Global Environmental Psychology

PsychOpen GOLD

Research Articles

Check for updates

How Dare We? The Relation Between Language Use, Global Identity, and Climate Activism

Laura S. Loy[1], Marivi Bauer[2], Marlis C. Wullenkord[3]

[1] *Department of Social, Environmental and Economic Psychology, Faculty of Psychology, RPTU University of Kaiserslautern-Landau, Landau, Germany.* **[2]** *Faculty of Psychology, Philipps-University of Marburg, Marburg, Germany.* **[3]** *Environmental Psychology Research Group, Department of Architecture and Built Environment, Faculty of Engineering, Lund University, Lund, Sweden.*

Global Environmental Psychology, 2024, Vol. 2, Article e11101, https://doi.org/10.5964/gep.11101

Received: 2023-01-13 • **Accepted:** 2023-09-04 • **Published (VoR):** 2024-04-30

Handling Editors: Sara Vestergren, University of Keele, Keele, United Kingdom; Sebastian Bamberg, University of Applied Sciences and Arts, Bielefeld, Germany; Winnifred Louis, University of Queensland, St. Lucia, Australia

Corresponding Author: Laura S. Loy, RPTU University of Kaiserslautern-Landau, Faculty of Psychology, Fortstraße 7, 76829 Landau, Germany. E-mail: laura.loy@rptu.de

Related: This article is part of the GEP Special Topic "Responding to the Socio-Ecological Crisis: Collective Action and Activism", Guest Editors: Sara Vestergren, Sebastian Bamberg, & Winnifred Louis. Global Environmental Psychology. https://doi.org/10.5964/gep.arco2

Badges for Good Research Practices: Open Code. Open Data. Diversity Statement. Open Materials. Preregistration.

Abstract

Identifying with and caring for people all over the world (i.e., a global identity) is positively related to pro-environmental behaviour. However, less is known how to foster such a global identity. Drawing on social identity theory, we investigated whether using inclusive (vs. exclusive) language in the context of demonstrations for climate protection increases people's global identity. Moreover, we examined whether inclusive language use strengthens people's intentions to engage in pro-environmental activism and their pro-environmental policy support, while reducing their denial of climate change implications, through a heightened global identity. In our pre-registered online experiment with a convenience sample mostly living in Germany (N = 307), we found no significant impacts of language use. Language effects did also not depend on people's prior identification with the climate movement. However, our results show that, in line with our assumptions, the stronger people's global identity, the more they intended to become pro-environmentally active, the more they supported pro-environmental policies, and the less they denied their impact on climate change.

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International License, CC BY 4.0, which permits unrestricted use, distribution, and reproduction, provided the original work is properly cited.

Keywords

global identity, climate change, pro-environmental activism, policy support, climate denial

Zusammenfassung

Die Identifikation mit Menschen auf der ganzen Welt und die Sorge um sie (d. h. eine globale Identität) steht in einem positiven Zusammenhang mit umweltfreundlichem Verhalten. Weniger wissen wir jedoch darüber, wie eine solche globale Identität gestärkt werden kann. Unter Bezugnahme auf die Theorie der sozialen Identität untersuchten wir, ob die Verwendung einer inklusiven (im Gegensatz zu einer exklusiven) Sprache im Rahmen von Demonstrationen für den Klimaschutz die globale Identität von Personen erhöht. Darüber hinaus untersuchten wir, ob ein inklusiver Sprachgebrauch die Absicht sich für den Umweltschutz zu engagieren und Umweltpolitik zu unterstützen stärkt, sowie die Leugnung des Klimawandels verringert. In unserem präregistrierten Online-Experiment mit einer Gelegenheitsstichprobe, hauptsächlich in Deutschland (N = 307), fanden wir keine signifikanten Auswirkungen des Sprachgebrauchs. Die Spracheffekte stehen auch nicht von der vorherigen Identifikation der Befragten mit der Klimabewegung ab. Unsere Ergebnisse zeigen jedoch entsprechend unseren Annahmen: je mehr sich Personen mit Menschen auf der ganzen Welt identifizierten, desto mehr beabsichtigten sie, sich für den Umweltschutz zu engagieren, desto mehr unterstützten sie eine umweltschützende Politik und desto weniger leugneten sie ihren eigenen Einfluss auf den Klimawandel.

Schlüsselwörter

Globale Identität, Klimawandel, Umweltaktivismus, Politikunterstützung, Klimawandelleugnung

Non-Technical Summary

Background

Climate change is an existential threat to humanity. This research examines the role a so-called “global identity” might play for climate protection. Global identity means an identification with people all over the world and care for their well-being. Past research found that the stronger people’s global identity, the more they engage in environmental and climate protection.

Why was this study done?

We wanted to find out how a global identification can be strengthened in the context of demonstrations for climate protection. We reasoned that using inclusive language (e.g., we, together) might increase people’s global identity, compared to using exclusive language that accuses people (e.g., you are destroying the planet). Moreover, we examined whether inclusive language use thereby strengthens people’s intentions to engage in climate activism and their support of climate protective policies, while reducing their denial of climate change implications.

PsychOpen GOLD

What did the researchers do and find?

We sent an online questionnaire to 307 participants. First, all participants answered questions about how much they identify with the climate movement. Then, they were randomly assigned to three groups. The first group evaluated demonstration placards using inclusive language (e.g., "Our common house is on fire, let's put it out together"). In the second group, demonstration placards contained exclusive language (e.g., "Your house is on fire, why don't you put it out?"). In the third group, participants did not view any placards. Afterwards, we asked all participants several questions regarding their identification with people all over the world (i.e., global identity), how often they intended to engage in different activities related to pro-environmental activism in the future, how strongly they (dis)agreed with several policy measures to protect the climate, and how much they believed in implications of climate change. We found no impacts of language use on how participants answered these questions. Language effects did also not depend on people's prior identification with the climate movement. However, the more people identified with people all over the world, the more they intended to become active for climate protection, the more they supported climate protective policies, and the less they denied their own impact on climate change.

What do these findings mean?

The stronger people's global identity, the less they deny that they have an impact on climate change, and the more they are willing to engage in climate activism and support climate protective policies. Therefore, fostering a global identity might help to address the threats of climate change. Our research did not show that using inclusive language can increase people's global identity. However, we observed a tendency in this direction. We encourage further investigation of this research question and development of alternative ideas on how to foster a global identity.

Highlights

- Global identity was positively related to pro-environmental activism.
- Global identity was positively related to pro-environmental policy support.
- Global identity was negatively related to denial of climate change implications.
- Inclusive (vs. exclusive) language did not impact these three outcomes.

Climate change is a fundamental threat to humanity and life on Earth (IPCC, 2023). To mitigate climate change, people need to adopt low-carbon lifestyles, and policies need to facilitate such lifestyles (IPCC, 2018; Newell et al., 2021). Therefore, it is important to understand what motivates people not to deny climate change but to support and demand climate-friendly political decisions and societal changes.

Social identity theory (SIT, Tajfel & Turner, 1979) assumes that identification with a group motivates behaviour on behalf of that group. Researchers have thus argued that identifying with all human beings as an inclusive group—a *global identity* (McFarland et

PsychOpen GOLD

al., 2019)—should promote climate protection for the sake of all humanity (e.g., Reese, 2016). Indeed, research shows positive relations between the strength of people's global identity and their pro-environmental intentions and behaviour. However, most of these studies focused on private behaviour (e.g., Joanes, 2019; Loy, Reese et al., 2022; Pong, 2021), or policy support (e.g., Loy, Clemens et al., 2022; Loy et al., 2021; Loy & Reese, 2019). Activism has rarely been investigated (see Renger & Reese, 2017; Rosenmann et al., 2016, for exceptions).

Self-categorisation theory (SCT, Turner et al., 1987) assumes that different aspects of people's identity can become salient in specific contexts and guide behaviour, depending on situational cues that make the identity aspect accessible. However, only few studies were able to raise global identity salience (e.g., Loy et al., 2021; Reese et al., 2015; Römpke et al., 2019). Thus, respective research has been called for (McFarland et al., 2019). One way to make identity aspects salient is through communication (Seyranian, 2014; Trepte & Loy, 2017)—particularly language usage. For example, words referring to global identity increased global identity salience (Tu et al., 2012). Identity salience, in turn, can affect behavioural intentions. For example, inclusive language referring to people's social identity fostered intentions to promote renewable energies (compared to individualising language; Seyranian, 2014). Drawing on SIT, we further argue that accusatory, exclusive language could demotivate collective behaviour. Yet, this type of language has, to our knowledge, not been examined in the context of pro-environmental behaviour.

Our study extends prior research by investigating whether inclusive language has the potential to raise global (not only social group) identity salience and thereby promotes the intention to engage in pro-environmental activism and policy support. Moreover, we address the research gap on the relation between global identity and denial of climate change implications. As further novelties, we compare inclusive to exclusive language in the specific context of demonstrations for climate protection. Thereby, we contribute to the practical question how climate activists can garner support effectively. In the following, we outline our theoretical rationale in detail.

Global Identity and Pro-Environmental Behaviour

McFarland et al. (2019) summarised definitions and theories regarding global identity. We refer to the social identity approach (SIT and SCT). SIT describes group memberships as essential parts of identity. People identify with certain social groups—their ingroups—and distinguish themselves from outgroups (Tajfel & Turner, 1979). SCT differentiates three identity levels: personal, social group, and global identity as a human. Hence, all of humanity is understood as a superordinate ingroup people can feel more or less part of (Turner et al., 1987).

By *global identity* we mean identification with and concern for people all over the world (McFarland et al., 2012), including the dimensions of *global self-definition* (i.e., identification and connectedness) and *global self-investment* (i.e., solidarity and care;

PsychOpen GOLD

Reese et al., 2015). According to SIT, individuals tend to benefit their ingroup (Tajfel & Turner, 1979). As globally identified people regard all humanity as their ingroup, they should be motivated to act pro-environmentally to benefit all humanity (Batalha & Reynolds, 2012; Reese, 2016).

Pro-environmental behaviour means committing acts that protect the environment (e.g., conserving energy) and omitting harmful acts (e.g., flying; Lange & Dewitte, 2019). Research often differentiates private (e.g., consumption) from public behaviour encompassing policy support and activism (Stern, 2000). By *pro-environmental policy support* we mean approval of policies aiming at a better life in a healthy environment (e.g., carbon pricing, pro-environmental subsidies; Drews & van den Bergh, 2016). *Pro-environmental activism* comprises "civic behaviors that are focused on systemic causes of environmental problems and the promotion of environmental sustainability through collective efforts" (Alisat & Riemer, 2015, p. 14), such as participating in demonstrations or signing petitions.

Past research found that the stronger people's self-reported global identity, the more pro-environmental behaviour/intentions they indicated. For example, global identity correlated positively with a pro-environmental lifestyle covering a range of behaviours (Lee et al., 2015; Loy, Clemens et al., 2022; Loy & Reese, 2019; Loy, Reese et al., 2022), refraining from flying (Loy et al., 2021), intending to reduce clothing consumption (Joanes, 2019), food waste (Pong, 2021), and animal products (Römpke et al., 2019). Moreover, a stronger global identity was associated with support for pro-environmental policies (Loy, Clemens et al., 2022; Loy et al., 2021; Loy & Reese, 2019). Less research exists on global identity's relation with pro-environmental activism. However, Renger and Reese (2017) found that the more study participants identified with people all over the world, the stronger their intentions for pro-environmental activism. The degree to which people regard themselves as "world citizens"—a concept similar but not equivalent to global identity (see Carmona et al., 2020, for details)—was positively related to pro-environmental activism (Rosenmann et al., 2016).

The Role of Inclusive Language for Global Identity Salience

SCT states that situational cues can make aspects of people's identity *salient* (i.e., top of mind, accessible), which then more likely guide behaviour (Turner et al., 1987). Therefore, some experiments investigated how to situationally increase global identity salience. After exposure to experimental cues, self-reported global identity was measured—sometimes using instruments equivalent to measures in the correlational research mentioned above, sometimes slightly adapted by asking how participants think and feel "now, in this moment" (but it has also been questioned whether situational accessibility can be measured this way; Loy & Spence, 2020). For example, participants who looked at themselves in a mirror and saw a poster with hands from different ethnical backgrounds holding a globe or several national flags in the background reported stronger global self-

PsychOpen GOLD

investment and donated more money to a global charity, compared to a control group. Seeing the posters indirectly predicted donations through stronger global self-investment (Reese et al., 2015). Further ways to increase global identity salience were asking people about past international travel experiences (Loy et al., 2021), or letting them interact with a person from another continent in a simulated chat (Römpke et al., 2019).

Moreover, language usage has been investigated. Participants formed meaningful sentences from sets of scrambled words. These sets included words linked to either local or global identity. Global identity was relatively more accessible than local identity in the global condition (Tu et al., 2012). Seyranian (2014) tested the effect of inclusive language (in this case referring to social identity as students at a certain college) on pro-environmental behavioural intentions. *Inclusive language* alludes to one's ingroup and builds a feeling of "who we are", due to the use of collective pronouns (e.g., "we") and words like "community" (Seyranian, 2014). Seyranian (2014) argued that the use of collective pronouns is essential because it increases a feeling of familiarity (Housley et al., 2010) and overpowers the separation between communicator and listeners (Cheney, 1983). Moreover, inclusive language is free from prejudices and derogatory speech but focuses on respectful and empathic messaging (Barcena et al., 2020). Using inclusive language referring to students' social identity (compared to individual language referring to personal identity, e.g., "I") in a speech advocating renewable energies fostered intentions to collectively promote renewable energies. People in the inclusive (vs. non-inclusive) language condition were more confident about social change (Seyranian, 2014). Thus, inclusive language may have the potential to promote pro-environmental activism and policy support.

An essential part of people's motivation for activism may be their ingroup identification with other environmentalists or the climate movement in general (Bamberg et al., 2015; see Fritsche et al., 2018, for an overview). SIT argues that social groups tend to distinguish themselves from outgroups, often through language (Tajfel & Turner, 1979). Such outgroup discrimination can be observed at climate demonstrations, where activists use accusatory messages (e.g., "how dare you", "you are destroying our future", Spaiser et al., 2022). We refer to language that devalues the outgroup as *exclusive language*. Past research indicates that using an accusatory "you" can lead to antagonistic responses in the recipient (Kubany et al., 1992). Therefore, inclusive language may be more effective than exclusive language to convince people who do not identify with the climate movement of the urgency to collectively act against climate change. However, due to people's tendency to devalue outgroups, people who identify strongly with the climate movement might not be demotivated by exclusive language that devalues their outgroup.

Global Identity and Climate Denial

Climate denial has been described as a self-protective strategy when psychological resources are lacking to endure the threat of climate change (Wullenkord, 2022;

PsychOpen GOLD

Wullenkord & Reese, 2021). Climate denial ranges from literal forms (i.e., denial of hard facts), over interpretive forms (i.e., distortion of severity), to implicatory forms (i.e., recognition of facts but denial of implications, but see e.g., Opotow & Weiss, 2000, for another categorisation). Currently, most Germans do not literally deny that anthropogenic climate change exists or distort its severity (Wullenkord, 2022). Still, many people express a subtler *implicatory climate denial* (Norgaard, 2011): they deny the moral, psychological, and political implications of climate change and their responsibility to behave in a climate protective manner (e.g., through rationalisation of own involvement—"although climate change is a big problem, it is not my responsibility to do something about it"—and avoidance of information or thoughts about climate change, Wullenkord & Reese, 2021). Although implicatory denial may appear less severe, it may be a barrier to climate mitigation if it results in inaction. In fact, the more people engage in all types of denial, the less pro-environmental behaviour they report (Wullenkord & Reese, 2021).

Past research also indicates that climate denial is related to identity. For example, environmental identity (Nartova-Bochaver et al., 2022) and environmental movement identity (Krange et al., 2019) were negatively related to literal and interpretive climate denial; a white conservative male identity was positively related (Krange et al., 2019; McCright & Dunlap, 2011). Moreover, right-wing authoritarianism (i.e., preferring strict authorities, laws, and punishments) and social dominance orientation (i.e., preferring social hierarchies and devaluing low-status groups) were particularly strong predictors of all forms of literal and interpretive climate denial (Jylhä & Akrami, 2015; Jylhä & Hellmer, 2020), and to a lesser extent implicatory denial (Wullenkord, 2022).

Global identity is negatively related to social dominance orientation and right-wing authoritarianism (McFarland et al., 2019), which makes a negative relation to climate denial plausible. However, the relation between global identity and (implicatory) climate denial has, to our knowledge, not been examined. The stronger people's identification with all humanity, the more they might consider threats to all humanity as relevant and feel responsible to help solve them. In line with this thought, global identity was positively related to how relevant people evaluated climate change for them personally and societally (Loy, Reese et al., 2022), to how strongly they behaved in a climate protective manner (Loy, Reese et al., 2022), and supported climate policies (Loy, Clemens et al., 2022). Moreover, global identity was positively related to a sense of responsibility to be actively involved in global issues (Reysen & Hackett, 2016; Reysen & Katzarska-Miller, 2013), and solidarity with victims of climate change injustice and willingness to collectively engage on behalf of these victims (Barth et al., 2015). Hence, global identity might be associated with acknowledging psychological, political, or moral implications of climate change and thus less implicatory climate denial.

PsychOpen GOLD

Current Research

In the current research, we experimentally examined impacts of using inclusive (vs. exclusive) language in the context of advocating climate protection. We hypothesised:

- Inclusive (vs. exclusive) language use increases the salience of global identity (**H1**), intentions for pro-environmental activism (**H2a**), and pro-environmental policy support (**H2b**).
- Inclusive (vs. exclusive) language use indirectly increases intentions for pro-environmental activism (**H3a**) and policy support (**H3b**) through an increase in global identity salience.
- The language effect is moderated by people's identification with the climate movement: if participants identify with the climate movement, inclusive language does not increase intentions for pro-environmental activism (**H4a**) and pro-environmental policy support (**H4b**), while it does if participants do not identify with the climate movement.
- Inclusive (vs. exclusive) language use reduces implicatory climate denial indirectly through an increase in global identity salience (**H5**).
- The language effect is moderated by people's identification with the climate movement; if participants identify with the climate movement, inclusive language does not reduce implicatory climate denial, while it does if participants do not identify with the climate movement (**H6**).

Method

Design and Procedure

This pre-registered online study (see Bauer & Loy, 2024) adheres to the APA's ethical principles and was approved by the university's ethics committee within a research program (#2020-297). We acknowledge that the pre-registration did not determine all analytical decisions. We used the software SoSci Survey (Leiner, 2024). After giving informed consent, participants rated their identification with the climate movement, and were randomly assigned to one of three groups: 1) inclusive language, 2) exclusive language, 3) control group. In the experimental conditions, participants evaluated four demonstration placards with either inclusive or exclusive language. Afterwards, they reported their global identity, pro-environmental activism intentions, pro-environmental policy support, and climate denial. Participants in the control group evaluated the placards after the dependent variables. This order allowed for an assessment of the dependent variables without prior language cues, while keeping study duration constant and avoiding suspicion regarding study contents (the study was advertised as a study about placards). All participants received control questions about the stimulus material

PsychOpen GOLD

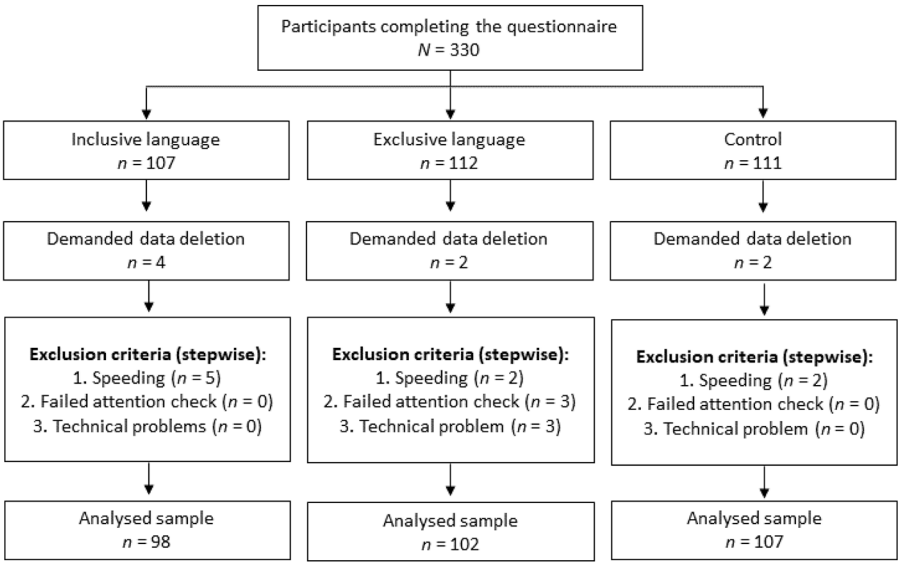
and socio-demographic characteristics. Finally, they had the possibility to sign a fictitious petition as a situational indicator of pro-environmental behaviour. They were debriefed, could participate in a lottery of four 25 Euro vouchers, and could ask for data deletion. Psychology students could receive class credit (though the study was not restricted to students).

Participants

We recruited a convenience sample through student mailing lists, social media, and personal contacts. A priori power analyses suggested a sample of at least 300 participants (see Loy et al., 2024, Supplement A). After data exclusion (see Figure 1 and Loy et al., 2024, Supplement B), the sample consisted of N = 307 participants (213 female, 90 male, 4 diverse, M_{age} = 29.91 years, SD = 12.29, Range = 18–75). The majority was highly educated: 47% with (applied) university entrance certificate, 46% with (applied) university degree. More than half were students (60%), followed by employees (30%). Almost all participants lived in Germany (98%; see Loy et al., 2024, Supplement B for a detailed sample description).

Figure 1

Participant Flow Depicting the Allocation of Participants to the Experimental Conditions and the Number of Excluded Participants per Criterion.



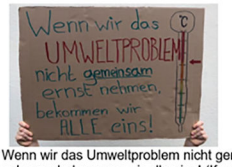
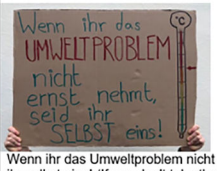
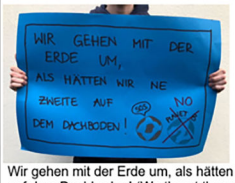
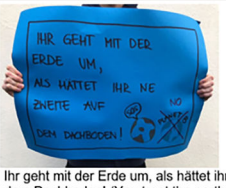
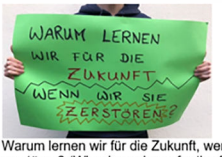
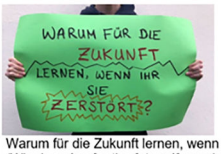
PsychOpen GOLD

Stimulus Material

We created placards in the style found at climate demonstration (see Figure 2). Four contained slogans with inclusive language, matched to four with exclusive language. Participants rated each placard regarding nine characteristics (e.g., creativity), and stated which of the four placards, if any, they would use themselves. These questions were supposed to make people examine the placards closely. To be able to exclude participants with technical problems, we asked whether pictures were viewable without pixelation and with sufficient detail. We also asked participants to recall the slogans in writing.

Figure 2

Placards With Inclusive vs. Exclusive Language in German (English).

Placard and slogan (inclusive)	Placard and slogan (exclusive)
Unser aller Haus brennt. Lasst es uns gemeinsam löschen! (Our common house is on fire. Let's put it out together!)	Euer Haus brennt. Warum löscht ihr es nicht? (Your house is on fire. Why don't you put it out?)
 Wenn wir das Umweltproblem nicht gemeinsam ernst nehmen, bekommen wir alle eins! (If we don't take the environmental problem seriously together, we'll all get one!)	 Wenn ihr das Umweltproblem nicht ernst nehmt, seid ihr selbst eins! (If you don't take the environmental problem seriously, you are one yourselves!)
 Wir gehen mit der Erde um, als hätten wir ne Zweite auf dem Dachboden! (We threat the earth as if we had a second one in the attic!)	 Ihr geht mit der Erde um, als hättet ihr ne Zweite auf dem Dachboden! (You treat the earth as if you had a second one in the attic!)
 Warum lernen wir für die Zukunft, wenn wir sie zerstören? (Why do we learn for the future, if we destroy it?)	 Warum für die Zukunft lernen, wenn ihr sie zerstört? (Why learning for the future if you destroy it?)

PsychOpen GOLD

Table 1

Psychometric Properties of the Measures

Variable	*n*	*M*	*SD*	Range	Item number	α	ω	AVE	R_p
Identification with the climate movement	307	4.76	1.52	1.00–7.00	4	.91	.91	.73	
Global identity (1-dim)	307	5.19	1.12	1.10–7.00	10	.92	.93	.56	
Global identity (2-dim)									
Self-definition	307	4.84	1.29	1.20–7.00	5	.88	.88	.61	
Self-investment	307	5.53	1.09	1.00–7.00	5	.88	.89	.61	
Pro-environmental activism intention	306	2.63	0.70	1.00–4.61	18	.92	.91	.41	
Pro-environmental activism intention–Rasch score	307	0.03	1.88	-5.56–5.52	18				.84
Pro-environmental policy support	306	5.58	0.98	2.16–7.00	19	.92	.90	.39	
Pro-environmental policy support–Rasch score	307	0.77	1.79	-4.23–4.16	19				.83
Implicatory climate denial (2-dim)									
Rationalisation	307	2.94	1.21	1.00–7.00	7	.87	.84	.48	
Avoidance	307	2.82	1.16	1.00–6.88	8	.91	.91	.56	

Note. α = Cronbach's alpha, ω = McDonald's omega, AVE = average variance extracted, R_P = person separation reliability based on Rasch model.

Measures

Scale descriptives are provided in Table 1, detailed analyses in Loy et al., 2024, Supplement C, variable wording and codings alongside data and script in Loy and Wullenkord (2024).

Identification With the Climate Movement

We included three items used by Wallis and Loy (2021), extended by one further item (e.g., "I feel a strong connection to others who engage in environmental and climate protection"). Participants rated the items on a Likert scale from 1 (*does not apply at all*) to 7 (*fully applies*).

Global Identity

We used an adapted version (Loy & Reese, 2019) of the Identification with all Humanity Scale (McFarland et al., 2012; Reese et al., 2015). Participants rated five items on global self-definition (e.g., "I feel connected to people all over the world") and five items on global self-investment (e.g., "I want to help people all over the world") on a Likert scale from 1 (*does not apply at all*) to 7 (*fully applies*).

PsychOpen GOLD

Pro-Environmental Activism Intentions

We selected items from the Environmental Action Scale (Alisat & Riemer, 2015) and the General Ecological Behaviour Scale (Kaiser & Wilson, 2000), added own items, and rephrased behaviour to behavioural intentions. Participants rated 18 items, e.g., "I will participate in demonstrations for climate protection, (e.g., Fridays for Future)", on a Likert scale from 1 (*never*) to 5 (*very often*).[1]

Pro-Environmental Behaviour

As a situational indicator, participants stated their willingness to sign a petition requesting the government to prioritize the 1.5°C limit of the Paris Agreement in the upcoming legislation period (*yes*, n = 171; *no*, n = 125; missing, n = 11). Later, they were debriefed that the petition was fictitious.

Pro-Environmental Policy Support

We extended scales used by Tobler et al. (2012) and Loy, Clemens et al. (2022). Participants rated 19 items (e.g., "Introduction of a general speed limit of 130 km/h on highways") on a Likert scale from 1 (*fully against*) to 7 (*fully in favour*).

Climate Denial

We used the Climate Self-Protection Scale (Wullenkord & Reese, 2021), including implicatory and interpretive denial. Participants rated 26 items[2] on a Likert scale from 1 (*fully disagree*) to 7 (*fully agree*). As pre-registered, we analysed implicatory denial: 1) rationalisation (e.g., "My personal influence on climate change is negligible"), 2) avoidance (e.g., "I try not to think about climate change"), 3) denial of guilt (e.g., "I don't need to make climate change a matter of conscience"). We excluded denial of guilt due to poor model fit (see Loy et al., 2024, Supplement C).

Results

Correlations Between Study Variables

Table 2 shows bivariate correlations.

1) The pre-registration says 19 items because we accidentally counted the attention check embedded in the scale.

2) The pre-registration mistakenly says 35 items. We cannot reconstruct how this typo arose as we always planned to use the scale by Wullenkord and Reese (2021).

PsychOpen GOLD

Table 2

Correlations With Confidence Intervals

Variable	1	2	3	4	5	6
1. Identification climate movement						
2. Global self-definition	.46** [.37, .55]					
3. Global self-investment	.56** [.47, .63]	.75** [.70, .80]				
4. Pro-environmental activism intention	.69** [.62, .74]	.35** [.25, .45]	.48** [.39, .56]			
5. Pro-environmental policy support	.61** [.53, .68]	.37** [.27, .46]	.50** [.41, .58]	.64** [.57, .70]		
6. Climate denial: rationalisation	-.40** [-.49, -.30]	-.29** [-.39, -.19]	-.31** [-.41, -.20]	-.37** [-.46, -.27]	-.39** [-.48, -.29]	
7. Climate denial: avoidance	-.13* [-.24, -.02]	-.05 [-.16, .06]	-.02 [-.13, .09]	-.19** [-.30, -.08]	-.08 [-.19, .03]	.29** [.19, .39]

*p < .05. **p < .01.

Group Comparison

Participants assigned to the three groups did not differ in the distribution of gender, age, and identification with the climate movement (ps ≥ .388), indicating successful randomization. Table 3 displays the dependent variables per group. As we did not specify scoring in the pre-registration, we report both mean scores as well as factor and Rasch scores resulting from scale analyses (see Loy et al., 2024, Supplement C)[3]. One-way ANOVAs did not reveal any significant group differences (see Table 3). Specifically testing H1, H2a, and H2b using one-tailed t-tests (not pre-registered), we did not find significant effects of inclusive (vs. exclusive) language, despite tendencies in the expected direction particularly for global self-definition, pro-environmental policy support, and rationalisation (ps < .10; see Loy et al., 2024, Supplement D). Additionally, we conducted a Chi-squared test comparing groups' willingness to sign the petition. We found no group difference ($\chi^2(4) = 0.39$, $p = .983$).

Table 3

One-way ANOVAs Comparing Dependent Variables Between the Groups

	Inclusive language		Exclusive language		Control group				
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***	***F***	***p***	η^2
Global self-definition	5.01	1.18	4.72	1.30	4.81	1.37	1.23	.269	.004
Global self-definition–factor scores	0.17	1.16	-0.11	1.30	-0.05	1.41	1.48	.225	.005
Global self-investment	5.60	0.93	5.49	1.03	5.51	1.28	0.39	.532	.001
Global self-investment–factor scores	0.10	0.96	-0.06	1.07	-0.04	1.29	0.79	.375	.003
Pro-environmental activism intentions	2.67	0.71	2.62	0.65	2.59	0.73	0.66	.418	.002
Pro-environmental activism intentions–Rasch scores	0.14	1.84	-0.01	1.76	-0.04	2.03	0.46	.496	.002

3) Using factor scores (instead of structural equation modelling) reduces the complexity of the models and idiosyncratic influences. According to simulations, biases are minimal for samples with N > 100 (Yang et al., 2010).

PsychOpen GOLD

	Inclusive language		Exclusive language		Control group				
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***	***F***	***p***	η^2
Pro-environmental policy support[a]	5.75	0.76	5.51	1.04	5.50	1.07	2.56	.080	.010
Pro-environmental policy support–Rasch scores	0.96	1.59	0.64	1.93	0.71	1.82	0.98	.323	.003
Climate denial–rationalisation	2.86	1.16	3.10	1.29	2.86	1.18	<0.01	.979	<.001
Rationalisation–factor scores	-0.05	0.76	0.10	0.88	-0.05	0.79	<0.01	.956	<.001
Climate denial–avoidance	2.94	1.17	2.71	1.10	2.81	1.20	0.60	.439	.002
Avoidance–factor scores	0.13	1.21	-0.10	1.15	-0.02	1.23	0.67	.414	.002

[a]Welch ANOVA due to unequal variances.

Mediation Analyses

We found no indirect effects of inclusive (vs. exclusive) language through higher global self-definition or self-investment on any of the dependent variables (see Table 4 and Loy et al., 2024, Supplement E for detailed results). Hence, we found no support for H3a, H3b, or H5.

Table 4

Indirect Effects of Inclusive (vs. Exclusive) Language

Hypotheses	**Indirect relations**	***B***	***SE***	***p***	**95% CI**	**β**
H3a	IL – GSD – PEAI	0.06	0.04	.108	[-0.13, 0.13]	.04
	IL – GSD – PEAI[a]	0.16	0.10	.131	[-0.05, 0.36]	.04
	IL – GSI – PEAI	0.04	0.05	.362	[-0.05, 0.14]	.03
	IL – GSI – PEAI[a]	0.13	0.11	.270	[-0.10, 0.35]	.04
H3b	IL – GSD – PEPS	0.07	0.04	.115	[-0.02, 0.16]	.04
	IL – GSD – PEPS[a]	0.13	0.09	.123	[-0.04, 0.30]	.04
	IL – GSI – PEPS	0.05	0.06	.347	[-0.06, 0.17]	.03
	IL – GSI – PEPS[a]	0.11	0.10	.269	[-0.08, 0.30]	.03
H5	IL – GSD – R	-0.07	0.05	.127	[-0.16, 0.02]	-.03
	IL – GSD – R[a]	-0.05	0.03	.131	[-0.12, 0.02]	-.03
	IL – GSI – R	-0.04	0.05	.428	[-0.14, 0.06]	-.02
	IL – GSI – R[a]	-0.04	0.03	.283	[-0.10, 0.03]	-.02
	IL – GSD – A	-0.03	0.03	.238	[-0.08, 0.02]	-.01
	IL – GSD – A[a]	-0.03	0.03	.265	[-0.08, 0.02]	-.01
	IL – GSI – A	-0.01	0.01	.508	[-0.04, 0.02]	-.00
	IL – GSI – A[a]	-0.01	0.02	.422	[-0.05, 0.02]	-.01

[a]Factor/Rasch scores. IL = inclusive (vs. exclusive) language, GSD = global self-definition, GSI = global self-investment, PEAI = pro-environmental activism intentions, PEPS = pro-environmental policy support, R = climate denial: rationalisation, A = climate denial: avoidance. Confidence intervals were bootstrapped through 10,000 samples.

PsychOpen GOLD

Moderation Analyses

Next, we examined identification with the climate movement as a moderator, regressing the dependent variables on language (inclusive vs. exclusive), identification, and the interaction term.[4] Details are reported in Loy et al. (2024), Supplement F.

There were no significant conditional effects of language on pro-environmental activism intentions, policy support, or climate denial in the forms of rationalisation or avoidance ($ps \geq .065$). Moreover, people's identification with the climate movement did not moderate language effects on activism intentions (H4a), policy support (H4b), and rationalisation or avoidance (H5; $ps \geq .290$). We found conditional effects of identification on activism intentions, mean scores: $B = 0.31$, $SE = 0.03$, 95% CI [0.24, 0.37], $p < .001$; factor scores: $B = 0.90$, $SE = 0.10$, 95% CI [0.68, 1.13], $p < .001$; policy support, mean scores: $B = 0.37$, $SE = 0.05$, 95% CI [0.22, 0.48], $p < .001$; factor scores: $B = 0.81$, $SE = 0.11$, 95% CI [0.55, 1.02], $p < .001$; and rationalisation, mean scores: $B = -0.33$, $SE = 0.08$, 95% CI [-0.52, -0.14], $p < .001$; factor scores: $B = -0.24$, $SE = 0.06$, 95% CI [-0.39, -0.11], $p < .001$; but not avoidance, mean scores: $B = -0.12$, $SE = 0.08$, 95% CI [-0.27, 0.04], $p = .121$; factor scores: $B = -0.14$, $SE = 0.09$, 95% CI [-0.32, 0.04], $p = .119$.

Discussion

We investigated whether using inclusive (vs. exclusive) language in the context of demonstrations for climate protection impacts how much people identify with people all over the world, intend to engage in pro-environmental activism, support pro-environmental policies, and deny climate change implications.

Contradicting H1, we found no significant impacts of language use on global identity salience. This contrasts prior research showing effects of language use on people's momentary global identification (Tu et al., 2012). However, in this prior study, the examined wording directly referred to global identity, while our wording was generally inclusive without using terms like "global". Moreover, a sentence-scrambling task might be a more active way to process language than evaluating placards. Further differences could consist in language per se, cultural background, the sample, or the measure. While Tu et al. (2012) conducted their study in English with US students, our study was conducted in German with a more heterogeneous convenience sample, using a different measure. Recent research showed that using different measures for global identity might indeed imply different meanings (Carmona et al., 2020). Finally, using a generic "we" without

4) In the pre-registration, we additionally listed ANCOVA because we had calculated power for an ANCOVA, moderated regression not being embedded in G*Power. However, as we regard moderated regression as more appropriate, we refrained from performing the ANCOVA.

PsychOpen GOLD

naming the group (i.e., all of humanity) might have resulted in other identities than global identity becoming salient (e.g., we as activists, we as Germans).

We did not find evidence that inclusive (vs. exclusive) language fosters pro-environmental activism intentions and policy support (H2). This contrasts findings that inclusive language promoted collective action intentions favouring renewable energies (Seyranian, 2014). However, this prior study referred to the social group of college students, while our study aimed to address a more inclusive identity—global identity. Furthermore, Seyranian (2014) compared inclusive to individual language, while we investigated differences to exclusive language and a control group. Moreover, our study differs regarding language and context, as Seyranian conducted her study in English with US students.

In the absence of effects of inclusive language on global identity and pro-environmental engagement, we found no support for H3 assuming an indirect positive effect on engagement through stronger identity salience. However, our results show that the more people identify globally, the more they intend to become pro-environmentally active and support pro-environmental policies. Thereby, our study extends prior research on global identity and pro-environmental behaviour (e.g., Joanes, 2019; Loy, Reese et al., 2022; Pong, 2021; Römpke et al., 2019) and adds to the few results on activism (Renger & Reese, 2017; Rosenmann et al., 2016). Still, we cannot infer a causal direction of this relationship. Global identity might promote pro-environmentalism and/or vice versa.

Contradicting H4, language effects did also not depend on people's prior identification with the climate movement. Still, identification with people who engage in environmental and climate protection was strongly related to participants' own intentions to engage in activism in the future. This is in line with studies showing that social identification is one of the strongest predictors of participating in the Swiss and German Fridays For Future demonstrations (Brügger et al., 2020; Wallis & Loy, 2021).

Contradicting H5, we found no evidence for language use to decrease denial of climate change implications through global identity. Nevertheless, rationalisation (i.e., the claim that one's own actions do not meaningfully contribute to climate change) was negatively related to global identity; avoidance of information and thoughts about climate change was not. While findings for rationalisation were in line with our reasoning, findings for avoidance were not. One may speculate that some people scoring high on avoidance (but not rationalisation) might use avoidance to maintain or increase their engagement in the face of climate change (maintaining functionality, see also Pihkala, 2022; Wullenkord & Ojala, 2023). The correlations of variables in this sample support this assumption.

Limitations and Future Directions

Our study is limited by its highly educated, mostly female convenience sample comprising many students. These characteristics are also often found amongst climate activists (Wahlström et al., 2019). Moreover, the average level of identification with pro-environ-

PsychOpen GOLD

mental activists was rather high in our sample. Thus, future studies should recruit more diverse samples with less prior contact to the climate movement through quota sampling or, ideally, random sampling. This research could examine generational differences in the assessed variables, and whether age effects differ for activism compared to private pro-environmental behaviour (e.g., Otto & Kaiser, 2014). Additionally, prior experience with demonstrations should be assessed—as active participant or passive observer. Thereby, it will be possible to examine whether inclusive language might be a means to address people without or with only little prior experiences. Moreover, it would be useful to ask in how far people felt personally addressed by the slogans. It is possible that most participants did not feel derogated by the exclusive wording because they saw themselves as part of the ingroup of climate activists.

Relatedly, future studies should assess other social identities that may be evoked by the wording (e.g., we as activists, we as the young generation). Experimental research could vary whether and which social categories are addressed in slogans (e.g., none vs. humanity vs. young people etc.), in order to examine whether activists engage their audiences more if they address specific groups. Moreover, climate justice considerations should be taken into account. For example, messages such as "we as humanity should mitigate climate change" might suggest equal responsibilities of Global North and South, in light of unequal carbon footprints and (historical) contributions to climate change. Phrases such as "you should mitigate climate change" might exaggerate individual responsibilities, in light of structural and systemic barriers.

Average levels of global identity and pro-environmental policy support were high in our sample, which limits the possibility to observe effects of the experimental stimuli. This is another argument for more diverse samples. Moreover, it will be valuable to examine country differences regarding the meaning of global identity and how it is related to pro-environmentalism. For example, the meaning of the human category could differ between individuals (Bain, 2013) but also between countries (IWAH, 2024). It would be worthwhile to compare countries that are currently more or less impacted by adverse effects of climate change and more or less active climate movements.

Future studies could also use larger samples. We had based our power considerations on roughly related prior research, which had examined different variables. Even though we did not find significant differences between our experimental groups, descriptive examination of the mean scores partly shows tendencies towards our hypotheses, but with effect sizes undetectable given our sample size. Replications of our study could use these effect sizes for power analyses. We argue that even small effects of language use might be practically relevant and thus worth detecting, as they likely accumulate over time.

Importantly, one-time exposure to experimental stimuli might not evoke a meaningful response. Global identity in particular might have a strong trait component and develop over longer time periods with manifold influences. Thus, longitudinal research

PsychOpen GOLD

is needed, including repeated exposure to stimuli that might impact global identity and long-term assessment of experimental effects, alongside further possible influences such as personality or education (McFarland et al., 2019). A fruitful path to investigate momentary changes in the salience of global identity compared to other identity aspects might be *social identity switching* (Zinn et al., 2022), for example, by sequentially addressing different identity levels in slogans.

Finally, the setting and design of our study needs critical reflection. External validity could be strengthened by examining the impact of placard wording directly at demonstrations or through showing videos of demonstrations. These contexts might elicit stronger feelings in viewers of demonstration placards. Internal validity could be increased in laboratory experiments in which the setting of study participation is controlled and less disturbances arise compared to online settings. Moreover, language use could be investigated not only in placards but also, for example, in speeches or flyers.

Practical Implications

How can climate activists motivate others to engage in climate protection? Should they use "you" or "we" in their communications? On the one hand, we cannot infer that inclusive language matters from our study. We did not find any significant effects of using inclusive "we" slogans on demonstration placards on participants' intentions to engage in climate activism or their support for political change—compared to derogatory "you" slogans or no messages. On the other hand, we cannot infer that language use does not matter, either. Rather, further research with varying methodology on this topic is needed (see suggestions above) to clarify, for example, the following practically relevant questions: Does an accusatory "you" (e.g., "you destroy the planet") demotivate people without prior experience with climate demonstrations, who feel personally devalued? Should climate activists address specific social groups with their messages?

Conclusion

Using inclusive "we" slogans (vs. accusatory "you" slogans) on climate demonstration placards did not impact how much participants identified with people all over the word, intended to engage in climate activism, supported climate policies, or denied climate change implications. However, the stronger people's global identity, the stronger their activism intentions and policy support, and the weaker their denial of their own impact on climate change. Based on our findings, we suggest finding ways to increase global identity because such an increase might contribute to climate protection (even though our results are not conclusive about the causal direction). Using inclusive language in the context of climate demonstrations does not seem to make a significant difference. However, we argue that it is too early to abandon the idea that people can be better motivated by inclusive words welcoming them, than by exclusive words derogating

PsychOpen GOLD

them. Rather, we hope that we could encourage other scholars to explore this research field, using diverse samples, designs, and measures.

Openness and Transparency Statements

The present article has been checked by its handling editor(s) for compliance with the journal's open science and transparency policies. The completed *Transparency Checklist* is publicly available at: https://doi.org/10.23668/psycharchives.14410

Author Contributions.

Laura S. Loy: Conceptualization. Formal analysis. Methodology. Project administration. Investigation. Data curation. Visualization. Supervision. Writing – original draft.

Marivi Bauer: Conceptualization. Methodology. Investigation. Visualization. Writing – original draft. Writing – review & editing.

Marlis C. Wullenkord: Writing – original draft. Writing – review & editing.

Acknowledgments. We thank Carlotta Gmünd and Paul Schweizer for their support. Moreover, we thank the editor and two anonymous reviewers for their very valuable and constructive feedback.

Funding. The authors have no funding to report.

Competing Interests. The authors have declared that no competing interests exist.

Diversity Statement. In the list below, the check mark (☑) indicates which steps were taken to increase diversity within the context of this paper. Steps that were not taken or did not apply are unmarked (☐).

- ☐ Ethnically or otherwise diverse sample(s)
- ☐ Gender balanced sample(s)
- ☑ Inclusive gender measure
- ☑ Inclusive materials
- ☑ Sampling justification
- ☑ Extensive sample description
- ☑ Discussion of generalizability
- ☑ Diverse reference list
- ☐ Underprivileged / minority author(s)
- ☑ Early career author(s)
- ☐ Degree of privilege/marginalization considered in authorship order
- ☐ Author(s) from sampled population (avoiding 'helicopter science')

Supplementary Materials. The following table provides an overview of the accessibility of supplementary materials (if any) for this paper.

Type of supplementary materials	Availability/Access
Data	
Study data and codebook.	Loy & Wullenkord, 2024

PsychOpen GOLD

Type of supplementary materials	Availability/Access
Code	
R script with analysis syntax.	Loy & Wullenkord, 2024
Material	
Questionnaire on global identity and climate activism.	Loy & Wullenkord, 2024
Other	
a. Supplement A: Power analyses.	Loy et al., 2024
b. Supplement B: Sample description.	Loy et al., 2024
c. Supplement C: Scale analyses.	Loy et al., 2024
d. Supplement D: Results of the direct group comparison.	Loy et al., 2024
e. Supplement E: Results of the mediation analyses.	Loy et al., 2024
f. Supplement F: Results of the moderation analyses.	Loy et al., 2024
g. Supplement G: Correlations including all dimensions of climate denial.	Loy et al., 2024
Study/Analysis preregistration	
Preregistration for study.	Bauer & Loy, 2024

Badges for Good Research Practices.

Open data: YES.

Open code: YES.

Open materials: YES.

Preregistration: YES.

Diversity statement: YES.

Note: YES = the present article meets the criteria for awarding the badge. NO = the present article does not meet the criteria for awarding the badge *or* the criteria are not applicable.

References

Alisat, S., & Riemer, M. (2015). The environmental action scale: Development and psychometric evaluation. *Journal of Environmental Psychology, 43*(4), 13–23. https://doi.org/10.1016/j.jenvp.2015.05.006

Bain, P. G. (2013). The structure and content of the human category, and its implications for understanding dehumanization. In P. G. Bain, J. Vaes, & J. P. Leyens (Eds.), *Humanness and dehumanization* (pp. 235–263). Psychology Press.

Bamberg, S., Rees, J., & Seebauer, S. (2015). Collective climate action: Determinants of participation intention in community-based pro-environmental initiatives. *Journal of Environmental Psychology, 43*, 155–165. https://doi.org/10.1016/j.jenvp.2015.06.006

Barcena, E., Read, T., & Sedano, B. (2020). An approximation to inclusive language in LMOOCs based on appraisal theory. *Open Linguistics, 6*(1), 38–67. https://doi.org/10.1515/opli-2020-0003

PsychOpen GOLD

Barth, M., Jugert, P., Wutzler, M., & Fritsche, I. (2015). Absolute moral standards and global identity as independent predictors of collective action against global injustice. *European Journal of Social Psychology, 45*(7), 918–930. https://doi.org/10.1002/ejsp.2160

Batalha, L., & Reynolds, K. J. (2012). ASPIRing to mitigate climate change: Superordinate identity in global climate negotiations. *Political Psychology, 33*(5), 743–760. https://doi.org/10.1111/j.1467-9221.2012.00896.x

Bauer, M.-V., & Loy, L. (2024). *Language, global identity, and pro-environmental activism (#54920).* [Preregistration]. AsPredicted. https://aspredicted.org/x88uq.pdf

Brügger, A., Gubler, M., Steentjes, K., & Capstick, S. B. (2020). Social identity and risk perception explain participation in the Swiss youth climate strikes. *Sustainability, 12*(24), Article 10605. https://doi.org/10.3390/su122410605

Carmona, M., Sindic, D., Guerra, R., & Hofhuis, J. (2020). Human and global identities: Different prototypical meanings of all-inclusive identities. *Political Psychology, 41*(5), 961–978. https://doi.org/10.1111/pops.12659

Cheney, G. (1983). The rhetoric of identification and the study of organizational communication. *Quarterly Journal of Speech, 69*(2), 143–158. https://doi.org/10.1080/00335638309383643

Drews, S., & van den Bergh, J. C. J. M. (2016). What explains public support for climate policies? A review of empirical and experimental studies. *Climate Policy, 16*(7), 855–876. https://doi.org/10.1080/14693062.2015.1058240

Fritsche, I., Barth, M., Jugert, P., Masson, T., & Reese, G. (2018). A social identity model of pro-environmental action (SIMPEA). *Psychological Review, 125*(2), 245–269. https://doi.org/10.1037/rev0000090

Housley, M. K., Claypool, H. M., Garcia-Marques, T., & Mackie, D. M. (2010). "We" are familiar but "It" is not: Ingroup pronouns trigger feelings of familiarity. *Journal of Experimental Social Psychology, 46*(1), 114–119. https://doi.org/10.1016/j.jesp.2009.08.011

IPCC. (2018). *Global warming of 1.5°C: An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.* Intergovernmental Panel on Climate Change. https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf

IPCC. (2023). *Climate change 2023: Synthesis report of the IPCC Sixth Assessment Report (AR6).* Intergovernmental Panel on Climate Change. https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_LongerReport.pdf

IWAH. (2024). *Global labels.* Identification With All Humanity LAB. https://iwahlab.com/ongoing-projects/global-labels

Joanes, T. (2019). Personal norms in a globalized world: Norm-activation processes and reduced clothing consumption. *Journal of Cleaner Production, 212*, 941–949. https://doi.org/10.1016/j.jclepro.2018.11.191

PsychOpen GOLD

Jylhä, K. M., & Akrami, N. (2015). Social dominance orientation and climate change denial: The role of dominance and system justification. *Personality and Individual Differences, 86*, 108–111. https://doi.org/10.1016/j.paid.2015.05.041

Jylhä, K. M., & Hellmer, K. (2020). Right-wing populism and climate change denial: The roles of exclusionary and anti-egalitarian preferences, conservative ideology, and antiestablishment attitudes. *Analyses of Social Issues and Public Policy (ASAP), 20*(1), 315–335. https://doi.org/10.1111/asap.12203

Kaiser, F. G., & Wilson, M. (2000). Assessing people's general ecological behavior: A cross-cultural measure. *Journal of Applied Social Psychology, 30*(5), 952–978. https://doi.org/10.1111/j.1559-1816.2000.tb02505.x

Krange, O., Kaltenborn, B. P., & Hultman, M. (2019). Cool dudes in Norway: Climate change denial among conservative Norwegian men. *Environmental Sociology, 5*(1), 1–11. https://doi.org/10.1080/23251042.2018.1488516

Kubany, E. S., Richard, D. C., Bauer, G. B., & Muraoka, M. Y. (1992). Verbalized anger and accusatory "you" messages as cues for anger and antagonism among adolescents. *Adolescence, 27*(107), 505–516.

Lange, F., & Dewitte, S. (2019). Measuring pro-environmental behavior: Review and recommendations. *Journal of Environmental Psychology, 63*, 92–100. https://doi.org/10.1016/j.jenvp.2019.04.009

Lee, K., Ashton, M. C., Choi, J., & Zachariassen, K. (2015). Connectedness to nature and to humanity: Their association and personality correlates. *Frontiers in Psychology, 6*, Article 1003. https://doi.org/10.3389/fpsyg.2015.01003

Leiner, D. J. (2024). *SoSci Survey (Version 3.5.01)* [Computer software]. SoSci Survey. https://www.soscisurvey.de

Loy, L. S., Bauer, M., & Wullenkord, M. C. (2024). *Supplementary materials to* "How dare we? The relation between language use, global identity, and climate activism" [Power and scale analyses, sample description, group comparison results, mediation and moderation analyses results, correlations]. PsychOpen GOLD. https://doi.org/10.23668/psycharchives.14409

Loy, L. S., Clemens, A., & Reese, G. (2022). Mind-body practice is related to pro-environmental engagement through self-compassion and global identity rather than to self-enhancement. *Mindfulness, 13*(3), 660–673. https://doi.org/10.1007/s12671-021-01823-1

Loy, L. S., & Reese, G. (2019). Hype and hope? Mind-body practice predicts pro-environmental engagement through global identity. *Journal of Environmental Psychology, 66*(1), Article 101340. https://doi.org/10.1016/j.jenvp.2019.101340

Loy, L. S., Reese, G., & Spence, A. (2022). Facing a common human fate: Relating global identity and climate change mitigation. *Political Psychology, 43*(3), 563–581. https://doi.org/10.1111/pops.12781

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

PsychOpen GOLD

Loy, L. S., Tröger, J., Prior, P., & Reese, G. (2021). Global citizens—Global jet setters? The relation between global identity, sufficiency orientation, travelling, and a socio-ecological transformation of the mobility system. *Frontiers in Psychology, 12*, Article 622842. https://doi.org/10.3389/fpsyg.2021.622842

Loy, L. S., & Wullenkord, M. (2024). *How dare we? The relation between language use, global identity, and climate activism* [OSF project page containing study questionnaire, variable wording and coding, data, script]. OSF. https://osf.io/xs2kq/

McCright, A. M., & Dunlap, R. E. (2011). Cool dudes: The denial of climate change among conservative white males in the United States. *Global Environmental Change, 21*(4), 1163–1172. https://doi.org/10.1016/j.gloenvcha.2011.06.003

McFarland, S., Hackett, J., Hamer, K., Katzarska-Miller, I., Malsch, A., Reese, G., & Reysen, S. (2019). Global human identification and citizenship: A review of psychological studies. *Political Psychology, 40*(S1), 141–171. https://doi.org/10.1111/pops.12572

McFarland, S., Webb, M., & Brown, D. (2012). All humanity is my ingroup: A measure and studies of identification with all humanity. *Journal of Personality and Social Psychology, 103*(5), 830–853. https://doi.org/10.1037/a0028724

Nartova-Bochaver, S. K., Donat, M., Kiral Ucar, G., Korneev, A. A., Heidmets, M. E., Kamble, S., Khachatryan, N., Kryazh, I. V., Larionow, P., Rodríguez-González, D., Serobyan, A., Zhou, C., & Clayton, S. (2022). The role of environmental identity and individualism/collectivism in predicting climate change denial: Evidence from nine countries. *Journal of Environmental Psychology, 84*(2), Article 101899. https://doi.org/10.1016/j.jenvp.2022.101899

Newell, P., Daley, F., & Twena, M. (2021). *Changing our ways: The report of the Cambridge Sustainability Commission on Scaling Behaviour Change* [Pre-print]. Cambridge Open Engage. https://doi.org/10.33774/coe-2021-544jx

Norgaard, K. M. (2011). *Living in denial: Climate change, emotions, and everyday life.* MIT Press.

Opotow, S., & Weiss, L. (2000). New ways of thinking about environmentalism: Denial and the process of moral exclusion in environmental conflict. *Journal of Social Issues, 56*(3), 475–490. https://doi.org/10.1111/0022-4537.00179

Otto, S., & Kaiser, F. G. (2014). Ecological behavior across the lifespan: Why environmentalism increases as people grow older. *Journal of Environmental Psychology, 40*, 331–338. https://doi.org/10.1016/j.jenvp.2014.08.004

Pihkala, P. (2022). The process of eco-anxiety and ecological grief: A narrative review and a new proposal. *Sustainability, 14*(24), Article 16628. https://doi.org/10.3390/su142416628

Pong, V. (2021). Global versus local framing of the issue of food waste: The role of Identification With All Humanity and the implications for climate change communication. *Asian Journal of Social Psychology, 24*(2), 221–231. https://doi.org/10.1111/ajsp.12453

Reese, G. (2016). Common human identity and the path to global climate justice. *Climatic Change, 134*(4), 521–531. https://doi.org/10.1007/s10584-015-1548-2

PsychOpen GOLD

Reese, G., Proch, J., & Finn, C. (2015). Identification with all humanity: The role of self-definition and self-investment. *European Journal of Social Psychology, 45*(4), 426–440. https://doi.org/10.1002/ejsp.2102

Renger, D., & Reese, G. (2017). From equality-based respect to environmental activism: Antecedents and consequences of global identity. *Political Psychology, 38*(5), 867–879. https://doi.org/10.1111/pops.12382

Reysen, S., & Hackett, J. (2016). Further examination of the factor structure and validity of the Identification With All Humanity Scale. *Current Psychology, 35*(4), 711–719. https://doi.org/10.1007/s12144-015-9341-y

Reysen, S., & Katzarska-Miller, I. (2013). A model of global citizenship: Antecedents and outcomes. *International Journal of Psychology, 48*(5), 858–870. https://doi.org/10.1080/00207594.2012.701749

Römpke, A.-K., Fritsche, I., & Reese, G. (2019). Get together, feel together, act together: International personal contact increases identification with humanity and global collective action. *Journal of Theoretical Social Psychology, 3*(1), 35–48. https://doi.org/10.1002/jts5.34

Rosenmann, A., Reese, G., & Cameron, J. E. (2016). Social identities in a globalized world: Challenges and opportunities for collective action. *Perspectives on Psychological Science, 11*(2), 202–221. https://doi.org/10.1177/1745691615621272

Seyranian, V. (2014). Social identity framing communication strategies for mobilizing social change. *Leadership Quarterly, 25*(3), 468–486. https://doi.org/10.1016/j.leaqua.2013.10.013

Spaiser, V., Nisbett, N., & Stefan, C. G. (2022). "How dare you?"—The normative challenge posed by Fridays for Future. *PLOS Climate, 1*(10), Article e0000053. https://doi.org/10.1371/journal.pclm.0000053

Stern, P. C. (2000). New environmental theories: Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues, 56*(3), 407–424. https://doi.org/10.1111/0022-4537.00175

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Brooks Cole.

Tobler, C., Visschers, V. H. M., & Siegrist, M. (2012). Addressing climate change: Determinants of consumers' willingness to act and to support policy measures. *Journal of Environmental Psychology, 32*(3), 197–207. https://doi.org/10.1016/j.jenvp.2012.02.001

Trepte, S., & Loy, L. S. (2017). Social identity theory and self-categorization theory. In P. Rössler, C. Hoffner, & L. van Zoonen (Eds.), *The international encyclopedia of media effects* (pp. 1–13). Wiley-Blackwell. https://doi.org/10.1002/9781118783764.wbieme0088

Tu, L., Khare, A., & Zhang, Y. (2012). A short 8-item scale for measuring consumers' local–global identity. *International Journal of Research in Marketing, 29*(1), 35–42. https://doi.org/10.1016/j.ijresmar.2011.07.003

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Basil Blackwell.

Wahlström, M., Kocyba, P., & de Vydt, M. (Eds.). (2019). *Protest for a future: Composition, mobilization and motives of the participants in Fridays for Future climate protests on 15 March,*

PsychOpen GOLD

2019 in 13 European cities. Institut für Protest- und Bewegungsforschung. https://protestinstitut.eu/wp-content/uploads/2019/07/20190709_Protest-for-a-future_GCS-Descriptive-Report.pdf

Wallis, H., & Loy, L. S. (2021). What drives pro-environmental activism of young people? A survey study on the Fridays for Future movement. *Journal of Environmental Psychology, 74*(2), Article 101581. https://doi.org/10.1016/j.jenvp.2021.101581

Wullenkord, M. C. (2022). From denial of facts to rationalization and avoidance: Ideology, needs, and gender predict the spectrum of climate denial. *Personality and Individual Differences, 193*(5), Article 111616. https://doi.org/10.1016/j.paid.2022.111616

Wullenkord, M. C., & Reese, G. (2021). Avoidance, rationalization, and denial: Defensive self-protection in the face of climate change negatively predicts pro-environmental behavior. *Journal of Environmental Psychology, 77*(4), Article 101683. https://doi.org/10.1016/j.jenvp.2021.101683

Wullenkord, M. C., & Ojala, M. (2023). *Climate-change worry among two cohorts of late adolescents: Exploring macro and micro worries, coping, and relations to climate engagement and well-being* [Pre-print]. PsyArXiv. https://doi.org/10.31234/osf.io/g9pm7

Yang, C., Nay, S., & Hoyle, R. H. (2010). Three approaches to using lengthy ordinal scales in structural equation models: Parceling, latent scoring, and shortening scales. *Applied Psychological Measurement, 34*(2), 122–142. https://doi.org/10.1177/0146621609338592

Zinn, A. K., Lavric, A., Levine, M., & Koschate, M. (2022). Social identity switching: How effective is it? *Journal of Experimental Social Psychology, 101*(5), Article 104309. https://doi.org/10.1016/j.jesp.2022.104309

PsychOpen GOLD