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**Will Outgroup Members Satisfy My Need for Autonomy? The Role of Autonomy
Threat Expectations in Outgroup Attitudes**

Abstract

Given relatively low familiarity with individuals from outgroups, people generally expect the worst, and such expectations about interacting with outgroup members drive negative policy-relevant attitudes. Informed by self-determination theory, we explore the idea that *autonomy threat expectations*, the anticipation that one will receive less satisfaction of the need for autonomy (i.e., not able to genuinely express oneself or make meaningful choices), would predict negative outgroup attitudes and behaviors. Results from four studies support this idea. Study 1 provides evidence of a correlation between autonomy threat expectations and prejudiced attitudes in samples from four countries, all in relation to a shared outgroup, refugees from Syria. Findings from Studies 2 and 3 provide a real-world test and show that when British citizens have higher autonomy threat expectations of outgroups, they are more likely to vote in favor of Brexit and for a conservative government, with links mediated by prejudice. A final study showed that autonomy threat expectations can be manipulated to differentially impact evaluations of an outgroup, and that this effect is mediated by intergroup trust and anxiety.

Keywords: self-determination theory; intergroup behavior; autonomy; attitudes; prejudice

Will Outgroup Members Satisfy My Need for Autonomy? The Role of Autonomy Threat Expectations in Outgroup Attitudes

People have expectations before going into new interactions, and they tend to feel more anxious about interacting with individuals from groups that are different from their own (Stephan, 2014). However, less is known about *what* people are actually anxious about in these outgroup interactions. In this paper, we explore one potential aspect of intergroup anxiety not yet examined: expectations that one's need for autonomy, or the need to express oneself fully, will not be met in outgroup interactions. In light of prior evidence that people thrive when their need for autonomy is satisfied and suffer when this need is not met (e.g., Gagné, 2003; Ryan & Deci, 2017), people might reject others who they anticipate will not provide the desired need satisfaction. The present research will hence examine how expectations that one's autonomy will be threatened relate to outgroup attitudes and behavior.

Self-Determination Theory and the Autonomy Need

The current work extends self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000) to an intergroup context. SDT argues that individuals have psychological needs, including the need for autonomy, or the need to express one's genuine feelings, interests, and values. Autonomy is satisfied when people perceive others to encourage self-expression and self-congruent behaviors, or conversely, it is thwarted when people experience pressure from others to behave in certain ways (Ryan & Deci, 2017). *Receiving* autonomy support from others has been linked to better interpersonal outcomes, including closeness with others (Hodgins et al., 1996; Knee et al., 2013; Patrick et al., 2007; Vansteenkiste et al., 2008), empathy and caring (e.g., Weinstein et al., 2010), and better performance on collaborative tasks (Jõesaar et al., 2011; Vansteenkiste et al., 2004), while perceiving others as threatening one's autonomy seems to increase aggression (Moller &

Deci, 2010; Weinstein et al, 2011). Supporting the need for autonomy has also been shown to lower prejudice (Legault et. al, 2011).

Importantly, autonomy is distinct from other types of social perceptions, such as social support, which is broadly defined as receiving psychological and material resources (e.g., Cohen & Wills, 1985), and from another need within SDT, relatedness (Ryan & Deci, 2000), defined as having close, caring connections with others. In contrast, support for autonomy conveys acceptance of individuals as they are so that they can pursue volitional action and expression congruent with the self. While empirical attention has been drawn to intergroup outcomes of relatedness (Kunstman et al., 2013), and perceived autonomy experienced by one's ingroup has been shown to impact personal well-being (Kachanoff et al., 2019), the role of autonomy threat expectations has been largely ignored. A notable exception is recent work by Kachanoff et al. (2020), who found that when minority group members expected their group's autonomy to be collectively restricted by other groups, they attempted to engage in more collective action to improve their own group's position. Kachanoff et al.'s work is informative in showing that collective autonomy-threat expectations are impactful among minority groups. However, such expectations of collective threat are likely to depend on the extent of members' identification with the group, and it is unclear how these expectations relate to outgroup attitudes. The current paper will examine the extent to which people expect an outgroup to threaten their *personal* need for autonomy and explore effects on attitudes and behaviors toward the outgroup. These autonomy-threat expectations on a personal level are not assumed to depend on group identification and may occur among both majority and minority group members (cf. Stephan et al., 2015).

Autonomy Threat Expectations

In the context of outgroup attitudes, we see autonomy threat expectations as one type of individual-level symbolic threat. Symbolic threat, as part of Intergroup Threat Theory (ITT; Stephan et al., 2015), is the belief that an outgroup poses a threat to one's own or the ingroup's values and way of life, and it plays a role among both majority and minority group members. Most ITT work has focused on group threats and has shown that symbolic group threat predicts negative attitudes toward immigrants (e.g., Stephan & Stephan, 2013; Velasco González et al., 2008) and a range of emotions including distrust and anxiety (e.g., Stephan et al., 2015; Tausch et al., 2010). Work on symbolic threat on an individual level is scarce, however. Stephan et al. (2015) gave as examples loss of face or honor and undermining an individual's self-identity or self-esteem. Relatedly, research from the values literature has shown that perceptions of greater self-outgroup value similarity (i.e., lower individual-level symbolic threat) predict more positive attitudes toward the outgroup (Schwartz et al., 1990; Struch & Schwartz, 1989; Wolf et al., 2019).

We study individual-level autonomy-threat expectations within a group context because groups commonly develop shared cultural norms, traditions, language, and interests that give group members a framework for how to behave so that they are understood and accepted by fellow group members (Smith et al., 2015). Outgroup individuals may be seen to have different, unfamiliar cultural and relational norms, and therefore individuals may expect they could not interact genuinely with these individuals. Alongside the freedom for genuine self-expression, another facet of autonomy – namely, agentic decision-making – may be seen to be threatened because shifting socioeconomic conditions create a sense that professional opportunities are limited (Giddie, 2011). In other words, people may expect that their *personal* need for autonomy will be threatened or frustrated by a group with different shared

understandings and elicit avoidance or even hostility toward the group or their members. This might also suggest people differ in these expectations for different outgroups. Nevertheless, autonomy threat expectations are not reducible to symbolic threat, or a perceived conflict in values and world views. This is because autonomy threat expectations are explicitly concerned with an anticipated threat to the freedom to self-express one's feelings, interests, and values, rather than a clash between different values, more broadly.

We focus on expectations rather than experiences because it is often subjective perception or interpretation of the social context that is key to predicting people's impressions, feelings, and subsequent behaviors (e.g., Crisp & Turner, 2009; Esses et al., 2001; Pettigrew, 1979). Expectations of need satisfaction within an interaction, rather than actual experiences of need satisfaction, may be especially important in an intergroup context, where actual experiences with outgroup members are relatively scarce and expectations may play a more important role (Plant & Devine, 2003; Turner et al., 2007a). In the absence of high-quality individual interactions, individuals may have concerns that an increasingly diverse social world would create social interactions with members of the community who do not understand or accept them. From an SDT standpoint, these outgroup interactions thwart the autonomy need if one expects an interaction to undermine one's self-expression and puts pressure to be behave a certain way in order to connect with the outgroup interaction partners in their communities.

Expectations in Outgroup Interactions

Prior work from the intergroup attitudes literature has shown that individuals' often have negative expectations about interacting with outgroup members. For example, Mallett et al. (2008) found that people expect their interactions with outgroup members to go more poorly than they actually do, in part because they focus on group dissimilarities rather than

similarities (see also Britt et al., 1996). In addition, people have been shown to underestimate outgroup members' interest and willingness to interact with them (Shelton & Richeson, 2005), and to substantially overestimate outgroup members' negativity against the ingroup (e.g., Lees & Cikara, 2019; Moore-Berg et al., 2020; Waytz et al., 2014). Other evidence suggests that people make empathic forecasting errors by expecting that outgroup members will feel more negatively than they actually do, which then affects how they themselves expect to feel during the interaction (Moons et al., 2017).

In turn, such negative expectations can explain people's prejudice, or their preference for ingroups over outgroups. For instance, Butz and Plant (2006) found that participants who expected their interracial interaction partner to not be open to the interaction expressed more anger, behaved in a more hostile manner toward their partner, and perceived their partner as more hostile, compared to participants expecting an open partner. Similarly, expectations of being rejected, embarrassed, misunderstood, or offended by an outgroup member predicts intergroup anxiety and avoidance of interactions (Livingstone et al., 2020; Mendoza-Denton et al. 2002; Plant & Devine, 2003; Shelton & Richeson, 2005; Stephan & Stephan, 1985; Vázquez et al., 2018). Additional evidence that autonomy threat expectations may be at play here, specifically, comes from recent work showing that White Americans anticipate they will not be able to speak openly in inter-racial conversations without being seen to be prejudiced (Takahashi & Jefferson, 2021). Given the importance of engaging in intergroup contact to reduce prejudice (Pettigrew & Tropp, 2006; Pettigrew et al., 2011), such negative outgroup expectations are likely to keep prejudice alive by hindering smooth intergroup contact – or even preventing intergroup contact altogether. Ironically, however, positive intergroup contact may help correct such negative expectations (Plant & Devine, 2003).

Autonomy Threat Expectations, Intergroup Trust and Anxiety

The present studies also explored two likely mechanisms which could link autonomy threat expectations to outgroup attitudes: intergroup anxiety and trust. Intergroup anxiety may be experienced within actual and expected interactions with outgroups (Stephan & Stephan, 1985), and involves feelings of tension and distress that arise from anticipating difficulty in making a desired impression and receiving the desired reactions in intergroup interactions (Plant & Devine, 2003; Schlenker & Leary, 1982). It can aggravate prejudice (Wilder, 1993) and undermine intergroup relations (Islam & Hewstone, 1993). Importantly, negative expectations concerning interactions with an outgroup member have been shown to predict anxiety, which in turn predicted avoidance and hostility toward the outgroup member (Plant & Devine, 2003). Building on this prior evidence, we might then expect intergroup anxiety to help explain why high autonomy threat expectations predict less favorable outgroup attitudes.

Trust, on the other hand, is associated with feelings of security and comes from positive expectations of outgroup members' behaviors (Pettigrew & Tropp, 2008). Indeed, the lack of trust is an important influence on prejudice (Dovidio et al., 2002), and individuals who have more positive contact with outgroup members show more trust (Hewstone et al., 2006). Consistent with this evidence, numerous studies have supported intergroup anxiety and trust in explaining various effects on prejudice (e.g., Pettigrew & Tropp, 2008; Turner et al., 2007b; Turner et al., 2013), and feelings of autonomy have been linked to feelings of trust and security (La Guardia et al., 2000). In short, then, we expect autonomy threat expectations to link to more prejudice against outgroups through higher intergroup anxiety and lower trust of the outgroup.

Present Research

In four studies, we explored the role that autonomy threat expectations play in outgroup attitudes and behaviors. As a starting point to our research, we set out to test one

core hypothesis: that anticipating threat to autonomy from an outgroup interaction would be linked to more negative attitudes, as indicated by less liking and more prejudice towards the outgroup. We tested this hypothesis with a larger sample derived from four countries, to examine the robustness and generalizability of the phenomenon. In Studies 2 and 3, we explored the real-world relevance of this link by testing its relation to voting decisions. In a final study, we aimed to examine whether expectations of autonomy threat can be manipulated, thus opening up the possibility for interventions to reduce prejudice by increasing outgroup autonomy threat expectations. We expect that this evidence will be useful in informing future efforts to reduce prejudice and its negative impacts on minority group members (Blank, 2001; Branscombe et al., 1999; Dovidio et al., 2008; Nelson, 2002; Richeson & Trawalter, 2005; Steele & Aronson, 1995).

Study 1

In Study 1, we sought to understand how autonomy threat expectations would relate to outgroup attitudes in four countries: the UK, the US, Greece, and Turkey. We focused on refugees from Syria as the outgroup given the large proportion of Syrian refugees living in Greece and Turkey (Anagnostopoulos et al., 2016; Kirişci, 2016), and because they have been the focus of immigration debates in the UK and the US at the time the research was conducted (e.g., Factcheck, 2017; Ignatieff et al., 2016; Rettberg & Gajjala, 2016). Further, in this study we measured not only autonomy threat expectations, but also expectations for the threat or satisfaction of the psychological needs of relatedness (i.e., the experience of belonging) and competence (i.e., the experience of being efficacious in what one does; Ryan & Deci, 2017). Theorizing within self-determination theory posits that not only autonomy, but also competence and relatedness needs, are critical for well-being and we might anticipate that expecting outgroup members to provide satisfaction for these psychological

needs would be as important as the expectation for autonomy. Moreover, given the three psychological needs are strongly correlated (Church et al., 2013), it is distinctly possible that individuals' expectations that their relatedness or competence psychological needs would be thwarted (e.g., competent thwarting, relatedness thwarting) would confound effects of autonomy threat expectations. Yet given the theoretical foundations for hypothesizing that autonomy threat expectations are independently important within interpersonal relationships (Deci & Ryan, 2014), we expected that autonomy threat expectations would explain independent variability alongside these other need expectations. Finally, this study also explored whether any effects of autonomy threat expectations on outgroup attitudes would be mediated by intergroup anxiety and trust regarding Syrian refugees.

Method

Participants and procedure. We conducted a power analysis to determine the required sample size for a multiple regression analysis. The required sample size to detect a medium-sized effect with a power of 90% is 109 participants. Five-hundred and ninety-one individuals across four countries took part. Of these, 128 were recruited in the United States, 187 from the United Kingdom, 137 from Turkey, and 139 from Greece. Overall, ages ranged from 18 to 70 years ($M=23.51$ years, $SD=7.87$), and 236 (39.9%) were male. In all cases, we aimed to recruit as many participants as possible in a set time-period (e.g., in an academic semester). Community participants (who were not compensated) were recruited by an experimenter, through word of mouth, online, and by email. To get a sufficient subsample, they were also recruited using a snowball sampling technique, where the online link to the questionnaire was emailed to community members who expressed an interest, and they were asked to forward the link to others. This and all further studies received ethical approval from

the School of Psychology at [masked] University Ethics Committee, and all participants gave their informed consent prior to inclusion in the study.

In all samples, participants completed the following measures relevant to this study: measures of autonomy, relatedness, and competence expectations, and liking and prejudice measures concerning views about Syrian refugees. The items for these measures showed the same factor structure across countries, and therefore we collapsed across the four countries when conducting primary analyses. However, to explore the possibility that effects differ across countries, we controlled for differences between them and tested for potential moderating effects by country.¹

Measures

Autonomy, competence, and relatedness threat expectations. We adapted the need satisfaction scale by La Guardia et al. (2000) to measure perceived threats to autonomy, competence, and relatedness needs in this study. Four items each were used to measure expectations of how the relatedness and competence needs would be threatened when future waves of immigrants came into the country, including, I'd feel "inadequate and incompetent" (competence) and "closeness and intimacy" (a lot of distance in my relationship with the community). Autonomy was measured with the three original items (e.g., "free to be who I am" (reverse-coded)), to which we added two items, including "like I can't make important decisions about my life", and "unable to pursue the activities I value"). Items were rated on a 7-point response scale that ranged from 1 "Not at all true" to 7 "Very true". The perceived threat to the autonomy need scale was measured reliably across countries (α =.68-.80). While

¹ Studies added measures that were beyond the scope of the present paper. These measures include cultural identification, dehumanization, perceptions of the changes as a result of immigration, human values and reasons for holding these values, hypothetical voting intentions, perceived threat from immigrants, emotions regarding the election, perceived warmth and competence, emotions, empathy, similarity, and familiarity with respect to immigrants.

the measures of competence and relatedness expectations showed acceptable reliabilities in the UK and the US (α s=.71 and .81 for competence, and .76 and .72 for relatedness; for the UK and US respectively), relatedness did not measure well in either Greece nor Turkey (α s=.41 and .53), and relatedness did not measure well in Turkey (α =.56; α =.69 in Greece). As such, those primary analyses controlling for relatedness and competence need threat expectations were conducted using the UK and US samples. All three subscales (autonomy, competence, and relatedness) were coded such that higher scores reflected lower need expectation, or more need threat.

Liking. Participants rated their liking toward the group through five items, including how much they like them, how interested they would be to meet and spend time with them, and how comfortable they would feel with them, on a scale from 1 (*not at all*) to 7 (*very much*). Items loaded on one common factor and showed high internal consistencies (α s=.92 to .96).

Prejudice. We measured participants' prejudice toward Syrian refugees with a shortened version of the blatant and subtle prejudice scale (Pettigrew & Meertens, 1995). Participants responded to 11 statements including "Syrian refugees have jobs that Americans (British people/Greek people/Turkish people) should have" in a random order on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).² Although the items are often combined to form the two factors blatant and subtle prejudice, the data favored a one-factor structure which showed very good internal consistencies (α s=.83 to .89 across countries). We therefore combined all items to a single prejudice score.

Intergroup anxiety. Intergroup anxiety was measured with seven items adapted from Stephan and Stephan (1985). Specifically, we presented the items *apprehensive*, *uncertain*,

² 15 items in total were measured, but 4 measured similarity, which was outside the scope of this paper

worried, anxious, confident, at ease, and awkward in a randomized order. We decided to drop items such as *comfortable, trust, and friendly* from Stephan and Stephan's original 12-item measure because we wished to isolate the effects of intergroup anxiety as much as possible and these items exhibit a strong theoretical overlap with other constructs of interest in the present research (e.g., trust). Participants indicated on a scale from 1 (*not at all*) to 7 (*very much*) to what extent they would feel these emotions when meeting a typical refugee from Syria. Items were reverse-coded as appropriate and averaged to create a composite with higher scores reflecting more anxiety ($\alpha=.76$ to $.88$).

Intergroup trust. We presented two items to measure trust ($r_s=.49$ to $.56$), adopted from Turner, West, and Christie (2013). Participants answered the questions "I would be able to trust a typical refugee from Syria as much as any other stranger" and "I would be able to trust a typical Syrian refugee with personal information about myself" on a scale from 1 (*not at all*) to 7 (*very much*).

Results

Primary analysis across countries. Table 1 provides descriptive statistics for these variables, separately for each of the four countries, and Table 2 presents correlations, separately for each country. First, we regressed the liking and prejudice composites onto autonomy threat expectations in two regression analyses; we also controlled for differences across countries (dummy coded) and moderated main effects by country. This procedure allowed us to check whether effects differed as a function of country. Findings indicated that across (and controlling for) countries, individuals who expected perceived threat to their autonomy need from Syrian refugees showed less liking toward this group, $b=-0.57$, $SE=0.05$, 95% CI [-0.66, -0.48], $t(564)=-12.56$, $p<.001$, $pr=-.47$, and more prejudice, $b=0.43$, $SE=0.04$, 95% CI [0.36, 0.50], $t(563)=12.01$, $p<.001$, $pr=.45$. Autonomy threat expectations

did not interact with country in predicting liking, [t]s<1.25, ps >.21, or prejudice, [t]s<1.51, ps >.13.

Independent effects of threat to psychological needs. Second, just for the UK and the US – the two countries in which we reliably measured competence and relatedness expectations – we evaluated models in which all three need threat expectations were included simultaneously.³ Here, we found that controlling for country, those who expected relatedness threat reported lower liking of refugees, $b=-0.41$, $SE=0.08$, 95% CI [-0.57, -0.25], $t(310)=-5.14$, $p<.001$, $pr=-.25$ (there was no relation with expecting competence threat, $b=0.16$, $SE=0.09$, 95% CI [-0.01, 0.33], $t(310)=1.86$, $p<.001$, $pr=.11$). Importantly, even after controlling for both needs, participants reported less liking when they expected autonomy threat, $b=-0.31$, $SE=0.09$, 95% CI [-0.50,-0.14], $t(310)=-3.39$, $p=.001$, $pr=-.19$.

In addition, participants who expected to perceived threat to their autonomy need reported more prejudice, $b=0.27$, $SE=0.07$, 95% CI [0.14, 0.43], $t(310)=3.80$, $p<.001$, $pr=.21$, controlling for relatedness threat, $b=0.19$, $SE=0.06$, 95% CI [0.06, 0.31], $t(310)=2.94$, $p=.004$, $pr=.17$ (no relation with competence threat, $b=0.03$, $SE=0.07$, 95% CI [-0.11, 0.16], $t(310)=0.44$, $p=.659$, $pr=.03$).⁴

Is the effect of autonomy threat expectation on outgroup attitudes mediated by anxiety and trust? Measures of liking (reversed) and prejudice were highly related and were combined to form a composite measure of negative attitudes toward Syrian refugees (r

³ Although we had low internal reliabilities for competence and relatedness threat composites in Turkey and Greece, we conducted additional analyses including participants from all four countries (UK, US, Turkey, Greece) and the two most face-valid items for relatedness (I would feel a lot of closeness and intimacy with them), and competence (I would feel like a competent person), as well as the autonomy threat composite. Results showed that across all three countries, autonomy threat expectations related to lower liking ($t=-7.69$, $p<.001$) and higher prejudice ($t=8.80$, $p<.001$), when controlling for relatedness ($t=-6.06$, $p<.001$; $t=2.17$, $p=.03$) and competence ($t=-0.98$, $p=.33$, $t=0.11$, $p=.92$).

⁴ Similar effects in terms of direction and significance were identified for all four countries, except, across the entire sample, competence expectations significantly predicted more prejudice.

across countries= $-.76, p < .001$). Using PROCESS bootstrapped models with 5000 iterations (Hayes, 2017), we estimated the indirect effects of autonomy threat expectation on negative outgroup attitudes through intergroup anxiety and trust. This model, including intergroup anxiety and trust simultaneously as mediators, showed that autonomy threat expectations predicted less trust, $b = -.42, SE = .06, t(553) = -7.21, p < .001$, and more anxiety, $b = .23, SE = .04, t(553) = 5.82, p < .001$. An indirect link was present through trust, $b = 0.21, SE = 0.04, 95\% CI [0.14, 0.28]$, as well as through anxiety, $b = 0.03, SE = 0.01, 95\% CI [0.01, 0.05]$. When controlling for these two constructs, the link between autonomy threat expectations from refugees and negative outgroup attitudes was weaker, though still significant, $b = 0.27, SE = 0.03, t(553) = 8.55, p < .001$ (from $t \approx 12.00, p < .001$).

Discussion

Study 1 provided initial evidence for our hypothesis that expecting an outgroup member to thwart one's need for autonomy predicts less positive attitudes toward the outgroup. Specifically, individuals who expected Syrian refugees to thwart their need for autonomy expressed less positive attitudes toward them, and this was independent of other expectations of need thwarting. Importantly, we found this effect consistently across four countries, the US, the UK, Greece, and Turkey, despite differing levels of exposure to the target outgroup, Syrian refugees. Turkey in particular may represent a less Western context (e.g., Makino et al., 2004; van der Meer et al., 2006), offering initial support for a generalizable effect of autonomy threat expectations. Finally, we found that intergroup trust and anxiety indirectly linked autonomy threat expectations to outgroup attitudes, suggesting that expecting autonomy to be thwarted was related to more negative outgroup emotions. A limitation of Study 1 worth noting is that the samples were recruited through available means, and so samples were not representative of the culture from which they came, nor were they

matched on demographic variables across countries. Informed by study results, we drew generalized conclusions across the samples, because we believe that patterns observed despite recruiting differences were compelling. However, differences observed within countries (i.e., from country to country) may not be generalizable. In addition, in this first study we measured our conceptual model using self-reported measures of both expectations and attitudes. Therefore, in Study 2 we aimed to assess the role of autonomy expectations in real world prejudice-related behavior.

Study 2

While the first study provided support for the role of autonomy threat expectations in intergroup perceptions, it relied on self-reported attitudes. In a second study we sought to test the real-world significance of this finding by tapping a behavioral correlate of the attitudes measured in Study 1. To do this, in Study 2 we collected data on UK participants' voting decisions in the 2016 referendum on EU membership ("Brexit") within a month of the vote (July, 2016), and we tested whether autonomy threat expectations toward two relevant outgroups predicted voting decisions. Studies suggested one of the strongest predictors of the decision to vote leave was anti-immigration sentiment (De Vreese & Boomgaarden, 2005; Hobolt, 2016), a dynamic which echoes motivations by other countries to exclude stigmatized others from EU membership (Azrout et al., 2011; Benhabib & Isiksel, 2006). Given this link between anti-immigration sentiments and the decision to vote *remain* or *leave*, people's voting decision may to some extent reflect levels of prejudice. Hence, people's voting decision may function as a real-world behavioral outcome indicative of people's favorability toward outgroups.

Participants were asked to reflect on their views toward Muslim and Polish immigrants as outgroups, given that these are prevalent ethnic and religious groups in the UK

and because evidence consistently points to biases against these groups in the UK (Strabac & Listhaug, 2008). Moreover, both Muslim and Polish immigrants have been frequently identified as targets of anti-immigration sentiments in the debates surrounding the UK referendum (e.g., Creighton & Jamal, 2020). While Brexit first and foremost targets immigrants from the EU, there is evidence that anti-Muslim sentiments played a dominant role in decisions to vote ‘leave’ (Burnett, 2017; Swami et al., 2017). For both groups, we measured expected autonomy threat, favorability toward the groups, and the potential mediators intergroup anxiety and trust.

Method

Participants and procedure. The required sample size to detect a medium-sized effect with a power of 90% is 109 participants. One-hundred and twenty-eight individuals of British nationality who voted in the referendum took part in this study (75 women, age range: 18 to 73 years, $M_{age} = 34.52$ years). One-hundred and sixteen participants identified as White European, four as Asian, and eight indicated ‘Other’. Forty participants were of Christian faith, two of Buddhist faith, one of Hindu faith, five indicated ‘Other’, and 80 were non-religious. Participants took part in a study conducted on Prolific Academic (prolific.ac), conducted one month after the UK referendum took place.

We presented all participants with surveys presenting two outgroups (Muslim immigrants, Polish immigrants) in random order. For each group, participants completed the perceived threat to the autonomy threat scale ($\alpha > .89$) as an expanded eight-item measure (see Appendix 1) of autonomy threat expectations, which added the items [Interacting with typical Muslim/Polish immigrants, I would feel...] “in touch with my real values and feelings”, “like I can express the real me”, and “out of touch with who I am”. Positive and

negative items were averaged and then positive items were subtracted from negative ones for a value representing autonomy threat expectation.

Apart from these additions, we used the same scale as in the previous studies: anxiety ($\alpha > .88$), trust ($r_s > .46$), liking ($\alpha > .91$), and prejudice ($\alpha > .89$). All measures were used as in Study 1, but we dropped one item from the measure of prejudice because it assessed prejudice against people of different color and physical characteristics, which may not necessarily apply to Muslim and Polish immigrants. Finally, we asked whether participants voted remain or leave in the 2016 UK referendum. Forty-seven reported they chose to leave the EU, whereas 81 chose to remain.

Results

Effects of autonomy threat expectation on outgroup negative attitudes. We combined measures of liking (reversed) and prejudice ($r = -.75, p < .001$) to form a composite measure of negative attitudes toward Muslim immigrants and toward Polish immigrants ($r = -.59, p < .001$). Table 3 provides descriptive statistics and correlations of all study variables concerning Muslim and Polish immigrants. Negative attitudes toward Muslim immigrants was regressed onto Muslim autonomy threat expectations, while a separate model considered relations for Polish immigrants. Those who expected autonomy threat from Muslim immigrants held more negative attitudes toward this group, $b = 0.26, SE = 0.03, 95\% CI [0.21, 0.32], t(126) = 8.86, p < .001$, and those who expected autonomy threat from Polish immigrants held more negative attitudes toward this group, $b = 0.20, SE = 0.04, 95\% CI [0.13, 0.27], t(126) = 5.77, p < .001$. These results are consistent with the findings in Study 1 and support our hypothesis that autonomy threat expectations would relate to negative outgroup attitudes.

Voting behaviors. First, we aimed to validate participants' decision to vote as a behavioral outcome reflecting favorability toward outgroups. A logistic regression predicting voting decisions (coded 1 = remain, 2 = leave) showed that negative attitudes toward Muslim immigrants predicted the decision to leave the EU, $b = 0.30$, $SE = 0.08$, $Wald = 13.73$, $p < .001$, although unexpectedly there was no link between Polish negative attitudes and voting decision, $b = -0.10$, $SE = 0.10$, $Wald = 0.904$, $p = .342$. These findings partially supported our notion that the voting measure is a valid behavioral outcome reflecting outgroup attitudes.

Is the effect of autonomy threat expectation on voting mediated by intergroup emotions and attitudes? We sought to examine a full conceptually driven sequential mediation model. Building on Study 1 and Study 2 results, we theorized that autonomy threat expectations in relation to Muslim immigrants link to more negative outgroup emotions, which relate to negative attitudes, and in turn to more conservative voting behaviors to leave the EU. To test this model, we subtracted intergroup trust from intergroup anxiety ($r = -.49$), so that higher scores reflected more negative emotions.

A PROCESS bootstrapped model with 5000 iterations (number 6) was conducted examining the sequential mediation as a four-step process: Autonomy expectations -> Negative Emotions -> Negative Attitudes -> Brexit vote. Findings of this model showed support for two alternative pathways. First, autonomy threat expectations directly linked to negative attitudes, which in turn related to Brexit voting, $b = 0.16$, $SE = 0.06$, 95% CI [0.06, 0.31]. Second, there was evidence for the full mediation path, $b = 0.26$, $SE = 0.09$, 95% CI [0.13, 0.49]. When controlling for these pathways, the link between autonomy threat expectations from Muslim immigrants and voting became non-significant, $b = 0.03$, $SE = 0.10$, $Wald = 0.35$, $p = .728$.

Discussion

Study 2 results identified that higher autonomy threat expectations from Muslim immigrants predicted the decision to vote 'Leave' in the 2016 UK referendum. This association could be attributed to individuals' negative attitudes toward Muslim immigrants, indicating that those who expected more autonomy threat from Muslim immigrants had less positive attitudes towards them, which in turn explained their decision to leave Europe.

Another result of Study 2 was that the link between autonomy threat expectations from Muslim immigrants and voting decision was mediated by outgroup emotions. It is important to note that after the inclusion of intergroup trust and anxiety, there was still a tendency for a direct effect of autonomy threat expectations on voting decisions, suggesting additional mediators might be identified to explain why autonomy threat expectations link to intergroup behaviors.

Unexpectedly, while these patterns of autonomy threat expectations from Muslim immigrants were as expected, autonomy threat expectations from Polish immigrants did not seem to play a role in predicting voting decisions. This suggests that voting leave in the 2016 UK referendum was at the time more strongly linked with low autonomy threat expectations from Muslim immigrants than from Polish immigrants. This finding is in line with evidence showing that anti-Muslim sentiments were a crucial factor in people's decision to vote to leave (Burnett, 2017; Swami et al., 2017) and with recently growing negativity toward Muslims as a result of terrorist attacks (Dunwoody & McFarland, 2017).

Study 3

Given Study 2 gave important, but mixed, support for the role of autonomy threat expectations in voting decisions, we attempted to conceptually replicate the paradigm, this time predicting conservative or liberal voting decisions in the 2017 UK General Election, a political choice that is closely aligned with issues related to immigration and with the recent

decision to leave the EU (e.g., BBC General Election 2017). Negative attitudes toward outgroups have been linked to conservative voting decisions where outgroup exclusion is at stake (Greenwald et al., 2009; Whitley, 1999), and we predicted that autonomy threat expectations from immigrants, measured at baseline, would predict conservative or liberal voting decisions made three weeks in the future. We additionally controlled for the potentially confounding influence of relatedness and competence need expectations (Church et al., 2013), as in Study 1, to test independent effects of autonomy threat expectations.

Method

Participants and procedure. The required sample size to detect a medium-sized effect with a power of 90% is 109 participants. One-hundred and sixty-three individuals of British nationality took part in an initial session of this study on Prolific Academic (prolific.ac) three weeks before the 2017 UK General Election (75 women, age range: 18 to 72 years, $M_{\text{age}}=36.88$ years); of these, 156 (96%) completed a second online survey sent out in the hours after polls closed. One-hundred and thirty-three participants identified as White European, five as Asian, and two as African; the remainder identified as ‘Other’.

Participants completed the same measure of autonomy ($\alpha=.77$), relatedness ($\alpha=.76$), and competence ($\alpha=.78$) expectations as in previous studies, focusing on expectations from new immigrants to the UK. This study assessed participants’ prejudice toward immigrants using the 20-item blatant and subtle prejudice scale described in Study 1; once again data favored a one-factor structure ($\alpha=.93$). After the 2017 UK General Election, which took place three weeks later, we asked participants which party they voted for. We coded the parties for socially liberal or conservative party standing. Of the total sample, 39.3% voted for the Labour Party, 5.5% for the Liberal Democrats, and 2.4% for the Green party; these parties were coded as socially liberal voting. An additional 28.2% voted Conservative, and 0.6%

voted for the UK Independence Party (UKIP); these were coded as conservative voting (Wheatley, 2015). Support for Plaid Cymru or the Scottish National Party were not coded as their dominant party platform is not clearly socially conservative or liberal. Eleven respondents (6.7%) did not vote.

Previous voting behaviors in the 2015 general election, the most immediate national voting opportunity before our outcome variable of 2017 voting, was measured as a control variable using the same question. Of all participants, 127 (77.9%) reported they had voted in the 2015 as well as the 2017 election; only these were included in the analyses controlling for voting in 2015.

Results

Effects of autonomy threat expectation on prejudice. The descriptive statistics and correlations of all study variables are presented in Table 4. Prejudice toward immigrants was regressed onto autonomy, relatedness, and competence expectations in a simultaneous model to estimate their independent effects. Those who expected more autonomy threat from immigrants reported more prejudice, $b=-0.50$, $SE=0.10$, 95% CI [-0.71, -0.30], $t(152)=-4.82$, $p<.001$, $pr=0.36$, whereas no effects were found from relatedness expectations, $b=-0.02$, $SE=0.10$, 95% CI [-0.22, 0.19], $t(152)=-0.18$, $p=.86$, $pr=-0.01$, or competence expectations, $b=0.03$, $SE=0.12$, 95% CI [-0.21, 0.27], $t(152)=0.24$, $p=.81$, $pr=0.02$. These results are consistent with the findings in Studies 1 and 2 and support our hypothesis that autonomy threat expectations would uniquely relate to less positive outgroup attitudes.

Effects of autonomy threat expectation on voting. A simultaneous logistic regression predicting voting decisions (coded 1=*conservative*, 2=*liberal*) indicated expecting autonomy threat from immigrants predicted conservative rather than liberal voting three weeks later, $b=0.57$, $SE=0.26$, Wald=4.84, $p=.03$. As was the case for prejudice, neither

relatedness need expectations, $b=-0.19$, $SE=0.26$, $Wald=0.51$, $p=.47$, nor competence need expectations, $b=-0.05$, $SE=0.30$, $Wald=0.03$, $p=.86$, linked to voting.⁵

We then examined whether the relation between autonomy threat expectation and voting decisions would remain when accounting for previous voting behaviors, to estimate a time course for the relation between autonomy threat expectations and subsequent liberal versus conservative voting decisions. This second analysis controlled for relatedness and competence psychological need expectation, and also controlled for previous voting behavior. Findings of a logistic regression showed the effect of autonomy threat expectation on voting remained significant, $b=0.62$, $SE=0.26$, $Wald=0.58$, $p=.02$, when controlling for the marginal effect of previous voting behaviors, $b=0.01$, $SE=0.01$, $Wald=3.58$, $p=.06$, and the non-significant effects of relatedness and competence threat expectations ($ps>.24$).

Further analyses examined potential mediation for the link between autonomy threat expectation and voting behaviors through prejudice. Indeed, higher prejudice was linked to more conservative voting three weeks later, $b=0.59$, $SE=0.20$, $Wald=8.65$, $p=.003$. Importantly, the indirect effect was significant, $b=0.28$, $SE=0.14$, 95% CI [0.09, 0.63], suggesting that those who expected autonomy threat experienced more prejudice, and as a result they were more likely to vote for a socially conservative party. When accounting for attitudes, the effect of autonomy threat expectations on voting behaviors became non-significant, $b=0.33$, $SE=0.28$, $Wald=1.35$, $p=.25$.⁶

⁵ We also asked participants how they voted in the 2016 EU referendum (Brexit) to explore whether links with Brexit decisions would replicate Study 2's findings (in this sample, 30.7% voted to leave; 46.6% of the sample voted to remain, and the remainder did not vote). Interestingly, although this was not the focus of this study, similar results were identified for reports of EU referendum votes; neither relatedness nor competence expectations related to this 'Brexit' vote ($ps < .13$), but expecting autonomy threat from immigrants predicted having voted to leave ($Wald=8.08$; $p=.004$).

⁶ An additional analysis was conducted to examine the alternative model – that is, that autonomy threat expectations would mediate the relation between prejudice and voting. Data did not support this second conceptualization, $b=-.07$, $SE=.09$, 95% CI [-0.28, 0.09].

Discussion

Study 3 conceptually replicated the previous study results with a prospective longitudinal design, showing that expecting immigrants to the UK to threaten one's need for autonomy predicted voting conservatively, even when controlling for other basic psychological needs (i.e., relatedness, competence) which might have better accounted for voting behaviors (Ryan & Deci, 2017). In additional exploratory models, this effect held even when controlling for past voting behaviors, providing some evidence for shifting likelihood to vote conservatively for those who viewed their autonomy would be threatened by immigration.

Study 4

The previous studies provided consistent support for the generalizability and real-world significance of autonomy threat expectations in an intergroup context. In these studies, we have assumed a causal relationship such that autonomy threat expectations would affect outgroup attitudes. However, the reverse effect may be true; that is, prejudiced attitudes may instead foster expectations that outgroup interactions will threaten one's autonomy. Study 4 addressed this concern by testing the causal effect of autonomy threat expectations on outgroup perception and evaluation, and once again tested for potential mediation by intergroup trust and anxiety. To do this, we manipulated participants' expectations of autonomy threat expectations from a relatively unknown group – Galicians.

Method

Participants and Procedure

We conducted a power analysis to determine the required sample size for an ANOVA with three groups. The required sample size to detect a medium-sized effect with a power of 90% is 207 participants. One-hundred and forty-nine students from Clarkson University and

98 students from the Illinois Institute of Technology took part in this study ($N=247$). The two samples did not differ in terms of the results and were combined. In the total sample, 151 were men, 94 were women, and two preferred not to answer. They varied in ages from 17 – 38 years, with a mean age of 19.75. One-hundred and sixty-four participants identified as White, 36 as Asian, 14 as Hispanic, 13 as Black, 16 indicated ‘Other’ and four preferred not to answer. One-hundred and sixteen participants were of Christian faith, 12 of Muslim faith, four of Buddhist faith, three of Hindu faith, 23 indicated ‘Other’, 86 were non-religious, and three preferred not to answer.

Participants read a short paragraph manipulating expectations of autonomy satisfaction from Galicians. Specifically, this paragraph explained that an ethnic group called Galicians will immigrate in the next few years, and it described how members of this group are perceived by their society. Participants were randomly assigned to an autonomy threat expectations condition, to an autonomy satisfaction expectations condition, or to a comparison condition (see Appendix 2). In all three conditions, Galicians were also described as typically friendly to increase the chance that the manipulation was independent of a more general expectation for warmth of the outgroup. Subsequently, we assessed participants’ liking ($\alpha=.87$), trust ($r=.25$), and anxiety ($\alpha=.85$) as measured in Study 1, and in lieu of the prejudice measure, which was less appropriate to this hardly known group, their behavioral tendencies as described below.

Measures

Autonomy threat expectations. As a manipulation check, we used the expanded eight-item measure (Appendix 1). Items were reverse coded as appropriate and averaged to create a composite with higher scores reflecting greater autonomy threat expectations ($\alpha=.90$).

Behavioral tendencies. We used the same five items to assess attitudes as in Study 1. To identify intentionality that has important implications for intergroup interactions, we also assessed behavioral tendencies by adopting a measure from Cuddy et al. (2007) in which participants indicate the likelihood of people's behavioral tendencies toward the group on a scale from 1 (*extremely unlikely*) to 7 (*extremely likely*). The scale presents four behavioral tendencies (active facilitation, active harm, passive facilitation, passive harm), each measured with three items. Each behavioral tendency score was internally consistent ($\alpha > .77$). Outgroup attitudes and behavioral tendencies showed high intercorrelations ($\alpha = .84$), and were standardized and combined into a composite after 'harm' scores were reverse coded.

Results

Analytic Approach. We conducted an ANOVA analysis with condition (autonomy threat vs. autonomy satisfaction vs. comparison) as the between-subject factor predicting the dependent variables autonomy threat expectations, positive attitudes and tendencies, prejudice, intergroup anxiety, and trust. Table 5 shows the descriptive statistics and correlations of all study variables across condition and Figure 1 shows the differences between the conditions on all outcomes.

Manipulation check. Condition predicted autonomy threat expectations, $F(2, 244) = 9.99, p < .001, d = 0.57$. Contrasts comparing the experimental conditions to the comparison condition showed that participants in the autonomy threat condition expected higher autonomy threat ($M = -1.46, SE = 0.22$) than participants in the comparison condition ($M = 2.65, SE = 0.22$), CI 95% for difference $[0.57, 1.81], p < .001, d = 0.58$. The autonomy satisfaction condition ($M = -2.72, SE = 0.23$) and the comparison condition did not differ from each other, CI 95% for difference $[-0.21, 0.84], p = .836, d = 0.03$.

Outgroup attitudes and tendencies. The effect of condition on outgroup attitudes and tendencies was marginal, $F(2, 244)=2.80, p=.063, d=0.30$. Yet planned contrasts showed that participants in the autonomy threat condition were less positive toward the outgroup ($M=5.23, SE=0.09$) than participants in the comparison condition ($M=5.50, SE=0.09$), CI 95% for difference $[-0.51, -0.03], p=.027, d=0.34$. The autonomy satisfaction condition ($M=5.45, SE=0.09$) and the comparison condition did not differ from each other, CI 95% for difference $[-0.29, 0.19], p=.69, d=0.07$. The experimental conditions differed marginally from each other, CI 95% for difference $[-0.02, 0.47], p=.072, d=0.27$. For more details on how condition related to attitudes and the individual behavioral tendencies, see Table 6.

Trust and anxiety. Condition had a significant effect on anxiety, $F(2, 244)=5.00, p=.007, d=0.40$, and trust, $F(2, 244)=3.01, p=.051, d=0.31$. In particular, participants in the autonomy threat condition reported more anxiety ($M=3.68, SE=0.11$) and lower trust ($M=4.36, SE=0.13$) than participants in the comparison condition ($M=3.21, SE=0.11; M=4.72, SE=0.13$), CI 95% for difference $[0.15, 0.79], p=.004, d=0.45$, CI 95% for difference $[-0.72, 0.01], p=.055, d=0.31$, respectively. The autonomy satisfaction condition ($M=3.27, SE=0.12; M=4.78, SE=0.13$) and the comparison condition did not differ from one another on anxiety and trust, CI 95% for difference $[-0.26, 0.38], p=.72, d=0.06$, CI 95% for difference $[-0.30, 0.43], p=.06, d=0.57$. The experimental conditions differed from one another in predicting anxiety, CI 95% for difference $[-0.73, -0.09], p=.012, d=0.39$, and trust, CI 95% for difference $[0.06, 0.79], p=.024, d=0.35$.

We tested whether the effects of condition on attitudes and tendencies were mediated by anxiety and trust. The analyses above showed that the autonomy threat and satisfaction conditions differed marginally from each other on attitudes and tendencies, and significantly on trust and anxiety. In a mediational analysis with attitudes and tendencies as the outcome,

both trust, $b=0.13$, $SE=0.06$, 95% CI [0.01, 0.27], and anxiety revealed indirect effects, $b=0.06$, $SE=0.04$, 95% CI [0.01, 0.16]. After the inclusion of these constructs, the direct effect of condition became non-significant, $b=0.03$, $SE=0.11$, 95% CI [-0.19, 0.24], $t(160)=0.26$, $p=.79$.

Moreover, the autonomy threat and the comparison condition differed from each other on attitudes and tendencies, on anxiety, and marginally on trust. A mediational analysis showed that both trust, $b=0.10$, $SE=0.05$, 95% CI [0.01, 0.22], and anxiety indirectly linked condition to positivity, $b=0.10$, $SE=0.04$, 95% CI [0.03, 0.21]. Accounting for the variance of trust and anxiety, the direct effect of condition became non-significant, $b=0.07$, $SE=0.11$, 95% CI [-0.14, 0.28], $t(162)=0.67$, $p=.51$.

Discussion

Study 4 manipulated participants' expectations of autonomy threat from an unfamiliar immigrant group. Our hypotheses were partially supported - they indicated that when the outgroup was described as threatening autonomy, it elicited less positive evaluations than at baseline. Moreover, these effects of autonomy threat expectations on outgroup attitudes were consistently mediated by intergroup anxiety and trust. That is, people who expected a group to threaten their need for autonomy reported more anxiety and less trust, which in turn explained their less positive evaluations of the group. Interestingly, the autonomy satisfaction condition did not differ from the comparison condition. While this finding was inconsistent with our expectation at the outset of the study, it is consistent with the view that autonomy threats, rather than autonomy satisfactions, drive the attitude effects we observed in previous studies, and it is in line with recent work by Kachanoff and colleagues (2019; Study 4) showing that collective autonomy restrictions reduced perceived collective autonomy when

compared to a neutral control, whereas autonomy support did not increase perceptions beyond the neutral control comparison.

General Discussion

A large body of research provides evidence that individuals respond negatively to others who are seen as belonging to an outgroup (for reviews see Brewer & Brown, 1998; Richeson & Sommers, 2016). The present work was aimed at broadening our understanding of the reasons for negative attitudes toward outgroups by investigating the role of autonomy threat expectations in outgroup attitudes and real-world behavior. In line with our hypotheses, we consistently found that expectations of autonomy threat by the outgroup related to negativity towards that outgroup. Our findings build on previous work on outgroup expectations, which shows that people who expect a negative interaction with an outgroup member are more anxious and avoidant about an interaction and behave with greater hostility than people who expect a more positive interaction (Butz & Plant, 2006; Mendoza-Denton et al., 2002; Plant & Devine, 2003; Shelton & Richeson, 2005; Stephan & Stephan, 1985). Our work also adds to the literature on Intergroup Threat Theory by providing novel evidence that autonomy-threat expectations may be regarded as one type of individual-level symbolic threat (Stephan et al., 2015). The present studies add a piece of the puzzle of *what* people are anxious about when going into an intergroup interaction that then fuels their greater outgroup hostility. We further expand on previous work linking experiences of autonomy need frustration to more physical and implicit aggression (Moller & Deci, 2010; Weinstein et al., 2011) and lower interpersonal closeness (Hodgins et al., 1996; Patrick et al., 2007). The present studies suggest that individuals who expected their need for autonomy to be threatened by outgroup members evaluated them less positively and voted in ways that made immigration more difficult for such outgroup members. Part of the reason for this link

between autonomy-threat expectations and prejudice may be that outgroup others are less likely to share traditions, values, norms, and language that make self-expression easier.

Effects on Real-World Voting Behaviors

In the context of the 2016 European Union referendum in the UK, studies suggested one of the strongest predictors of the decision to leave was anti-immigration sentiments (De Vreese & Boomgaarden, 2005), a dynamic which echoes motivations by other countries to exclude stigmatized others from EU membership (Azrout et al., 2011; Benhabib & Isiksel, 2006). In Study 2, we took advantage of the opportunity provided by this “Brexit” vote to test the potential behavioral implications of autonomy threat expectations. We found that prejudice and expectations of autonomy satisfaction with respect to Muslim, though not Polish, immigrants related to “Leave” decisions. Indeed, outgroup prejudice and negative attitudes fully mediated the effects of autonomy threat expectations on voting decisions, supporting our hypothesis that voting behaviors were driven by outgroup attitudes. In Study 3, we conceptually replicated this finding with a prospective longitudinal design, showing that British voters were more likely to vote for a less inclusive conservative party when they expected autonomy threat from immigrants, an effect once again mediated by prejudice. Findings from this study show real-world relevance of expectations of autonomy threat expectations and inform work that attempts to explain the motivation behind such consequential and divisive decisions. This real-world relevance is crucial because it suggests that autonomy threat expectations can have widespread, societal consequences, explaining which political parties and policies people vote for. Because people commonly expect outgroup interactions to go more poorly than they actually do (e.g., Mallet et al., 2008; Moons et al., 2008), researchers and policymakers may wish to focus on finding ways to correct people’s misperceptions of the autonomy-threat posed by outgroups, thus promoting

inclusive voting decisions that are more rooted in reality.

Effects Across Cultures

The present research also demonstrates some cross-cultural support for the effects of autonomy threat expectations. While Study 4 recruited American participants and presented a little known outgroup, Studies 2 and 3 recruited British participants and presented immigrants as the target groups. Although both the UK and the US are Western countries and may be similar to a certain extent in terms of their perceptions and evaluations of immigrants, the prejudice literature has repeatedly shown that effects can differ markedly depending on the particular combination of host country nationals and immigrant groups (e.g., Schwartz et al., 1990). This is also illustrated by our finding in Study 3 that autonomy threat expectations from Muslim immigrants, but not from Polish immigrants, relate to voting behavior, a finding which presumably is driven by the fact that many British nationals based Brexit decisions on anti-Muslim sentiment (Burnett, 2017; Swami et al., 2017). Despite the potential for group differences, findings were generally robust across these combinations of host country nationals and immigrant groups on a range of outcomes. Of particular importance in this context is Study 1, which found consistent evidence for autonomy threat expectation effects across four countries which included Greece and Turkey. Turkey, in particular, represents a less Western context (e.g., Makino et al., 2004; van der Meer et al., 2006), offering first suggestions for a generalizable effect of autonomy threat expectations on favorability toward outgroups (e.g., Chirkov & Ryan, 2001). While this finding is noteworthy because it provides initial support for a universal effect across different cultures, it also suggests that the effect may be robust across different immigration contexts. That is, we obtained the effects despite substantial differences in immigration of Syrian refugees into the respective country and resulting repercussions for host country nationals including greater opportunities for direct

contact and experiences with this immigrant group.

Trust and Anxiety

In Studies 1, 2, and 4 we tested whether intergroup trust and anxiety would link autonomy threat expectations to outgroup attitudes. Generally, we found that autonomy threat expectations related to less trust for, and greater anxiety, which indirectly linked autonomy threat expectations to outgroup attitudes. These findings are in line with a few existing studies which suggest that experiencing autonomy support fosters trust of, and reliance on, others (e.g., La Guardia et al., 2000), and a much larger body of work showing that both trust and lower anxiety, in turn, is important for reducing prejudice (Dovidio et al., 2002). Here, we saw that dynamics of autonomy expectations relate to intergroup emotions, paralleling the effects of autonomy on emotions of both trust and anxiety in the context of close relationships (Hodgins et al., 1996; Knee et al., 2013; Patrick et al., 2007; Vansteenkiste et al., 2008).

Methodological Considerations

Our studies were varied in the methods used, in an aim to increase generalizability of the findings and address possible alternate explanations for the effects found. Across studies, we found comparable effects on attitude measures. Consistency among these measures was important because previous work has found that positive and negative attitudes are not interchangeable; for example, positive attitudes are better at predicting positive behaviors and behavioral intentions whereas negative attitudes are stronger predictors of negative behavioral intentions (Pittinsky et al., 2011). In addition, whereas three studies tested our hypotheses thinking of well-known outgroups where participants may have had other meaningful associations and pre-existing stereotypes (immigrants and refugees from Syria), we used a little-known group in Study 4, and like previous research that manipulated

experiences of one group (Billig & Tajfel, 1973; Brewer, 1979; Gaertner & Insko, 2000; Tajfel, 1982), we found that expectations of such groups could also be shaped in meaningful ways, yielding outcomes consistent with those for well-known ones.

Despite advantages of the work reviewed above, there are some limitations that should be addressed in future research. First, we predominantly collected self-report measures of attitudes. While the voting measure in Studies 2 and 3 was an important exception, future research may benefit from assessing attitudes in more indirect, subtle ways. For instance, it may be fruitful to test whether expectations of autonomy threat by the outgroup also operate on a more spontaneous and automatic level, that is, when outgroup favorability is assessed using implicit measures of prejudice (e.g., Implicit Association Test; Greenwald et al., 1998). Future research could also examine effects of autonomy threat expectations on other behavioral outcomes, such as verbal and nonverbal friendliness in an intergroup interaction (Dovidio et al., 2002).

Future work should also consider what autonomy threat entails. In the current studies, we measured autonomy threat holistically as is commonplace with SDT-derived measures and conceptualizations (Ryan & Deci, 2017). This operationalization includes feeling unable to express oneself authentically, making important decisions in one's life, and following one's values and interests. Yet, it could be that threats to feeling free to be oneself, for example, for fear of not being accepted might be driving negative attitudes. Or, it could be that threats to one's values and interests are most salient to negative outgroup attitudes and behaviors; this seems especially important when considering immigration policies that would allow increased numbers of members of the outgroup to immigrate (Stephan & Stephan, 1985). As such, teasing apart different aspects of autonomy threat expectations and their respective contribution to outgroup attitudes and behaviors thus represents an important

direction of future research that could directly help with intervention building, zoning in on the aspects of autonomy that are most important to target.

In considering these effects, it is important to note the current studies focused on individuals' expectations for their personal interactions with outgroup others, rather than their beliefs about how the outgroup collectively treats their group as a whole. One's expectations for oneself and one's group may diverge (Ryan et al., 2017; Taylor et al., 1990), and so our findings regarding expectations for one's personal experience may not extend to the group collective. It would therefore be fascinating to extend Kachanoff et al.'s (2019; 2020) foundational work showing that minority groups engage in more collective action when they expect their group's autonomy to be threatened to outcomes assessing attitudes and behaviors towards the majority group. It may well be that these expectations at the group level intersect with personal expectations regarding how autonomy supportive or threatening individual interactions with outgroup members would be.

Moreover, while Study 4 showed that expectations of autonomy threat can be induced experimentally, most of the current studies were correlational in nature. It is certainly possible that links were identified because individuals who held more negative attitudes towards outgroups also anticipated their autonomy would be threatened by those groups, a reverse causal model from the one we theorized. Equally likely is that the relationship between prejudice and anticipated autonomy threat is bi-directional, such that negative attitudes influence anticipated autonomy threat, but that autonomy threat exacerbates prejudiced attitudes. Additional research is needed to determine causal pathways and inform future interventions aiming to improve outgroup attitudes.

In addition, the current studies tested concurrently the three psychological needs, but did not account for other factors that could have confounded the autonomy – attitude

relationship. Future research could model autonomy threats as predictors simultaneously with competing outgroup threats and expectations, including perceived value dissimilarities (e.g., Wolf et al., 2019), feeling misunderstood (e.g., Livingstone et al., 2020), or feeling rejected (e.g., Mendoza-Denton et al. 2002). Such tests would guide our knowledge about which threats drive the energy to have antagonism towards outgroup others.

Implications

Four studies suggested that expecting autonomy need threat related to less liking and higher prejudice toward outgroup others, with implications for facilitative (e.g., helping others) and harming behaviors (e.g., ignoring others), as well as voting decisions. Testing the role of autonomy expectations is important because it may inform future efforts to reduce prejudice and its widespread negative impacts on minority group members (Blank, 2001; Branscombe et al., 1999; Dovidio et al., 2008; Nelson, 2002; Richeson et al., 2005; Shelton et al., 2005; Steele & Aronson, 1995). This seems particularly crucial in efforts to integrate and smoothen the transition of a new immigrant population into a community. At a minimum, this research suggests the importance of avoiding messages that convey the idea that individuals will thwart autonomy (e.g., Wright, 2016).

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Table 1

Study 1 Descriptive Statistics for all Study Variables, Split by Country

	UK		USA		Turkey		Greece	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Age	19.48	1.99	20.52	2.43	26.42	9.93	28.95	9.46
2. Autonomy expectation	2.70	1.06	2.78	1.27	2.80	1.16	3.08	1.28
3. Relatedness expectation	3.09	1.08	3.17	1.27	3.36	1.23	3.67	1.06
4. Competence expectation	2.80	0.96	2.94	1.31	3.07	1.20	3.21	1.31
5. Liking	5.10	1.05	4.93	1.43	3.47	1.78	4.71	1.50
6. Prejudice	2.17	0.93	2.56	1.09	3.53	1.37	2.63	1.09
7. Trust	5.18	1.13	4.92	1.43	3.13	1.70	4.79	1.64
8. Anxiety	3.46	1.14	3.26	1.19	3.32	1.14	3.43	0.88

Note. Possible ratings on all measures range from 1 to 7. Higher mean scores indicate higher expectations of need threat, more liking, higher prejudice, more trust, and more anxiety.

Table 2

Study 1 Correlations for All Study Variables, Split by Country

US (top), UK (bottom)	1	2	3	4	5	6	7
1. Autonomy threat		.70***	.77***	-.40***	.47***	-.39***	.33***
2. Relatedness threat	.78***		.66***	-.50***	.43***	-.44***	.33***
3. Competence threat	.76***	.69***		-.24**	.37***	-.23**	.22*
4. Liking	-.53***	-.50***	-.44***		-.70***	.63***	-.49***
5. Prejudice	.53***	.53***	.49***	-.70***		-.63***	.46***
6. Trust	-.53***	-.47***	-.50***	.66***	-.68***		-.47***
7. Anxiety	.34***	.29***	.30***	-.36***	.27***	-.25**	
Turkey (top), Greece (bottom)							
1. Autonomy threat		.66***	.71***	-.40***	.29**	-.09	.04
2. Relatedness threat	.48***		.73***	-.40***	.25**	-.12	.05
3. Competence threat	.68***	.53***		-.23**	.12	-.02	-.02
4. Liking	.58***	.30**	.33***		-.67***	.56***	-.30**
5. Prejudice	.56***	.28**	-.29**	-.82***		-.53***	.27**
6. Trust	-.39***	-.03	.14	.68***	-.70***		-.29**
7. Anxiety	.43***	.32**	.34***	-.61***	.51***	-.45***	

Note. Higher mean scores on autonomy, relatedness, and competence threat indicate *higher* expectations of threat, more liking, higher prejudice, more trust, and more anxiety.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3

Study 2 Descriptive Statistics and Correlations for all Study Variables for Muslim Immigrants Below the Diagonal, and Polish Immigrants Above the Diagonal

	<i>Muslim</i>		<i>Polish</i>		1	2	3	4	5
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>					
1. Autonomy threat	-0.94	2.81	-2.38	2.12		.46***	.32***	-.34***	-.04
2. Negative Attitudes	3.66	1.19	3.12	0.94	.62***		.35***	-.74***	.36***
3. Anxiety	3.51	0.85	3.17	0.77	.49***	.53***		-.18***	.04
4. Trust	4.38	1.62	4.82	1.30	-.49***	-.83***	-.48***		-.30***
5. Voting	--	--	--	--	.34***	.53***	-.23***	-.36***	

Note. Possible ratings on measures 1-4 ranged from 1 to 7. Higher mean scores indicate higher expectations of autonomy threat, more negative attitudes, higher anxiety, higher trust, and higher likelihood to vote leave.

*** $p < .001$

Table 4

Study 3 Descriptive Statistics and Correlations for all Study Variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Autonomy threat	2.16	1.38					
2. Competence threat	1.87	1.24	.83***				
3. Relatedness threat	2.45	1.17	.72***	.74***			
4. Prejudice	3.38	1.19	.58***	.47***	.42***		
5. Brexit vote [#]	--	--	-.32***	-.20*	-.22*	.56***	
6. 2017 UK General Election [#]	--	--	-.27**	-.20*	-.14	-.37***	-.36***

Note. Higher mean scores on autonomy, relatedness, and competence threat indicate higher expectations of need threat. [#]Brexit vote was coded 1 for leave, 2 for remain; 2017 UK general election was coded 1 for conservative, 2 for liberal.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5

Study 4 Descriptive Statistics and Correlations for all Study Variables Across Condition

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Autonomy threat	-2.27	2.10							
2. Active facilitation	5.14	0.99	-.35***						
3. Passive facilitation	5.02	1.00	-.47***	.74***					
4. Active harm	1.66	0.99	.41***	-.37***	-.37***				
5. Passive harm	2.20	1.18	.56***	-.49**	-.55***	.70***			
6. Liking	4.65	0.94	-.43***	.58**	.70**	-.22***	-.36***		
7. Anxiety	3.39	1.06	.56***	.28***	-.34***	.26***	.42***	-.43***	
8. Trust	4.62	1.20	-.38***	.45***	.50***	-.20***	-.32***	.62***	-.39***

Note. Higher mean scores on autonomy threat indicate greater expectation of threat. Possible ratings on all measures range from 1 to 7. Higher mean scores indicate higher expectations of autonomy threat, more positive active and passive facilitation tendencies, more negative active and passive harming tendencies, more liking, more anxiety, and more trust.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 6

Effects of Autonomy Condition on Attitudes and Behavioral Tendencies in Study 4.

Autonomy condition	Liking <i>M (SE)</i>	Active Facil <i>M (SE)</i>	Passive Facil <i>M (SE)</i>	Active Harm <i>M (SE)</i>	Passive Harm <i>M (SE)</i>
Satisfaction	4.75 (.10)	5.12 (.11)	5.08 (.11)	1.64 (.11)	2.07 (.13)
Threat	4.47 (.10)	5.00 (.11)	4.78 (.11)	1.69 (.11)	2.43 (.13)
Neutral	4.74 (.10)	5.30 (.11)	5.19 (.11)	1.65 (.11)	2.09 (.13)
Condition effect	$d=0.29^{\dagger}$	$d=0.26$	$d=0.35^*$	$d=0.06$	$d=0.29^{\dagger}$

Note. Possible ratings on all measures range from 1 to 7. Higher mean scores indicate more positive attitudes, more positive active and passive facilitation (Facil) tendencies, and more negative active and passive harming (Harm) tendencies. The favorability score is a composite of attitudes and the four tendency indicators.

Cohen's d : \dagger marginally significant at .10 level, * significant at .05 level

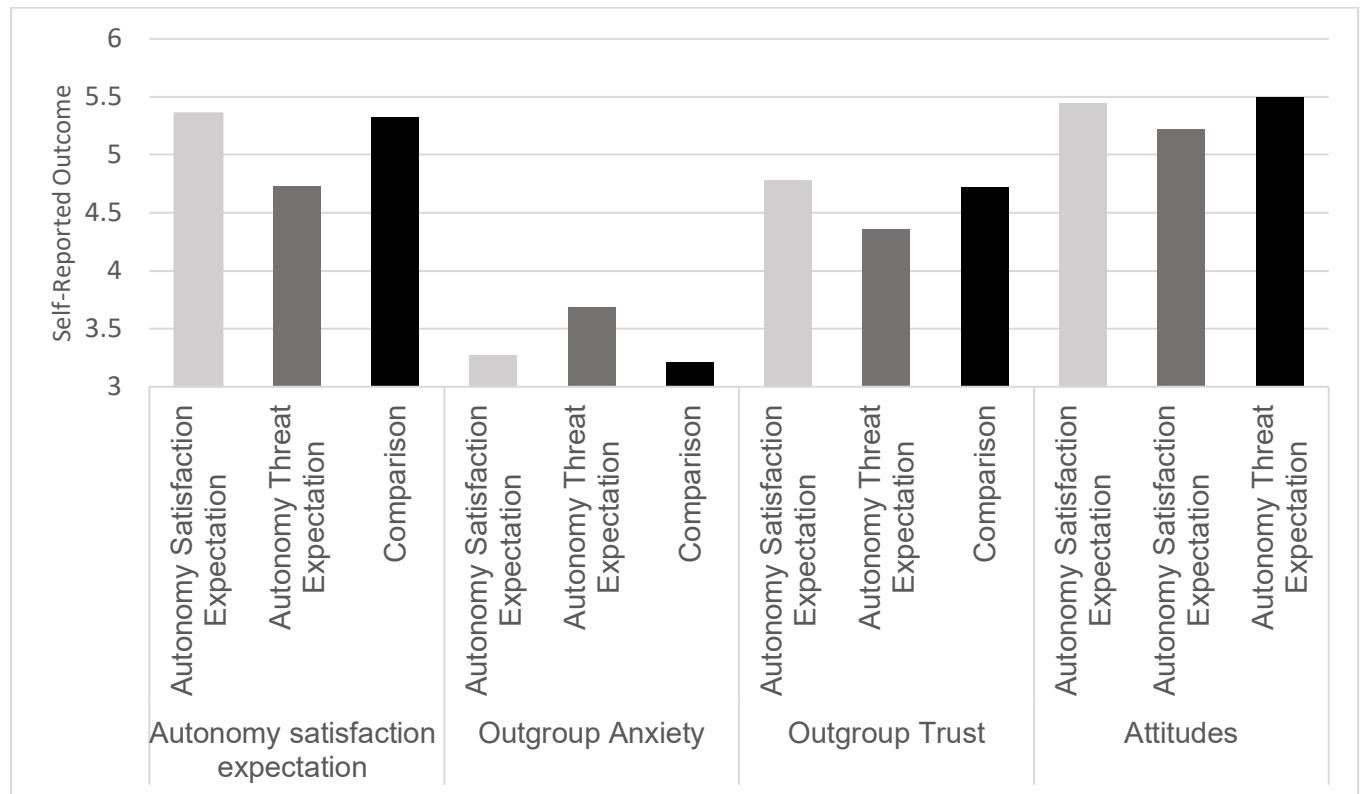


Figure 1. Study 4 main effects of expected Autonomy Satisfaction Expectation, Neutral, and Autonomy Threat expectation conditions predicting positive attitudes. Possible scores range from 1 to 7.

Appendix 1

Imagine that you are about to meet a typical immigrant to the U.K.. Please answer the following questions with respect to how true each statement is for you.

1=not at all true, 7=very true

I would feel free to be who I am.

I would have a say in what happens, and can voice my opinion.

I would feel controlled and pressured to be a certain way.

I would feel like I can't make important decisions.

I would feel like I am unable to express myself.

I would feel out of touch with who I am.

I would feel like I can express the real me.

I would feel in touch with my real values and interests.

Appendix 2*Autonomy Satisfaction*

Please read the following information carefully.

Due to political and economic circumstances, demographers predict waves of immigration in the next few years from an ethnic group outside our borders called Galicians. From what others have said, the Galicians are typically friendly. Those who have met members of this group have said we can expect to feel free to be ourselves and express ourselves when with them, continue to make important decisions, and follow our real values and interests.

Autonomy Threat

Please read the following information carefully.

Due to political and economic circumstances, demographers predict waves of immigration in the next few years from an ethnic group outside our borders called Galicians. From what others have said, the Galicians are typically friendly. Those who have met members of this group have said we can expect to feel some control or pressure when with them, find it hard to express ourselves, and feel out of touch with who we are.

Comparison condition

Please read the following information carefully.

Due to political and economic circumstances, demographers predict waves of immigration in the next few years from an ethnic group outside our borders called Galicians. From what others have said, the Galicians are typically friendly.