or call your government official to support strong environmental protection.
6. Write letters to editors of newspapers in support of environmental protection.
7. Go to a political demonstration or protest to support environmental protection.
8. Hand out fliers or put up posters in public locations to raise awareness about environmental issues.
9. Write in public forums (e.g., blogs, newspapers, social media) about environmental issues.
10. Take non-violent action to block projects that may harm the environment (e.g., standing in the path of work trucks).

Letter Writing Behavioral DV

Now that you have completed the study, we would like to give you the opportunity to contact your government and express your views on the environment.

As you may know, the Canadian government signed the 2016 Paris Climate Accords. In part, this agreement calls for halting the global increase in temperature by reducing greenhouse gas emissions to below 30% of 2005 levels. Despite this, current carbon emissions within Canada are not on track to meet the goals of the Paris Climate Accords. We would now like to provide you an opportunity to write an anonymous letter to Catherine McKenna, Federal Minister of Environment and Climate Change, urging her to fulfill Canada's commitment to reducing carbon emissions. If you choose to write a letter, we will print and mail your letter to Catherine McKenna's office on your behalf. Regardless of whether you choose to write a letter or not, this will not affect your compensation for participating in this study. Would you like to write a letter now?

Yes, I would like to write a letter now. No, I would not like to write a letter now.

[if yes is selected, then an open-ended box is displayed]

[On the screen following the text-box, the following text appears]

Now that you have written a letter, we would like to give you the opportunity to sign your letter. Of course, this is up to you. You may choose to sign the letter or not. Regardless, we will still print and mail your letter on your behalf, either anonymously or signed. If you would rather have the letter sent anonymously, simply leave this information blank. If you prefer to have your letter signed, please type your in the box below as you would like it to appear below your letter.

[text-box to enter name]

Appendix C.

Study 3 Measures

Collective efficacy (adapted from van Zomeren, Saguy, & Schellhass, 2013)

1	2	3	4	5	6	7
Strongly disagee	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. As a group, environmental activists can help reduce greenhouse gas emissions.

2. Together, environmental activists can help prevent catastrophic climate change.

3. Through joint actions, environmental activists can help convince governments and policy-makers to take climate-friendly action.

4. Environmental activists can contribute to stopping projects that harm the climate and the environment.

Moral obligation (to do something about climate change):

1	2	3	4	5	6	7
Strongly disagee	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. I feel morally responsible for taking action on climate change .
2. I have a moral duty to work towards trying to stop climate change.
3. I believe I have a moral obligation to promote climate friendly behaviours in my community.
4. I have a duty to participate in climate marches and rallies.
5. I have a moral responsibility to put pressure on my government to meet climate targets.
6. I have a moral duty to protest for action on climate change.
7. It is morally imperative that I try to stop projects that contribute to emissions (e.g., pipelines, fracking).
8. I feel morally obliged to get involved with a group that is taking action on climate change.

Climate Change as a Moral Issue

1	2	3	4	5	6	7
Strongly disagee	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. Climate change is a moral issue.
2. It is morally wrong to ignore climate change.
3. Climate change has nothing to do with morality or ethics. [R]

Participative (Individual) Efficacy (adapted from van Zomeren, Saguy, & Schellhass, 2013)

1. As an individual, I can contribute greatly to humans working together to stop environmental degradation.
2. As an individual, I can provide an important contribution so that, together, humans can prevent the environment from being harmed.
3. As an individual, I can provide a significant contribution so that, through joint action, humans can live in harmony with nature.
4. As an individual, I can contribute meaningfully so that humans can achieve their common goal of stopping global warming.

Identification with environmental activists (adapted from Cameron, 2004)

1	2	3	4	5	6	7
Strongly disagee	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. I have a lot in common with environmental activists.

2. I feel strong ties to environmental activists.

3. I find it difficult to form a bond with environmental activists. [R]

4. I don't feel a sense of being "connected" to environmental activists. [R]5. I often think about the fact that I am an environmental activist.

6. Overall, being an environmental activist has little to do with how I feel about myself. [R]

7. In general, being an environmental activist is an important part of my self-image.

8. The fact that I'm an environmental activist rarely enters my mind. [R]

9. In general, I'm glad to be an environmental activist.

10. I often regret that I'm an environmental activist. [R]

11. I don't feel good about being an environmental activist. [R]

12. Generally, I feel good when I think about myself as an environmental activist.

Intentions to engage in environmental activism (Schmitt et al., 2019)

Please rate how much you intend to engage in the following behaviours over the next year using the scale below:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

1. Get involved with a group whose main aim is to take action on climate change.

2. Attend meetings of groups taking action on climate change.

3. Sign a petition in support of meeting climate targets.

4. Give money to groups taking action on climate change.

5. Write letters or call your government official to support action on climate change.

6. Write letters to editors of newspapers in support of taking action on climate change.

7. Go to a political demonstration or protest to demand more action on climate change.

8. Hand out fliers or put up posters in public locations to raise awareness about climate change.

9. Write in public forums (e.g., blogs, newspapers, social media) about climate change.

10. Take non-violent action to block projects that may contribute to climate change (e.g., standing in the path of work trucks).

Behavioural measure of environmental activism – getting involved with SFU 350

SFU350 is a student-led climate action group organizing to push SFU and the broader community to adopt more climate friendly policies.

If you would like information about SFU350 or would like to get involved, please leave you contact information and we will forward to the organization.

1. Yes, I would be interested _____
2. No, I'm not interested.

3. No, I'm already a member of SFU350.

Climate change beliefs (adapted from Milfont et al., 2017)

1	2	3	4	5	6	7
Strongly disagee	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. Climate change is real.
2. Climate change is caused by humans.
3. Climate change will have serious negative impacts on human civilization.

Attention Check

1. Please select “Strongly Agree” to show you are paying attention to this question.

Collective Guilt-Human vs. Nature (adapted from Branscombe, Slugoski, and Kappen, 2012)

1	2	3	4	5	6	7
Strongly disagee	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. I feel regret for how humans have harmed the environment.
2. I feel guilty about how humans have exploited the natural world.
3. I can easily feel guilty for the negative outcomes of human-caused climate change.

Collective Guilt-Human vs. Humans (adapted from Branscombe, Slugoski, and Kappen, 2012)

1	2	3	4	5	6	7
Strongly disagee	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. I feel regret for how some groups have benefitted from resource extraction at the expense of others.
2. I feel guilty about how groups that have contibuted the least to climate change will face the worst consequences of it.
3. I can easily feel guilty for the negative impact climate change will have on vulnerable groups.

Collective Anger-Human vs. Nature (adapted from Becker, Tausch, & Wagner, 2011)

1	2	3	4	5	6	7
Strongly disagee	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. I feel anger about the way humans treat the environment.
2. I am mad at humans for the way they treat the environment.
3. It enrages me to think about the way humans treat the environment.

Collective Anger-Human vs. Human (adapted from Becker, Tausch, & Wagner, 2011)

1	2	3	4	5	6	7
Strongly disagee	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1.I am angry about how some groups have more power than others to make decisions about the environment.

2. It makes me mad to think about how some groups are exposed to more pollution than others.

3. I feel enraged at groups who put others at risk of environmental disaster for their own gain.

Political orientation (adapted from Liu and Latané (1998)

1	2	3	4	5	6	7
Very liberal	Liberal	Somewhat liberal	Center/ Moderate	Somewhat conservative	Conservative	Very Conservative

1. How would you describe your views on social issues?
2. How would you describe your views on economic issues?

Demographics

How old are you? _____

What is your gender? _____

What is your sexual orientation? _____

How do you describe your race/ethnicity? _____

Do you have a disability or chronic health condition you are comfortable disclosing? _____

Appendix D.

Study 4 Materials

Climate Change Video

Participants were shown a slideshow of some images with text and narration, to prime them to think about climate change. In the control condition the video ended after discussing some of the threats and consequences of climate change. In the moral obligation condition, the video included some additional statements providing reasons why climate change can be considered a moral issue.

Below is a transcript of what was said in the video, as well as the images that were shown to participants.

All Conditions

[Narration] The effects of human-caused global warming are happening now, and, if nothing is done, will worsen in the decades to come. Global climate change has already had harmful effects on the environment and society.

[Narration] In the past decade, the rate and severity of natural disasters such as intense heat waves, floods, fires, and hurricanes have increased dramatically.

[Narration] Climate change also leads to the destruction of habitat and loss of biodiversity. The effects of climate change are expected to lead to food shortages and mass displacement, increasing conflict around the world.

[Narration] Global temperatures will continue to rise, largely due to greenhouse gases produced by human activities. The Intergovernmental Panel on Climate Change (IPCC), which includes more than 1300 scientists from around the world, forecasts that if we continue on our current trajectory, we will see climate change ramp up with increasingly severe consequences in the coming decades.

[Narration] If drastic changes are not made at a societal level to limit the warming of the planet to 1.5 degrees, climate change threatens to cause catastrophic devastation to human civilization, other species, and planetary ecosystems.

Moral Obligation Condition

[Additional Narration]

Climate change is a moral issue. Those who will be harmed the most by climate change are disproportionately children, who will grow up in a world of scarce resources, violent conflict, and devastating natural disasters. We have a duty to protect our children and make the world a better place for their sake.

Such problems will only get worse for future generations, who have done nothing to contribute to climate change, but who will suffer its consequences nonetheless. They do not deserve this.

If we act now, immense human suffering could be avoided. There is still time to limit the warming of the planet to 1.5 degrees Celsius, which will significantly reduce the negative impacts on human civilization – including food shortages and mass displacement.

Questions About Video

After watching the video, participants were asked the following questions to help us determine if they watched and understood the video.

Please answer the following questions about the video you just watched.

1. Which of the following topics is discussed in the video?

a. The rate and severity of natural disasters has been increasing due to climate change.

b. Local recycling initiatives have been very successful in reducing landfill waste.

c. NASA's new telescope has captured stunning images of Jupiter's great red spot.

d. New evidence suggests that the earth is actually flat.

2. According to the video, what do scientists in the IPCC predict will happen in the future?

a. Global temperatures will go down on their own in the next few years.

b. A meteor will hit the earth within the next decade.

c. If nothing is done, global temperatures will rise above 2 degrees in the coming decades.

d. Biodiversity will increase as we discover new species of animals in the next century.

If you experienced any technical difficulties that prevented you from watching the video, please let us know:

_____

[SFU350]

After watching the video, participants read a short paragraph about a student-led activist group on campus.]

All Conditions

Please read the paragraph below about a climate activist group organized by SFU students.

SFU350 is a student-led climate action group organizing *to push SFU and the broader community to adopt more climate friendly policies.*

Once of SFU350's campaigns has been to convince SFU to divest from fossil fuels. Divesting from fossil fuels involves removing SFU's monetary investments from companies that extract, process, and transport fossil fuels. Fossil fuels include coal, oil, and natural gas, and are one of the primary sources of CO2 emissions that contribute to climate change. Investing in the fossil fuel industry grants a social and financial license to these companies to continue practices that are destroying the environment.

High Efficacy Condition

SFU350's efforts to convince the Board of Governors to divest from the fossil fuel industry have been extremely successful. Initially, when SFU350 proposed divestment from fossil fuels to the SFU administration, they were met with resistance. However, through their hard work and persistence, they were able to convince the board of directors that divestment is important and necessary. Recently, as a result of SFU350's campaigning, SFU announced its commitment to fully divesting from fossil fuels by 2025.

Behavioural measure of environmental activism – getting involved with SFU 350

If you would like information about SFU350 or would like to get involved, please leave your contact information and we will contact you after the study with additional information about SFU350 and how to volunteer with them.

Please note that your decision to share your contact information is voluntary and separate from your consent to participate in this study. You are not required to share your contact information to participate in the study and receive your RPS credit.

3. Yes, I would be interested _____
4. No, I'm not interested.

3. No, I'm already a member of SFU350.

Intentions to engage in environmental activism (Schmitt et al., 2019)

Please rate how much you intend to engage in the following behaviours over the next year using the scale below:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

1. Get involved with a group whose main aim is to take action on climate change.

2. Attend meetings of groups taking action on climate change.

3. Sign a petition in support of meeting climate targets.

4. Give money to groups taking action on climate change.

5. Write letters or call your government official to support action on climate change.

6. Write letters to editors of newspapers in support of taking action on climate change.

7. Go to a political demonstration or protest to demand more action on climate change.

8. Hand out fliers or put up posters in public locations to raise awareness about climate change.

9. Write in public forums (e.g., blogs, newspapers, social media) about climate change.

10. Take non-violent action to block projects that may contribute to climate change (e.g., standing in the path of work trucks).

Identification with environmental activists (adapted from Cameron, 2004)

Please answer based on how you feel right now using the scale below.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. I have a lot in common with environmental activists.

2. I feel strong ties to environmental activists.

3. I find it difficult to form a bond with environmental activists. [R]

4. I don't feel a sense of being "connected" to environmental activists. [R]

5. Being an environmental activist has little to do with how I feel about myself. [R]

6. Being an environmental activist is an important part of my self-image.

[**Politicized identification with nature (based on Klandermans, 2005; Cameron, 2004)**]

Please rate your agreement with the following statements, by writing a number in the blank beside each question (using the scale below).

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

1. I identify with groups that are struggling to protect the environment against those with an interest in harming it.

2. I feel strong ties to those who are fighting to making sure nature is protected.

3. I do **not** have much in common with people who are concerned about the struggle to protect the environment.

4. I see myself as someone who is fighting to make sure nature is recognized and protected in our society.

5. I do **not** feel a sense of being connected to others who try to defend the environment.

Climate change beliefs (adapted from Milfont et al., 2017)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

4. Climate change is real.
5. Climate change is caused by humans.
6. Climate change will have serious negative impacts on human civilization.

Attention Check

2. Please select “Strongly Agree” to show you are paying attention to this question.

Collective Guilt-Human vs. Nature (adapted from Branscombe, Slugoski, and Kappen, 2012)

1	2	3	4	5	6	7
Strongly disagee	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

4. I feel regret for how humans have harmed the environment.
5. I feel guilty about how humans have exploited the natural world.
6. I can easily feel guilty for the negative outcomes of human-caused climate change.

Collective Guilt-Human vs. Humans (adapted from Branscombe, Slugoski, and Kappen, 2012)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

4. I feel regret for how some groups have benefitted from resource extraction at the expense of others.
5. I feel guilty about how groups that have contibuted the least to climate change will face the worst consequences of it.
6. I can easily feel guilty for the negative impact climate change will have on vulnerable groups.

Collective Anger-Human vs. Nature (adapted from Becker, Tausch, & Wagner, 2011)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

4. I feel anger about the way humans treat the environment.
5. I am mad at humans for the way they treat the environment.
6. It enrages me to think about the way humans treat the environment.

Collective Anger-Human vs. Human (adapted from Becker, Tausch, & Wagner, 2011)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1.I am angry about how some groups have more power than others to make decisions about the environment.

2. It makes me mad to think about how some groups are exposed to more pollution than others.

3. I feel enraged at groups who put others at risk of environmental disaster for their own gain.

Collective efficacy (adapted from van Zomeren, Saguy, & Schellhass, 2013)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. As a group, environmental activists can help reduce greenhouse gas emissions.

2. Together, environmental activists can help prevent catastrophic climate change.

3. Through joint actions, environmental activists can help convince governments and policy-makers to take climate-friendly action.

4. Environmental activists can contribute to stopping projects that harm the climate and the environment.

Moral obligation (to do something about climate change):

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

9. I feel morally responsible for taking action on climate change .
10. I have a moral duty to work towards trying to stop climate change.
11. I believe I have a moral obligation to promote climate friendly behaviours in my community.
12. I have a duty to participate in climate marches and rallies.
13. I have a moral responsibility to put pressure on my government to meet climate targets.
14. I have a moral duty to protest for action on climate change.
15. It is morally imperative that I try to stop projects that contribute to emissions (e.g., pipelines, fracking).
16. I feel morally obliged to get involved with a group that is taking action on climate change.

Climate Change as a Moral Issue

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

4. Climate change is a moral issue.
5. It is morally wrong to ignore climate change.
6. Climate change has nothing to do with morality or ethics. [R]

Participative (Individual) Efficacy (adapted from van Zomeren, Saguy, & Schellhass, 2013)

5. As an individual, I can contribute greatly to humans working together to stop environmental degradation.
6. As an individual, I can provide an important contribution so that, together, humans can prevent the environment from being harmed.
7. As an individual, I can provide a significant contribution so that, through joint action, humans can live in harmony with nature.
8. As an individual, I can contribute meaningfully so that humans can achieve their common goal of stopping global warming.

Political orientation (adapted from Liu and Latané (1998)

1	2	3	4	5	6	7
Very liberal	Liberal	Somewhat liberal	Center/ Moderate	Somewhat conservative	Conservative	Very Conservative

3. How would you describe your views on social issues?
4. How would you describe your views on economic issues?

Demographics How old are you? _____

What is your gender? _____

What is your sexual orientation? _____

How do you describe your race/ethnicity? _____

Do you identify as religious? If so, what religion do you identify with? _____

Are you an international student? _____

Do you have a disability or chronic health condition you are comfortable disclosing? If yes, please describe: _____