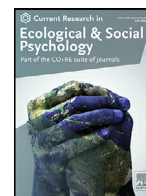




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Support for climate-driven migration in Australia: Testing an ideology-based threat model

Samantha K. Stanley^{a,*}, Zoe Leviston^{a,b}, Caroline Ng Tseung-Wong^c^a School of Medicine and Psychology, Australian National University, Canberra, Australia^b School of Arts and Humanities, Edith Cowan University, Joondalup, Australia^c Discipline of Psychology, University of Canberra, Canberra, Australia

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ABSTRACT

We examine Australians' preferences for resettling people displaced by climate change from overseas ('climate refugees'), from within Australia ('internal climate refugees'), and people displaced by war. Across three studies (Study 1 $N = 467$, Study 2 $N = 1679$, Study 3 $N = 492$), our findings reveal greater support for resettling refugee groups already residing in the nation: internal climate refugees and refugees of war. Although support for all three groups was reasonably high, participants were consistently and significantly less supportive of resettling international climate refugees. Both groups of international refugees (relocating due to war or climate changes) were viewed as posing greater threat than internally displaced Australians. Endorsement of right-wing ideological attitudes predicted lower support for climate refugees, which was mediated by symbolic and realistic threat perceptions. These findings highlight the potential of ideology, economic and cultural concerns to undermine support for resettling those displaced by climate change.

Introduction

Forced migration due to climate change will be one of the defining trends of population movement in the 21st century (Brown, 2017). The Global South is more impacted by the changing climate (Rigaud et al., 2018), which raises questions about wealthier nations' responsibilities to accommodate those displaced (McAdam and Pryke, 2020; Wyett, 2014). As a high-resourced nation, Australia could accommodate those displaced from nearby Pacific Islands (Wyett, 2014). However, Australia will also soon grapple with increased internal migration from climate-affected areas (Australian Academy of Science, 2021), and has a history fraught with controversy over its asylum-seeker policy (Rowe and O'Brien, 2014). In this context, we gauge Australians' support for resettling international climate refugees, including how this support compares to resettling internal climate refugees and refugees of war.

The novelty of this research is in establishing the levels and ideological determinants of attitudes towards international climate refugees in Australia, and whether and how they differ to other refugee groups. We also explore the ideological resistance to resettling climate refugees, which is important for ascertaining how well existing models of out-group perceptions apply to this novel group and understanding whether climate refugees pose a unique threat when compared to other groups. We test a theoretical model of ideology-based opposition to climate refugee resettlement proposed by Stanley and Williamson (2021) in

three samples to examine the extent SDO and RWA relate to acceptance of climate refugee policy through concerns about values and resources.

The current status of international climate migration

There is currently no legal basis for those displaced by climate change to seek asylum in Australia¹ or elsewhere in the world (Brown, 2008; United Nations, 1951). This legal lacuna does not negate the need for climate-driven migration. Environmental stressors are increasingly common and severe in our changing climate and add to existing reasons to leave an area (McAdam, 2012). There is therefore a pressing need to understand societal support and opposition to climate refugee resettlement to inform the development of climate aid policies and international agreements.

There is reason to suspect that widespread community acceptance toward climate refugee policy is unlikely in the Australian context. Australians' attitudes to migration and asylum seeker policy in general have been ambivalent (Dandy and Pe-Pua, 2013), and influenced

¹ There have been two attempts to change migration pathways in Australia to accommodate people displaced by climate induced environmental disaster (Parliament of the Commonwealth of Australia, 2007; Sercombe & Albanese, 2006), but these proposals were unsuccessful and appear forgotten (Constable, 2017).

* Corresponding author.

E-mail address: samantha.stanley@anu.edu.au (S.K. Stanley).

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by national identity concerns, threat perceptions, and perceived fairness (Canetti et al., 2016; Hartley and Pedersen, 2015; Louis et al., 2013; McAllister, 2018). Climate change itself is also a contested issue, with support for climate policy split along political and ideological lines (McCrea et al., 2016; Unsworth and Fielding, 2014). Stanley et al. (2021) reported that each major voting group in Australia, on average, supported accepting 'climate refugees', albeit with divisions in degree of support on a 1–7 scale from strongly oppose to strongly support between voters of both left-wing parties, where mean support was above 5.4 for Labor and Green voters, and right-wing party voters, where support was above 4.6 for Liberal and National supporters. Yet it is unclear how support for climate refugee resettlement compares to support for different forms of immigration or refugee resettlement in Australia.

Research conducted in the United States, Germany, and Denmark suggests people are less supportive of resettling international climate migrants compared to refugees fleeing persecution (Arias and Blair, 2022; Hedergaard, 2021; Stanley et al., 2022; but see Helbling, 2020). One of the first Acts of Australia's federal Parliament limited immigration to those from Europe who were fluent in English, forming the basis of a "White Australia policy" that persisted until the 1970s. The transition from cultural assimilation to encouraging the retention of migrant cultural customs and traditions has not been smooth; it is continually contested, punctuated by moments of rancorous debate (Jupp, 2002), and politicians have even questioned the legitimacy of refugees seeking asylum (e.g., Rowe and O'Brien, 2014). Within this context, it is unclear if climate refugees pose a *unique* threat when compared to people seeking asylum for other (approved) reasons, such as escaping persecution. Furthermore, while international climate migration is on the horizon, Australia will experience its own spike in internal migration as areas become uninhabitable due to climate changes (Australian Academy of Science, 2021).

Australia's pending internal climate migration

Mirroring general patterns of migration (Castles et al., 2013), most climate-induced migration is intra-national, or 'internal' (Hoffmann et al., 2020). The recent catastrophic flooding in New South Wales and Queensland in 2022, and the bushfires of 2019/2020, have demonstrated Australia's vulnerability to the ecological impacts of climate change (Australian Academy of Science, 2021; Garnaut, 2011). These events have prompted renewed commentary on the suitability of much of Australia for large-scale habitation, including questions about the sustainability of population movement out of urban centres to rural and coastal areas (Norman et al., 2021), and habitation along flood plains (Hannam, 2022). These risks are factored into Australian's migration decisions (Zander et al., 2020).

Although internal migration is the dominant response to environmental change, little empirical research examines perceptions of internal climate migration and findings are contradictory for the studies that do exist. Arias and Blair (2022) showed similar levels of support for internal and international climate migrants in samples from Germany and the United States. Interestingly, participants preferred to resettle refugees of persecution than members of their own nation or the international community who were fleeing climate change. This finding suggests surprisingly little evidence for a tendency to support one's ingroup in the context of climate migration, and it conflicts with Stanley et al.'s (2022) US findings, where internal climate refugees were *most* supported, followed by refugees of war, and international climate refugees received the lowest support. Given that opposition to migration stems in part from concerns about cultural differences and economic conflict (Stephan et al., 2009), it is most consistent with theory that people will hold least resentment towards fellow Australians moving within their nation compared to international refugee groups.

Several studies document support for international climate migration in developing nations. Castellano et al. (2021) found that people

in Bangladesh were *less willing* to donate to internal climate migrants than refugees fleeing religious persecution, suggesting displacement due to climate change might elicit less prosocial responses. Spilker et al.'s (2020) examination of attitudes towards internal climate migration in Kenya and Vietnam showed that participants in both nations were relatively accepting of environmental migrants fleeing the effects of both short-term (storm or floods) and longer-term (drought) environmental crises, and agreed these events justify migration. However, the authors suggested that concerns about the incoming group's reliance on public services and funding, or differences in culture and values, may explain why some individuals resist migration. Spilker and colleagues did not test these possible explanations. Instead, they relied on "anecdotal evidence illustrating this phenomenon with climate-induced migration as a result of the American "Dust Bowl" in the 1930s leading to locals in receiving areas protesting and accusing migrants of taking jobs, lowering wages and crowding relief rolls" (p. 623).

Understanding ideological opposition to climate migration

Concerns over economic and cultural clashes from immigration are consistent with the drivers of prejudice identified in intergroup threat theory (Stephan et al., 2009). This theory proposes that intergroup tensions stem from both symbolic and realistic threats (Sherif and Sherif, 1969; Stephan et al., 2005; 2009; Stephan and Stephan, 2000). Symbolic threats are the concerns the incoming group will differ in attitudes, morals, or values, thus threatening the cultural status quo. Realistic threats include concerns the incoming group will vie for resources such as jobs, public spending, and political power. The belief that an incoming group poses a symbolic and/or realistic threat is a known barrier to the acceptance of immigrants and refugees (Riek et al., 2006). Opposition to climate refugee policy may similarly stem from concerns about threat to host nationals' economic and cultural power. Understanding whether these threats are relevant predictors of attitudes towards climate refugees has conceptual importance by identifying how well existing theories of outgroup prejudice apply in this new context.

Host nationals' attitudes towards incoming social groups are also dependant on individual differences. Two important predictors of generalised prejudice (Altemeyer, 1998) are social dominance orientation (SDO) and right-wing authoritarianism (RWA). SDO is the relative tolerance of social inequality and group-based social hierarchy (Sidanius and Pratto, 1999), and RWA is the preference for submission to strong leaders, tradition, and punitive social control (Duckitt et al., 2010). Those with greater endorsement of SDO and RWA are less supportive of immigration policies (Craig and Richeson, 2014), and of the actions and policies that would address climate change (Stanley and Wilson, 2019). Attitudes towards climate refugee policy, a new category of migration stemming from the effects of climate change, may also be predicated on endorsement of SDO and RWA.

Endorsement of SDO and RWA are linked to increased perceived threat from outgroups (e.g., Duckitt 2006). This suggests a theory-grounded mediation model, whereby SDO and RWA predict opposition to a new group through their associations with perceived threat. Stanley and Williamson (2021) recently proposed and tested such a model in predicting support for climate refugee policy in New Zealand. They showed that SDO (and to a lesser extent, RWA) predicts lower support for climate refugee policy and interestingly, ideology-based opposition was largely explained by realistic threat perceptions, with weak (Study 1) and null (Study 2) mediating effects of symbolic threat perceptions. Weak and insignificant paths from symbolic concerns to policy opposition may be because New Zealanders have strong cultural ties in the Pacific, where early climate-driven migration may stem from. That is, although some people may view the incoming group as culturally different, this perceived difference does not undermine their support for the group. Moreover, frequent intergroup contact between New Zealanders and Pacific Island groups likely assuages symbolic threat perceptions (Stephan et al., 2000). The extent SDO, RWA, and threat perceptions re-

late to climate refugee policy support in Australia is unknown, though testing Stanley and Williamson's (2021) model further is worthwhile to understand potential roots of refugee opposition in different contexts.

Current studies

Our program of research advances understanding of the attitudinal landscape in Australia concerning climate-driven migration by documenting associations between Australians' ideological attitudes, threat perceptions, and attitudes towards international climate refugees, as compared to perceived threat from and attitudes towards internal climate refugees and international refugees of war. In all studies, we included three support-type measures: liking of refugee groups, support for their resettlement, and for dedicating resources to support the group. We expected most supportive ratings and lowest perceived threat from internal climate migrants (participants' 'ingroup') compared to the international refugee groups. Of international groups, we expected the novel group (international climate refugees) to receive lowest support, in line with Stanley et al. (2022).

To build evidence on the potential roots of opposition to climate refugee resettlement, we also made several theory-based correlational predictions. First, we expected that endorsement of SDO and RWA would predict greater perceived symbolic and realistic threat from climate refugees and lower support for climate refugee resettlement. SDO and RWA are rooted in distinct worldviews, with SDO theoretically emerging from a view of the world as a competitive place, and RWA emerging from the view the world is dangerous (Duckitt, 2001). This may indicate that Social Dominants are more attuned to realistic threats, while Authoritarians are more concerned with safety and symbolic threats, however evidence on differential ideology-threat associations is limited and mixed (Rios et al., 2018), and thus we do not make strong predictions about the extent SDO and RWA will relate to each threat perception.

We predicted that in contrast to findings from New Zealand, both realistic and symbolic threats will undermine support for climate refugees in Australia due to differences in cultural contexts and narratives surrounding immigration and refugees. Analyses of media portrayals in the two nations reveal an Australian media tendency to express concern over the refugee 'problem', compared with a New Zealand 'human-focused' emphasis on celebrating the wider contribution refugees have made to society (Sulaiman-Hill et al., 2011). Moreover, aggressive and bipartisan Australian federal government policies, including offshore detention for asylum seekers arriving by boat, have accompanied political discourses that position refugees as threatening and 'illegitimate' (Rowe and O'Brien, 2014). The Australian cultural landscape regarding refugees could shape how a proposed policy to facilitate climate-driven migration is perceived. Furthermore, while all resettlement programs may be perceived as costly, perceived symbolic threats are more likely for international groups than fellow Australians displaced by climate change. Putting these expectations together with the theoretical ordering of ideology-threat-prejudice associations, we test Stanley and Williamson's (2021) mediational model in each study. In this model, ideological attitudes predict lower support for climate refugee resettlement through symbolic and realistic threat perceptions.

In addition to these predictions that are tested in every study, Study 1 makes a distinct contribution by exploring the types and (in)distinctiveness of concerns arising from climate refugees. Reflecting the exploratory nature of this first study, it involved a range of possible intergroup threats, including the extent participants perceived each group as a threat to Australian culture (symbolic threat), economic wellbeing (realistic threat), safety (safety threat), levels of societal xenophobia (prejudice threat) and conflict (cohesion threat), and concerns about the standard of living Australia can offer the refugees (altruistic threat). Landmann et al. (2019) developed this taxonomy to catalogue the threats from refugee resettlement as perceived by German majority group members. They identified that each threat type was associated

with negative emotions and greater preference for restrictive resettlement policy, thus each could reasonably undermine support for resettlement of climate refugees. Given the novelty and exploratory goals of our first study, we collected a convenience sample comprised of data from two Australian universities.

Study 2 addresses the convenience sampling limitations of Study 1 by recruiting a representative sample of Australians, and narrowed focus to the two original threat dimensions theorized as undermining support for incoming groups: symbolic and realistic threats (Stephan and Stephan, 2000). Finally, we designed an experiment in Study 3 to test causal effects of inducing symbolic and realistic threat of climate migration. This manipulation was unsuccessful, and thus we treat Study 3 as a third independent sample to replicate the findings of Study 1 and 2.

Material and methods

Participants

Study 1: Participants were recruited using convenience sampling from two universities in Australia: 348 students from the University of Canberra, and 119 students from Edith Cowan University. The full sample ($N = 467$) were on average 24.30 years of age ($SD = 8.36$), and 65.7% identified as female (32.5% male, 1.7% other/prefer not to say). Participation was voluntary and compensated with credit towards students' required research participation hours. The University of Canberra approved all ethical aspects of the study (ID: 20204471), and we received reciprocal ethics approval by the Human Research Ethics Committee of Edith Cowan University (ID: HREC-2020-01439).

Study 2: Qualtrics recruited participants on our behalf using quota sampling to ensure the final sample matched the adult Australian population on age, gender, and location. Due to competing survey priorities, the overall sample (of more than 5000) was split so that one third of respondents were randomly assigned to complete our measures. The sample was therefore 1681 participants ranging from 18 to 87 years in age ($M = 47.70$, $SD = 17.61$; male = 48.7%, female = 50.9%, other and prefer not to say = 0.5%). The Australian National University Human Research Ethics Committee approved this protocol (ID: 2020/429).

Study 3: We recruited Australian-born adults via the student participation pool at the Australian National University in exchange for course credit ($N = 118$) and through social media advertising ($N = 374$).² Participants had a mean age of 49.94 years ($SD = 20.92$), and 49.8% were male, 48.0% female, and 2.2% other or missing. We obtained ethical approval for the study from the Australian National University Human Research Ethics Committee (ID: 2020/468).

Measures and procedure

Study 1: Participants completed Ho et al.'s (2015) 8-item SDO₇ scale (e.g., "It is unjust to try to make groups equal", $\alpha = .77$, $M = 2.64$, $SD = 0.95$) and Duckitt et al.'s (2010) 18-item ACT scale to measure RWA ("Strong, tough government will harm not help our country", $\alpha = .88$, $M = 3.37$, $SD = 0.88$) on 7-point Likert scales from 1 (strongly disagree) to 7 (strongly agree). They then read a brief description of each refugee group:

Climate change refugees or climate migrants are people who might be displaced from their own country due to the effects of climate change. For example, rising sea level may force people to leave low-lying coastal nations.

Internal climate refugees or internal climate migrants are Australian citizens who might be displaced from their current home due to

² A further 31 participants took part in Study 3 and withdrew consent after reading the project debrief revealing the true aims. Therefore, as per our ethics protocol, although 523 participants completed the study, only data from 492 participants were analyzed.

the effects of climate change. For example, rising temperatures and drought may make some areas of the country unlivable, forcing people to relocate within Australia.

Refugees are those who have been forced to flee their country because of persecution, war or violence.

We used thermometer ratings (Esses et al., 1993) to capture general feelings toward each refugee group: "Using the sliding bar below, how would you rate your feelings toward [refugee group] from 0 (extremely unfavourable) to 100 (extremely favourable)?" We modified Stephan et al.'s (1998) measure to record symbolic (e.g., "The relocation of this group will undermine Australian culture") and realistic concerns ("This group would increase the tax burden on Australia") about each group, with seven items each. We adapted Landmann et al.'s (2019) measures for the remaining threat types, with five items on safety threat ("This group living here threatens public safety in Australia"), four on cohesion threat ("The relocation of this group leads to social disruption"), and two each on prejudice (Prejudice 1: "The relocation of this group leads to more support for right-wing parties"; Prejudice 2: "The relocation of this group leads to increased xenophobia in Australia") and altruistic threat (Altruistic 1: "If many members of this group migrate to or within Australia, humane housing for them is impossible"; Altruistic 2: "If many members of this group migrate to or within Australia, adequate care for them cannot be guaranteed"). Reliability analyses (Table S1) indicate good reliability (α 's > .7) of all threat dimensions except prejudice and altruistic threat, thus we interpret findings from the single items from these measures.

The final section of the survey measured support for the three refugee groups. This included support for a policy allowing an annual intake of the group to Australia, to their local community, and support for dedicating government resources to resettling the group, each recorded on 1 (strongly oppose) to 7 (strongly support) scales. They were also asked whether they believed the need to resettle each group would decrease or increase over time (on a sliding scale from 0/decrease dramatically to 100/increase dramatically, with a midpoint of 50/stay about the same), which was included to capture potential concerns about exponential rises in climate migration, though may have tapped acceptance of the severity of climate change, and thus was not included in Study 2 and 3.

Study 2: Participants rated all three groups on the following measures from Study 1: thermometer ratings, support for an annual intake into their local community, and support for allocating resources to each group. They also completed shortened measures of SDO (4 items, $\alpha = .65$, $M = 3.15$, $SD = 1.08$) and RWA (9 items, $\alpha = .83$, $M = 4.40$, $SD = 1.09$), and 3-item measures of symbolic ($\alpha = .93$) and realistic threat ($\alpha = .93$) arising from international climate refugees (adapted from Landmann et al. 2019).

Study 3: Our third study was designed to experimentally test the effect of inducing symbolic and realistic threats on attitudes towards climate refugees. Our manipulations did not successfully induce threat, and thus we also present our correlational findings from this study (and elaborate on the design and findings from the experimental component in the Supplementary Materials). Participants completed the same measure of SDO as in Study 2 ($\alpha = .78$, $M = 2.52$, $SD = 1.36$), and Bizumic and Duckitt's (2018) 9-item RWA measure ($\alpha = .90$, $M = 3.40$, $SD = 1.45$). After a threat manipulation (see Supplementary Materials), they rated how genuine the need to resettle within Australia is for the three refugee groups, the extent they support an annual intake of the groups to Australia and their local community, the Australian government allocating resources to resettle the groups, feelings thermometer ratings, and finally the measures of symbolic ($\alpha = .97$) and realistic ($\alpha = .94$) threat from international climate refugees from Study 2. Given the strong reliability of all multi-item scales in Study 3, means were computed to allow one missing item per scale. Although the focus of this study was on the potential causal effects of threat on attitudes towards international climate refugees, we included measures of attitudes

towards the other three refugee groups to allow replication of Study 1 and 2.

Results

Studies were not preregistered, however data for all three studies and the syntax for mediation models are available on the Open Science Framework: <https://osf.io/ydf3j/>. We used RStudio to test our mediation models and SPSS for all other analyses.

Comparing mean ratings of refugee groups

Table 1 presents participants' ratings of all three refugee groups in each study. Importantly, in every study, mean ratings of each refugee group indicated that participants generally hold positive attitudes and support for refugee resettlement policy. Some interesting patterns emerge from a series of repeated measures ANOVAs. In Study 1, which is the only study where participants rated perceived threat of all three refugee groups, scores were generally low and thus suggest on average, people disagree that refugee groups pose a threat. Thus, differences are in the *degree* of support and threat across refugee groups. Study 1 also shows that both climate refugee groups are perceived as increasing in need over time to a greater extent than refugees of war. Across every study, international climate refugees receive the lowest ratings on the feelings thermometer, support for annual or local intake of refugees, and support for allocating resources to the group, when compared to internal climate refugees and refugees of war.

Findings from Study 1 suggest that the differences in support are unlikely attributable to the group posing substantially higher threat than other groups. Instead, refugees of war were perceived to pose greater threats than international climate refugees to culture (symbolic threat), safety, xenophobia (prejudice threat 2), and social cohesion. International climate refugees were rated as posing similar levels of realistic threat, threat of increasing right-wing votership (prejudice threat 1), and difficulty to supply adequate housing (altruistic threat 2), as refugees of war. Findings from Study 3 offer an alternative explanation: the more supported groups (internal climate refugees, refugees of war) were perceived as significantly more in *genuine need of resettlement* than international climate refugees.

Correlation and regression findings

Correlations in the lower diagonal of Table 2 show that attitudes towards international climate refugees are positively related. Those more permitting of admitting climate refugees to Australia are also more welcoming of bringing them to their local community and allocating resources. Endorsements of SDO and RWA are associated with greater perceptions of each threat, except prejudice threat. The upper diagonal of Table 2 presents the same set of associations for ratings of internal climate refugees. Interestingly, while the prejudice threats were unrelated to support for international refugee groups, those who believed relocating *internal* climate refugees would increase societal prejudice were less supportive of this group's relocation. This might be explained by differences in expectations of the demographics of internal climate migrants. Table S2 reports correlations for refugees of war, which look similar to those for international climate refugees, and Table 3 replicates patterns of associations using the variables in Study 2 and 3.

Thus, correlations support our predictions that SDO and RWA would be related negatively to attitudes in favour of refugees, and positively to perceptions of symbolic and realistic threat, which are also related to less positive ratings of refugees. To address our exploratory aim to see which of Landmann et al.'s (2019) full taxonomy of threats independently contribute to predicting attitudes towards refugees, we report standardised regression coefficients (betas) from a series of multiple linear regressions in Table 4. Attitudes towards international climate refugees are relatively consistently independently predicted by realistic,

Table 1
Mean attitude and policy ratings for each refugee group and results from repeated measures ANOVAs.

| | Scale range | International Climate refugees M (SD) | Internal climate refugees M (SD) | Refugees of war M (SD) | F Test |
|---------------------|-------------|--|-------------------------------------|-----------------------------|---|
| Study 1 | | | | | |
| Thermometer Rating | 0–100 | 71.94 _a (24.09) | 74.56 _b (24.25) | 77.97 _c (25.26) | $F(1.54, 714.00) = 27.31$, $p < .001$, $\eta_p^2 = 0.06$ |
| Annual intake | 1–7 | 5.40 _a (1.24) | 5.63 _b (1.20) | 5.57 _b (1.28) | $F(1.83, 850.15) = 13.88$, $p < .001$, $\eta_p^2 = 0.03$ |
| Local intake | 1–7 | 5.34 _a (1.31) | 5.61 _b (1.24) | 5.45 _c (1.37) | $F(1.79, 833.46) = 17.00$, $p < .001$, $\eta_p^2 = 0.04$ |
| Resource allocation | 1–7 | 5.38 _a (1.31) | 5.65 _b (1.22) | 5.52 _b (1.30) | $F(1.94, 899.54) = 15.83$, $p < .001$, $\eta_p^2 = 0.03$ |
| Need over time | 0–100 | 65.40 _a (20.45) | 65.00 _a (20.21) | 58.18 _b (18.71) | $F(1.82, 845.64) = 43.42$, $p < .001$, $\eta_p^2 = 0.09$ |
| Realistic threat | 1–7 | 2.99 _a (0.99) | 2.73 _b (0.93) | 2.99 _a (1.01) | $F(1.47, 682.21) = 57.79$, $p < .001$, $\eta_p^2 = 0.11$ |
| Symbolic threat | 1–7 | 3.80 _a (0.90) | 3.39 _b (0.86) | 3.87 _c (0.93) | $F(1.20, 557.20) = 154.53$, $p < .001$, $\eta_p^2 = 0.25$ |
| Safety threat | 1–7 | 2.70 _a (1.27) | 2.49 _b (1.17) | 2.80 _c (1.34) | $F(1.38, 640.18) = 58.91$, $p < .001$, $\eta_p^2 = 0.11$ |
| Prejudice threat 1 | 1–7 | 3.68 _a (1.36) | 3.42 _b (1.33) | 3.76 _a (1.39) | $F(1.60, 740.47) = 25.37$, $p < .001$, $\eta_p^2 = 0.05$ |
| Prejudice threat 2 | 1–7 | 4.20 _a (1.46) | 3.22 _b (1.47) | 4.36 _c (1.46) | $F(1.29, 599.07) = 170.19$, $p < .001$, $\eta_p^2 = 0.27$ |
| Altruistic threat 1 | 1–7 | 3.22 _a (1.49) | 3.02 _b (1.49) | 3.14 _b (1.47) | $F(1.84, 854.76) = 13.66$, $p < .001$, $\eta_p^2 = 0.03$ |
| Altruistic threat 2 | 1–7 | 3.63 _a (1.54) | 3.23 _b (1.53) | 3.59 _a (1.55) | $F(1.68, 778.98) = 44.20$, $p < .001$, $\eta_p^2 = 0.09$ |
| Cohesion threat | 1–7 | 3.21 _a (1.32) | 2.80 _b (1.24) | 3.27 _c (1.36) | $F(1.36, 628.33) = 99.76$, $p < .001$, $\eta_p^2 = 0.18$ |
| Study 2 | | | | | |
| Thermometer Rating | 0–100 | 59.24 _a (25.39) | 66.42 _b (24.07) | 65.91 _{bc} (24.46) | $F(1.78, 2951.43) = 116.71$, $p < .001$, $\eta_p^2 = 0.07$ |
| Local intake | 1–7 | 4.34 _a (1.71) | 5.02 _b (1.53) | 4.67 _c (1.65) | $F(1.78, 2981.11) = 189.94$, $p < .001$, $\eta_p^2 = 0.10$ |
| Resource allocation | 1–7 | 4.40 _a (1.63) | 4.93 _b (1.55) | 4.91 _{bc} (1.56) | $F(1.87, 3139.30) = 138.44$, $p < .001$, $\eta_p^2 = 0.08$ |
| Study 3 | | | | | |
| Thermometer Rating | 0–100 | 62.30 _a (36.99) | 70.16 _b (32.08) | 66.74 _c (34.52) | $F(1.75, 839.06) = 24.36$, $p < .001$, $\eta_p^2 = 0.05$ |
| Local intake | 1–7 | 4.53 _a (2.30) | 5.24 _b (1.92) | 4.89 _c (2.12) | $F(1.75, 857.58) = 51.20$, $p < .001$, $\eta_p^2 = 0.10$ |
| Resource allocation | 1–7 | 4.61 _a (2.33) | 5.21 _b (1.98) | 4.97 _c (2.09) | $F(1.74, 852.61) = 35.96$, $p < .001$, $\eta_p^2 = 0.07$ |
| Genuine need | 0–100 | 58.78 _a (39.42) | 67.10 _b (37.55) | 65.01 _b (36.76) | $F(1.67, 811.29) = 27.57$, $p < .001$, $\eta_p^2 = 0.05$ |

Note. In all analyses above, the assumption of sphericity was violated, and Greenhouse-Geisser sphericity corrections were applied. Different subscripts for each mean denote significant differences in mean scores between groups at the $p < .05$ level when using pairwise comparisons with Bonferroni adjustment for multiple comparisons. Means are estimated marginal means taken from the output of repeated measures ANOVA and include only participants who rated all three groups, standard deviations are from descriptive analysis (in Study 2 + 3, missing data means these outputs were slightly different).

symbolic, and safety threats; attitudes towards internal climate refugees are more consistently predicted by only realistic and symbolic threats, and refugees of war by realistic and safety threats. For all refugee groups, distinct effects of prejudice, altruistic, and cohesion threats are weak and largely non-significant. These regression findings are largely unchanged when controlling for age and gender, which do not significantly predict attitudes towards refugee groups (see Table S3). Only two weak effects become non-significant when age and gender are controlled, namely safety threat predicting support for a local intake of internal climate refugees, and symbolic threat predicting support for allocating resources to refugees of war.

Testing the ideology-based threat model of attitudes towards climate refugees

We next tested the path model of ideology-based threat in all three datasets. The model was constructed such that mean scores of SDO and RWA were set to predict each rating of climate refugees, as mediated by the two core dimensions of intergroup threat theory: symbolic and

realistic threat (also entered as mean scores). The model also included the covariance between mediators and between each set of outcome variables. As the path models were fully saturated, fit statistics are not available. Mediation was tested using the Delta method in RStudio using lavaan (Rosseel, 2014).

In every study, both SDO and RWA had significant total effects on attitudes towards international climate refugees that were partly direct, and partly associated with threat perceptions (i.e., evidence of partial mediation). For the variables included in every study (feelings thermometer ratings, support for the intake of, and dedication of resources to, climate refugees), the effects of SDO and RWA were significantly mediated by both symbolic and realistic threat perceptions. Thus, we found consistent evidence about this model in partially explaining ideology-based threat as relating to lower liking of climate refugees, lower support for their resettlement, and for dedicating resources to the group. It is important to note that in all models, indirect effects are weak, but their consistency suggests threat perceptions are important correlates of attitudes and may help us to understand ideology-based opposition to refugee resettlement.

Table 2

Correlations with ratings of International Climate Refugees (below the diagonal) and Internal Climate Refugees (above the diagonal) in Study 1.

| | | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. |
|---------------------|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Attitudes / support | 1 Thermometer rating | – | .74*** | .77*** | .75*** | .45*** | –0.41*** | –0.34*** | –0.61*** | –0.48*** | –0.55*** | –0.26*** | –0.24*** | –0.25*** | –0.31*** | –0.45*** |
| | 2 Annual intake | .55*** | – | .88*** | .90*** | .32*** | –0.39*** | –0.35*** | –0.56*** | –0.51*** | –0.50*** | –0.22*** | –0.22*** | –0.26*** | –0.28*** | –0.48*** |
| | 3 Local intake | .56*** | .92*** | – | .90*** | .38*** | –0.39*** | –0.37*** | –0.59*** | –0.54*** | –0.52*** | –0.24*** | –0.26*** | –0.24*** | –0.31*** | –0.48*** |
| | 4 Resource allocation | .52*** | .90*** | .88*** | – | .36*** | –0.41*** | –0.39*** | –0.57*** | –0.52*** | –0.51*** | –0.23*** | –0.24*** | –0.27*** | –0.28*** | –0.48*** |
| | 5 Need over time | .39*** | .39*** | .41*** | .36*** | – | –0.26*** | –0.28*** | –0.34*** | –0.25*** | –0.30*** | –0.18*** | –0.12** | –0.14** | –0.15** | –0.24*** |
| Ideology | 6 SDO | –0.49*** | –0.43*** | –0.43*** | –0.43*** | –0.32*** | – | .43*** | .50*** | .45*** | .49*** | .18*** | .15** | .26*** | .20*** | .40*** |
| | 7 RWA | –0.46*** | –0.46*** | –0.46*** | –0.45*** | –0.35*** | .43*** | – | .43*** | .50*** | .46*** | .23*** | .21*** | .29*** | .25*** | .37*** |
| Threat type | 8 Realistic | –0.49*** | –0.62*** | –0.62*** | –0.63*** | –0.33*** | .48*** | .48*** | – | .56*** | .64*** | .28*** | .29*** | .36*** | .40*** | .55*** |
| | 9 Symbolic | –0.46*** | –0.53*** | –0.54*** | –0.52*** | –0.25*** | .43*** | .55*** | .61*** | – | .59*** | .24*** | .36*** | .34*** | .28*** | .54*** |
| | 10 Safety | –0.50*** | –0.58*** | –0.59*** | –0.56*** | –0.33*** | .49*** | .48*** | .64*** | .59*** | – | .31*** | .33*** | .36*** | .33*** | .73*** |
| | 11 Prejudice 1 | –0.08 | –0.08 | –0.10* | –0.08 | –0.01 | .07 | .03 | .10* | .05 | .16** | – | .42*** | .22*** | .33*** | .27*** |
| | 12 Prejudice 2 | .09 | –0.02 | –0.01 | –0.01 | .15** | –0.11* | –0.15** | .00 | .04 | .05 | .32*** | – | .26*** | .30*** | .33*** |
| | 13 Altruistic 1 | –0.29*** | –0.29*** | –0.28*** | –0.29*** | –0.17*** | .29*** | .34*** | .37*** | .28*** | .40*** | .05 | –0.00 | – | .50*** | .36*** |
| | 14 Altruistic 2 | –0.21*** | –0.29*** | –0.27*** | –0.27*** | –0.12* | .20*** | .24*** | .35*** | .26*** | .33*** | .15*** | .12** | .48*** | – | .38*** |
| | 15 Cohesion | –0.40*** | –0.51*** | –0.52*** | –0.52*** | –0.20*** | .38*** | .39*** | .60*** | .54*** | .71*** | .17*** | .17*** | .34*** | .38*** | – |

Note. *** $p < .001$, ** $p < .01$, * $p < .05$. Prejudice and Altruistic threat measures were unreliable and thus we report correlations with their individual items.

Table 3

Correlation matrix of key variables in Study 2 (below the diagonal) and Study 3 (above the diagonal).

| | | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. |
|--------------------------------|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| International climate refugees | 1. Thermometer | – | .89*** | .90*** | –0.78*** | –0.72*** | .90*** | –0.67*** | –0.71*** | .78*** | .75*** | .73*** | .77*** | .82*** | .74*** | .76*** | .78*** |
| | 2. Local intake | .74*** | – | .93*** | –0.79*** | –0.73*** | .91*** | –0.70*** | –0.70*** | .67*** | .76*** | .70*** | .73*** | .78*** | .83*** | .80*** | .80*** |
| | 3. Allocating resources | .76*** | .81*** | – | –0.79*** | –0.75*** | .90*** | –0.71*** | –0.72*** | .68*** | .74*** | .76*** | .75*** | .78*** | .78*** | .83*** | .80*** |
| | 4. Symbolic threat | –0.58*** | –0.60*** | –0.58*** | – | .84*** | –0.82*** | .68*** | .74*** | –0.56*** | –0.58*** | –0.57*** | –0.62*** | –0.74*** | –0.73*** | –0.74*** | –0.77*** |
| | 5. Realistic threat | –0.55*** | –0.59*** | –0.59*** | .81*** | – | –0.77*** | .63*** | .71*** | –0.50*** | –0.51*** | –0.52*** | –0.58*** | –0.68*** | –0.66*** | –0.69*** | –0.71*** |
| Ideology | 6. Genuine need | – | – | – | – | – | – | –0.71*** | –0.76*** | .68*** | .71*** | .70*** | .80*** | .77*** | .75*** | .75*** | .85*** |
| | 7. SDO | –0.39*** | –0.41*** | –0.40*** | .42*** | .35*** | – | .64*** | –0.52*** | –0.55*** | –0.56*** | –0.56*** | –0.70*** | –0.67*** | –0.68*** | –0.71*** | |
| | 8. RWA | –0.39*** | –0.41*** | –0.39*** | .50*** | .48*** | .33*** | – | –0.53*** | –0.54*** | –0.56*** | –0.60*** | –0.64*** | –0.62*** | –0.65*** | –0.70*** | |
| Internal climate refugees | 9. Thermometer | .71*** | .53*** | .54*** | –0.38*** | –0.32*** | – | –0.33*** | –0.26*** | – | .82*** | .85*** | .78*** | .62*** | .52*** | .54*** | .56*** |
| | 10. Local intake | .53*** | .62*** | .57*** | –0.40*** | –0.36*** | – | –0.34*** | –0.28*** | .63*** | – | .87*** | .78*** | .58*** | .60*** | .59*** | .59*** |
| | 11. Allocating resources | .58*** | .58*** | .68*** | –0.39*** | –0.36*** | – | –0.35*** | –0.29*** | .70*** | .70*** | – | .80*** | .58*** | .55*** | .59*** | .58*** |
| Refugees of war | 12. Genuine need | – | – | – | – | – | – | – | – | – | – | – | – | .61*** | .58*** | .58*** | .66*** |
| | 13. Thermometer | .69*** | .59*** | .57*** | –0.57*** | –0.50*** | – | –0.39*** | –0.36*** | .48*** | .39*** | .40*** | – | .88*** | .89*** | .85*** | |
| | 14. Local intake | .57*** | .75*** | .63*** | –0.58*** | –0.54*** | – | –0.40*** | –0.37*** | .35*** | .48*** | .43*** | .74*** | – | .92*** | .85*** | |
| | 15. Allocating resources | .56*** | .65*** | .68*** | –0.56*** | –0.52*** | – | –0.40*** | –0.36*** | .38*** | .46*** | .52*** | .75*** | .82*** | – | .87*** | |
| | 16. Genuine need | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | |

Note. *** $p < .001$, ** $p < .01$, * $p < .05$. Ratings of genuine need were recorded only in Study 3.

Table 4
Standardised regression coefficients (β) from a series of models using threat perceptions as predictors of attitudes towards refugees in Study 1.

| | | Thermometer ratings | Australian intake | Local intake | Resource allocation | Need over time |
|--------------------------------|------------------|---------------------|-------------------|--------------|---------------------|----------------|
| International climate refugees | R ² | .34 | .46 | .47 | .46 | .17 |
| | Realistic threat | -0.23*** | -0.35*** | -0.35*** | -0.38*** | -0.21*** |
| | Symbolic threat | -0.18*** | -0.15** | -0.15** | -0.13** | -0.04 |
| | Safety threat | -0.21*** | -0.22*** | -0.24*** | -0.16** | -0.25*** |
| | Prejudice 1 | -0.05 | .01 | -0.01 | .01 | -0.01 |
| | Prejudice 2 | .12** | .01 | .02 | .02 | .15** |
| | Altruistic 1 | -0.07 | .02 | .02 | -0.00 | -0.01 |
| | Altruistic 2 | .02 | -0.05 | -0.02 | -0.02 | -0.01 |
| | Cohesion threat | -0.02 | -0.05 | -0.06 | -0.11* | .11 |
| | R ² | .32 | .39 | .44 | .40 | .14 |
| Internal climate refugees | Realistic threat | -0.25*** | -0.31*** | -0.34*** | -0.33*** | -0.22*** |
| | Symbolic threat | -0.17** | -0.22*** | -0.23*** | -0.21*** | -0.04 |
| | Safety threat | -0.25*** | -0.08 | -0.12* | -0.08 | -0.14 |
| | Prejudice 1 | .03 | -0.02 | -0.00 | -0.01 | -0.03 |
| | Prejudice 2 | .07 | .05 | .04 | .04 | .07 |
| | Altruistic 1 | -0.07 | .08 | .08 | .03 | -0.02 |
| | Altruistic 2 | -0.06 | -0.05 | -0.07 | -0.02 | -0.04 |
| | Cohesion threat | .08 | -0.14* | -0.09 | -0.13* | .03 |
| | R ² | .29 | .48 | .50 | .47 | .08 |
| | Realistic threat | -0.38*** | -0.39*** | -0.37*** | -0.38*** | -0.24*** |
| Refugees of war | Symbolic threat | -0.04 | -0.08 | -0.12* | -0.09* | -0.02 |
| | Safety threat | -0.12 | -0.26*** | -0.26*** | -0.22*** | -0.17* |
| | Prejudice 1 | -0.03 | -0.03 | -0.06 | -0.02 | .02 |
| | Prejudice 2 | .07 | .04 | .04 | .03 | -0.01 |
| | Altruistic 1 | -0.07 | .03 | .06 | .00 | -0.03 |
| | Altruistic 2 | .08 | -0.01 | -0.02 | -0.00 | .14** |
| | Cohesion threat | -0.06 | -0.05 | -0.07 | -0.10 | .16* |

Note. Although threats were correlated, we did not find evidence of multicollinearity. VIF ranges 1.16–2.60 for international climate refugee regression; 1.15–2.78 for internal climate refugee regression; 1.15–2.73 for refugees of war.

Table 5
Results of mediation path models whereby ideological attitudes predict attitudes towards refugees through perceived threat in Study 1.

| | Social dominance orientation | | | | Right-wing authoritarianism | | | | Symbolic | Realistic | R ² |
|---------------------------------------|------------------------------|---------------------|----------------------|----------|-----------------------------|---------------------|----------------------|----------|----------|-----------|----------------|
| | Direct | Indirect - symbolic | Indirect - realistic | Total | Direct | Indirect - symbolic | Indirect - realistic | Total | | | |
| International climate refugees | | | | | | | | | | | |
| Thermometer ratings | -0.25*** | -0.03* | -0.08*** | -0.35*** | -0.19*** | -0.05* | -0.07*** | -0.32*** | -0.12* | -0.22*** | .38 |
| Australia intake | -0.10* | -0.04* | -0.14*** | -0.28*** | -0.13** | -0.08** | -0.14*** | -0.34*** | -0.18*** | -0.40*** | .44 |
| Local intake | -0.10* | -0.04** | -0.14*** | -0.28*** | -0.13** | -0.08** | -0.14*** | -0.34*** | -0.18*** | -0.41*** | .45 |
| Allocating resources | -0.12** | -0.03** | -0.15*** | -0.30*** | -0.13** | -0.06** | -0.14*** | -0.34*** | -0.14** | -0.42*** | .45 |
| Need over time | -0.16** | .01 | -0.06* | -0.21*** | -0.21*** | .02 | -0.06** | -0.26*** | .04 | -0.18** | .17 |
| Internal climate refugees | | | | | | | | | | | |
| Thermometer ratings | -0.16** | -0.04* | -0.10*** | -0.30*** | -0.19*** | -0.05* | -0.07*** | -0.31*** | -0.12* | -0.26*** | .34 |
| Australia intake | -0.07 | -0.07*** | -0.14*** | -0.28*** | -0.04 | -0.10*** | -0.10*** | -0.23*** | -0.25*** | -0.36*** | .37 |
| Local intake | -0.04 | -0.08*** | -0.16*** | -0.28*** | -0.05 | -0.10*** | -0.11*** | -0.26*** | -0.27*** | -0.40*** | .42 |
| Allocating resources | -0.08 | -0.07*** | -0.15*** | -0.29*** | -0.08 | -0.09*** | -0.10*** | -0.26*** | -0.24*** | -0.37*** | .39 |
| Need over time | -0.07 | -0.00 | -0.09*** | -0.17** | -0.15** | -0.00 | -0.06*** | -0.22*** | -0.01 | -0.24*** | .14 |
| Refugees of war | | | | | | | | | | | |
| Thermometer ratings | -0.17*** | -0.01 | -0.14*** | -0.32*** | -0.07 | -0.02 | -0.11*** | -0.20*** | -0.04 | -0.38*** | .30 |
| Australia intake | -0.11* | -0.03* | -0.18*** | -0.31*** | -0.07 | -0.06** | -0.14*** | -0.27*** | -0.13** | -0.48*** | .44 |
| Local intake | -0.11** | -0.04** | -0.17*** | -0.32*** | -0.03 | -0.08*** | -0.14*** | -0.26*** | -0.19*** | -0.46*** | .46 |
| Allocating resources | -0.09* | -0.03* | -0.17*** | -0.29*** | -0.10* | -0.06** | -0.14*** | -0.30*** | -0.14** | -0.47*** | .45 |
| Need over time | -0.02 | .00 | -0.06* | -0.08 | -0.10 | .00 | -0.05* | -0.14** | .01 | -0.16** | .05 |

Note. *** $p < .001$, ** $p < .01$, * $p < .05$. Estimates are fully standardised.

For Study 1, we replicated the model for all three refugee groups. Ideological attitudes significantly predict perceived threat of international climate refugees (symbolic threat SDO: $\beta = 0.24, p < .001$; RWA: $\beta = 0.45, p < .001$; realistic threats SDO: $\beta = 0.35, p < .001$; RWA: $\beta = 0.34, p < .001$), internal climate refugees (symbolic threat SDO: $\beta = 0.29, p < .001$; RWA: $\beta = 0.38, p < .001$; realistic threat SDO: $\beta = 0.39, p < .001$; RWA: $\beta = 0.27, p < .001$), and refugees of war (symbolic threat SDO: $\beta = 0.23, p < .001$; RWA: $\beta = 0.45, p < .001$; realistic threat SDO: $\beta = 0.37, p < .001$; RWA: $\beta = 0.30, p < .001$). The remaining direct and indirect paths of SDO, RWA, symbolic, and realistic threats are presented in Table 5 and reveal that the relationships between SDO and RWA and attitudes towards international and internal climate refugees were related through concerns about the symbolic and

realistic threats these groups pose, for all outcomes except perceived need over time, where mediation was only significant through realistic threat perceptions. We found the same pattern when the model was applied to refugees of war, however in this instance the effects of SDO and RWA on feelings thermometer rating were mediated only through realistic threat concerns.

Table 6 presents model results from Study 2 and 3 testing the same model on ratings of international climate refugees. Again, ideological attitudes were robust predictors of symbolic threat (Study 2 SDO: $\beta = 0.30, p < .001$; RWA: $\beta = 0.39, p < .001$; Study 3 SDO: $\beta = 0.35, p < .001$; RWA: $\beta = 0.51, p < .001$) and realistic threat perceptions (Study 2 SDO: $\beta = 0.21, p < .001$; RWA: $\beta = 0.41, p < .001$; Study 3 SDO: $\beta = 0.30, p < .001$; RWA: $\beta = 0.52, p < .001$). Across each outcome variable, ef-

Table 6

Results of mediation path models whereby ideological attitudes predict attitudes towards international climate refugees through perceived threat in Study 2 and 3.

| | Social dominance orientation | | | | Right-wing authoritarianism | | | | Symbolic | Realistic | R ² |
|----------------------|------------------------------|---------------------|----------------------|----------|-----------------------------|---------------------|----------------------|----------|----------|-----------|----------------|
| | Direct | Indirect - symbolic | Indirect - realistic | Total | Direct | Indirect - symbolic | Indirect - realistic | Total | | | |
| Study 2 | | | | | | | | | | | |
| Thermometer ratings | -0.16*** | -0.09*** | -0.04*** | -0.29*** | -0.09*** | -0.12*** | -0.08*** | -0.29*** | -0.31*** | -0.20*** | .39 |
| Local intake | -0.17*** | -0.08*** | -0.06*** | -0.31*** | -0.09*** | -0.11*** | -0.11*** | -0.31*** | -0.27*** | -0.27*** | .43 |
| Allocating resources | -0.18*** | -0.06*** | -0.07*** | -0.31*** | -0.07** | -0.08*** | -0.13*** | -0.29*** | -0.21*** | -0.32*** | .41 |
| Study 3 | | | | | | | | | | | |
| Thermometer ratings | -0.20*** | -0.15*** | -0.03* | -0.38*** | -0.19*** | -0.22*** | -0.06* | -0.46*** | -0.42*** | -0.11* | .68 |
| Local intake | -0.25*** | -0.15*** | -0.04* | -0.43*** | -0.15*** | -0.22*** | -0.06* | -0.43*** | -0.42*** | -0.12* | .70 |
| Allocating resources | -0.25*** | -0.12*** | -0.05** | -0.43*** | -0.17*** | -0.18*** | -0.10*** | -0.44*** | -0.34*** | -0.18*** | .71 |
| Genuine need | -0.21*** | -0.13*** | -0.05** | -0.39*** | -0.23*** | -0.19*** | -0.08*** | -0.50*** | -0.38*** | -0.16*** | .75 |

Note. *** $p < .001$, ** $p < .01$, * $p < .05$. Estimates are fully standardised.

Table 7

Means (standard deviations) for each experimental group on each measure captured after the manipulation in Study 3.

| | Control condition M (SD) | Symbolic threat condition M (SD) | Realistic threat condition M (SD) | ANOVA results |
|-----------------------|-----------------------------|-------------------------------------|--------------------------------------|--|
| Thermometer rating | 60.86 (37.51) | 60.55 (38.39) | 64.25 (35.07) | $F(2, 483) = 0.48, p = .621, \eta_p^2 = 0.002$ |
| Genuine need | 57.73 (39.43) | 58.05 (40.39) | 60.48 (38.65) | $F(2, 488) = 0.23, p = .791, \eta_p^2 = 0.001$ |
| Local intake | 4.54 (2.32) | 4.35 (2.38) | 4.69 (2.21) | $F(2, 487) = 0.80, p = .450, \eta_p^2 = 0.003$ |
| Allocating resources | 4.60 (2.33) | 4.51 (2.41) | 4.67 (2.28) | $F(2, 489) = 0.18, p = .838, \eta_p^2 = 0.001$ |
| Symbolic threat | 3.43 (2.03) | 3.54 (2.13) | 3.29 (2.02) | $F(2, 489) = 0.56, p = .570, \eta_p^2 = 0.002$ |
| Realistic threat | 4.18 (1.95) | 4.25 (2.08) | 4.03 (1.90) | $F(2, 489) = 0.49, p = .611, \eta_p^2 = 0.002$ |
| Competitive worldview | 2.21 (1.00) | 2.36 (1.07) | 2.35 (0.96) | $F(2, 489) = 1.19, p = .306, \eta_p^2 = 0.005$ |
| Dangerous worldview | 3.77 (1.41) | 3.65 (1.52) | 3.64 (1.39) | $F(2, 489) = 0.46, p = .634, \eta_p^2 = 0.002$ |

facts of SDO and RWA were significantly mediated through concerns about international climate refugees threatening culture and resources.

Experimental analysis

We aimed to conclude our manuscript with an experimental test of the effect of symbolic and realistic threats on attitudes towards international climate refugees. Although the text we supplied with threatened groups were indeed interpreted as stressing the threat as intended (see manipulation check results in Supplementary Materials), one-way ANOVAs did not identify significant differences between conditions on any dependant variables (see Table 7 and Fig. S1). This indicates equivalent attitudes towards climate refugees, *regardless* of the message participants read. There were also no differences in perceptions of symbolic and realistic threat from international climate refugees across the three experimental conditions. Therefore, those who read about potential threats did not *agree* that incoming refugees would indeed pose such risks to any greater extent than the control condition.

Discussion

Our research compared support for resettling refugee groups in Australia. Across three studies, we document consistent and reasonably high levels of support for each refugee group. However, the degree of support (and all that entails, including allocating resources and resettlement opportunities) was dependant on the refugee group. Australians were more supportive of internal climate refugees and refugees of war than international climate refugees. Consistent with predictions, right-wing ideological attitudes favouring unequal social systems (SDO) and strict social control (RWA) each predicted lower support for refugee groups. Our models show that this relates to concerns about threats to culture and economic systems from resettling refugees.

Differences in support by refugee group

Our findings indicate an Australian host-community preference for a group comprised of fellow nationals (internal climate refugees) and

a group that Australians have historically received intakes of (refugees of war), and comparatively lower levels of support for international climate refugees. As international climate refugees are a group that Australians have had little contact and experience with to date, this pattern is consistent with Stanley et al.'s (2022) research on attitudes towards climate migration in the United States, and with previous research indicating more favourable responses toward refugees already residing within the host nation, compared with those yet to resettle.

However, our findings are at odds with other research comparing preferences for the same refugee groups. Arias and Blair (2022) found persecuted refugees are preferred above *both* internal and international climate refugees, with the latter two groups preferred similarly. Meanwhile, Helbling (2020) found that support for climate refugees did not differ from support for political refugees. These discrepant findings might be due to methodological differences (for instance, Arias and Blair used conjoint analysis, randomly varying different elements of refugee characteristics to ascertain the relative influence of each characteristic on support), or reflect differing social contexts. The high support for internal refugees in the current research may be due, at least in part, to the recency (and hence salience) of the catastrophic bushfire events of 2019/2020, and the accompanying displacement of residents across a large area of the eastern seaboard. This social-contextual explanation is supported by our findings that internal climate refugees were perceived to be in greater genuine need of relocation than international climate refugees.

One further explanation for preferring internal over international climate refugees in the Australian context may be the perceived lower status of those displaced internationally by climate change. Mols and Jetten (2016) note that a common anti-immigrant trope is of an 'elite' conspiring with lower status groups (such as immigrants and asylum seekers) at the expense of "virtuous" and "ordinary hard-working" citizens (p. 288). Under such a model, internal climate refugees as existing citizens are part of the potentially disenfranchised ingroup, rather than an outgroup complicit in reducing the cultural or economic conditions of the citizenry. We did not test for differences in perceptions of shared identity with the three different groups, but the role of social identity in influencing attitudes warrants consideration.

Ideological opposition to refugee resettlement

A second aim of our research was to identify the ideological and threat-based barriers to support for climate refugee intake, and thus the potential attitudinal targets for future messaging campaigns. While previous work found New Zealanders' climate refugee attitudes were more strongly tied to endorsement of SDO and realistic threat perceptions than RWA and symbolic threat concerns (Stanley and Williamson, 2021), we found that each of these ideological and threat dimensions significantly related to Australians' climate refugee attitudes: those more tolerant of inequality or with a greater preference for social order and control were less in favour of resettling refugee groups. On the other hand, those more strongly *rejecting* intergroup hierarchy and control held more positive attitudes towards climate refugees. While SDO and RWA are known to predict more prejudiced attitudes in general (Altemeyer, 1998), recent research identifies more nuance in the types of group-based prejudice the ideological attitudes predict. SDO is more predictive of prejudice towards derogated groups, and both SDO and RWA are similarly predictive of attitudes towards dissident groups (Cantal et al., 2015). The distinct pattern of associations found suggests that climate refugees were viewed as a derogated (low-status) group in New Zealand. As both SDO and RWA carry explanatory power in predicting climate refugee attitudes in Australia, the group is more likely characterised as *dissident* (i.e., low status and threatening; Cantal et al., 2015).

Media representations and the different historical contexts could drive these distinct views of climate refugees. New Zealanders' evaluations are consistent with the (much criticised, but ever present) narratives conveying communities at risk of displacement as powerless and vulnerable (Farbotko and Lazrus, 2012). Australians' evaluations arguably reflect media and political characterisations of refugee groups as problematic (Sulaiman-Hill et al., 2011), and threatening to Australia's national identity and border security (Rowe and O'Brien, 2014). Indeed, O'Doherty and Augoustinos' (2008) discursive analysis demonstrates how refugees are portrayed as threatening to Australia's law and order in political discourse, precipitating their construction in the public mind as 'deviant' and 'dangerous outsiders' (see also Every and Augoustinos 2007, Pickering 2001).

Further research to understand how our findings generalise to other countries is necessary to explore these possibilities. It is possible that different countries' historic constructions of refugees and immigrants (as either low status, threatening, or both) will be conferred to new climate refugee populations, and that different expectations about the geographic source of climate refugees will also interact with these historical contexts. Importantly, similar associations with SDO and RWA suggest that the dissident characterisation was not unique to international climate refugees, but rather applied to Australians' views of internal climate refugees and refugees of war as well, suggesting refugees are generally viewed as dissident here. Additionally, pressures on viable areas to live and on housing may further constrain willingness to resettle refugees, and this differs between nations.

Regarding threat perceptions, concern that resettling refugees would increase levels of prejudice in society, threaten social cohesion, or that Australia would fail to accommodate refugees' needs, did not consistently predict attitudes towards refugee resettlement. Instead, beliefs about the threat refugees pose to financial and cultural wellbeing were significant. Importantly, these concerns partially explained ideological opposition to resettling international climate refugees. Our mediation results suggest that right-wing adherents are less supportive of refugee resettlement in part because they are more likely to view refugees as a threat to the nations' economy and values.

More research is needed to guide reporting on a 'climate refugee crisis'

We find a tendency to support refugee resettlement among each of our samples (consistent with Stanley et al. 2021), and note that while

the effects of ideological attitudes on support for refugees are consistent and undoubtedly important, they are small to moderate. Support is typically high, though drops with greater endorsement of SDO and RWA, and with greater concern about the threat posed by climate refugees. Despite high current support, Stanley et al. (2021) cautioned that disagreement across political lines could be amplified as policy debate shifts into the public arena (see Mann 2021). Identifying potential sources of policy opposition can inform public communication campaigns. Our correlational results suggest that concern about the economic and cultural tensions arising from resettling international refugee groups in Australia are potential barriers to unanimous support. With our null experimental findings, we cannot comment on whether media framing of potential threat posed by a climate refugee crisis increases division. However, the pattern of correlations suggests this is possible, with one critical caveat: Perceiving a group as threatening does not necessarily entail opposing resettlement.

International refugees of war were perceived as posing similar levels of threat to international climate refugees, though enjoyed significantly *greater* public support. Furthermore, even when we examined a full taxonomy of threat types in Study 1, perceived threat typically explained less than half of the variance in support for refugee resettlement. Threat is clearly not the sole determinant of resettlement support, and further research is needed to understand what differentiates attitudes towards international refugee groups. One possibility is that the marked difference in perceptions of genuine need could be key to understanding international climate migrants' relatively lower support than refugees of war, despite similar profiles of threat perceptions. Indeed, when we add ratings of genuine need as a predictor of support for an annual intake of climate refugees to Australia as an exploratory analysis using Study 3 data, ratings of genuine need emerge as the strongest predictor ($\beta = 0.79, p < .001$; weak effects of symbolic threat remain, and realistic threat is no longer a significant predictor). Another recent study, Stanley et al. (2022), similarly found lowest perceptions of genuine need for international climate refugees in the United States when compared to refugees of war and internal climate refugees.

Understanding what shapes (and undermines) perceptions of migrants' authenticity will be critical for developing support for migration opportunities. Factors such as the salience of the crisis and familiarity with refugees and their stories might be lower in the case of climate-driven migration, though this warrants empirical investigation. Perceptions of genuine need could also be related to views about whether refugees were forced or chose to leave their homes. Views about the degree of forcedness of migration may influence host nationals' attitudes towards refugees (Echterhoff et al., 2020), and this construct is now measurable with Niemann and Hertel's (2022) newly validated Perceived Migration Forcedness – Residents scale, thus its role in shaping attitudes towards climate and other refugees could be examined in future studies.

While not central to our investigation, our Study 1 findings showing greater opposition to international climate refugee resettlement when the group is perceived as posing greater threat to safety warrant further investigation in light of the securitisation of climate migration discourse. Tying climate change to national security issues is divisive (Myers et al., 2012), and warning of impending climate migration is not an effective way to increase support for action to avert climate change (Arias and Blair, 2022). Conflict framing is not helpful (at best), and is potentially harmful (at worst): "Playing with fear is like playing with fire. You cannot be sure exactly where it will spread." (Hartmann, 2010, p. 238). More promising alternative frames to investigate in future research include emphasising the contribution refugees make to society and the patriotic nature of supporting those in need (Stanley et al., 2021).

Limitations and future directions

The main limitation of our research is an emphasis on correlational findings, which cannot inform us of any modifiable factors driving op-

position to refugee resettlement. Such correlational designs also only reflect likely associations between variables, and indeed, other arrangements of these variables could be plausible (e.g., where threat and ideological attitudes are predictors at the same level, rather than threat as mediators of the ideology-refugee attitudes associations). We hoped to explore the potentially causal roles of perceived threat in undermining support for resettling international climate refugees in Study 3. Participants' open-ended responses suggest many rejected the manipulation text (see Supplementary Files for details), and as a result of this manipulation failure, we did not affect participants' threat perceptions. Correlational findings from Study 3 replicated our earlier work, and thus right-wing adherents could be more likely to perceive greater threat from climate-driven migration *regardless* of how the issue is raised to them, perhaps suggesting that people's ideas about the threat posed by a new refugee group are fixed, and shaped by their political and ideological allegiance rather than by the narrative around incoming groups. We are hesitant to make this conclusion without further research employing alternate narratives of climate migration.

Climate driven migration has not yet begun in Australia, nor is the issue regularly reported in the news, so it is unclear whether Australians have established attitudes towards this group. A limitation that applies to each of our studies is that we are unsure *who* Australians are thinking about when they answer questions about climate refugees. Differences in the assumed referent group may account for some differences in results (Braun et al., 2013). Arias and Blair (2022) did specify origin nations of international climate migrants in their study (Afghanistan, Ethiopia, Myanmar, Ukraine), finding little difference in American and German citizens' support by climate migrant origin. Future research specifying climate refugee outgroups that Australia is geographically and politically likely to accommodate would shed further light on the impact (if any) of existing attitudes toward certain outgroups and subsequent policy responses.

Pedersen et al. (2006) suggest prejudice toward migrant groups in Australia is fluid, with the most recent wave of migrants to Australia generally experiencing the most negativity from host members. Historically, immigrants from Southern and Eastern Europe experienced this negativity, followed by Asian groups, and more recently Middle Eastern and African groups. Pedersen et al. argue that prolonged contact with people from each wave of immigration undermines the initial 'false beliefs' people hold about them, thus reducing prejudice over time. This historical context also underscores the importance of specifying the 'outgroup', not only with respect to international climate refugees, but to internal refugees also. Recent climate-exacerbated events such as the Millennium Drought and the Black Summer Bushfires may have resulted in our participants imagining internal climate refugees as 'tree- and sea-changers' fleeing bushfire-prone areas, or drought-affected farmers relocating to the cities having lost their livelihoods. But Aboriginal and Torres Strait Islander communities are especially vulnerable to the impacts of climate change (Reisinger et al., 2014). These different referent groups may induce different responses in receiving communities.

Conclusions

Our research focused on the ideological and threat-related barriers to acceptance of climate-driven migration. However, it is important to reiterate in our conclusion that across every study, participants supported climate-driven migration on average. While law changes to permit asylum on the grounds of climate change are currently unlikely, the UN Human Rights Committee (2020) recently reviewed this issue, including some arguments about when climate change may reach the legal threshold for refugee status. Our research contributes to understanding the possible reception of climate-driven migrants, in this narrowing window of opportunity before mass migration might be necessary (Storlazzi et al., 2018). Integrating theories of prejudice, we show that individual difference factors of SDO and RWA, and perceptions of threat posed by refugee groups themselves, are each associated with

less favourable ratings of refugees and the policies that would protect them. We also find that international climate refugees enjoy less support than other refugee groups and are viewed as in less genuine need. Echterhoff et al. (2020) conceptualise host nationals' perceptions of threat and attitudes towards refugees as integration-relevant psychological processes. Our findings highlight the ideological attitudes and threat perceptions that may impede successful integration of climate refugees in society and thus must be considered when designing programs to support climate refugees' integration, inclusion, and wellbeing.

As is often the case in emerging research areas, our work leads to more questions than answers. We suggest that the appetite for international climate-driven migration already exists – both in these supportive communities shown in our results, and in asylum requests made on the basis of environmental decline (e.g., Koser, 2012, McAdam and Pryke, 2020). Environmental displacement is a complex issue, and care needs to be taken to engage with community members to find out which solutions those at risk of displacement prefer, and to understand the perspectives of those living in nations with the capacity to resettle those displaced. We call for further research to continue addressing the gaps in the literature, including the avenues for further research detailed in our discussion.

Ethics information

Ethical aspects of each study were approved by University ethics committees. The Human Research Ethics Committee (HREC) of the University of Canberra approved all ethical aspects of Study 1 (ID: 20204471), and the Edith Cowan University HREC granted reciprocal ethics approval (ID: HREC-2020-01439). The Australian National University HREC approved the protocol for Study 2 (ID: 2020/429) and Study 3 (ID: 2020/468). Before beginning the online studies, participants were presented with a detailed onscreen information sheet. They indicated informed consent by continuing on to the survey. Participants could withdraw by exiting the survey any time before submitting their responses, and in Study 3, we also sought explicit consent at the end of the experiment after the debrief, and only include participants who again consented to take part in the research at that stage.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data for all three studies and the syntax for mediation models are available on the Open Science <https://osf.io/ydf3j/>.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.cresp.2023.100119](https://doi.org/10.1016/j.cresp.2023.100119).

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